Guest editorial

Emerging technologies and value creation in business and industrial marketing

We live in a time of enormous transformations fueled by information and communication technology (Gupta et al., 2017). The World Economic Forum has suggested that this transformation announces the beginning of a new era – the Fourth Industrial Revolution (Schwab, 2016). The Fourth Industrial Revolution builds on the increasing digitization of information and represents new ways in which information and communication technology becomes embedded within products, processes, firms and societies overall. This new era is marked by technology breakthroughs in a number of fields, including artificial intelligence (AI), robotics, the Internet of Things (IoT), decentralized consensus (such as blockchain technologies), virtual reality, 3D printing and others. The breadth, depth and velocity of change brought about by these new technologies are expected to have a profound impact on organizations across a wide range of industries.

The business and industrial marketing field is certainly not immune to these transformations. Today, information and communication technologies enable new approaches to how B2B firms create value in a variety of areas. They enable firms to co-innovate within business communities, they facilitate access to critical resources, such as financial, human or social capital via crowdfunding (Paschen, 2017), and they even allow computers to reliably make decisions with minimal or no human involvement, e.g. AI systems (Syam and Sharma, 2018). Socio-technical systems, including the ones mentioned above, are indeed more than mere mediators of B2B transactions – they shape industrial marketing processes and outcomes in significant ways and give rise to altogether new industrial marketing opportunities.

The theme of this special issue “Emerging technologies in business and industrial marketing” suggests the need for a broader and more in-depth investigation of the role and impact of emerging technologies in business and industrial marketing. The articles in this special issue build on existing conceptualization of business and industrial marketing and examine IT-mediated value creation in three key areas: innovation, the business and industrial marketing process, and competitive advantage.

With respect to innovation, article one by Codini et al. (2019) investigates how open innovation digital platforms facilitate knowledge co-creation with online business communities through interactive, coupled processes. Using an exploratory case study approach, their findings suggest that open innovation digital platforms assume the role of co-creators, oriented towards activating co-creation processes via the exploration, acquisition, integration and development of knowledge in dispersed business networks.

The next four papers examine value creation in the context of the B2B marketing and sales process. Article two by Diba et al. (2019) discusses social media platforms in the context of the industrial buying process. The authors develop a framework for managers by which to assess the roles that social media can play at different stages of the industrial buying process. In article three, Li and Zhang (2019) also examine the use of social media but focus on understanding their impact on key constructs in the post-sales process, such as customer loyalty, trust and purchase risk. The study results suggest that social media enhance buyers’ trust beliefs and can indirectly improve buyer loyalty, but also that they have no impact on purchase risk. Article four, by Paschen et al. (2019), focuses on AI and machine learning. In their conceptual article, the authors introduce a framework by which to elucidate any AI system into six building blocks and discuss how AI systems impact market knowledge in business and industrial marketing. Article five, authored by Blair et al. (2019) focuses on managing service quality in industrial service ecosystems using IT-mediated crowds. The authors suggest a conceptual model by which to elucidate service quality gaps in service networks and develop propositions on how crowdsourcing can help firms manage these gaps. Article six, by Nath et al. (2019) examines the determinants of attitudes to and usage of social media and consumer generated websites for travel planning. The authors develop and empirically test a model using constructs from the information systems (IS) and marketing literature and discuss their findings with respect to the relevance for the demand (consumer) and supply (B2B) side.

The final area for value creation examined in this special issue focuses on competitive advantage. The first two articles examine the employer/employee topics within the B2 context. Dabirian et al. (2019), in article seven, develop an instrument to measure employer branding value propositions for IT firms as a means to gain competitive advantage in an industry where talent is a highly competed-for resource. In article eight, Duncan et al. (2019) explore brand image of B2B firms through the lens of employee reviews on social media and demonstrate the value that firms can gain from this type of “competitive intelligence”.

The authors would like to thank everyone who provided submissions, including those authors whose work they were unable to publish. The authors sincerely appreciate the reviewers and the editors of the Journal of Business and Industrial Marketing, Wesley Johnston and Michael Kleinaltenkamp, for their patience and support.

This paper forms part of a special section “Emerging Technologies in Business and Industrial Marketing”, guest edited by Jeannette Paschen, Leyland Pitt and Jan Kietzmann.
Finally, in article nine, Bonnin and Rodriguez (2019) look at how the topic of “corporate narrative” plays an important role for B2B firms’ ability to reduce uncertainty and to make sense of innovation.

Jeannette Paschen, Leyland Pitt and Jan Kietzmann

References


Enticing the IT crowd: employer branding in the information economy

Amir Dabirian
Department of Industrial Marketing, Kungliga Tekniska Högskolan Skolan för teknikvetenskap, Stockholm, Sweden and
Mihaylo College of Business and Economics, California State University Fullerton, Fullerton, California, USA

Pierre Berthon
McCallum School of Business, Bentley University, Waltham, Massachusetts, USA, and
Jan Kietzmann
Peter B. Gustavson School of Business, University of Victoria, Victoria, Canada

Abstract

Purpose — The purpose of this paper is to develop an instrument to measure employer branding in the information age. Firms increasingly migrate from matter-intensive business models to information-intensive models, where value lies in information rather than the physical objects. This shift has, in turn, led to a change in employee work skills. This is particularly true in the information technology (IT) sector, where firms rely on a limited supply of skilled labor. Employer branding, a firm’s reputation as a place to work, is an important strategy to attract and retain employees.

Design/methodology/approach — From the literature, the authors developed and refined an instrument to measure key value propositions of employer brands. The potential IT employees surveyed in the study were students enrolled in the disciplines of computer science and information systems at a comprehensive university in North America. The study went through three stages resulting in an instrument for psychometric properties.

Findings — This research revealed eight employer branding value propositions that future IT employees care about. These dimensions are important for both IT firms and industries competing for skilled IT labor to understand and manage.

Originality/value — This paper extends the work of Berthon et al. (2005) on employer branding to the information intensive age and particularly the IT sector. It allows executives to manage and measure their employer brand so as to maximize competitive advantage in attracting and retaining skilled employees.

Keywords Human resource management, Retention, Recruitment, IT, Employer branding, Personnel management, Branding

Paper type Research paper

1. Introduction

Labor mobility in the USA is higher than in most other developed countries; according to the Bureau of Labor Statistics, an American moves jobs 12 times during his or her life and stays four years with one employer (Mosley, 2015; Ewing et al., 2002). Although a dynamic labor market can lead to a more efficient use of human resources in sectors that need more readily available skills, labor mobility is a concern particularly for Information Technology (IT) and IT-enabled firms that rely on highly skilled individuals and where workforce mobility results in increased costs of hiring, training and developing employees (Dabirian et al., 2019). Firms are constantly looking for effective strategies to attract and recruit new talent while putting in place practices to ensure that their current employees do not leave for employment opportunities with other firms. One of those strategies is commonly referred to as employer branding (Ambler and Barrow, 1996). An employer brand is the image that current, past and future employees share of an organization’s attractiveness as a place to work (Wilden et al., 2010). As this shared image strongly influences the firm’s ability to retain current employees and to attract new talent, it is one of the most valuable assets of the company (Dabirian et al., 2017). The underlying premise of employer branding is its focus on employees as human capital, which alongside other capitals (e.g. social, structural, intellectual) (Archer-Brown and Kietzmann, 2018; Robson and Sekhon, 2016) enhances a firm’s performance and gives it a competitive advantage in the market (Barney, 1991; Barney et al., 2001; Backhaus and Tikoo, 2004).

Employer branding matters in Business to Consumer (B2C) firms and in the decision-making process (Webster and Keller, 2004) in the Business to Business (B2B) context. In B2B relationships, it is the employees that carry the company brand (Gupta et al., 2010a; Gupta et al., 2010b) and communicate it to their customers (Leek and Christodoulides, 2011), which is also seen as a catalyst to improve overall productivity.

This paper forms part of a special section “Emerging Technologies in Business and Industrial Marketing”, guest edited by Jeannette Paschen, Leyland Pitt and Jan Kietzmann.

Received 7 November 2018
Revised 28 February 2019
28 March 2019
14 April 2019
Accepted 24 April 2019
(Chunping and Xi, 2011). In B2C, especially in retail, customer-perceived service quality completely mediates the relationship between employee job satisfaction and customer satisfaction (Brown and Lam, 2008). Interestingly, the effect of employee engagement on performance is actually stronger in the B2B context (Kumar and Pansari, 2016), where employee satisfaction ultimately affects profits (Abbott, 2003), and motivated and committed sales people contribute to the long-term success and competitive advantage that can be counted on even during life-threatening crisis of a firm (Bucuniene and Skudiene, 2015). In other words, the formal and psychological contract between an employer and employee form the basis of the success of a B2B firm.

A lot has happened in the 33 years since Ambler and Barrow’s initial work on employer branding. In the following section of this paper, section 2, we explore recent changes in the workplace (and the nature of work), transformations of employee generations, and the shift of value from physical to information offerings. These changes along with technological transformation have an effect on how employers and employees view the workplace and the employer brand. We argue that these changes need to be reflected in a revised conceptualization of the employer brand so that firms today can understand how to attract and retain the best talent. In Section 3, we present employer branding in more detail, and in Section 4, we place employer branding into the context of the IT industry. Building on the study of Berthon et al. (2005), we develop an instrument to measure employer attractiveness that is reflective of the changes in work, generation and value locus. In Section 5, we present the findings of this study, before we turn to the discussion in Section 6.

2. The nature of work in a connected world

In recent decades, information technology has impacted most industries and dramatically changed the nature of work, with employees increasingly using shared, digital tools and virtual offices (Kietzmann et al., 2013). This is especially a reality in North America with its ubiquitous connectivity. When employees started accessing data and digital workspaces using technologies such as cloud tools (e.g. Dropbox and One Drive) and collaboration tools (e.g. Skype, Zoom, Slack), work practices soon became uncoupled from geographic limitations and time zones. Consequently, recruiting talent became far less dictated by geographic locations. Indeed, for many IT companies, employees began to “hotdesk”, work from home or from virtual office spaces. With this shift in the importance of location, the meaning of “work-life balance” started changing and employees expected flexible schedules and working venues.

Alongside technological shifts that impact the workplace, we are witnessing a generational shift within our workforce. Members of Gen-Z, born between 1996 and 2010, are digital natives who were born into a ubiquitously networked digital world. This generation, known as “generation me” (Bennett et al., 2012), presents a challenge for employers who need to understand how its members’ values and expectations vary from those of previous generations. Gen-Z members, who are considered more productive, better multi-taskers who can process a great amount of information and exhibit strong confidence in themselves (Iorgulescu, 2016), emphasize seven specific preferences in the workplace (Singh and Dangmei, 2016). They care about transparency, self-reliance and personal freedom, like their independence, prefer managers who listen to them and understand their ideas, enjoy work environments that have professional development, learning and mentoring, prefer a workplace to work for them and be changed by them instead of a work environment which they have fit into, they look for honesty and integrity in their manager and finally, they like to work in a firm that works with the community and understands “social responsibility.”

These individuals are also known as the i-generation since they heavily rely on information services, or “generation C” (Kietzmann and Angell, 2014) as they are always connected and blur the line between work and personal lives. They are also less motivated by money than previous generations (Singh and Dangmei, 2016). Employers today, who compete with one another for the top talent, need to take into consideration these changes to appeal to this new generation of employees.

Today, more industries are moving from traditional matter-intensive, product-focused business models to more information-centric business models (Paschen et al., 2019; Archer-Brown and Kietzmann, 2018). In the past decade, we have seen traditional brick and mortar firms such as Sears, Marriott, Caldwell and Banker increasingly being replaced by information-intensive companies such as Amazon, Airbnb, and Zillow (Cohen and Kietzmann, 2014; Täuscher and Kietzmann, 2017). While these examples compete in the retail, hospitality, real estate, and transportation industries, they are inherently IT companies that use technology-based business models to offer enhanced offerings. As a result, the employees of these information-intensive firms vary dramatically from those of their traditional counterparts.

Against this backdrop of changing workplaces, generational shifts and a move towards information-intensive industries, in the next section, we explore the topic of employer branding, and specifically the value propositions young IT employees look for.

3. Employer branding

Employer branding has been described as “the sum of a company’s effort to communicate to existing and prospective staff that it is a desirable place to work.” (Lloyd, 2002, p. 64) In 1996, it was originally defined as the “package of functional, economic, and psychological benefits provided by employment, and identified with the employing company” (Ambler and Barrow). In short, the economic dimension focused on financial benefits, the functional dimension related to the actual work, and the psychological dimension represented a sense of belonging among employees.

The resulting employer brand is the perception, the commonly shared image of an organization as a place to work and its value proposition to current, past and future employees (Dabirian et al., 2017). This collective image influences the loyalty and retention of current employees, in addition to shaping how firms attract new talent. According to a Conference Board of Canada report, effective employer branding can support the development of a firm’s competitive advantage (Dell et al., 2001). However, the competitive advantage of an employer brand helps “to secure and retain the most sought-after employees” (Moroko and Uncle, 2006, p. 160) only if
Employer branding in the information economy
Pierre Berthon, Jan Kietzmann and Amir Dabirian

managers understand the trends in what employees value (Biswas et al., 2013).

To understand how these priorities might have changed, Berthon, Ewing et al. studied desirable employer attributes in 2005, and extended the package of perceived benefits to five factors: economic, social, application, development, and interest value of work (Berthon et al., 2005). A decade later, the benefits desired by current and former employees were studied again, and extended to eight value propositions as displayed in Figure 1. (Dabirian et al., 2019; Dabirian et al., 2017).

Through these employer brand value propositions, companies market to their employees (Moroko and Uncles, 2008), both current and potential (Barrow et al., 2005). In other words, a strong employer brand helps retain current employees (also known as internal employer branding) and attract new employees (also known as external employer branding) (Minchington, 2010). Not only is employer branding one of the best practices for leveraging talent acquisition (Teetz, 2003), but it has also been seen as a catalyst to improve productivity through encouraging and motivating employees (Chunping and Xi, 2011). Backhaus and Tikoo (2004) describe employer branding as the three-step process of developing a firm’s “value proposition”, marketing this to potential employees, recruiting agencies, etc., and motivating the internal workforce.

Biswas et al. (2013) argued that it is important to understand the trends in what employees value. However, what is valued varies by industry. For instance, seasonal, low-paid hospitality workers have different employment priorities than highly paid knowledge workers. Thus, managers need to pay attention to the industry specific trends in what employees value. This is particularly true in industries where turn-over is high. This is certainly the case in the IT industry, where firms rely on a limited supply of skilled professionals (Ewing et al., 2002). We now turn to the IT industry to investigate employer branding.

4. Employer branding in the IT industry

The IT industry has faced a shortage of talent in the past two decades, leading not only to a high demand for IT professionals (Anuradha, 2011; Lo, 2015) but also increased competition among employers. This coupled with workplace and generational changes (Malati et al., 2011) are exacerbating the pressure to attract and retain talent.

To recruit employees IT firms have to communicate that they are a ‘great place to work’ (Kavitha and Srinivasan, 2012); a good employer brand does exactly this, and thus forms a competitive advantage (Vasavada-Oza and Bhattacharjee, 2016). However, given the changes in what employees are looking for, what constitutes a ‘great place to work’ needs to be reassessed.

4.1 Employer attractiveness among potential employees

We focused on potential employees of the IT industry. To this end, we surveyed 449 junior and senior year students enrolled in the disciplines of computer science and information systems at a comprehensive university in North America. The survey was administered in upper-level courses in the faculty of computer science in the college of engineering and computer science, and to management IS majors in the college of business and economics. Students completed the survey anonymously.

4.2 Instrument development

Our intention was to measure the importance of the eight employer attractiveness dimensions outlined in Figure 1. For the first five (i.e. social, interest, application, development and economic value), we used the instrument developed by Berthon et al. (2005). The three additional factors identified by Dabirian et al. (2019) were the role of management, work-life balance (WLB) and brand image of the employer (i.e. the desire to work at a “cool”, “exciting” and “innovative” company) (Dabirian et al., 2019). To measure these dimensions, we created 16 new questions.

The resulting survey, consisting of 40 questions for all eight dimensions, used a seven-point Likert scale and was administered as a pilot study to 120 students. We ran an exploratory factor analysis (EFA) on the data and used principal component analysis extraction method with varimax rotation. The majority of variables loaded on single factor therefore we decided to update the instrument and run it for another pilot. The seven questions that were eliminated in the original study (Berthon et al., 2005) also did not have good loading around those variables. Therefore, we eliminated eight questions (including the seven from the original study). When we ran the second pilot study, we had 100 students (from a

Figure 1 Eight value propositions for IT employer branding

<table>
<thead>
<tr>
<th>SOCIAL VALUE</th>
<th>INTEREST VALUE</th>
<th>APPLICATION VALUE</th>
<th>DEVELOPMENT VALUE</th>
<th>ECONOMIC VALUE</th>
<th>MANAGEMENT VALUE</th>
<th>WORK/LIFE BALANCE</th>
<th>BRAND IMAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is this a fun place to work with talented people and a great organizational culture?</td>
<td>Is the work interesting, challenging and achievable?</td>
<td>Is the work meaningful and does it invite the application of knowledge and skills?</td>
<td>Are there opportunities for employees to grow and advance professionally?</td>
<td>Is work rewarded appropriately through salaries, benefits and perks?</td>
<td>Are managers good, honest leaders who inspire, trust, protect, enable and respect employees?</td>
<td>Are work arrangements flexible enough to achieve success on and off the job?</td>
<td>Through the eyes of employees, how is the firm’s brand perceived? Is it seen as cool and innovative?</td>
</tr>
</tbody>
</table>

1405
different pool of students) responding and performed another EFA analysis. The results revealed eight factors, comprising four themes: (Table I).

Based on the second pilot study, we eliminated further questions and rephrased others to improve clarity. The main study included 37 questions and 449 responses.

5. Finding and discussion

With respect to scale reliability and exploratory factor analysis, we first checked for scale reliability and purified the scale. The Cronbach alpha (Cronbach 1951) was 0.975, suggesting that the scale demonstrates good internal consistency. The scale is regarded as reliable if the coefficient exceeds 0.7 (Carman, 1990).

The exploratory factor analysis yielded eight factors. Questions 9, 21, 27, and 28 were eliminated because the factor loadings were below 0.54 (Williams et al., 2010).

Figure 3 shows the eight factor loadings: the original five employer branding factors identified by Berthon et al. (2005) and the three additional themes identified by Dabirian et al. (2019). The factors account for 76 per cent of the variation. The rotated matrix loads items 2-6 for factor 1, items 29-33 for factor 2, items 34-37 for factor 3, items 10-13 for factor 4, items 14, 20, 22, 23 for factor 5, items 15-19 for factor 6, items 26-28 for factor 7, and finally items 1, 7, 8 for factor 8. The definitions of eight value propositions for IT employer branding are listed in Table II.

Table II Definitions of eight value propositions for IT employer branding

| Factor 1 | The “Development” value proposition refers to professional and personal development opportunities |
| Factor 2 | The “Management” value proposition describes supervisory and management styles and practices |
| Factor 3 | The “Work-Life Balance” value proposition relates to the type of balance between family and work that allows personal and professional success |
| Factor 4 | The “Application” value proposition refers to the type of work that allows the application of knowledge and skills |
| Factor 5 | The “Economic” value proposition is all about financial the impact for the employee including salary, perks and other benefits |
| Factor 6 | The “Interest” value proposition relates to how employees are interested in their jobs and in their employer, and how challenging and achievable their work is |
| Factor 7 | The “Brand Image” value proposition describes how ‘cool’ and innovative the company is or how cool it is perceived to work for it |
| Factor 8 | The “Social” value proposition relates to how much fun and exciting the working environments and co-workers are |

Bentler, 1990). AVE (Average Variance explained) for all eight latent variables were > 0.5 and CR (Composite Reliably) were > 0.7 (Hair et al., 2006). The SEM model confirms the eight factors. Figure 4 also shows the result of standardized regression weights for all items.

6. Conclusion

Our study into the types of benefits potential employees seek in the IT industry yield several important contributions. First, it confirms that the eight value propositions that are important to current and former employees are also important to potential employees. This suggests that people care about the same benefits, whether they are potential, existing or current employees. In a sense, from a theory perspective, this finding brings the areas of internal and external employer branding closer together.

Second, the study developed and tested a new, more comprehensive instrument to assess employer branding. Managers can use this tool not only to measure what IT job-seekers find attractive, but also once hired, what employees care about. Previous studies have shown that employees seek changes over time, and this instrument allows managers to track these changes.

We argue that employer branding is an essential tool to attract and retain the best talent. The employer brand, as perceived by potential, current and former employees, communicates that a firm is a “great place to work”. Furthermore, in alignment with the focus of the Journal of Business and Industrial Marketing, we presented evidence grounded in the literature that employer branding is a strategic lever for firm performance in business to business environments.

Finally, in regard to the focus of this special issue’s call for papers, we suggest that this topic matters to those “who are interested in learning how emerging technologies will impact the relationships between firms and their customers, and how firms can use them effectively in their marketing strategies.” While technological tools don’t play a central role in this article, in an instrumental sense, they provide the backdrop for the increasing importance of employer branding. Recent developments, including the changing nature of work, generational changes and the shift in value from physical to information offerings present us with continuously connected employees. In other words, emerging technologies result in a ubiquitous connected i-generation, who desire different attributes in employers compared to previous generations.
Figure 2  Item loading for first-order, eight-factor model
As emerging technologies move us to a more and more information-intensive age, B2B firms will need to present themselves as “great places to work” to attract top employees. Understanding the employer branding value propositions that potential employees seek is a first step. Using the instrument developed here, to assess what job-seekers is a second step. Finally, managers need to adjust their firms’ social, interest, application, development, economic, management, work/life and brand value propositions. We hope that this article motivates B2B firms to think about employer branding as a strategic tool, and use the instrument to achieve competitive advantage through employer branding (Paschen and Pitt, 2019).

References


Employer branding in the information economy
Pierre Berthon, Jan Kietzmann and Amir Dabirian


Corresponding author
Amir Dabirian can be contacted at: adabirian@fullerton.edu

For instructions on how to order reprints of this article, please visit our website:
www.emeraldgrouppublishing.com/licensing/reprints.htm
Or contact us for further details: permissions@emeraldinsight.com

1409
Artificial intelligence (AI) and its implications for market knowledge in B2B marketing

Jeannette Paschen
Department of Industrial Marketing, KTH Royal Institute of Technology, Stockholm, Sweden

Jan Kietzmann
Peter B. Gustavson School of Business, University of Victoria, Victoria, Canada

Tim Christian Kietzmann
MRC Cognition and Brain Science Unit, University of Cambridge, Cambridge, UK

Abstract
Purpose – The purpose of this paper is to explain the technological phenomenon artificial intelligence (AI) and how it can contribute to knowledge-based marketing in B2B. Specifically, this paper describes the foundational building blocks of any artificial intelligence system and their interrelationships. This paper also discusses the implications of the different building blocks with respect to market knowledge in B2B marketing and outlines avenues for future research.

Design/methodology/approach – The paper is conceptual and proposes a framework to explicate the phenomenon AI and its building blocks. It further provides a structured discussion of how AI can contribute to different types of market knowledge critical for B2B marketing: customer knowledge, user knowledge and external market knowledge.

Findings – The paper explains AI from an input–processes–output lens and explicates the six foundational building blocks of any AI system. It also discussed how the combination of the building blocks transforms data into information and knowledge.

Practical implications – Aimed at general marketing executives, rather than AI specialists, this paper explains the phenomenon artificial intelligence, how it works and its relevance for the knowledge-based marketing in B2B firms. The paper highlights illustrative use cases to show how AI can impact B2B marketing functions.

Originality/value – The study conceptualizes the technological phenomenon artificial intelligence from a knowledge management perspective and contributes to the literature on knowledge management in the era of big data. It addresses calls for more scholarly research on AI and B2B marketing.

Keywords B2B marketing, Customer knowledge, Artificial intelligence, Market knowledge, Machine learning, Natural language processing, Knowledge-based marketing, User knowledge

Paper type Conceptual paper

1. Introduction

Scholars from a variety of disciplines agree that businesses are no longer seen from an industrial but from a knowledge perspective (Grant, 1996, 2002; Spender and Grant, 1996). Knowledge, gained from superior information quantity and quality, has become the dominant resource and outpaced physical and financial capital in terms of its organizational importance (Archer-Brown and Kietzmann, 2018; Bollinger and Smith, 2001; Drucker, 1999). Knowledge is also at the heart of market orientation (Day, 1990, 1994, 2000), which has been a dominant marketing paradigm since the 1990s. In particular, market knowledge (Kohli and Jaworski, 1990) is critical for creating offerings that cater to the needs and preferences of customers and for ultimately building and maintaining effective long-term customer relationships. Thus, a systematic knowledge management effort can channel market knowledge into effective B2B marketing strategies and tactics (Shaw et al., 2001).

In recent years, the increasing digitalization and the advent of emerging information and communication technology has transformed value creation in B2B in general (Paschen et al., 2019), and more specifically, how B2B firms manage data and knowledge (Gupta et al., 2017). First, information and communication technologies have fueled the creation of large volumes of data, for example, from the almost ubiquitous use of social media (Kietzmann et al., 2011) and the rise of the Internet of Things (IoT; Osmenbekov and Johnston, 2018; Robson et al., 2016; Turunen et al., 2018). Individually, these new and still emerging data points mean little when compared to their profound joint meaning (Pigni et al., 2016). Collectively, big data, vast in terms of their volume, velocity, variety, veracity and value (known as the Five Vs), are...
becoming an increasingly valuable source for market knowledge for B2B companies.

Second, emerging information technologies can help companies uncover, organize and share the knowledge contained in big data (Codini et al., 2019). One information technology that is gaining increased interest among practitioners is artificial intelligence (Martínez-López and Casillas, 2013; Singh et al., 2019; Syam and Sharma, 2018). As an illustration, a 2018 survey of more than 1,400 B2B marketing executives revealed that the professional services sector ranked among the top sectors to embrace artificial intelligence (MIT Technology Review Insights, 2018). The premise is that, for B2B companies, artificial intelligence can help translate (big) data into information and into knowledge required for developing effective marketing and sales strategies and tactics. Traditionally, this has been a difficult undertaking in B2B marketing, where B2B marketers need to focus on both, understanding customers, i.e. those who make the buying decision, in addition to understanding the users, i.e. those who ultimately use the offering (Abrell et al., 2016). The potential impact that practitioners expect AI to offer to the B2B marketing and sales practice include personalization, customization, innovation and enhanced marketing effectiveness and efficiencies (EverString, 2018).

While marketers acknowledge the opportunities for AI-enabled knowledge, there appear to be gaps in comprehensively understanding artificial intelligence and how to operationalize it for B2B marketing processes and decision-making (Martinez-Lopez and Casillas, 2013; Singh et al., 2019; Syam and Sharma, 2018). In other words, when B2B marketers discuss AI, they often refer to and use different terms and concepts, thereby leading to misinterpretations and confusion about what AI can and cannot do. For B2B managers and executives to be able to assess AI properly, a first critical step is to understand what artificial intelligence is, what the different related terms and concepts mean and how they all come together to offer different value propositions to B2B marketing. In addition, there is a gap in our understanding on the implications of AI with respect to market knowledge in a B2B context. Our article addresses both of these gaps. In response to the first, this article describes the foundational building blocks of any artificial intelligence system and their interrelationships, in addition to clarifying AI-terminology that is often used interchangeably in practice. With respect to the second gap, this article describes the implications for AI with respect to different types of market knowledge in the context of B2B marketing decision making and outlines avenues for future research in this area. In doing so, our article contributes to the literature on AI and B2B marketing from a knowledge perspective while addressing the call for more scholarly work in this area (Martinez-Lopez and Casillas, 2013; Singh et al., 2019; Syam and Sharma, 2018).

The remainder of this article proceeds as follows. Section 2 begins with a conceptual clarification of artificial intelligence systems, grounding the concept in the appropriate literature. Next, we describe the foundational building blocks of artificial intelligence systems and their interrelationships, along with illustrative examples from B2B marketing in Section 3. Section 4 discusses the implications of AI for market knowledge in B2B marketing along with avenues for future scholarly research, before concluding with a summary of implications.

2. Artificial intelligence systems’ conceptual foundations

Our exploration of artificial intelligence starts with an examination of the term intelligence, which, in the human context, is defined as a person’s ability to learn, to deal with new situations, to understand and handle abstract concepts, and use knowledge to manipulate one’s environment (Legg and Hutter, 2007; Sternberg, 2017). In more general terms, intelligence is defined as the ability to perceive and process data, transform data into information and ultimately knowledge and use this knowledge towards goal-directed behavior. Effective adaptation of intelligence draws upon the selective combination of a number of processes, including perceiving one’s environment, problem solving, reasoning, learning, memory and acting to achieve goals.

Following extant conceptualizations, we treat artificial intelligence as “computational agents that act intelligently” (Poole and Mackworth, 2010, p. 3). This definition departs from previous views that AI is about machines that can display human-like intelligence in two important ways. First, it focuses on acting intelligently, which refers to performing the above outlined processes, such as perception, learning, memorizing, reasoning and problem-solving towards goal-directed behavior. Second, it addresses the performance of the computational agent, which is not necessarily rational, but simply note that human behavior sometimes encompasses behavior that may not achieve the best possible outcome. This conceptualization measures the performance of artificial intelligence not in terms of fidelity to human behavior, but instead, in terms of an ideal performance called rationality (Russell and Norvig, 2016). An AI system is rational if it does the “right thing” given what it knows. A rational view of artificial intelligence suggests that AI acts so as to achieve the best outcome or, when there is uncertainty, the best expected outcome. By distinguishing between human and rational behavior, we are not suggesting that humans are necessarily irrational, but simply note that human behavior sometimes encompasses behavior that may not achieve the best final outcome (Kahnemann and Tversky, 1979). To echo Herbert Simon (1996), human behavior is boundedly rational, that is, it is limited by the information we have, our cognitive abilities, and the finite amount of time we have to make decisions.

The second key element in our notion of artificial intelligence is “computational agents”. Referring again to Russell and Norvig (2016), in information systems, an agent perceives its environment and acts upon this environment. Human agents perceive through their eyes, ears and other organs, and act using their hands, legs or vocal tracts. Computer agents use sensors, such as cameras, or keystrokes to perceive inputs and act on the environment by writing files, moving objects or displaying output on a screen. Thus, by including the notion of computational agents, we posit that artificial intelligence agents solve problems in practice as opposed to only in principle. It should be noted that every single AI system described here falls under the term of “narrow” AI, rather than “strong” AI. Narrow artificial intelligence describes AI systems that are optimized for a given task. On the other hand, strong AI, also known as “artificial generalize intelligence,” is the research and practice of designing systems capable of solving any intellectual task,
much like a person can. This is extremely difficult, and currently does not exist in practice. The uses of AI discussed in this article focus on narrow artificial intelligence systems.

Information systems, at any level of sophistication or intelligence, consist of hardware (e.g. computers and servers), software (e.g. algorithms), data (e.g. collections of facts and numbers), people (e.g. individuals interacting with various elements of an information system) and procedures (e.g. rules or descriptions for how to use, operate or maintain an information system; Silver et al., 1995). The interaction of an information system with its organizational and social environment follows a basic input–process–output model in which the system itself is seen as a separate entity from its environment. Accordingly, systems require data from human or physical sources in their environment (inputs), manipulate such data in value-creating ways (processes), and feed information (outputs) back to the environment. Regarding their functional relationships, in information systems data are treated as raw facts that represent a subject or object in the real world; information places these facts into a formative context so that meaning emerges. Knowledge develops as we use, question and apply information in useful ways to understand and learn about our environment (Ackoff, 1989).

3. The six building blocks of artificial intelligence systems

The previous section clarified artificial intelligence and information systems conceptually based on the extant literature. Having defined the two key constructs – artificial intelligence and information systems – we can now venture deeper into the concept of artificial intelligence systems. If we accept that (a) artificial intelligence is the theory and practice of developing systems (i.e. machines or computer programs that receive or perceive inputs, process these inputs, and return the results of the processing as outputs) and (b) that these systems act to achieve the best expected outcome, we can unpack AI systems into six building blocks as illustrated in Figure 1: structured data, unstructured data, pre-processes, main processes (i.e. problem solving, reasoning and machine learning), knowledge base and information. The following section offers an introduction to and a definition of each building block (in italics) and discusses each building block’s role in AI systems.

3.1 Inputs

Each information system first must have a means to invite data from its environment to feed its input–process–output transformation. For AI, these inputs come in two forms: structured and unstructured data.

3.1.1 AI building block 1: structured data

Structured data are data that are standardized and organized according to predefined schema. They form the heart of business analytics and business intelligence – activities that are concerned with the methodical exploration of an organization’s structured data, often with a strong emphasis on quantitative analyses. Examples include customer demographics, web browsing data or transaction data – all these are internal structured data – and social media ratings or stock exchange transactions, which are examples of external structured data. AI, powered by growing computational efficacy and rapidly improving machine learning techniques (explained in building block 4), is able to run computations on different types of structured data, often in real time.

3.1.2 AI building block 2: unstructured data

Unstructured data are data that are not standardized or organized according to a pre-defined schema. What sets AI apart from traditional information systems is that it can also handle the vastly increasing amount of input data that come in unstructured formats. IoT, social media and mobile devices have led to a seemingly endless flow of digital data that are mostly unstructured and include, among others, human language in written form, such as blogs, posts, reviews, comments or tweets; speech, such as audio in user-generated content, and images that portray objects or people. In a Web form, for example, website visitors may be asked to provide their contact information or give feedback on a product or service by choosing an answer option from pre-determined answer categories (structured data) but also be presented with a comment box in which they can provide additional feedback or questions (unstructured data).

3.2 Processes

Artificial intelligence systems first need to format and standardize unstructured data. These pre-processing activities transform unstructured data into structured data, which can then be manipulated in AI’s main processes (building block 4; O’Leary, 2013).

3.2.1 AI building block 3: pre-processes

Pre-processing of unstructured data in their various forms includes data cleaning, normalization, transformation, feature extraction and selection, with the goal that the remaining data can be processed in value-creating ways.

3.2.1.1 Natural language understanding. AI systems use natural language understanding (NLU) to assign meaning to the vast and complicated human language in spoken and written form. Human language comes to life through text (written language).
and acoustic signals (spoken language). Before AI systems can make sense of spoken language, speech first needs to be transcribed into text; this step is typically referred to as speech recognition. Although speech recognition and voice recognition are often used synonymously, the former is concerned with detecting the words that are spoken, while the latter identifies the speaker personally. Speech recognition allows an AI system to recognize the words that were said, but not what the words mean. This sense-making takes place as part of natural language understanding. Assigning meaning to written text, i.e. creating a semantic representation of the text, is the most important task in NLU. It is also a challenging task given the ambiguity inherent in natural language resulting from contextual circumstances, linguistic styles or dialog history. For example, artificial intelligence systems need to separate the meaning of homonyms – words with the same spelling and pronunciation, but different meanings (e.g. to book a criminal vs to book a hotel room), homophones – words that share the same pronunciation, regardless of how they are spelled (e.g. to, too and two) and homographs – words that share the same spelling, regardless of how they are pronounced (e.g. to tear up vs to tear down). Adding to this complexity of assigning meaning are other issues such as spelling errors, jargon, slang or dialect. Thus, a key task in natural language understanding involves analyzing the syntax (i.e. the structure of sentences), semantics (i.e. the relationship between words, phrases and symbols) and pragmatics (i.e. the context in which words or phrases are used of natural language; Gill, 2019). While early applications of NLU were based on hand-written rules, today’s systems rely on machine learning (explained in AI building block 4 below) to extract meaning from text. While several techniques exist, most NLU applications use a lexicon (a vocabulary) and a set of grammar rules coded into its procedures. These applications then use statistical models and machine learning to apply these rules and determine the most-likely meaning of what was said. The applications of NLU today are immense, and include, among others, automatic text summarization, personality insights, sentiment analysis, topic extraction and named entity recognition, i.e. classifying named entities in text into predefined categories, parts-of-speech tagging, relationship extraction, or stemming, i.e. reducing inflected words like fishing and fisher to their word stem fish. As an illustration, the start-up firm Klue offers AI services using natural language processing and machine learning to curate competitive intelligence from written text in 3.5 million external Web sources, processing these data to extract insights for B2B personal selling and sales management. Klue’s website promises to provide “a lens for enterprises into their competitor’s world, continuously updating and connecting dots to help them win more business.” (Klue, 2017). This up-to-date information can better enable sales professionals to answer clients’ questions and deposition competitors, in addition to offering valuable insight of what competitors are up to.

3.2.1.2 Computer vision. Computer vision is the transformation of visual images into internal representations of the world so that these representations can interface with other building blocks in the AI system. The degree of sophistication in computer vision varies widely, from recognizing edges or texture to boundaries, surfaces and volumes to the classification of objects, scenes or events (Forsyth and Ponce, 2011). For example, retail technology company Cloverleaf uses AI-enabled computer vision to measure shopper sentiment via store shelves and identify improved pricing or promotion tactics, often in real-time. While easy for humans, visual processing is a highly challenging task for computers and thereby poses a bottleneck for AI systems, which need to work from the resulting output.

Computer vision is strongly linked to the field of machine learning explained in the following section, which provides the algorithmic backend to recognize patterns in and extract meaning from pixels. eBay, for instance, is rolling out a feature that allows users to identify an item found on any website – a blog post or Pinterest – and find similar items on the digital marketplace site by sharing the URL with eBay. Users will also be able to zoom in on specific items within a photo and search for those. While early computer vision systems worked on hand-crafted, human-designed features, today’s object classification systems rival human recognition rates.

3.2.2 AI building block 4: main processes

One of the key processes of intelligence is the ability to apply logic to solve problems and learn. Learning is the process of acquiring new or modifying existing knowledge to better achieve desired outcomes. In AI, building block 4 is primarily concerned with three main processes of intelligent behavior: Problem solving, reasoning and machine learning, with machine learning using the two former processes to make machines smarter.

3.2.2.1 Problem-solving. Problem-solving involves choosing the best solution from a range of alternatives for reaching a goal. Just like with humans, two fundamentally different problem-solving processes exist for AI systems. In divergent problem solving, artificial intelligence systems generate and evaluate alternative solutions for a given problem. The importance here is that there is no single best solution – a host of alternatives can be equally valuable. Convergent problem-solving, on the other hand, is concerned with narrowing down alternatives to find a single-best or even correct answer to a problem. For this, the brute force that AI systems can employ to deal with big data is particularly helpful. However, this does not mean that AI problem-solving always explores all options to arrive at the optimal solution. Instead, AI often relies on heuristics to reach outcomes that are sufficient for the immediate problem at hand (Tecuci, 2012). For example, when IBM’s Watson defeated the human contestants in the TV game show Jeopardy! Watson determined a list of answers along with a weighting for each answer reflecting its likelihood (or confidence) of being correct. It then used the ranked list to decide whether to answer the question and the amount of money to bet. In either case, the divergent or convergent problem solutions are stored (discussed in building block 5 – knowledge base) and existing knowledge is updated (discussed in the below section machine learning).

3.2.2.2 Reasoning. Reasoning refers to applying logic to generate conclusions from available data. Put differently, systems reason with the input to develop reasoned conclusions. It is important to note that there is a fundamental difference between traditional reasoning machines, e.g. data automation systems whose reasoning processes calculate inventory levels or process credit card payments, and AI systems that provide capabilities
for reasoning under uncertainty. Consequently, AI systems are also thought of as inference engines. They apply rules or laws to the data available to deduce information (Wilson and Keil, 2001). While problem-solving was about finding solutions for problems, reasoning is concerned with the type of logic underlying these processes. Here, too, two main kinds of reasoning exist. Deductive reasoning, also known as top-down reasoning, formal logic or the scientific method, combines premises, i.e. logical statements that are believed to be true to obtain new conclusions. Accordingly, if the premises are true, so is the conclusion. Theories are tested, and new knowledge is deduced from previous knowledge. For example, IBM Watson Health was fed a large training data set of proteins and used deductive reasoning to identify proteins associated with cardiovascular disease. On the other hand, inductive reasoning, also known as bottom-up reasoning, does not use rules but instead attempts to generate general hypotheses from specific observations. The ultimate goal of the AI system is to detect patterns and develop rules that would not only be conclusive for the data at hand, but that can also be applied to future problems or situations. AI applications, for instance, are used to analyze business-internal data to identify potential future regulatory obligations for the business.

3.2.2.3 Machine learning. If the premise of AI is to develop machines that act intelligently, then they need to be able to learn from past attempts. Machine learning (ML) encompasses techniques that enable computers to learn from experience, i.e. progressively improve their performance, without an explicit, pre-defined set of rules that are stored in memory. Classic supervised machine learning relied on human decision making to define input features and pre-program specific behavior based on which the systems learned. It soon became clear that successful systems would need to learn from experience and derive insight from large amounts of data – without being explicitly re-programmed every time. Advanced versions of machine learning target this question, developing algorithms and statistical methods that are capable to extract (oftentimes implicit) knowledge from data. The advent of deep learning, new graphics processing units (GPU) technology and vast amounts of data now allows algorithms to automatically learn complex features from the data to optimally perform the task that they are trained on. This renders machine learning the most important element of today’s AI systems.

The space of learning algorithms is vast and can be separated into supervised methods (i.e. methods that learn from data for which target output is known), unsupervised methods and reinforcement learning. Supervised learning methods include computer vision applications, such as object- or speech recognition, where training data are provided together with correct labels from which the computer learns the patterns and develops the rules to be applied to future instances of the same problem. Unsupervised learning methods aim at finding structure in high-dimensional data to make it more accessible (e.g. clustering and dimensionality reduction). Reinforcement learning tries to teach agents to learn intelligent behavior from their own past experience. In other words, AI systems learn from various sources not only from the structured and unstructured input data, but also from their own processes. To achieve this, machine learning extends content stored in the knowledge base with new concepts or facts and refines its problem-solving and reasoning processes. Thus, machine learning enhances the competence of an AI system to solve a wider range of problems or increases the accuracy with which re-occurring tasks are solved. This can imply efficiency gains, too, in terms of memory consumption or time spent on task.

No up-to-date AI system exists that does not use machine learning as a key mechanism to dynamically alter its behavior in an ever-changing environment. As mentioned above, its ability to learn without being explicitly programmed means that it can make data-driven decisions or predictions by recognizing patterns within large data sets, even across various data sources. For instance, Source Media, a business-to-business media company, uses natural language understanding and machine learning to develop a highly tailored content strategy to nurture and qualify leads. Using structured and unstructured data from third-party providers, its own marketing platforms and internal sources, Source Media creates prospect profiles and segments them based on users’ needs and intents. Employing machine learning, the digital media company delivers highly tailored communications, such as personalized website content, white paper downloads or emails, to nurture and qualify leads (“Lytics | Source Media,” 2019).

Artificial neural networks (ANNs) are one of the tools used in machine learning. Inspired loosely by the human brain, ANNs consist of a sequence of computational stages, also known as network layers, each of which performs comparably simple calculations on its respective input and passes the results of the computations on to the next layer, deeper in the network (Kietzmann et al., 2019). Although each computation is mathematically simple, the network as a whole has large computational power owing to the cascaded setup, deriving complex mappings from a sequence of simple nonlinear computations (Knight, 2017). As an example, the computational units in the first layer of a network that performs visual object categorization may receive their input from the pixels of an image and test for the existence of simple oriented lines. The next layer then performs its calculations not on the basis of pixels, but on the level of oriented lines, and thereby detects more complex shapes (curves, crosses, etc.). Like this, units deeper in the network become sensitive to increasingly more complex shapes, resulting in units that are best described as conceptual. For instance, units can be activated upon the presence of a dog, irrespective of breed or viewing angle. The output layer of the network then directly corresponds to the probability that the image contains a given category. Because of ever increasing data availability and computational power of GPUs, today, there exist increasingly complex artificial neural networks that include millions of parameters. The term “deep learning” or “deep neural networks” describes this new and powerful breed of ANNs (Yao, 2017). While the above example describes a visual network performing an object categorization task, networks can learn arbitrary input–output relations. For instance, the input can be pixels, as described above, but also sound-waves (e.g. from a video), temperature scores (e.g. from a sensor), laser-scans (e.g. from medical diagnostics), clicks (e.g. from a user navigating a webpage) and many more – the possibilities are endless. The output can also be diverse, ranging from category labels to speech or robot movements (as described in building block 6). ANN and deep learning algorithms have a variety of
marketing applications today, including customer segmentation, predictive lead scoring, ad re-targeting or dynamic pricing models.

To recap, deep learning is a sub-field of machine learning. Machine learning uses algorithms to parse data, learn from it and make decisions based on what it has learned without human intervention. Deep learning structures algorithms in network layers to create an artificial neural network that can learn and make intelligent decision on its own.

### 3.3 Data storage

In intelligent behavior, the fact that experiences influence subsequent behavior is only possible through memory, which stores past data, information or knowledge for future access. AI systems are highly dependent on efficient storage and retrieval of large volumes of data – both in real-time and in data repositories – to solve problems, reason and learn from experience, which leads us to building block 5.

#### 3.3.1 AI building block 5: knowledge base

A knowledge base stores digital representations of aspects of the real world in which these representations operate, for later access. In the 1970s, such storage places were hierarchical or relational databases that contained rows and rows of structured data. Much like today’s AI systems, they were repositories that allowed the encoding and decoding, storing and retrieval of information from past computations. In the AI context, however, these representations can be structured data or data from pre-processing, but also information generated by the system itself, about relationships between objects or events, rules or actions (Hayes-Roth et al., 1983) for three main AI processes: problem-solving, machine learning and reasoning. Finally, knowledge obtained via deep learning is also stored. This form of storage is highly implicit, i.e. the stored computations from a single network layer are impossible to interpret without the context of all others. Deep neural networks can therefore be seen as implicit knowledge bases.

### 3.4 Outputs

Structured and unstructured data, AI building blocks 1 and 2, encompassed accepting sensory input from the environment. Building block 3, i.e. pre-processing (natural language understanding and computer vision) and building block 4, main processing (problem-solving, reasoning and machine learning) transformed these inputs in value-creating ways, while the knowledge base (building block 5) stored the resulting information for future purposes. The final building block discussed here entails the AI system’s post-processing interface with its environment. In other words, it refers to what happens in the real world after an AI system generated its results. In general terms, these outputs can inform human decision making or become inputs into other information systems that then act on the internal or external environment of the business.

#### 3.4.1 AI building block 6: information

Information results from data being placed into a formative context so that meaning emerges. This information resulting from AI can then be used to support human decision-making. For instance, digital marketing companies employ AI to improve search engine optimization, mapping content to user profiles and models of what Google looks for in a particular topic. This is similar to how traditional search engine optimization (SEO) keyword search works but expands keywords into semantic topics, thus considering many more topics at a more sophisticated depth than humans. Likewise, sentiment analyses, such as “emotion AI,” can help marketing managers determine and quantify the attitudes and affective states of customers, information from which educated marketing decisions can be made. For example, marketing agencies and media companies are employing webcams, computer vision and machine learning to determine customers’ emotional responses to advertising. The resulting knowledge enables marketers to optimize their media content to the right audiences (e.g. in pretesting ads) or when to stop showing a specific advertisement. In addition to AI-generated information used in human decision-making, AI-generated information is also used for non-human tasks in a variety of business applications.

#### 3.4.1.1 Natural language generation (NLG)

While natural language understanding (NLU) focuses on identifying the meaning of written text, natural language generation (NLG) performs the complimentary task: natural language generation (or text generation) produces written narratives in conversational language as output. Natural language processing (NLP) is the umbrella term that describes an AI systems ability to understand and identify the meaning of human language (NLU), decide on an appropriate action and create a response delivered in language back to the human (NLG). By using NLG, organizations can turn large data sets or other internal assets into reports and business intelligence insights, thus bringing a new level of understanding to employee and customer relationships. In addition to internal uses, NLG can also bring economies of scale through applications outside of the organization, for instance by using AI to generate content, for example in advertising or journalism.

The written narratives created through NLG can also take the form of an auditory response delivered back to humans; this is referred to as speech generation. For instance, firms are increasingly using chatbots for “conversational commerce,” including marketing, customer relationship management and post-purchase customer support. A sophisticated AI-empowered speech generator can handle hard-to-pronounce words, as well as alter its pronunciation based on punctuation. For example, capitalized words are emphasized, as a human speaker would when indicating that a specific word is particularly important. Furthermore, AI applications just recently managed to accurately mimic an individual’s voice after learning which sounds go with text as well as learning about the idiosyncrasies of how one talks. Finally, the latest generation of Google Assistant is capable of calling businesses on behalf the phone’s owner, engage in two-way conversations and make appointments using a sophisticated, deep-learning-based, speech recognition, reasoning and speech generation system. Equipped with machine translation, the tool will ultimately be able to understand spoken sentences in one language and translate the content and output it in a different language.

#### 3.4.1.2 Image generation

Image generation is the reverse of image recognition: when the AI system is fed an image description, even with missing data, it can create complete images as output. Still
4. Implications of artificial intelligence for market knowledge in B2B marketing

Artificial intelligence, as systems that act intelligently, can be used in a combination of any or all of the aforementioned building blocks to help B2B marketers create, organize and use knowledge for a host of marketing decisions. Indeed, at the heart of our argument in this article lies the idea that the inputs-processes-outputs and the use of different AI building blocks within these can help B2B marketers transform data into information and ultimately different types of knowledge. Understanding the different types of knowledge that AI enables is important for practitioners and scholars. For managers, these differences impact how a B2B firm can turn to artificial intelligence to create, organize and share knowledge, i.e. intangible assets and resources that may result in a sustained competitive advantage or superior organizational performance (Grant, 1996, 2002; North and Maier, 2018; Kogut and Zander, 1992). For scholars, construct diversity allows an investigation of how existing theories and extant understanding in the literature may or may not apply to the knowledge enabled by artificial intelligence. Drawing on the concept of market orientation, a central paradigm in the marketing literature, and specifically relying on the seminal work by Kohli and Jaworski (1990), we discuss the implications of artificial intelligence for enabling three different types of market knowledge: customer knowledge, user knowledge and other external market knowledge (Kohli and Jaworski, 1990).

4.1 Customer knowledge

Customers are individuals who purchase a B2B offering, but do not necessarily use it. Customer knowledge includes the inventory of and activities for creating, codifying, sharing and applying knowledge about customers, such as the what, how and why of the purchasing decision, and the antecedents and consequences of this purchasing decision (Abrell et al., 2016). Customer knowledge is important for B2B firms as it relates to short-term performance needs of a product or service and can be a valuable resource for improving an offering. AI can enable customer knowledge in a number of ways, for example, by creating a comprehensive profile of current or potential customers. AI is able to use structured and unstructured data inputs of various types, such as recency, size, frequency and the type of past purchases, current web browsing behavior, psychographic and demographic characteristics and interactions with the firm to create this profile. Using machine learning and predictive algorithms, the resulting profiles of current or potential customers can then be applied to improve customer relationship efforts, and for prospecting of future customers. In addition, AI can enable marketing efficiencies and greater effectiveness at each stage of the B2B sales funnel (Syam and Sharma, 2018). Using predictive models, AI systems can engage in prospect scoring, i.e. evaluating prospects based on their propensity to buy and identifying high-quality leads, a task that typically requires substantial human resources (Järvinen and Taiminen, 2016). During the preapproach and approach stages, AI can automate some of the more routine tasks, such as scheduling meetings, or answering common questions via chatbots. At the presentation and close stage of the sales funnel, AI-presentation bots can help sales staff create compelling presentations. Further, AI can help overcome objections from customers, for example, by using emotion AI to understand client’s responses at this stage, or AI-enabled battlecards to deposition competitors and strengthen the firm’s own value proposition. Lastly, AI can make order fulfillment more efficient by automating order processing and using chatbots to automate tasks during follow up.

A number of future research avenues emerge from the above discussion. For example, if AI is supporting or independently performing previously human-performed tasks in the B2B sales process, a fruitful area for future research is to investigate if and how this impacts the role of sales professionals. For instance, what are the effects of AI on a salesperson’s knowledge and performance? How will sales professionals react to the codification of their tacit knowledge enabled by AI? Which of the traditional human tasks in sales are conducive to being performed by AI and to what degree? How can AI support customer knowledge transfer among sales professionals? In addition, investigating how AI changes the value creation process for customers in B2B may be a fertile ground for future studies. For example, how can AI facilitate creating, organizing and applying customer knowledge at each stage of the marketing and sales process? How can AI enable a more effective approach to capturing tacit and explicit customer knowledge?
4.2 User knowledge
While customers encompass buyers in a B2B context, users are individuals who consume a B2B firm’s product or service and are most likely located further down the value chain of a B2B firm (Abrell et al., 2016). User knowledge includes insights about the experience of using an offering, including users’ attitudes, values and future needs and wants, as well as any of the firm’s activities related to creating and codifying these insights. In the extant literature, user knowledge has been acknowledged as a valuable as it is not only used to help improve existing products and services, but also to enable the B2B firm to successfully adapt to long-term changes in market needs (Abrell et al., 2016). Thus, user knowledge is critical with respect to new product development, innovation and process improvement (Abrell et al., 2017; Abrell et al., 2016; Pedeliento et al., 2018).

AI enables user knowledge in a number of ways. The explosion of social media use and of IoT has led to an influx of big data that AI can process more effectively and efficiently than humans ever could. For example, AI can analyze vast data sets of written and non-written user-generated content on social media platforms which can reveal insights to B2B marketers about user needs, preferences, attitudes and behaviors (Martínez et al., 2016). The AI system IBM Watson, for example, has the capabilities to identify sentiment, emotions, values and attitudes expressed in a piece of text (Biondi et al., 2017; IBM, 2018). These psychographic characteristics can be a valuable source of insight for B2B marketers for innovation and new product development efforts. In addition, AI can be used to identify themes and patterns in users’ posts about their use of a product, which can reveal insights about the user experience and point to areas to enhance this experience. Further, the AI-enabled knowledge about users may point to insights of how users creatively alter products and services (Wilson, 2016), which, in turn, can be a valuable resource for product development and innovation efforts.

A number of these customer knowledge research questions can also be relevant avenues for future research of AI and user knowledge. For example, how can AI support the transfer of user knowledge to a B2B firm? How does AI enable an effective inventory and flow of user knowledge in B2B marketing? In addition, given users are located further down the value chain than customers, future studies may investigate how AI impacts the value creation activities for customers and users differently, and how the interaction between the two can be optimized.

4.3 Other market knowledge
Lastly, according to the market orientation paradigm, B2B firms must develop and use other, external market knowledge, i.e. intelligence about external market forces and stakeholders, such as competitors, legislators or news organizations, as these external forces may influence customer or user preferences and behaviors (Kohli and Jaworski, 1990).

AI enables external market knowledge, for example by analyzing the vast amount of online content published on social media platforms, blogs or third-party news platforms, to name a few. For example, AI systems using natural language processing and machine learning algorithms are increasingly used to analyze and identify fake news content (Berthon and Pitt, 2018; Horne and Adali, 2017; Paschen, 2019). This is important for marketers as the creation and dissemination of fake news can threaten the viability of a firm’s brand (Berthon and Pitt, 2018) and damage its reputation among a firm’s customers and users. Thus, marketers are well advised to be vigilant about if and how their brands are associated with fake news to develop effective tactics to manage these threats. In addition, AI can enable B2B marketers develop competitive intelligence, for example, by identifying keywords or themes from competitors’ news releases, social media profiles and other unstructured data. This insight can inform a B2B firm’s own positioning strategy, help deposition competitors during the sales process and be a valuable resource for new product development.

A number of future research areas arise from the above discussion. First, the research questions raised with respect to customer and user knowledge can also be potential areas for investigation for market knowledge. In addition, future studies could explore how AI can be leveraged to develop market sensing capabilities, how AI will change the value creation processes for users and customers resulting from other external market knowledge or how AI can facilitate external market knowledge, when the external environment undergoes rapid and unforeseen change?

5. Concluding remarks
This article started off by arguing that in this time of enormous transformations fueled by digitalization, information and communication technology, recent advances in artificial intelligence will have significant implications for businesses and B2B marketing specifically. The fundamental impact that artificial intelligence will bring about will be on how AI enables the transformation of vast amounts of data into information and ultimately knowledge. The trouble is, as it is with many emerging technologies, that B2B managers eager to adopt these new technologies are unclear about how they function and what their potential impacts with respect to knowledge management strategies and tactics are.

Against this backdrop, our article explains to marketing managers and executives in B2B organizations the foundational elements of AI systems and their interrelationships. Specifically, our article introduces a framework consisting of six artificial intelligence building blocks and describes the interrelationships of these building blocks, along with current use cases to illustrate the implications of each building block for B2B marketing.

In addition, our article provides a structured discussion of the implications of AI systems for market knowledge in B2B marketing. AI systems can be used in a combination of any or all of the building blocks to help B2B marketers transform data into information and ultimately different types of knowledge: customer knowledge, user knowledge and other external market knowledge. These activities promise to help B2B firms become more market-oriented, specifically by enabling firms to create, organize and apply knowledge about their customers, users and other external market forces. In addition, our article highlights avenues for future research with respect to each of these types of knowledge. We hope that this article offers practical guidance for B2B managers, in addition to inspiring management and marketing scholars to conduct more nuanced research of artificial intelligence in an organizational context.
References


Artificial intelligence (AI) and its implications

Jeannette Paschen, Jan Kietzmann and Tim Christian Kietzmann


Further reading


Corresponding author

Jeannette Paschen can be contacted at: paschen@kth.se
How social media usage influences B2B customer loyalty: roles of trust and purchase risk

Chu-Bing Zhang
Business School, Tianjin University of Finance and Economics, Tianjin, China, and
Yi-Na Li
School of Management, University of Science and Technology of China, Hefei, China

Abstract

Purpose – In the digital era, business-to-business (B2B) salespersons are encouraged to communicate with buyers on social media platforms and shape customer loyalty. However, the effect of social media usage and its mechanism remain unexplored. The purpose of this paper is to investigate how salespersons’ social media usage influences B2B buyers’ trust beliefs and purchase risk, and therefore, customer loyalty.

Design/methodology/approach – The authors conduct an online-survey, use partial least squares structural equation modeling to analyze the data, and adopt SPSS PROCESS macro 2.13 to test mediation effects.

Findings – Salespersons’ social media usage can enhance buyers’ trust beliefs on salespersons’ ability, integrity and benevolence, but only the latter two can improve customer loyalty. Social media usage does not directly affect purchase risk, and only benevolence can reduce purchase risk. Serial mediation models reveal that the effect of social media usage on customer loyalty is mediated by buyers’ trust beliefs on salespersons’ integrity/benevolence and purchase risk.

Originality/value – First, the authors confirm the effect of social media usage on customer loyalty in B2B context and refute the fallacy of social media uselessness in B2B. Second, the research shows that buyers’ trusting beliefs on salesperson’s ability and integrity do not significantly influence perceived risk. The finding is different from the stereotypical judgment in B2C scenarios. Third, the authors distinguish differently weighted influences of buyers’ trusting beliefs on salesperson’s ability, integrity and benevolence, and highlight the role of salespersons’ altruism attributes in shaping customer loyalty.

Keywords Integrity, Customer loyalty, Social media usage, Ability, Benevolence, Purchase risk

Paper type Research paper

1. Introduction

Social media has been pervasively used to establish and maintain personal connections and professional contacts (Neubaum et al., 2014). Social media marketing refers to using social media integrated with other communication channels to achieve organizational goals by creating value for stakeholders internally and externally, including clients, employees, suppliers and government agents (Felix et al., 2017, p. 210; Andersson and Wikström, 2017). In the business-to-consumer (B2C) domain, social media usage targeting the general public has been proved effective in attracting consumers’ attention (Hudson et al., 2015), enhancing interaction (Kim and Ko, 2012) and improving sales performance (Kumar et al., 2016; Rodríguez et al., 2012), customer relationship performance (Harrigan et al., 2015; Trainor et al., 2014; Trainor, 2012), brand performance (Dijkmans et al., 2015; Hudson et al., 2015; Gensler et al., 2013; Rapp et al., 2013) and operational performance (Paniagua and Sapena, 2014). In contrast, in the business-to-business (B2B) domain, social media targets professionals. The interactivities with buyers may be different from that with consumers (Buvik and Reve, 2001). Existing studies investigate the effect of B2B communication strategies on different social media platforms (Swani et al., 2014; Lashgari et al., 2018), distinguish different influences of social media’s blocks on buying process (Diba et al., 2019), and confirm the positive influence of social media in creating sales opportunities, relationship management (Rodríguez et al., 2012), buyers’ satisfaction (Agnihotri et al., 2016), brand performance and retailer performance (Rapp et al., 2013). However, it remains debatable whether social media usage is effective in enhancing B2B customer loyalty.

2016 Social Media Marketing Industry Report by the Social Media Examiner indicates that more than 90 per cent of

This research is supported by National Natural Science Foundation of China (17102080 and 71502120), Humanities and Social Sciences Fund of Ministry of Education (17YJC630071, 16YJC630166 and 15YJA630090), and the project of Humanity social science of Tianjin (TJGLQ17-015). The authors appreciate Dr Bo Wu and anonymous reviewers’ suggestions.

This paper forms part of a special section “Emerging Technologies in Business and Industrial Marketing”, guest edited by Jeannette Paschen, Leyland Pitt and Jan Kietzmann.

Received 12 July 2018
Revised 13 December 2018
21 March 2019
Accepted 24 April 2019
Social media usage in B2B communication in China

Personal
3 (6%) 16 (31%) 12 (23%) 13 (25%) 8 (15%)
43 (32%) 12 (9%) 27 (20%) 15 (11%) 37 (28%)
The integer is the number of people who use certain social media channel and the percentile is the rate of certain channel serves the purpose of

Our research empirically explores how social media usage by salespersons influences B2B customer loyalty to suppliers and attempt to indicate the mechanism of influence by testing the mediation role of trust and purchase risk.

Our research contributes to the literature on B2B social media marketing and the theory of trust and perceived risk. First, we confirm that social media usage by salespersons can improve customer loyalty to suppliers, validating the use of social media in B2B social customer relationship management (CRM). Second, we identify the distinctive roles of buyers’ trust beliefs in salespersons’ ability, integrity and benevolence in the influence of social media usage on customer loyalty. Salespersons can use social media to improve customer loyalty by increasing buyers’ trust beliefs in their integrity/benevolence and by reducing purchase risk. Nevertheless, their efforts to build buyers’ trust belief in their ability do not influence customer loyalty, which is different from the stereotypical judgment in B2C scenarios. Third, we test the mediation effect of trust and purchase risk and provide insight to understand how social media usage influences customer loyalty.

2. Literature review

2.1 Social media usage

Social media usage refers to the use of social media tools (such as Facebook, Google+ and WeChat) to improve customer engagement, create value from customer interactions, and thus, enhance firm performance (Rapp et al., 2013; Trainor, 2012). Our research highlights the social media usage that servers B2B marketing goals, unlike the other research streams. For instance, the study on the usage of social media technology distinguishes the uses of functions including communication, sharing and community support provided by social media, and discusses their influences (Harrigan et al., 2015). Studies on social media interactivity focus on the establishment and maintenance of interpersonal social ties online (Tajudeen et al., 2018).

To reveal B2B social media usage in China, we briefly surveyed 60 buyers (including 7 directors, 29 managers and 14 specialists). First, we find that salesperson’s personal WeChat, WeChat official subscription, QQ group and industrial community are the most frequently used social media channels, each used by 48, 33, 27 and 19 buyers in their recent purchase. Second, almost 80 per cent B2B purchase involves WeChat, where official subscriptions push general business information and industry news, and the personal account is used to discuss purchase issues and to solve the customized problem. The details of the top four social media channels and the communication purposes they serve are shown in Table I. Third, 73 per cent of the buyers report that they frequently receive information from official subscription and 95 per cent of buyers reported that from salespersons, suggesting the challenging status to effectively deliver information.

We define salespersons’ social media usage in B2B marketing in a purpose-oriented perspective. Our definition addresses salesperson as the subjects who use social media, and the purpose of communication as business goals, including selling tasks, branding and after-sale service. Salespersons can actively provide buyers customized information different from official notifications, establish the interpersonal social relationship and influences customers. Their role as a supplier’s representative is generally considered as default (such as Rapp et al., 2013). However, their role as an individual user is far from been well discussed. Salesperson’s self-generated content could be in a strong personal style (Bonnin and Rodriguez, 2019), rather than shared professional and objective information. The source of a message (i.e. the salesperson) could be equally important as the message per se. Social media by nature is a tool for interpersonal communication rather than the born elixir of marketing. The overlooking of the perceived characteristics of information senders hinders a full understanding of B2B communication.

2.2 Trust theory

Trust refers to a situation wherein a trustor relies on the action of a trustee and believes that the trustee will act as expected (Pentina et al., 2013). Trustors initially hold various levels of expectation of the trustees; they gradually build trust beliefs during social exchanges and then decide whether they can rely on a trustee (Doney and Cannon, 1997). The trustworthiness

Table I Social media usage in B2B communication in China

<table>
<thead>
<tr>
<th>Communication content</th>
<th>Discusses purchase issue</th>
<th>Discuss industry news</th>
<th>Push product information</th>
<th>Provide information of the industry</th>
<th>Help buyers solve problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salesperson’ personal WeChat account</td>
<td>43 (32%)</td>
<td>12 (9%)</td>
<td>27 (20%)</td>
<td>15 (11%)</td>
<td>37 (28%)</td>
</tr>
<tr>
<td>WeChat official subscription</td>
<td>19 (19%)</td>
<td>16 (17%)</td>
<td>28 (29%)</td>
<td>21 (22%)</td>
<td>13 (13%)</td>
</tr>
<tr>
<td>QQ group</td>
<td>20 (25%)</td>
<td>15 (20%)</td>
<td>20 (25%)</td>
<td>12 (15%)</td>
<td>12 (15%)</td>
</tr>
<tr>
<td>Industrial online community</td>
<td>3 (6%)</td>
<td>16 (31%)</td>
<td>12 (23%)</td>
<td>13 (25%)</td>
<td>8 (15%)</td>
</tr>
</tbody>
</table>

Note: The integer is the number of people who use certain social media channel and the percentile is the rate of certain channel serves the purpose of marketing communication.
of a trustee is considered the antecedent of trust (McKnight et al., 2002). Trustworthiness is classified into three types, namely, ability, benevolence and integrity (McKnight et al., 2002). In other words, trustworthiness can be measured using the trustee’s beliefs in the trustee’s ability, integrity and benevolence. Our research adopts ability, integrity and benevolence to indicate the three dimensions of trustworthiness. Ability refers to a trustee’s competence to satisfy a trustor’s needs. Integrity pertains to a trustee’s honesty and promise keeping. Benevolence denotes that a trustee cares and is motivated to act in a trustor’s interests (Mayer et al., 1995; McKnight et al., 2002). Integrity and benevolence are both ethical traits. Integrity highlights utilitarian virtues, whereas benevolence underscores altruism (McKnight et al., 2002).

Trust can be categorized into interpersonal trust and inter-organizational trust (Huang and Wilkinson, 2013). Interpersonal trust is based on emotional bonds between individuals within a group. When a trustee refers to an organization, the antecedent of trust requires faith from general people, even those unknown to a trustor (Qu et al., 2015). The three types of trustworthiness can be applied in organizations (Schoorman et al., 2007). Buyers who perceive higher situational normality will consider a salesperson capable, honest and benevolent (McKnight et al., 2002). The classification of interpersonal and inter-organizational trust suggests that in the B2B context, inter-organizational trust is established and maintained by individual agents.

Trust is built on confidence in a trustee’s trustworthiness (Morgan and Hunt, 1994; Park et al., 2012). In the perspective of cognitive-based B2B trust-building, information update enables the trustors who hold an initial general expectancy to adjust their level of confidence and willingness to rely on a specific trustee. Specifically, trust beliefs are initially formed by social categorization, reputation and irrational thinking (McKnight et al., 2002), and then gradually changed based on gained experience with a trustee. Social media provides buyers the facility to assess the salesperson’s trustworthiness dynamically by observing their behavior during the interaction with them.

As vehicles for information sharing, social media mediate interpersonal communication. Prior literature has indicated that trust in a brand hosted on social media is influenced by users’ trust in the technology of social media, in a particular social media platform (Pentina et al., 2013), and in the received information. Given that social media provide imagery that are alienated from reality, carefully selected information may optimize certain trustworthiness.

2.3 Purchase risk
Risk is “the potential for the realization of unwanted, negative consequences of an event” (Beldad et al., 2011). Risk can be categorized into performance, privacy, financial, functional, temporal, psychological and social risks (Paluch and Wünderlich, 2016). B2B Marketing research has examined the risk of purchasing and products use. Compared with the concerns of consumers, wherein they consider the popularity of the brand, their knowledge of the product, and the conflicts with their ego (Aghekyan-Simonian et al., 2012), buyers consider the potential impression they will make among their peers and the promotional prospect as the consequences of the purchase.

People have difficulties in accurately estimating the risk that they might encounter. Perceived risk, the subjective judgment on the possibility of undesired outcomes, actually determines the decision people make (Pavlou and Gefen, 2004; Beldad et al., 2011). To make a rational choice, buyers attempt to realize their maximum benefit by processing all available information in estimating the risk they will possibly encounter.

2.4 Customer loyalty
Customer loyalty is the customers’ willingness to purchase products from a certain supplier repeatedly and to keep a long-term commitment to that supplier (Algesheimer et al., 2005) despite the potential benefit from supplier switching. Loyal customers patronize a supplier by referral and by repurchasing its products (Cater and Cater, 2010). Customer loyalty is considered the consequence of customer value (Lam et al., 2004), customer satisfaction (Bennett et al., 2005), customer involvement, perceived switching cost and the absence of choice (Russo et al., 2016). Loyal buyers can contribute to a steady stream of revenue and favorable word-of-mouth communication (Rauyruen and Miller, 2007). However, B2B buyers would follow more rational buying criteria and less committed to a supplier than consumers, making the customer loyalty program vital in B2B marketing (Cater and Cater, 2010).

2.5 The effect of social media usage
Existing research specifies the influence of social media usage on either customers or sellers. Regarding customers, social media usage can engage customers, improve corporate reputation (Dijkmans et al., 2015), lead to positive word of mouth (Hudson et al., 2015) and enhance consumer-brand relationships (Hudson et al., 2016). Concerning sellers, social media usage elevates the sellers’ capability of social CRM (Trainor et al., 2014), improves customer relationship performance in either in B2C domain (Harrigan et al., 2015; Trainor et al., 2014) or B2B domain (Agnihotri et al., 2016; Rodriguez et al., 2012). However, the influence of social media usage on B2B buyers’ loyalty has not been subject to an in-depth examination (Rapp et al., 2013).

Our research investigates how social media usage influences customer loyalty. Among the attitudinal and behavioral outcomes of social media usage (Akar and Topçu, 2011), we highlight the long-term customer-seller relationship by discussing the roles of trust and purchase risk as predictors of loyalty.

3. Conceptual model and hypotheses
3.1 Social media usage and trust
Social media users are exposed to the deluge of information, where fake news, misleading articles and incorrect information spread through “liking” and “sharing” rapidly like wildfire (Liang and Kee, 2018). Information might leak accidentally and be misused (Martin, 2018; Gerber et al., 2018). Social media users have to carefully discriminate information quality, resource reliability and usefulness. As an unacknowledged information sender who competes for buyers limited attention
using a shared communication channel, the salesperson needs to build their advantage and gain the opportunity of effective communication. A trustworthy salesperson can endorse information quality and protect customers from the legitimate-looking but harmful information. In other words, when buyers are confident about a salesperson’s competency to provide product and service (ability), honesty and promise-keeping (integrity) and altruism (benevolence), they would be more likely to process the information from the salesperson.

Social media usage can enhance information dissemination and uncertainty reduction in both relationship establishment and maintenance stage (Habibi et al., 2014; Brennan and Croft, 2012). After the first few times of contacts, buyers may seek information from social media to judge the trustworthiness of a salesperson. The accumulated records of the salespersons’ personal information, daily life and significant events on social media imply their family background, cultural background, ethnicity and other personal characteristic (as the cue of benevolence and integrity) and also professional credentials or membership to an organization (as the cue of ability) (Chang et al., 2013). During the trust-building process, social media can facilitate communication and improve the experience of information exchange and collaboration (Chang et al., 2013; Kim and Park, 2013).

A salesperson’s timely response on social media may help buyers engage in the communication and facilitate trust building. As self-perception theory indicated, people shape their attitude by observing their own behavior and interpreting its meaning (Critcher and Gilovich, 2010). Conflicting with the intuitive wisdom that attitude determines behavior, a behavior may shape attitude. Specially, having spent time engaging in communication, buyers cherish their effort, attempt to make sense of their input and develop positive evaluation on the trustworthy of the salesperson’s ability, integrity and benevolence.

Overall, communication on social media decreases information asymmetry, improves understanding, helps to reach consensus (Brennan and Croft, 2012), leads to integrative bargaining strategies that benefit both sides, and consequently, enhances trustworthy (Schurr and Ozanne, 1985). Therefore, we propose that:

H1a. Social media usage is positively related to trust belief in ability.

H1b. Social media usage is positively related to trust belief in integrity.

H1c. Social media usage is positively related to trust belief in benevolence.

3.2 Social media usage and purchase risk
The information dissemination on social media can reduce purchase risk. Relying on a salesperson and a supplier, buyers are vulnerable and exposed to risk from volatile environments or intentional opportunistic behavior (Saleh et al., 2013). Thus, they are motivated to seek information to avoid a bad purchasing decision (Mitchell, 1999). First, social media usage can improve information dissemination, decrease information asymmetry, enhance the ability to prevent environmental volatilities during the trading process, and therefore, decrease purchase risk. Second, word of mouth in social media imposes a pressure on salespersons and suppliers to discipline themselves. Participants of B2B communication are not random strangers, but selected stakeholders endorsed by virtual word of mouth (Brennan and Croft, 2012). The social ties increase their cost of opportunistic behavior.

Social media usage can also decrease perceived purchase risk. The buyers’ frequent interaction may elicit a sense of familiarity, and reduce the perceived purchase risk (Saleh et al., 2013; Aghekyan-Simonian et al., 2012). To review one’s accumulated records on social media may increase the buyers’ perceived predictability of a salesperson. Exposed to a salesperson’s frequently updated information on social connections, buyers may recognize the signal of high willingness to continually maintain the relationship and a low likelihood of opportunistic behavior. Therefore, we presume that:

H2. Social media usage is negatively related to purchase risk.

3.3 Trust and purchase risk
Trust beliefs serve as a subjective norm that reduces uncertainty and creates opportunities for information exchange. Trust can effectively reduce users’ sensitivity to perceived risk (Martin et al., 2015; Beldad et al., 2011). Without adequate trust, B2B collaborative relationships would suffer from all contingent uncertainties. A favorable judgment of a salesperson would have a halo effect on purchase risk. Particularly, a salesperson’s ability suggests easy communication, sufficient competencies in providing proper products and customized solutions, and promising performances to resist unexpected changes. Integrity implies a lower propensity of evasion from obligation, distortion or withholding information and other detrimental self-interest seeking behavior (Saleh et al., 2013). Benevolence signifies that the salesperson cares about the buyer’s welfare and will take extra initiatives to provide altruistic solutions to achieve a win-win situation (Pavlou, 2002). A salesperson’s motivation of reciprocity in relationship building signals the customer’s superior position over the average business relationships, reducing their sense of vulnerability during purchase. Hence, based on the judgment of a salesperson’s attributes, we assume that:

H3a. Trust belief in ability is negatively related to purchase risk.

H3b. Trust belief in integrity is negatively related to purchase risk.

H3c. Trust belief in benevolence is negatively related to purchase risk.

3.4 Trust and customer loyalty
Trust is the central construct of long-term relationships (Morgan and Hunt, 1994), and customer loyalty is the positive consequence of the relationship. Trust beliefs in ability, benevolence and integrity can improve relationship
Roles of trust and purchase risk
Chu-Bing Zhang and Yi-Na Li

Performances (Dowell et al., 2015), relationship effectiveness (Saleh et al., 2013), continued intention to stay in the relationship (Saleh et al., 2013; Pavlou, 2002), relationship satisfaction (Saleh et al., 2013; Pavlou, 2002) and commitment (Keh and Xie, 2009). Specifically, a trust belief that a partner will show high competency to perform a certain task can save time and energy in supervision and negotiations (Dowell et al., 2015), and enhance relationship performances. A trust belief in integrity indicates that the buyers believe that the salesperson will adhere to their shared principles and perform as expected. Buyers would be willing to rely on the salesperson and the supplier and to continue to invest in the relationship. The trust belief in a salesperson’s benevolence can prevent buyers from taking excessive precautionary measures, especially when slight control can be taken during collaboration (Ganesan, 1994). Thus:

H4a. Trust belief in ability is positively related to customer loyalty.

H4b. Trust belief in integrity is positively related to customer loyalty.

H4c. Trust belief in benevolence is positively related to customer loyalty.

3.5 Purchase risk and customer loyalty

Customer loyalty is regarded as the strength of a relationship. Low perceived risk and high switching barrier suppress the space to enhance benefits by switching from their current supplier to another (Martin et al., 2015; Aghekyan-Simonian et al., 2012), and keep buyers in the relationship. Low purchase risk can improve multidimensional relationship performances, including perceived value (Lam et al., 2004), customer satisfaction (Bennett et al., 2005), customer commitment (Keh and Xie, 2009) and repurchase intention (Martin et al., 2015). Therefore, we hypothesize that:

H5. Purchase risk is negatively related to customer loyalty.

The proposed hypotheses are presented in Figure 1.

4. Methods

4.1 Data collection

We commissioned Sojump (www.sojump.com/) to survey in China using an online questionnaire. Founded in 2005, Sojump has provided reliable services to reputable companies and academic organizations. Sojump includes more than 2.6 million available participants, which guarantees a sufficient number of qualified participants for our research. We distributed 1,000 questionnaires. In total, 130 respondents were accepted as respondents. They work in diverse industries, including manufacture, construction, wholesale, retailing and catering (Table II). Salespersons were made aware of our academic purposes.

We asked respondents whether they hold a purchasing-related position in their company. The respondents responded yes were then required to recall their most recent deals and their interactivities with a supplier’s representative on social media platforms, write down the name of the supplier with whom they interacted, complete our questionnaire, and describe and evaluate their interactivities. We exclude 15 responses, which contain inconsistent information throughout the questionnaire or lacks key information, and remain 115 samples. To obtain reliable results in structural equations model, Kline (2005) recommended sample size of 100-150 cases, and Stevens (2002) suggested that the sample size for social science research should be greater than 15 times the number of predictors. Our model has six predictors, and our sample size is larger than 90 (6 × 15), satisfying the criteria of sample size.

Respondents reported their gender, age, education level, monthly income, job position and the annual revenue of their firm. The t-test results show no difference between respondents regarding the above-mentioned characteristics (Table II).

4.2 Construct measures

All multi-item scales used in this research were developed based on existing literature and modified to fit the current research (Table III). We adopted the scale for social media usage of suppliers, retailers and customers (Rapp et al., 2013). Our research highlights how buyers respond to a salesperson’s social media usage. Therefore, we modified the existing scales based on an in-depth interview with a B2B purchasing manager and supplier managers, and exclusively included the items appropriate for our scenario.

Among the three types of trust beliefs, the trust belief in ability is measured using three items, namely, one item is adopted from Dowell et al. (2015) and the other two from Huang and Wilkinson (2013). Likewise, three items measure the trust belief in integrity, with one from Dowell et al. (2015) and the other two from Huang and Wilkinson (2013). Three items measuring trust belief in benevolence...
are adopted from Dowell et al. (2015) and Hoejmose et al. (2012). The three items measuring customer loyalty are adopted from Janita and Miranda (2013) and Cater and Cater (2010). The above items used a seven-point Likert scale from “1 = strongly disagree” to “7 = strongly agree.” Also, four items in the purchase risk scale are adopted from Brown et al. (2011) and Mudambi (2002), and used a seven-point Likert scale from “1 = very low” to “7 = very high.” All measurements are based on studies in the B2B domain, except for two items modified from Huang and Wilkinson (2013) in B2C marketing research.

To reduce the potential for other variables impacting on customer loyalty, we controlled the influences of individuals’ gender, age, education, income and job position, and the organizations’ attributes (i.e. annual revenue and industry) (Agnihotri et al., 2016).

### 4.3 Data analysis

We test the hypotheses using structural equations modeling (SEM). Either a covariance- or variance-based approach is appropriate to estimate both the measurement and structural models. We use the partial least squares (PLS) SEM approach for three reasons (Hair et al., 2013, 2012). First, a PLS approach is suitable for data of a small sample size (Barclay et al., 1995; Gefen et al., 2011) and in the skewed non-multinormal distribution (Cassel et al., 1999). Recent research emphasizes that the application of PLS-SEM requires representative samples (Hair et al., 2013). Considering that we have 115 valid and highly representative respondents, PLS-SEM is appropriate. Second, we prefer robust statistical techniques and the PLS approach provides conservative estimator (Chin and Newsted, 1999). For both new constructs and measures, the PLS approach under- rather than
overestimates the relations between the (newly operationalized) indicators, and prevents invalid assumptions and conclusions (Reinartz et al., 2009). Third, the PLS approach is a prediction-oriented variance-based approach that focuses on endogenous target constructs in the model and aims to maximize their explained variance (i.e. their \( R^2 \) value) (Hair et al., 2012). This is consistent with our research to predict B2B customer loyalty through social media usage, purchase risk and three types of trust beliefs.

### 5. Analysis and results

We use SmartPLS 2.0 statistical software to assess the measurement models and the structural model.

#### 5.1 Common method bias

We exclude the influence of common method variance on the postulated relations in the PLS path model. Harman’s (1976) single-factor test is adopted to evaluate the common method bias (CMB) of the assumed relationships proposed in the model (Figure 1). We extract the first-factor using principal axis factoring without rotation. The first factor accounts for only 35.3 per cent of the overall variance, and this value is lower than the majority of the variance. Therefore, no general factor is apparent, and there is no evidence for CMB (Podsakoff and Organ, 1986). Also, we examine the correlation matrix and find no highly correlated factors (highest correlation is \( r = 0.648 \)) (Table IV), whereas the presence of CMB should have resulted in extremely high correlations \((r > 0.90)\). These findings confirm that common method variance is not a critical issue.

#### 5.2 Assessment of the measurement models

Based on the criteria proposed by Hair et al. (2012) and Henseler et al. (2009), we evaluate the reliability (i.e. indicator reliability and internal consistency reliability) and validity (i.e. convergent validity and discriminant validity) of the models.

Table III shows that 19 of the 21 indicators have outer loadings above 0.7. Only two indicators exhibit slightly lower loadings of 0.692 and 0.688. The \( t \)-values show that the indicators are significantly associated with their respective constructs \((p < 0.001)\). Therefore, the indicator reliability levels are satisfactory (Bagozzi et al., 1991). Also, only the Cronbach’s alpha of benevolence is 0.635; the rest exceed the threshold of 0.7 (Bagozzi and Yi, 1988). Meanwhile, all composite reliability (CR) values are higher than 0.7 \((CR_{min} = 0.804)\). Thus, the internal consistency reliability meets the standard (Bagozzi and Yi, 1988). Finally, the average variance extracted (AVE) is above the minimum required 0.5 threshold \((AVE_{min} = 0.579)\), which indicates high convergent validity (Fornell and Larcker, 1981).

Table IV summarizes the test for discriminant validity, which indicates the extent to which a given construct is dissimilar to the other constructs. We adopt the Fornell and Larcker (1981) criterion, which requires that the square roots of the AVEs should be higher than the off-diagonal correlations between the

### Table III Measurement model evaluation results

<table>
<thead>
<tr>
<th>Constructs and items</th>
<th>Loading</th>
<th>( t )-value</th>
<th>( \alpha )</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social media usage adapted from Rapp et al. (2013)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- This supplier’s representative discusses with us about the business by social media</td>
<td>0.791</td>
<td>18.201</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- This supplier’s representative uses social media to discuss industry development with us</td>
<td>0.798</td>
<td>14.913</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- This supplier’s representative sends the product information to us using social media</td>
<td>0.788</td>
<td>15.907</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- This supplier’s representative uses social media to provide information on the industry to us</td>
<td>0.795</td>
<td>17.356</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- This supplier’s representative deals with our problems using social media</td>
<td>0.692</td>
<td>8.118</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>Ability adapted from Dowell et al. (2015) and Huang and Wilkinson (2013)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- This supplier’s representative is well qualified for related jobs</td>
<td>0.732</td>
<td>12.329</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- This supplier’s representative is very knowledgeable about their product/services</td>
<td>0.844</td>
<td>21.810</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- This supplier’s representative seems to be highly successful at what he/she does</td>
<td>0.863</td>
<td>23.109</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>Integrity adapted from Dowell et al. (2015) and Huang and Wilkinson (2013)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- This supplier’s representative does not make false claims</td>
<td>0.818</td>
<td>14.701</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- Promises made by this supplier’s representative are reliable</td>
<td>0.831</td>
<td>25.797</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- This supplier’s representative conducts fair trades with us</td>
<td>0.848</td>
<td>21.609</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>Benevolence adapted from Dowell et al. (2015) and Hoejmose et al. (2012)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- This supplier’s representative cares for us</td>
<td>0.688</td>
<td>8.872</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- This supplier’s representative is like a friend</td>
<td>0.831</td>
<td>22.434</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- We feel that this supplier’s representative has been on our side</td>
<td>0.757</td>
<td>11.634</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>Purchase Risk adapted from Brown et al. (2011) and Mudambi (2002)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- The overall risk of the purchase from this supplier</td>
<td>0.954</td>
<td>105.565</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- Risk due to the performance/functionality of the product</td>
<td>0.934</td>
<td>90.338</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- Risk due to the potential for financial loss or high costs</td>
<td>0.913</td>
<td>49.918</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- Risk due to the potential that the product would not meet the approval of our colleagues</td>
<td>0.933</td>
<td>72.623</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>Customer Loyalty adapted from Janita and Miranda (2013) and Cater and Cater (2010)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- We would continue to more business with this supplier</td>
<td>0.798</td>
<td>11.634</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- I recommend this supplier to other colleagues</td>
<td>0.821</td>
<td>18.080</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
<tr>
<td>- This supplier is the first choice for our company</td>
<td>0.809</td>
<td>22.696</td>
<td>0.835</td>
<td>0.882</td>
<td>0.599</td>
</tr>
</tbody>
</table>

This table summarizes the measurement model evaluation results using SmartPLS 2.0 statistical software. The results indicate that the measurement models are satisfactory, with high reliability and validity, confirming the adequacy of the constructs used in the study.
Discriminant validity assessment

The square root of the AVE of each construct. The remaining values are correlation coefficients between constructs.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Mean</th>
<th>SD</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social media usage</td>
<td>5.543</td>
<td>0.919</td>
<td>0.815</td>
<td>0.648</td>
<td>0.672</td>
<td>0.586</td>
<td>0.761</td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>5.757</td>
<td>0.778</td>
<td>0.648</td>
<td>0.832</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrity</td>
<td>5.673</td>
<td>0.813</td>
<td>0.424</td>
<td>0.672</td>
<td>0.586</td>
<td>0.761</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benevolence</td>
<td>5.623</td>
<td>0.7044</td>
<td>0.608</td>
<td>0.761</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase risk</td>
<td>2.604</td>
<td>1.545</td>
<td>–0.312</td>
<td>–0.316</td>
<td>–0.359</td>
<td>0.934</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer loyalty</td>
<td>5.760</td>
<td>0.783</td>
<td>0.583</td>
<td>0.597</td>
<td>0.617</td>
<td>–0.482</td>
<td>0.809</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Values in italic are the square root of the AVE of each construct. The remaining values are correlation coefficients between constructs.

5.3 Assessment of the structural model

We applied nonparametric bootstrapping and selected 115 cases, 5,000 samples to obtain the path coefficients and their significance levels (Figure 2).

Social media usage has significant positive effects on ability, integrity and benevolence (β = 0.519, p < 0.001; β = 0.424, p < 0.001; β = 0.608, p < 0.001, respectively), supporting H1a, H1b and H1c. However, H2, which proposes that social media usage has a positive effect on purchase risk, is not supported (β = 0.022, n.s.).

Ability and integrity do not have a significant effect on purchase risk (β = −0.072, n.s.; β = −0.136, n.s., respectively); therefore, H3a and H3b are rejected. In contrast, H3c, proposing that benevolence has a negative effect on purchase risk (β = −0.245, p < 0.05) is supported. In addition, as hypothesized in H4a, H4b and H4c, trust belief in integrity (β = 0.271, p < 0.05) and benevolence (β = 0.250, p < 0.05) have a positive influence on customer loyalty. However, the relation between trust belief on ability and customer loyalty is not significant (β = 0.136, n.s.).

The effect of purchase risk on customer loyalty is significant (p < 0.01) at −0.275, supporting H5. None of the control variables have a significant influence on customer loyalty.

The squared multiple correlation ($R^2$) value for each endogenous variable is used to assess the predictive power of the model. Social media usage explains 27.0, 18.0 and 37.0 per cent of the variance in ability, integrity and benevolence, respectively. Moreover, the antecedents of purchase risk explain 14.8 per cent of its variance, and the model explains 55.0 per cent of the variance in customer loyalty. All $R^2$ values are greater than the threshold of 0.1 (Falk and Miller, 1992), which shows that the model has good predictive power.

To provide more evidence on the validity of the model, we also tested the model by including a second-order construct. According to Gharib et al. (2017), trust can be formed by three subconstructs, namely, ability, integrity and benevolence. As a result (Figure 3), the influences of social media usage on customer loyalty via trust beliefs and purchase risk still hold.

5.4 Mediation effect of trust beliefs and purchase risk

We tested the mediation effects of trust belief in ability, integrity and benevolence on the influences of social media usage on customer loyalty using SPSS macro model 4 (Hayes, 2013). As we expected, with 5,000 bootstrapping samples, the total effect of social media usage on customer loyalty is significant with a 95 per cent confidence interval excluding zero (0.20, 0.48). A mediation analysis finds that the indirect effect of social media usage on customer loyalty through ability is not significant (95 per cent CI = −0.02 − 0.13, including zero) and that the indirect effect of social media usage on customer loyalty through integrity and benevolence respectively is significant (95 per cent CI = 0.02 − 0.19 and 95 per cent CI = 0.01 − 0.22). The direct effect of social media usage on customer loyalty is no longer significant (c = 0.08, p = 0.29). Therefore, we confirm the mediation effect of trust beliefs in integrity and benevolence in the influences of social media usage on customer loyalty. The trust belief in ability has no such effect.

Furthermore, we explored the mediation role of purchase risk. We conducted the SPSS PROCESS macro model 6 (Hayes, 2013) to test the serial mediation effect of integrity and purchase risk in the effect of social media usage on customer loyalty. The indirect effect of social media usage on customer loyalty through integrity and purchase risk is significant (95 per cent CI = 0.02 − 0.19 and 95 per cent CI = 0.01 − 0.22).

Control Variables
- Individual Level: Gender (0.002, n.s.), Age (0.009, n.s.), Education (<0.05, n.s.), Income (<0.014, n.s.), Job Position (<0.11, n.s.), Organizational Level
- Firm Level: Industry (<0.062, n.s.), Annual Revenue (<0.016, n.s.)
loyalty through integrity and purchase risk (social media usage → integrity → purchase risk → customer loyalty) is significant at the 95 per cent confidence interval excluding zero (0.003, 0.053). We then tested the serial mediation effects of benevolence using the same method (social media usage → benevolence → purchase risk → customer loyalty). A significant effect is confirmed at the 95 per cent confidence interval excluding zero (0.02, 0.11). The two-serial-mediation models show that the effect of social media usage on customer loyalty is mediated by integrity/benevolence and purchase risk.

6. Discussion

Our research confirms that social media usage can enhance buyers’ trust beliefs in the ability, integrity and benevolence of salespeople; thereby, integrity and benevolence improve customer loyalty. Additionally, buyers’ trust belief in benevolence can reduce purchase risk, indirectly increasing customer loyalty. The trust belief in a salesperson’s altruistic attributes (integrity and benevolence) influences customer loyalty in professional B2B interactions. However, the ability does not influence customer loyalty in a B2B context. Thus, our research contributes to the literature on trust beliefs, purchase risk and customer loyalty.

6.1 Theoretical implications

First, our research provides empirical evidence to support that social media usage can enhance B2B customer loyalty by shaping trust beliefs. Previous exploratory research (Brennan and Croft, 2012) indicates that social media usage might improve buyer-supplier relationship building. Aligning with their proposition, our conclusion shows the influences of social media usage on customer loyalty and its mechanism.

Second, our insight into the influences of social media usage on B2B customer loyalty is interpersonal-based. In contrast to the institutional mechanisms in building inter-organizational relationships in online B2B marketplaces (Pavlou, 2002), our research emphasizes the role of the salesperson as an agent who connects buyers and a supplier and influences customer loyalty. The influences from casual and informal interpersonal communication shed light on the understanding of the soft sell, a featured use of social media for B2B marketing (Brennan and Croft, 2012; Swani et al., 2014; Keinänen and Kuivalainen, 2015).

Third, our research specifies the roles of multidimensional trust beliefs in the effect of social media usage on customer loyalty. Social media usage can facilitate all three types of trust beliefs, among which altruistic traits (integrity and benevolence) influence customer loyalty, but the ability does not. The conclusion regarding ability is a conflict with the intuitive judgment in B2C scenarios (Dowell et al., 2015; Park et al., 2012; Pavlou, 2002), where consumers lack professional knowledge and rely on a salesperson’s ability to improve decision-making. Switching to another salesperson leads to their cost in searching, communicating and judgment making. By contrast, in a B2B context, buyers have little switching cost as they own equivalent professional abilities to that of suppliers. Our findings distinguish the trustworthy in ability from other altruistic features and enrich the literature on the influence of trust on long-term B2B relationships.

Fourth, our results shed light on the differences between the two altruistic traits in B2B marketing, i.e. benevolence has a significant influence on purchase risk, but integrity does not. The integrity of a salesperson in a professional context addresses the value of keeping promises and engaging in fair trades. However, buyers’ benefit trivial from salespersons’ integrity because the terms of the contract clearly define rules, making affirmatory moral codes less important. A professional buyer might have been well aware of their preference for integrity, and therefore, intentionally avoid the misleading influence on their decision-making by behaving in an excessively cautious manner. In contrast, benevolence demonstrates a salesperson’s potential extra efforts to reduce information asymmetry and optimize buyers’ benefits. Such
efforts suggest that the salesperson is not neutral, but stands on the side of the buyers, and implies surplus benefits out of those defined by contract terms. Therefore, only the trust belief in benevolence would influence purchase risk.

Finally, our findings indicate the mediation role of trust in the influences of social media usage on risk perception, i.e. social media usage does not directly influence purchase risk, but influences via trust. Our conclusion indicates the importance of successful information communication in shaping trust beliefs, especially in the era of information deluge.

6.2 Managerial implications
Customer loyalty is the pursued consequences of a good buyer-supplier relationship. Our research confirms that a salesperson’s social media usage is effective to earn customer loyalty in B2B marketing, by increasing trust and reducing purchase risk. Our findings provide managerial implications for salespersons’ training programs, incentive programs and risk prevention.

The effect of social media usage on customer loyalty suggests the necessity of training on social media techniques to help salespersons avoid falling behind of the era. In China, the dominant social media platform WeChat has been widely used in B2B communication, indicating the shift of communication channel from phone, website and online industrial community. Managers, especially who in the international B2B domain, have to carefully pay attention to their customers’ uses and changes of social media platforms and assign adequate resources to integrate social media communication into their overall landscape of marketing communication.

Both salespersons’ personal accounts and official subscriptions are inevitable compositions of B2B communication. A salesperson has to exert efforts to shape a moral impression in their buyers’ eyes on social media. They may have to generate contents implying altruism intention, such as post social-responsible deeds in their moment of WeChat, share a comment on articles that stand for their benevolence beliefs, and provide customized and responsive personal support during their interaction with customers. Our conclusion also indicates that sharing a professional report and personal insights into the business will not improve customer loyalty.

Moreover, the interpersonal view of this research sheds light on the understanding of the salespersons’ role as agents. Customer loyalty to suppliers is transferred from the trust beliefs in salespersons. As the initial survey reveals, salespersons’ personal WeChat account is used in almost 80 percent B2B communication, and meanwhile links non-business social ties. Salespersons may successfully use social media as a personal platform to establish online customer communities. However, the potential conflict of interests between suppliers and salespersons may lead to failure to the transference. Once a salesperson leaves to work for a competing company, suppliers may suffer a loss of customers, and making the suppliers of homogenous products or rapidly consumed products suffer more than the suppliers in other industries. Therefore, suppliers should consider the prerequisites of the transference of trust belief in a salesperson to customer loyalty to one’s organizations and also develop incentive programs to improve organizational success.

At last, the influence of trust beliefs in purchase risk implies that overconfidence in the benevolence of the salesperson may lead to ignorance of purchase risk and result in a crisis. B2B purchases are assumed as rational behavior. However, trust beliefs are individuals’ intuitive judgments, and possibly strongly biased. Heuristic information processing might provide an alternative explanation for the recent food scandals in China, such as plasticizer in alcohol and melamine in infant formula. Apart from the intention to purchase for over-profit and futile sanctions, we might ascribe the ignorance of risks and a lack of timely precautionary inspection to the low perception of purchase risk.

6.3 Limitations and future research
This paper indicates the positive influence of social media usage on customer loyalty. However, we must be careful when generalizing such a conclusion. First, social media could serve to build new connections and maintain established connections. However, in B2B marketing communication with a supplier’s representative, social media usage may have a limited influence on ensuring a good start to the relationship, as people may refuse to communicate with strangers at the first contact. Second, social media usage may be different in various industries. A salesperson in an industry highly open to internet culture (e.g. electronics vs tax consultant) may be more likely to adopt social media to communicate with customers. We are not yet clear about the role of industries in the influences of social media usage on customer loyalty. Third, the current research is conducted based on B2B marketing practices in China. Cultural differences may influence the results. Existing literature has revealed that cultural differences in individualism/collectivism, power distance, context cultural characteristics and masculinity influence information technology acceptance (Lin, 2014; Lin and Ho, 2018). For example, high masculinity culture, which oriented toward value and achievement leads to perceived usefulness of social media, but low perceived ease of use (Lin and Ho, 2018). Therefore, social media usage in B2B in other countries may be different from that in China regarding platform selection, frequency and popularity. Regarding the content on social media, existing literature indicates that Indian and American viewers of social media advertisement are influenced strangely either by entertainment feature or by informative attributes (Muralidharan et al., 2019). The experience in crisis management on social media addresses to contextualize the strategy based on insiders’ assessment of attribution of blame (Zhu et al., 2017). Those conclusions suggest salespersons tailor their self-generated content based on the sub-culture of their industry and region. Future cross-cultural studies will enhance the generality of our conclusions.

Future research should measure customers’ initial inclinations to trust and reveal the diachronic formative process of trust (Doney and Cannon, 1997), and explore how different social media functions influences the different stages of trust belief development (Kietzmann et al., 2011).
Roles of trust and purchase risk

Chu-Bing Zhang and Yi-Na Li

Future work using quasi-experiment methodology may detect the influences of social media by strictly controlling the influences of other communication channels used simultaneously.

References


<table>
<thead>
<tr>
<th>Roles of trust and purchase risk</th>
<th>Journal of Business &amp; Industrial Marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Che-Bing Zhang and Yi-Na Li</td>
<td>Volume 34 · Number 7 · 2019 · 1420-1433</td>
</tr>
</tbody>
</table>

environment”, *Journal of Interactive Marketing*, Vol. 27 No. 4, pp. 242-256.


Further reading


**Appendix. Highlights**

- We confirm the effect of social media usage on customer loyalty under the B2B context and refute the fallacy of social media uselessness in B2B practices.
- Our research shows that buyers’ trusting beliefs on salesperson’s ability and integrity on purchase risk do not have significant influences on perceived risk. Such a finding is opposite to the stereotypical instinctive judgment based on B2C scenarios.
- We compare different influences of buyers’ trusting beliefs on salesperson’s ability, integrity and benevolence, and highlight the significance of salespersons’ altruism attributes in shaping customer loyalty.

**Corresponding author**

Yi-Na Li can be contacted at: yinali@ustc.edu.cn
Knowledge co-creation in Open Innovation Digital Platforms: processes, tools and services

Tindara Abbate
Department of Economics and Business, University of Messina, Messina, Italy
Anna Paola Codini
Department of Economics and Management, University of Brescia, Brescia, Italy, and
Barbara Aquilani
Department of Economics and Management, University of 'Tuscia' of Viterbo, Viterbo, Italy

Abstract
Purpose – The purpose of this paper is to understand how Open Innovation Digital Platforms (OIDPs) can facilitate and support knowledge co-creation in Open Innovation (OI) processes. Specifically, it intends to investigate the contribution of OIDPs-oriented to successfully implement all the phases of interactive coupled OI processes.

Design/methodology/approach – The paper carries out an exploratory qualitative analysis, adopting the single case study method. The case here investigated is Open Innovation Platform Regione Lombardia (OIPRL).

Findings – The case study sheds light on how OIPRL supports knowledge co-creation through its processes, tools and services as a co-creator intermediary. In its launch stage, the platform simply aimed at giving firms a tool to “find partners” and financial resources to achieve innovative projects. Now, however, the platform has developed into an engagement platform for knowledge co-creation.

Research limitations/implications – One limitation lies in the particular perspective used to perform the case study: the perspective of the digital platform itself. Future research should focus on the individuals engaged in the platform to better investigate the processes, tools and services used to implement the OI approach.

Practical implications – The paper suggests ways in which OIDPs could be used by firms for effective exploration, acquisition, integration and development of valuable knowledge.

Originality/value – The study conceptualizes the role of OIDPs in shaping knowledge co-creation, assuming that the platforms act as Open Innovation Intermediaries (OIs). Specifically, OIDPs can be observed to function as “co-creator intermediaries” that define, develop and implement dedicated processes, specific tools and appropriate services for supporting knowledge co-creation activities.

Keywords Digital platforms, Open Innovation Intermediaries, Open Innovation Digital Platforms, Knowledge co-creation, Interactive coupled processes

1. Introduction

The paper aims to examine how Open Innovation Digital Platforms (OIDPs) support knowledge co-creation in interactive coupled processes – the only sort that leads to value co-creation – run among individuals engaged in innovation processes in business-to-business (B2B) markets. The Open Innovation (OI) approach suggests that firms can use respectively inflows of knowledge to accelerate their internal innovation processes and outflows of knowledge to expand their markets, by making available knowledge, intellectual property (IP) rights and/or patents to help partners to innovate (Chesbrough, 2006). The approach highlights for firms the need of a new approach to strategy (Chesbrough and Appleyard, 2007) to increase the permeability of their organizational boundaries (Dahlander and Gann, 2010; Zobel and Hagedoorn, 2018) by enabling knowledge exchange with external knowledge sources.

Indeed, OI depends on knowledge flows being purposively managed by firms (Chesbrough and Bogers, 2014) following three different processes (Gassmann and Enkel, 2004; Enkel et al., 2009). Inbound OI processes involve the use of external ideas and technologies to expand their markets, by making available knowledge, intellectual property (IP) rights and/or patents to help partners to innovate (Chesbrough, 2006). The approach highlights for firms the need of a new approach to
are related to earning profits by bringing ideas to the market and selling IP and technology by transferring internal ideas or knowledge to the outside environment (Chesbrough, 2003). Coupled OI processes see inbound and outbound OI processes develop simultaneously, leading to alliances, cooperation and joint ventures in which give and take are crucial for success (Enkel et al., 2009, p. 313). Put in another way, it can be said that in inbound and outbound processes, the knowledge flow is unidirectional and moves from the outside environment to the firm and from the firm to the outside environment, respectively. In coupled processes, however, knowledge flow develops simultaneously in both directions because these processes involve dyadic collaboration between firms and partners (West and Bogers, 2014). However, only interactive coupled processes lead to co-creation (West and Piller, 2014).

While inbound and outbound processes have been investigated repeatedly (Chesbrough and Crowther, 2006; Lichtenhaller, 2009; Huizingh, 2011; Spithoven et al., 2011; Huang et al., 2015; Cassim and Valentini, 2016), “more is needed to develop the conception of coupled OI and to show how OI practices are similar (or different) in such network settings” (West et al., 2014, p. 809). This is true above all in B2B contexts, where innovation tends to result from on-going innovation-oriented relationships among different organizations (Håkansson et al., 2009). In this domain, several business actors have a valuable impact on the knowledge and innovation process (Rampersad et al., 2010), making the OI model a valuable alternative in knowledge creation and transfer (Fisher and Qualls, 2018). Indeed, as critical sources of innovation often reside somewhere in the company’s surrounding business relationships (Björk and Magnusson, 2009), those relationships can be considered as an ideal setting for coupled processes, and especially for interactive coupled processes, in that they can lead to knowledge co-creation.

Furthermore, over the past 20 years, OI processes have developed rapidly (in number and importance) because of the ever-increasing availability of innovative tools and advanced technologies linked to Web 2.0, and due especially to the possibility of both firms and intermediaries creating and effectively running OIDPs. Specifically, OIDPs can be considered as “co-creators” – “oriented to activate co-creation processes in the dispersed innovation network by integrating and combining knowledge and by supporting interactions and relationships through digital tools and open services” (Aquilani et al., 2016). This role is possible because of the definition of a set of advanced web-based tools and services to support the platform’s actors. Socio-technical systems are indeed more than mere mediators of B2B transactions shaping industrial marketing processes and outcomes in significant ways and giving rise to altogether new industrial marketing opportunities (Paschen and Pitt, 2019).

Given that Open Innovation Intermediaries (OIIs) use digital platforms to support OI processes OIDPs can be assumed as a specific kind of Open Innovation Intermediary (OII) (Section 2.1). An OII is defined as an “organization […] that provides a supportive role for collaboration between two or more parties during various stages of the innovation process” (Howells, 2006, p. 721), and such organizations have been recognized as being central to implement and maintaining a successful innovation ecosystem (Sieg et al., 2010; De Silva et al., 2018). In this respect, these organizations are capable of acting as knowledge repositories, fostering new combinations of knowledge (Howells, 2006).

While past research has extensively investigated roles and contributions of OIIIs by assuming a knowledge-based perspective (Randhawa et al., 2017, 2018; De Silva et al., 2018), there are no studies that investigate OIDPs particularly when individuals are engaged in knowledge co-creation through interactive coupled OI processes and especially in B2B markets.

To fill this gap in the literature, this study first develops a theoretical framework focused on the role of OIDPs in interactive coupled processes (Gassmann and Enkel, 2004; Enkel et al., 2009; West and Piller, 2014). Specifically, it investigates how OIDPs support the different phases – i.e. defining the problem and its relevant issues, finding participants and collaborating – that characterize interactive coupled processes.

Secondly, the paper performs an exploratory analysis based on a single case study – Open Innovation Platform Regione Lombardia (OIPRL) – that sheds light on how OIDPs really support knowledge co-creation in coupled processes, focusing on processes, tools and services in a B2B context.

The paper is articulated as follows. First, OIDPs are introduced in Section 2.1. Then, following a brief literature review, it explores the features of interactive coupled processes and the conditions under which they can lead to knowledge co-creation in Section 2.2. The theoretical part of the paper ends by analyzing processes and services created and run by OIDPs. Next, the methodology in Section 3 and the case study in Section 4 are presented, followed by the discussion in Section 5 and conclusions in Section 6.

2. Towards a framework for knowledge co-creation

2.1 Digital platforms for Open Innovation

Information and communication technologies are considered to enable new approaches to how B2B firms create value in a variety of areas (Paschen and Pitt, 2019). Albeit recent studies aimed to explore how different emerging technologies create value for B2B marketing and sales (Diba et al., 2019; Li and Zhang, 2019; Nath et al., 2019; Paschen et al., 2019), no many studies focussed on the role specifically assumed by digital platforms in this context.

In recent times, the concept of digital platforms has become increasingly relevant for scholars and managers (De Falco et al., 2017; Hossain and Lassen, 2017). The main focus of past studies has been to investigate how digital platforms, with their tools and advanced web technologies, can open up new ways for organizations to collaborate with external sources to acquire and develop ideas, technologies and knowledge (Hossain and Lassen, 2017) and to create useful outcomes. The managerial task of searching and combining external knowledge across organizational boundaries is critical to firms’ innovation activities (Lopez-Vega et al., 2016). Indeed, “the searching space can be local or distant and experiential or cognitive” (Hossain and Lassen, 2017, p. 55). From this perspective, digital platforms represent “an important carrier for searching external knowledge” (Hossain and Lassen, 2017, p. 55) and, as a consequence, for activating new combinations of knowledge and creating novel and useful solutions to innovation problems. They enable organizations to bring knowledge globally
distributed to bear to solve problems that organizations cannot solve internally on their own (i.e. Jeppesen and Lakhani, 2010).

In digital platforms, the heterogeneity of knowledge stimulates innovation because the digital platforms tend to attract complementary innovators (Boudreau, 2010).

Even though a significant stream of literature focused on the investigation of the dynamics of two-sided platforms (Rochet and Tirole, 2003; Economides and Katsamakas, 2006; Hagiu, 2009), OI platforms – a specific kind of two-sided platform – (De Falco et al., 2017) represent a less investigated domain. These platforms can be described as virtual environments in which heterogeneous entities (i.e. experts, specialist companies, users, R&D laboratories, universities, etc.) are involved in knowledge transfer and integration processes to solve OI challenges (Sawhney et al., 2003; Jeppesen and Lakhani, 2010). In this respect, OI platforms can be understood, essentially, as useful mechanisms to match seekers of solutions on one side with potential solvers on the other (Eisenmann et al., 2006). This is because OI platforms foster continuous interaction and higher participation among all parties involved in them. For this reason, OI platforms have “a far-reaching impact” (Hossain and Lassen, 2017, p. 55) on how actors collaborate and innovate together through networks, alliances and business ecosystems (West and Bogers, 2014).

From another angle, OIDPs can be understood as a specific kind of OII, by assuming a central role in stimulating, creating and maintaining a successful innovation ecosystem (Sieg et al., 2010).

Indeed, OIIs support and are involved in the handling and integrating of the knowledge base of innovation ecosystems (De Silva et al., 2018). In this domain, OIDPs perform tasks ranging from linking a large variety of parties for collaboration to setting up and mediating relationships and bridging a wide array of knowledge, competency and capability gaps (Howells, 2006; Dalziel, 2010; Sieg et al., 2010; Agogue et al., 2013; Mele and Russo-Spana, 2015; Aquiliani et al., 2016; Randhawa et al., 2017, 2018; De Silva et al., 2018). Having “a better awareness of the needs, knowledge and competencies of a wide array of actors of a system of innovation and their institutional framework […], which is termed […] as ‘innovation ecosystem knowledge’” (De Silva et al., 2018, p. 73), these intermediaries are engaged in an array of diverse functions (Howells, 2006) and activities (Lopez-Vega and Vanhaeverbeke, 2009; Diener and Piller, 2010; Lichtenhaller, 2013; Colombo et al., 2014; Aquiliani et al., 2016) to help firms in their exploration, integration, combination and exploitation of knowledge.

OIDPs thus, can support not only inbound and outbound OI processes but also, and especially, coupled processes, including the interactive coupled processes, which can lead to knowledge co-creation.

2.2 Interactive coupled processes leading to co-creation

West and Piller (2014) highlight that coupled processes can be divided into two types, namely: bi-directional and interactive. Bi-directional coupled processes see firms separately conducting efforts to innovate and then sharing the resulting knowledge. These processes are the ones that best match the definition of coupled processes proposed by Gassmann and Enkel (2004), considering that each firm involved in the process takes advantage of its own knowledge derived through contracts, alliances, etc. (West and Piller, 2014).

Interactive coupled processes are different from bi-directional processes in that knowledge creation and sharing occurs not inside firms but rather in a shared space; the innovative knowledge is the result of a collaborative process among actors (Chesbrough, 2011; West and Piller, 2014). Out of such cases emerges the concept of co-creation or better knowledge co-creation, building on the studies of Prahalad and others (i.e. Prahalad, 2004; Ramaswamy and Ozcan, 2014). Interactive coupled OI processes differ from the bi-directional process in terms of such factors as the nature of the external actors involved, the topology of the coupling, the impetus to collaboration and the locus of innovation (West and Piller, 2014) (Table I).

The actors involved in knowledge co-creation are individuals who may or may not belong to organizations and may or may not be grouped into communities. The individual perspective is a differentiating issue in the view of co-creation advanced by Prahalad and others, embracing the so-called “strategic perspective” (Ramaswamy and Ozcan, 2014). Indeed, co-creation is an approach based on human experiences (Ramaswamy and Ozcan, 2014); experiences, thus, form the basis for co-creating knowledge. In this context, the locus of value, and of new knowledge, is in interactions among individuals, while the locus of co-creation is in engagement platforms (Ramaswamy and Ozcan, 2014). In this sense, all interactions can lead to innovative knowledge, which can be found in the engagement platform.

Firms, therefore, cannot control or manage knowledge flows as they develop on engagement platforms; they develop autonomously following the interests and goals of participating individuals, and they are nurtured by individual experiences and contributions, no matter whether the individuals belong to the firm or to other organizations. Indeed, knowledge flow in the engagement platform no longer follows a linear path, and the same is true inside the firm because different employees – individuals – can participate simultaneously in the co-creation processes no matter what their role or status in the organization might be.

To make this point clearer, it is worth remembering that engagement platforms are not necessarily created by firms; individuals affiliated with firms can join engagement platforms already created by, for example, lead users, online communities, institutions, etc. As a consequence, it is clear that firms can facilitate interactions, but they neither fix goals unilaterally, nor coordinate processes towards their sole goals as they might be able to in other approaches to co-creation (e.g. Service-Dominant Logic; Vargo and Lusch, 2004). This is because co-creation, following the strategic perspective, is not only about the creation of products and services but also can encompass all of the firms’ activities – including, for example, changing co-creation processes or rules, which have to be co-created per se, changing approaches to production, defining different or new goals for the firm, changing particular aspects of organizations.

Firms can actualize a part of the co-created value also in terms of knowledge, in the engagement platforms rewarding the individuals participating in the co-creation process and can internalize it to use it on behalf of their goals. This is essential to
encourage individuals to remain engaged in co-creation processes. Surely, this can happen only if firms ground their activities on inclusivity, generativity, linkability and evolvability (Ramaswamy and Ozcan, 2014, p. 87), so that co-creation processes develop continuously in the engagement platform because “co-creation is both the means and the end, in a continuous cycle” (Ramaswamy and Gouillart, 2010, p. 29).

For this reason, it does not matter who starts the knowledge co-creation – offering the impetus to collaboration – nor which is the path followed by the co-creation process.

Given the above, OIDPs can be understood as a special kind of engagement platform (Figure 1), besides offline platforms, such as, for example, meetings, call centres when organized to propose and share solutions, events (i.e. Ramaswamy and Ozcan, 2014) and temporary shops (Russo-Spena and Mele, 2012) and online ones – such as forums, social network sites (i.e. Ramaswamy and Ozcan, 2014).

Table 1 Dimensions of interactive coupled processes leading to knowledge co-creation

<table>
<thead>
<tr>
<th>Dimensions of all coupled processes</th>
<th>Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>External actors</td>
<td>Firms; other organizations; and individuals</td>
</tr>
<tr>
<td>Topology of coupling</td>
<td>Dyadic; network; and community</td>
</tr>
<tr>
<td>Collaboration impetus</td>
<td>Top-down; and bottom-up</td>
</tr>
<tr>
<td>Innovation locus</td>
<td>Bidirectional (innovation created within organization boundaries); and Interactive (innovation created across organizational boundaries)</td>
</tr>
</tbody>
</table>

Note: Aquilani (2016, p. 210)

2.3 Knowledge co-creation inside Open Innovation Digital Platform: processes and services

West and Piller (2014) have developed a process model for interactive coupled OI that includes four phases, namely, problem definition, finding participants, external collaboration and leveraging the collaboration results. In the framework here proposed, the fourth stage has not been considered, because “leverage” is linked to value capture from each actor participating in the OI interactive process, and not to co-creation developed outside organizational boundaries (West and Piller, 2014) (Table II). The first phase is represented by the definition of “the problem that it is seeking to address via engaging external partners in the co-creation effort” (West and Piller, 2014, p. 8). It involves the explanation of the institutions and the rules of engagement (i.e. control of IP rights; explicit procedures for OI), and consequently, the definition of resources and of the level of internal commitment necessary to sustain the ongoing interactions and collaborations with

Figure 1 OIDPs and interactive coupled processes for knowledge co-creation

Source: Our elaboration
external participants (Dahlander and Gann, 2010). The second phase is characterized by searching for suitable external participants with relevant knowledge. Different approaches can be taken to searching for qualified participants: open call, selective open call and open search (Diener and Piller, 2013). However, “both the search for and the acquisition of such knowledge will depend on understanding and strengthening the motivations of partners to create and share their knowledge” (West and Piller, 2014, p. 8). In this respect, motivating participants to engage in collaborating with the firm (Dahlander and Gann, 2010) is an issue related to the provision of incentives (either monetary or non-monetary) (West and Gallagher, 2006; Dahlander and Gann, 2010). Finally, the collaborating phase is observed as the key co-creation phase in the model (West and Piller, 2014). This phase encompasses a variety of activities: the definition and implementation of the processes singled out for collaboration; the creation of tools, technologies and platforms to support the collaboration process; and the identification of the internal attitudes and capabilities needed to develop collaboration processes.

In Table II, the processes and activities are presented in the first two columns (West and Piller, 2014), while in the third column services to be created and run by OIDPs to support knowledge co-creation have been added, based on the literature on OI platforms (Aquilani and Abbate, 2014).

### Table II  Processes and services of OIDPs to support knowledge co-creation

<table>
<thead>
<tr>
<th>Process stage</th>
<th>Key activities</th>
<th>OIDPs’ services to support knowledge co-creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defining</td>
<td>Problem formulation Institutions and rules Resources allocation and strategic commitment</td>
<td>Support in finding aspects and/or projects to invest in; Acceptance and preparation of texts and the revision of post; Preventive analysis of requests/problems; Evaluation of existing and emerging technology to aid the firm in innovating; Monitoring innovation</td>
</tr>
<tr>
<td>Finding participants</td>
<td>Identifying participants with the right characteristics Motivating and retaining a critical mass of collaborators Selecting the right participants</td>
<td>Definition of a range of awards/benefits; Communication and integration into the engagement platform; Expert support for specific requests/projects; Research for specialized collaborators identified by firm requirements; Creation of ad hoc groups for problem solving; and Search for partners for venture capital operations</td>
</tr>
<tr>
<td>Collaborating</td>
<td>Governance of collaboration process: organizing, monitoring, policing Interaction platform and other tools Openness of firm attitudes, structure and processes</td>
<td>Guides for shared innovation; Services to improve existing technologies within the firm or as integration (e.g. applying norms or vertical integration); Organizational and financial consulting; training and coaching; Services facilitating information-sharing between individuals in the engagement platform; Services enabling efficiency and ease of platform use for participating individuals; Services relaying communities’ perceptions of firms’ engagement practices; Services developing holistic individual knowledge and skills in the engagement platform; Services mirroring goals and values of individuals; Services motivating firm leadership team to embrace engagement platform; and Services to support the building of motivation inside firms to help individuals effectively participate and share in engagement platforms to co-create knowledge</td>
</tr>
</tbody>
</table>

**Note:** Our elaboration, based on West and Piller (2014) and Codini et al. (2018)
study is a contemporary phenomenon in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident” (Yin, 2014, p. 216). The case selected is the Open Innovation Platform Regione Lombardia (OIPRL), a digital platform developed by the Italian Public Institution Regione Lombardia to support OI processes involving individuals acting in the engagement platform as representatives of firms, institutions, universities and research centres rather than as private citizens.

The selection of this case study was based on the combination of theoretical interests and ongoing research activities (Siggelkow, 2007). OIPRL represents a suitable context for answering the research question because it has undergone an interesting process of evolution as its launch on the market, moving from a platform that basically offered support for financing new projects to an engagement platform where individuals can co-create. The platform is now focusing on “collaboration” and has developed digital services and tools aimed at supporting knowledge co-creation. The qualitative data collection for this study was based on a variety of data sources, following Yin (2003). The use of multiple data sources represents a necessary element of the analysis because it ensures the variety of perspectives required by the constructivist principles on which qualitative analyses are based. The data collected include both primary data (semi-structured interviews) and secondary data (desk analysis, internal reports and documents, dossiers and other printed materials).

The preliminary desk research that the study performed to collect secondary data was helpful in the design of the interview protocols used in the collection of primary data and in illustrating the context for the interpretation of the data gathered by interviews. The analysis was focused on the services and tools offered through the platform. The study used archival data (mainly reports and presentations), as well as public and internal company material.

Semi-structured interviews were conducted with significant key informants, and these constituted a significant portion of the data collected. As reported in Table III, the interviewees were selected in Regione Lombardia and in other organizations involved in the development of the platform: Lombardia Informatica S.p.A. and Finlombarda S.p.A.

Lombardia Informatica is an in-house company of Regione Lombardia, engaged in the development of information systems and digital solutions for the departments and regional system agencies; it supported Regione Lombardia in developing the digital tools of the platform. Finlombarda S.p.A. is the in-house financial company of Regione Lombardia, offering financial services to the companies that operate in the Lombardia area.

During phone calls just one consultant or manager was contacted, whereas during conference calls and face-to-face interviews two or more people from the different institutions were involved. Each phone call, conference call or face-to-face interview lasted between 60 and 80 min.

The interviewees were chosen on the basis of their level of involvement and their knowledge and experience. The total number of respondents was sufficient to achieve theoretical saturation (Glaser and Strauss, 1967).

The study outlined an interview protocol that would address topics relating to the research questions while at the same time leaving room for both the respondent and the researcher to extend the discussion to unexpected issues (Yin, 2003). In this way, it was ensured that the respondents were free to interpret each question from their own perspectives, as required in this type of research. Some questions were added to capture issues that surfaced during discussions in the interviews. The interviews were recorded to minimize data loss and were then immediately transcribed for later analysis and shared with research members in both full and excerpted forms. In some cases, informal follow-up questions were sent to respondents, often via e-mail, to clarify issues that emerged during the transcription.

The information derived from the interviews has been triangulated with secondary data, following the recommendation of Eisenhardt (1989). The triangulation of different data sources was used to mitigate the risk of informant bias, control for the subjective judgments of individuals, and thus, increase construct validity (Gibbert et al., 2008). The OIPRL was continually monitored to remain abreast of available activities and projects. The deeper analysis of the institutional platform supported a better comprehension of this phenomenon and its main rules and mechanisms.

4. Findings

4.1 The case study: Open Innovation Regione Lombardia

OIPRL is one of the tools of the intelligent specialization strategy adopted by Regione Lombardia, which aims, through this platform, to stimulate connectivity among universities, research centres and firms by creating a network between different kinds of individuals; promote growth, leveraging resources, know-how and human and social capital; support innovative best practices and cases sharing; and create new knowledge.

The OIPRL was launched under ERDF Regional Operational Programme 2007-2013 Priority 1 “Innovation and knowledge economy” and developed under ERDF Regional Operational Programme 2014-2020. The OIPRL was started in 2013, and after a developing and testing phase, was opened to the public in 2015. In 2014, there were 50 actors involved, while in 2015 there were 525.

The OIPRL integrated another platform supported by Regione Lombardia and named “QuESTIO” (Quality Evaluation in Science and Technologies for Innovation Opportunity), a business network involving only business partners (companies and competence centres) aiming to help firms looking for new partnerships to gain access to public financing (European programs, etc.). When the OIPRL was launched, QuESTIO was integrated within it.

In the OIPRL only individuals – not organizations – can participate, and QuESTIO, embracing the individuals’ perspective, originated about 2,000 profiles deriving from organizations and 600 profiles deriving from competence centres. As a consequence of this transformation, individuals belonging to firms or to other organizations are still today the core of the OIPRL, so that the core of the platform is made up of interactions developing among firms and/or other organizations. Since its origin, the platform has matured. To date, it has attracted over 10,000 participants, launched 1,200
news and discussion threads, connected 2,000 organizations, collected 400 expressions of interest in project ideas and launched 11 public consultations. Among the participants, 58 per cent are representatives of enterprise, 22 per cent of research organizations, 18 per cent of public administration and only 2 per cent of civil society.

After this general introduction to the OIPRL, the main findings, in terms of tools and services supporting each phase of OI interactive processes leading to knowledge co-creation, will be presented.

### 4.2 Contribution to “defining” stage

To support the “defining” phase, the OIPRL provides a toolkit for developing projects and managing them. As noted by one Senior Manager who was interviewed:

“…the platform is composed of tools aimed at supporting individuals to find partners, cooperate and realize projects. The reason is that the platform was born as a place aggregating experts (6).”

Originally, it was a place where regional projects developed, but exclusively related to calls issued by the Regione Lombardia. Then, the platform developed into a virtual space where enterprises could scout potential partners and engage them in every kind of project. Over time, the OIPRL evolved, widening its boundaries and joining the Enterprise European Network (ENN).

In this way, the platform transformed from a space “aggregating experts developing projects” to a place for “transferring to citizens the business projects” (6).

Thus, the OIPRL aims at transferring to citizens the business projects’ value and towards this aim develops specific tools to engage non-expert individuals.

The choice not to focus on problem formulation as a key activity is part of the strategy of Regione Lombardia; it is aware of the risk this choice entails in terms of competition with other institutions (such as universities, incubators, agencies, associations, etc.) that focus their expertise on these services. However, Regione Lombardia, aware of the value of such services, involves them in the OIPRL as “multipliers” or “sounding boards”. The engagement of these experts potentially generates a reciprocal benefit: Regione Lombardia can widen its engagement platform, benefiting from the role of “catalyst” assumed by these institutions, and these institutions can expand their target accessing to the OIPRL. In this respect, one interviewed Senior Manager (3) explained:

“…we don’t do this accompanying activity, but we want to give a strong and clear message to those who do it on the territory. This platform aims to facilitate them and to help them do it amongst themselves. So, in practical terms it means that, for example, a person from the Confartigianato institution can interact with a person who works in the university, trying to share and co-create resources to work on issues of common interest, each on behalf of its own projects but generating a mutual cross-fertilization.”

To allow this “cross-fertilization” between individuals, OIPRL has created the following roles:

- **The “facilitator”,** an individual engaged in the platform and belonging to an organization, who has expertise in research and innovation. He or she takes charge of individuals new to the platform and supports them from the very beginning – the registration moment. Newcomers, when inside the platform, can also ask to change their “facilitators”.

- **The “community manager”,** responsible for creating a new community and managing it. Thus, individuals willing to develop their own projects can create and manage their own communities, using the OIPRL’s features to attract new participating individuals.

<table>
<thead>
<tr>
<th>Role</th>
<th>Organization</th>
<th>Interview’s protocol</th>
<th>Main contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant (1)</td>
<td>Lombardia Informatica S.p.A.</td>
<td>Phone interview – 60 min</td>
<td>Technical description of platform’s digital tools and services</td>
</tr>
<tr>
<td>Consultant (1)</td>
<td>Lombardia Informatica S.p.A.</td>
<td>Conference call – 80 min</td>
<td>Technical description of platform’s digital tools and services</td>
</tr>
<tr>
<td>Consultant (2)</td>
<td>Lombardia Informatica S.p.A.</td>
<td>Phone interview – 60 min</td>
<td>Platform development and launch on the market</td>
</tr>
<tr>
<td>Senior Project Manager (3)</td>
<td>Finlombarda S.p.A.</td>
<td>Phone interview – 60 min</td>
<td>Platform development and launch on the market</td>
</tr>
<tr>
<td>Executive (4)</td>
<td>Regione Lombardia</td>
<td>Face-to-face interview – 60 min</td>
<td>Platform development and launch on the market – focus on collaboration tools and services</td>
</tr>
<tr>
<td>Senior Manager (6)</td>
<td>Finlombarda S.p.A.</td>
<td>80 min</td>
<td>Platform contribution to co-creation (different stages)</td>
</tr>
<tr>
<td>Executive (4)</td>
<td>Regione Lombardia</td>
<td>80 min</td>
<td>Platform contribution to co-creation (different stages)</td>
</tr>
<tr>
<td>Official (5)</td>
<td>Regione Lombardia</td>
<td>80 min</td>
<td>Platform contribution to co-creation (different stages)</td>
</tr>
<tr>
<td>Corporate executive (8)</td>
<td>Regione Lombardia</td>
<td>80 min</td>
<td>Platform contribution to co-creation (different stages)</td>
</tr>
</tbody>
</table>

**Note:** Numbers in column one are used to identify interviewed people. Indeed, some of the managers or executives were asked to contribute to different parts of the case study performing more than a single interview.
hired with the aim of disseminating the culture of OI. These influencers will be selected on the basis of their ability to attract individuals outside the platform and to fruitfully engage them in the OIPRL.

Besides creating the new roles above, the OIPRL has implemented other activities for supporting “strategic commitment”, such as:

1. Open events promoted by various institutions.
2. A sort of “tutorship” designed to guide individuals to approach the OIPRL and to launch their projects effectively on the platform. Individuals are invited to issue a call for proposals consisting of a project abstract and various forms reporting the main insights of the project, the name of the project manager and a short organization profile. This step supports individuals to be more open-minded and to share information readily with partners. Specifically, the Senior Project Manager (7) emphasized:

[...] they are a bit directed, as many users are not ready to throw themselves into the platform, but after writing the project form, filling out the organization profile and identifying a project manager, it’s a done deal. I’m a bit more engaged in the platform; I’m not a stranger anymore, and I’m ready to approach other tools.

This activity has been successful since the launch of the OIPRL, and the participant firms’ openness through its employees seems to have developed:

[...] some signal has emerged. At the beginning there was just a proud closure [...] It is interesting to see how sometimes even small projects have a very strong openness (3).

4.3 Contribution to “finding participants” stage

To support the activity of “finding participants”, in the launch stage Regione Lombardia promoted an invitation to tender to assign incentives for micro-, small- and medium-sized enterprises and/or research centres to create and develop communities within the OIPRL. An example was the downstream applications from the satellite. In this case, a Consiglio Nazionale delle Ricerche (CNR) expert was responsible for engaging individuals and supporting interactions among them, assuming the role of “community manager”. Because of this experience:

[...] we have learned a lot, and it was good to increase the audience of participants [...] so they managed to compress, to accelerate this initial phase that would never be started if there were not enough people. This first step has led us to about 2,000 participants who are the heart of those who are still active participants (3).

Moreover, the OIPRL is starting to support the activity of finding the right participants from the registration stage, making all individuals provide specific information about their skills, knowledge and activities. Each individual must create an account and complete the following five steps before accessing the services of the OIPRL:

1. Introduction section: the individual is asked to complete his or her profile. A warning message reminds the individual of the goals of the OIPRL: “the collaborative platform is an ecosystem supporting innovation. Here you can start up collaborations, take part in discussions and interact with firms, institutions and other participants.” Moreover, the individual is reminded that carefully completing his or her profile will enable the platform to provide customized information according to personal and professional interests.

2. Presentation section: the individual has to describe himself or herself using 140 characters, to upload a photo and to provide demographical information.

3. The new participant in the OIPRL is encouraged to select his or her role and just one area of interest from a list of macro-industries including electronics and microelectronics, industrial manufacturing, other industrial technologies, energy, physical and exact sciences, biological sciences, agriculture and marine resources, agri-food, etc.

4. New participants are invited to express their interests, selecting from two lists, namely, the first includes various technological fields, while the second includes strategic regional topics (aerospace, agri-food, eco-industry, creative and cultural industry, health industry, advanced manufacturing, sustainable mobility, smart cities and communities).

5. Individuals are encouraged to identify their prevailing collaborations in terms of the organizations they work for.

The support provided by the OIPRL during the “finding” stage continues, after registration, with the offering of services shown on the dashboard as, for example, “projects” (“my projects”, “all projects”) and “partnership proposals” (“my interest proposals”, “all proposals”). Each service available on the dashboard is designed to allow individuals to identify the right participant, evaluating his or her characteristics based on the information gathered during the registration process and made available on the platform.

Once the right individual is identified, the seeker can easily connect with him or her by clicking “connect” in his or her personal profile. Accessing the right partner is easy, given that participants are divided into “validated”, “all”, “community managers” and “facilitators”. The “validated users” are selected according to the participants’ personal interests, while “all users” includes all individuals on the platform; “community managers” are users responsible for the communities in specific interest areas. As a result, this section allows individuals not only to select participants sharing their interests but also to identify participants with other interests.

Within the “projects” and “partnership proposal” sections, all projects and proposals are available, divided into “projects/partnership proposals in my own interest areas” and “all projects/proposals”. Here, individuals can collect information about projects (general descriptions, expressions of interest) and express their own interest.

4.4 Contribution to the “collaboration” stage

Other sections of the OIPRL are designed to foster collaboration, such as, for example, “communities” (divided into “my communities” and “all communities”), “discussions” (divided into “discussions in my area of interest” and “all discussions”), “documents” (divided into “my documents” and “all documents”) and “news” (divided into “my news” and “all news”).

In each section, individuals can find information about what has been published by other individuals and actively post their
own messages, create their own communities, participate in or activate discussions and upload documents.

Recently, the need has emerged for a monitoring service to track individuals’ activities and linked performances. An interviewed Senior Project Manager (7) said:

Today we are thinking about a set of indicators that can support the next step of the platform development; so we are at the moment releasing some tools for projects’ formalization rather than tools to monitor the projects that will help us both to improve and to get feedback on how projects born on the platform are developing

Indeed, some monitoring activities of this kind are currently being carried out on projects:

An analysis can be made of how much these projects lead to results over time; […] The platform will serve as an example for these partnerships to share the steps following the end of the project and will allow us to see how the projects that are started in the field of regional financing have evolved; this will give us the possibility to allow other institutions and organizations to make their projects known with the help of the platform (7).

Therefore, platform managers are becoming even more aware of the need to understand what goes on in the OIPRL and what results have been or could be generated through it:

Monitoring the platform means staying on the follow-up, to really understand once the report is completed what the territory has received from this project, who has benefited from it and who eventually will benefit from it later on (6).

Regione Lombardia continue to develop new tools to foster collaboration inside the OIPRL, such as, for example, the “conference call” plugin, a specific section for project management and a service to support participants with event organization. Indeed, the OIPRL already offers the opportunity to customize tools. Each individual can create new content (i.e. discussions, newsletters, communities, projects and partnership proposals) and select individuals to start interacting.

The interactive tools of the OIPRL are continually upgraded to enhance their efficiency and usability.

In this domain, the OIPRL recently made available to its participants a “unique experience”:

The external part of the platform will be completely revised in order to offer a “unique experience” so once I am in the platform, I look for information, I understand, I see, and, consequently I want to do something for myself, to write, to comment, to try to say my opinion rather than to propose to me as a partner (6).

Accordingly, the internal part of the OIPRL has been upgraded:

It was also a little more dated because it was born with different objectives as a pure work tool. Today we understand that the path to involve citizens more and more and then participate in it starts with facilitating the experience not only in terms of language but also in terms of usability. In order to reach this aim, the internal part was radically simplified and some sections were grouped (6).

The newsletter is going to be revised in the coming months, as well. From the “classic newsletter” – a list of information – the newsletter will be completely redesigned to make immediately clear to participants what information is encompassed within it (i.e. if it is about the technical equipment of the platform or about news, or new services to be activated, etc.).

In the context of collaboration, the need for a well-designed monitoring activity has emerged. Indeed, the great challenge in the future will be to understand whether the best projects completed have led to concrete results for participants and for other individuals.
encourage and motivate external participants to collaborate (West and Gallagher, 2006; Dahlander and Gann, 2010), it can be said that the OIPRL has used monetary incentives in the past, but would now like to shift to non-monetary incentives. Indeed, making available data on the performance of past projects can act as a sort of social incentive, motivating new participants to be engaged in the platform.

Finally, regarding collaboration as the key co-creation phase in the West and Piller (2014) model, the platform executives in

the past few years have invested in developing digital tools aimed at effectively enhancing collaboration (Table IV). This activity will continue with the introduction of “influencers”.

6. Conclusions

The theoretical contributions of this paper can be summarized as follows. First, the research on interactive coupled OI processes has received little attention in the literature until now

Table IV Platform contribution to knowledge co-creation

<table>
<thead>
<tr>
<th>Process stage</th>
<th>Key activities</th>
<th>Digital tools</th>
<th>Services</th>
<th>Contributions to co-creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defining:</td>
<td>Problem formulation</td>
<td>Organizational roles</td>
<td>Being aware of the risk in terms of competition with other institutions (such as universities, incubators, agencies, associations, etc.) that focus their expertise on these services, Regione Lombardia, involves them in the OIPRL as “multipliers” or “sounding boards” assigning them a specific role. The engagement of these experts potentially generates a reciprocal benefit: Regione Lombardia can widen its engagement platform, benefiting from the role of “catalyst” assumed by these institutions, and these institutions can expand their target accessing to the OIPRL</td>
<td></td>
</tr>
<tr>
<td>Finding participants:</td>
<td>Identifying participants with relevant characteristics</td>
<td>My profile</td>
<td>Definition of a range of awards and benefits; Communication and integration into the engagement platform; Expert support for specific requests and projects; Research for specialized collaborators identified by firm requirements; Creation of ad hoc groups for problem solving</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Motivating and retaining a critical mass of collaborators</td>
<td>Participants Organizations Discussions Documents News Projects Surveys</td>
<td>To support the activity of “finding participants”, in the launch stage Regione Lombardia promoted an invitation to tender to assign incentives to create and develop communities within the OIPRL. The OIPRL supports the activity of finding the right participants from the registration stage, making all individuals provide specific information about their skills, knowledge and activities</td>
<td></td>
</tr>
<tr>
<td>Selecting the right participants</td>
<td></td>
<td></td>
<td>Paying attention to the registration section as to the information provided makes the step of finding new participants more effective</td>
<td></td>
</tr>
<tr>
<td>Collaborating:</td>
<td>Governance of collaboration process: organizing, monitoring and policing</td>
<td>Organizational roles Community Discussion Documents News Collaboration opportunities Own projects</td>
<td>Guides for shared innovation; Financial consulting; Services facilitating information-sharing between individuals in the engagement platform; Services enabling efficiency and ease of platform use for participating individuals; Services relaying communities’ perceptions of firms’ engagement practices; Services developing holistic individual knowledge and skills in the engagement platform; Services mirroring goals and values of individuals; Services motivating firm leadership teams to embrace engagement platform; Services supporting building motivation inside firms to help individuals effectively participate in engagement platforms to co-create knowledge</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interaction platform and other tools</td>
<td>Community Collaboration opportunities Own projects Programmes, projects and results Newsletter</td>
<td>Today the OIPRL is releasing some tools for projects’ formalization rather than tools to monitor the projects that will help both to improve and to get feedback on how projects born on the platform are developing. His should highlight the virtuous mechanisms in terms of added value in participating in the initiatives promoted in the platform that go beyond the financial benefit. So, the reason why the OIPRL is investing in monitoring the projects it is not to provide with an instrument for the detection of what are the results of the projects, but to disseminate the added value of the projects</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Openness of firm attitudes, structure and processes</td>
<td>Project forms</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1443
Open innovation digital platforms

Tindara Abbate, Anna Paola Codini and Barbara Aquilani

(2014). This study enriches this stream of literature, focusing on knowledge co-creation through interactive coupled processes, especially in B2B markets. Second, past studies have investigated OI platforms as virtual environments in which different entities are concretely involved in knowledge transfer and integration processes to solve specific OI challenges (Sawhney et al., 2003). This paper suggests that OIDP can be considered as a specific kind of OII that facilitates and supports firms in their efforts to define and implement interactive OI coupled processes to co-create knowledge.

This case study shows how an OIDP can support knowledge co-creation in B2B domains involving individuals, who may or may not be affiliated with firms or other organizations, in effective innovation interactions (Möller and Halinen, 2017). This case study supports the main insights embedded in the framework – which is to say that to stimulate knowledge co-creation, an OIDP has to act as an engagement platform (Ramaswamy and Ozcan, 2014) and has to create specific tools and services supporting the key processes of “defining”, “finding participants” and “collaborating” (West and Piller, 2014). Even though the OIPRL was initially focused on knowledge-transfer, now it is progressively moving towards knowledge co-creation (Aquilani et al., 2016; Randhawa et al., 2017, 2018; De Silva et al., 2018). While at the beginning, the intermediary supported match-making between innovation demand and supply, recently the need has emerged to widen services to allow individuals engaged in the platform to effectively run collaborations. This has meant that digital platforms have widened the range of tools and services offered to support the initial steps of “defining” and “finding” participants, but above all to support “collaboration itself” (West and Piller, 2014).

This paper has managerial implications for OIDPs and firms using them for effective exploration, acquisition, integration and development of valuable knowledge. It suggests that OIDPs have to develop mechanisms and practices to support firms in knowledge co-creation processes by using advanced digital platforms. This would imply that OIDPs have to develop and reinforce their services for individual engagement and participation. They also have to enhance collaboration and participation, activating suitable interactions leading to co-created innovative solutions to various innovation problems.

Looking at the case study, many challenges in the development of OIDPs towards knowledge co-creation in coupled processes emerge, especially regarding the need to spread the culture of OI among firms, above all when they operate in B2B markets where this innovation model is less studied and applied, missing the opportunity to involve individuals not pertaining to firms and/or other institutions in knowledge co-creation. This not only suggests the need to invest more in specific tools aimed at really stimulating an open mindset towards platforms but also requires that firms be ready to open their boundaries to seize the opportunities for co-creation, even if they operate in B2B markets.

This study has several limitations that should be recognized to stimulate further research in the same area. Firstly, although the case study selected here is appropriate to the exploration of the growing phenomenon of OIDPs, relying on a single platform for the study is a limitation. Future qualitative research could use a multiple-case-study method with the idea of exploring similarities and differences between cases involved. Additionally, future quantitative research could further test the framework developed here to try to better assess the findings of this study. In this way, the study could obtain confirmatory empirical evidence by the use of representative samples of platforms. However, the findings presented here can be regarded as a first step in extending the body of knowledge about interactive OI coupled processes developed because of OII. Secondly, the study is mainly focused on the OIPRL perspective for exploring activities, tools and services created and implemented to stimulate and sustain coupled OI processes, and this certainly represents another limitation. An intriguing direction for future research would be to involve a wide range of participants (i.e. engaged individuals) with different characteristics and market requirements, to gain a better understanding of the contribution of the platform to knowledge co-creation while also gaining a more precise idea of the specific benefits participants have obtained.

References


Further reading


About the authors

Tindara Abbate is an Associate Professor of Business Economics and Management at the University of Messina (Italy). She teaches Territorial Marketing and Finance. She has been involved, as presenter or chairman, in national and international conferences. She has also been involved in national and international research projects, as member and scientific coordinator. Her research interests refer to open innovation, market orientation and territorial marketing.

Anna Paola Codini is an Associate Professor of Management at the Department of Economics and Management of the University of Brescia (Italy) where she teaches Innovation and Operations Management and International Business. She has been involved, as presenter and chairman, in several national and international conferences and in several national/international research projects. Her research interests refer to innovation management and green consumption. Anna Paola Codini is the...
Barbara Aquilani is Full Professor of Management at the Department of Economics and Engineering, Society and Business Organization of “Tuscia” University of Viterbo (Italy) where she held the courses of Management and Marketing. She worked as Assistant Professor at the Siena University from 2005 to 2009 – Communication Department, Faculty of Letter and Philosophy – where she held the courses of Marketing and Marketing Communication. She has been involved, as presenter, in several national and international conferences and in several national/international research projects, as member or scientific coordinator. Her research interests refer to: (i) firm management and especially on firm growth (on which she published a book) and corporate governance; (ii) marketing (among others she published papers on university marketing and online marketing); (iii) innovation and open innovation and (iv) value co-creation.
The narrative strategies of B2B technology brands

Gaël Bonnin
Department of Marketing, Smart Products and Consumption Institute, NEOMA Business School, Reims, France and Laboratoire Regards, University of Reims Champagne-Ardenne, Reims, France and
Mauricio Rodriguez Alfonso
Department of Marketing, Higher School for Economic and Social Development (ESDES), Lyon, France and Laboratoire Regards, University of Reims Champagne-Ardenne, Reims, France

Abstract

Purpose – With the rise of digital media and content marketing, business-to-business (B2B) technology firms increasingly use narratives in their marketing strategy. If research has studied the impact of narrative on audiences, the structuration of the narrative strategies is still an overlooked area. The purpose of this paper is to understand the structuration of narrative strategies.

Design/methodology/approach – Authors studied the cases of narratives on the Internet of Things produced by two leading technology firms, IBM and Cisco, between 2012 and 2016. Material includes advertising campaigns, blogs, written customer cases, white papers, public speeches and selling discourses.

Findings – The research highlights the importance of metanarratives as the core of the structuration of seemingly different contents. It also shows how firms tap into fundamental mythic archetypes and broader sociocultural narratives to try and legitimate the emerging technology. Finally, research also introduces the concept of transmedia strategy and illustrates its use by the two firms studied.

Research limitations/implications – The results are based on only two cases of multinational firms, limiting the generalization of the findings.

Practical implications – The results of the research may encourage firms to use more narrative branding strategies. They also offer directions for the key elements to manage when elaborating a narrative strategy (defining key metanarratives, identifying and using broader sociocultural narratives, designing a transmedia strategy).

Originality/value – The paper is among the first to try to understand the structuration of narrative branding strategies. While exploratory, it contributes to research on B2B branding and digital branding by bringing the narrative into B2B branding research.

Keywords Narratives, Internet of things, Artificial intelligence, B2B brands, Transmedia

Paper type Research paper

1. Introduction

“Position: Marketing Storyteller – Digital Story
Company: Cisco France
Job Description
[... ] You will create engaging content which communicates our story and drives awareness and demand in France.
(Job Opportunity, posted on Cisco website, February 2017).

Like Cisco in the example above, technology firms (e.g. General Electric, Intel, IBM and Boeing) increasingly go beyond traditional functional or emotional communication strategies and use narratives to legitimize and institutionalize their technology products and markets. The ability to design compelling narratives is also crucial for smaller technology-based businesses to create an identity and attract investors (Törmäli and Gyrd-Jones, 2017; Wallnöfer and Hacklin, 2013). Brands are central assets for business firms (Dabirian et al., Forthcoming; Ducan et al., Forthcoming; Seyedghorban et al., 2016), but the understanding of the role of narratives in branding strategies is still limited. The rare investigations have tended to focus on the impact of narratives on, and their use by, audiences (Gilliam and Flaherty, 2015; Lowe and Hwang, 2012; Wallnöfer and Hacklin, 2013). Simakov and Neyland (2008) proposed a rare foray into the issue of narrative making in a business-to-business (B2B) context. However, they concentrated on the content of one dominant story. In other words, research on narratives has mostly taken a “molecular” approach, focusing on one story or one specific medium, often digital. Narratives are studied as a component of a specific advertising content. This focus fails to offer a comprehensive view of how the multiple elements making a narrative are combined and of the overall structure of narrative strategies.

The central questions of our research are: How is a B2B narrative strategy structured? What are the constituents of a
narrative strategy, and how are they assembled? What are the implications of a narrative approach for B2B technology firms?

To address these questions, we study the cases of two high-technology companies, often cited as exemplary in their use of narratives: Cisco and IBM.

We start by presenting the conceptual background of this research, drawing on branding and narrative theories. We then explain the methodology of our case study. Following this, we present two main results of our analysis: the creation of a rhizomatic narrative world, by simple variations on a single basic metanarrative; the use of transmedia strategy, characterized by a relative autonomy of the creation of narratives, which contrasts with the “adaptation perspective” that prevails in branding theory where only minor changes to the brand story are permitted.

2. Conceptual background

2.1 Business-to-business brands and narratives

Branding theories are evolving, and several scholars have highlighted the limitations of the so-called dominant “strategic brand management” approach and the benefits of a sociocultural approach incorporating narratives.

The first evolution proposes that brands are not merely conveyors of benefits, either functional or emotional (Leek and Christodoulides, 2011). They are also purveyors of meaning, which helps people or organization make sense of events and negotiate identities, especially when they experience tensions or contradictions (Diamond et al., 2009; Holt, 2002).

Another evolution is the recognition that brand meaning is constructed by and negotiated with multiple stakeholders. The monolithic, authoritative model of brand building and management should leave room for branding as a multilogue and “continuous stabilization” (Diamond et al., 2009; Stevens and Maclaran, 2007; Törmälä and Gyrd-Jones, 2017; Visconti, 2010).

Thus, branding should be approached as a myth-making process, in which brands are cultural narrators (Holt, 2003; Visconti, 2010; Woodside, 2010). This conceptual evolution is recent, and research in B2B is rare. While the narrative approach is beginning to gain support, this does not concern the audience (van Laer et al., 2014).

To offer a fine-grained explanation of various phenomena, organization studies, strategy and marketing researchers (Cayla and Arnould, 2013; Czarniawska, 2004; Fenton and Langley, 2011; Vaara et al., 2016) have resorted to narrative theory. In B2B marketing, research has focused on the innovation process (Araujo and Easton, 2012), investment decisions (Wallnöfer and Hackl, 2013), sales relationships (Gilliam and Flaherty, 2015), and the formation of identities within business networks (Lowe and Hwang, 2012).

However, the question of the narrative structure itself has rarely been studied, in spite of its importance (Bublitz et al., 2016; Preece and Kerrigan, 2015; Simakov and Neyland, 2008; Törmälä and Gyrd-Jones, 2017; van Laer et al., 2014; Visconti, 2010). The rare endeavors generally focus on a single, often digital, media or on the content of one specific narrative, aiming to identify the key features of a good story: characters (entities that act and react), temporality (chronological ordering of events) and causality (a causal link between events) (Bublitz et al., 2016; Visconti, 2010). Good choices for these features will induce emotional reactions and transportation in the audience (van Laer et al., 2014).

However, brands often deliver more than just one story through one media. The question of the overall structure of a narrative brand strategy has not been addressed. This requires the use and definition of additional concepts from narrative theory.

First, we need to clarify the concept of narrative and its difference from the concept of story, for they are often used interchangeably. We follow Porter Abbot (2015):

[...] narrative is the representation of events consisting of story and narrative discourse; story is an event or a sequence of events (the action); and narrative discourse is those events as represented.

More precisely, our unit of analysis is the narrative infrastructure (Araujo and Easton, 2012; Deuten and Rip, 2000) of the brands. Narrative infrastructure is defined as the
building blocks of and links between heterogeneous elementary stories (Araujo and Easton, 2012; Deuten and Rip, 2000).

We present below two further concepts that help to understand narrative infrastructure: metanarrative and transmedia.

2.3 Metanarratives and transmedia narratives

In marketing, metanarrative has mostly been considered as a set of stories that, when combined, constitute a master narrative that circulates in society and legitimizes one main idea (Davis and Francis, 2014; Firat and Venkatash, 1995; Thompson, 2004). This perspective has often been endorsed in marketing research (Firat and Venkatash, 1995; Thompson, 2004; Davis and Francis, 2014). In narrative theory, the concept of metanarrative centers on the narrative itself. It is also sometimes referred to as “master plot,” “master narrative” or canonical story (Porter Abbot, 2015). It accounts more simply for the myriad of forms a story can take and the incorporation of multiple stories into a broader and often simple story (Bublitz et al., 2016; Porter Abbot, 2015). In this sense, a metanarrative is part of the narrative infrastructure, but focuses on the relationship between a higher order narrative and smaller stories. As far as we know, only Bublitz et al. (2016) and Araujo and Easton (2012) have taken a systematic approach to the study of metanarratives in marketing contexts. Yet this concept is promising in that it offers a framework to explain the articulation between the multiple stories that firms tell about their brands or products and the construction of an overall brand identity. It accounts for the flexible, evolutionary, dynamic nature of stories and for the potential for multiple improvised stories to reinforce credibility (Araujo and Easton, 2012; Porter Abbot, 2015). Moreover, firms often create provisional stories to address particular issues and communicate with specific audiences. These provisional stories need to find a form of relationship with the overarching brand narrative (Vaara et al., 2016). Again, the concept of metanarrative helps account for this phenomenon. For example, Bublitz et al. (2016) show how the metanarratives of social impact organizations focus on their missions and act as umbrellas to other smaller stories of these organizations that make them more powerful. More generally, at the highest level of abstraction, metanarratives are simple and share a common basic structure. For social impact organizations, the metanarrative is “a social problem that leads to action” (Bublitz et al., 2016). In most of the stories, the fundamental metanarrative is a lack of something and the quest to get it (Porter Abbot, 2015). This is typically found in myths, which are specific types of society-level metanarratives. Myths are collectively constructed narratives of imagined events, whose aim is to give sense to and represent typical human experiences and to explain the origins and evolution of things (Campbell, 1991). Myths, like other narratives, provide explanations and help to solve contradictions and dilemmas (Campbell, 1991).

The other useful concept for our research objective is the concept of transmedia. Jenkins coined the term transmedia in 2003 after he observed the plethora of narratives told across an increased number of media platform. Jenkins et al. (2006, p. 46) define transmedia storytelling at the most basic level as “stories told across multiple media platforms.” Scolari (2009) adds that transmedia “is a particular narrative that expands through both different languages (verbal, iconic, etc.) and media (cinema, comics, television, video games, etc.)” and that it:

... is not just an adaptation from one media to another. The story that comics tell is not the same as that told on television or cinema; the different media and languages participate and contribute to the construction of the transmedia narrative world. This textual dispersion is one of the most important sources of complexity in contemporary popular culture (Scolari, 2009).

In line with our discussion about IMC above, transmedia is more adapted to the complex, evolving nature of brands considered as narrative worlds (Scolari, 2009). The stress is less on coherence and control of a message to be delivered to audiences than on the synergies between multiple complementary stories delivered in different ways that nurture the main narrative, exploring its different aspects. With a transmedia strategy, we study how a set of stories, delivered via multiple media, can create a common storyworld (von Stackelberg and Jones, 2014).

3. Methodology

The aim of this research is to analyze the assemblage of the elements comprising a narrative brand strategy, and the implications of this narrative approach for strategic level branding. Therefore, we used a case study because it is especially relevant in contexts where the aim is to increase understanding of a research area that has been explored only partially (Miles et al., 2014).

The two cases selected for this research were the narrative strategies deployed between 2012 and 2016 by two firms: IBM, for its artificial intelligence solution “Watson,” and Cisco for its Internet of Things solutions “Internet of Everything.” The first reason for these choices is that artificial intelligence and the Internet of Things were both emerging technologies (Paschen et al., Forthcoming; Paschen and Pitt, Forthcoming). Emerging technologies create a context of uncertainty and controversy, in which firms have to legitimize and give sense to their products. Moreover, the two firms have been pioneers in the use of narratives, using them continuously over recent decades, and have fully integrated narratives into their strategy. The last reason for this choice is that both companies are market leaders and dedicate significant resources to deploy a large array of narratives across different media. This offered us a comprehensive view of the possibilities and variations of narrative strategies.

Narratives can take multiple forms and are delivered across a variety of media. Narratives can be a TV commercial or a discussion between a salesperson and a potential customer, short or long, formal or informal. The data collected needed to account for this wide range of narratives. During the data collection phase, we tracked narratives wherever they appeared, the only condition for their integration being that they originated from IBM or Cisco. The main sources of data were official company internet sites: websites, company or employee blogs, official social media sites, official YouTube channels and company podcasts. We also collected data on information websites (business, technology or general press and blogs) as the companies also used these media to publish their narratives. Finally, we conducted observation and interviews at company locations and during events (e.g. technology fairs). We collected data for the period 2012-2016. The data collected took the form of videos (TV commercials, Web videos, video
The narrative strategies of B2B
Gaël Bonnin and Mauricio Rodriguez Alfonso

4. Findings
Two aspects of the two brands’ narrative strategies were of particular interest. The first is the assemblage of narratives around a key metanarrative and its articulation with existing sociocultural narratives. The second is the articulation of narratives broadcast via different channels, in other words, the transmedia strategy used by the brand.

4.1 Metanarratives and assemblages of narratives
4.1.1 Brand metanarratives, narratives and their articulations

Both Cisco and IBM produced several hundred narratives during the period of our investigation, each different from the others, telling a different story. Some of them were formal (video, ads) while others were informal (conversations during a show or between salespeople and prospects). In other words, each brand’s narrative world comprised a myriad of small, apparently loosely related, narratives (Table I shows selected examples of the narratives analyzed).

However, our analysis of narrative elements (Bublitz et al., 2016; Porter Abbott, 2015) revealed a single, simple metanarrative for each firm.

The Cisco metanarrative is:

- Humanity and individuals experience problems. Cisco has developed the Internet of Everything, a technological solution that enables entities (things, animals and humans) to communicate together. This technology solves the problems and creates a brighter future for humanity and for individual people.

The key elements of this metanarrative are:
- Characters: Cisco, Internet of Everything, organizations that implement Cisco solutions, individuals and humanity;
- Temporality: before using the Internet of Everything, after using the Internet of Everything; and
- Causal link: The Internet of Everything, developed by Cisco, solves societal or individual issues and creates a brighter future by making it possible for entities (human beings, objects).

The IBM metanarrative is similar to that of Cisco:

- Humanity or individuals experience problems. Watson artificial intelligence has skills that humans do not have, and wants to collaborate with humans. Using Watson improves users’ skills, helps solve the problems of humanity or individuals and creates a brighter future for its recipients.

The key components of the metanarrative are also close to those of Cisco:
- Characters: IBM, Watson artificial intelligence technology, organizations that implement Watson, individuals, and humanity;
- Temporality: before using Watson, after using Watson; and
- Causal link: Watson does some things better than humans do, collaborates with them to improve their performance and solve societal or individual issues and it also creates a brighter future.

These metanarratives are simple. They tell the story of a quest for a better life. As such, they are similar to most narratives, fairy tales or advertising campaigns. They are also similar to the narratives studied by Bublitz et al. (2016). However, the contrast with traditional B2B communication is interesting. The potential customer is not the main protagonist in the narratives and the benefits for society or final users are stressed more than the benefits for the customer itself. In addition, the narratives provide few technical details and do not explain how technology solves the problems they describe.

The consistency of these multiple narratives is to be found in how they are developed from the metanarratives. Metanarratives act like matrices: the narratives are produced by varying only selected elements of the metanarrative. In the narratives that we analyzed, the causal link was always the same. Temporality changed only occasionally, when, for example, the story was placed in the future (Cisco’s “Long wait” or IBM’s “Coping with humans”). The main source of variation originates in the character or combination of characters that use the technologies: organizations, individuals or humanity. Just changing these characters enables the development of multiple stories and situations, all within the
Table I: Metanarratives, variations in narratives and archetypical myths for Cisco and IBM

**Cisco metanarrative**

“Humanity or individuals experience problems. Cisco has developed the Internet of Everything, a technological solution that enables entities (things, animals and humans) to communicate together. This technology solves the problems and creates a brighter future for humanity and for individual people.”

<table>
<thead>
<tr>
<th>Name or source of the narrative</th>
<th>Story and notable characters (only characters that vary are mentioned, not the company and its solutions)</th>
<th>Selected illustrations of links to archetypical myth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tomorrow starts here/Anthem (1 min, video)</td>
<td>Depict what a future will look like, enumerating the issues humanity faces and how they can be solved</td>
<td>Gaian (“trees will talk to the network, will talk to a scientist about climate change”, several images of plants, animals and landscape)</td>
</tr>
<tr>
<td>Tomorrow starts here/Typical day (30 s, video)</td>
<td>Story of an injured cyclist saved by an ambulance connected to the Internet of Things</td>
<td>Appolonian (cities become organized, out of chaos, metaphorical use of light)</td>
</tr>
<tr>
<td>Tomorrow starts here/Warrior Weekend (30 s, video)</td>
<td>Story of a store facilitating the shopping of its customers</td>
<td>Appolonian (DIY shopping as a metaphor of chaos, network communications reduce chaos)</td>
</tr>
<tr>
<td>Tomorrow starts here/Banana story (30 s, video)</td>
<td>Story of a banana from the field to the plate and its trip on the supply chain</td>
<td>Gaian (nature is included in the network, banana speaks to the network)</td>
</tr>
<tr>
<td>Museums of the lasts/The long wait (15 s, video)</td>
<td>Story of a museum in the future showing waiting for lines as a problem of the past</td>
<td>Appolonian (dark colors for the past, chaos)</td>
</tr>
<tr>
<td>Customer cases/Barcelona (video, 3’50)</td>
<td>Story of the adoption of the Internet of Things solution by Barcelona</td>
<td>Appolonian (past city situation presented as chaos, network as the organization of the city)</td>
</tr>
<tr>
<td>Never Better/Connected Conservation (set of several videos)</td>
<td>Story of how Cisco solutions help protect rhinoceros in a South Africa reserve</td>
<td>Gaian (communication between animals, network and individuals protects nature)</td>
</tr>
<tr>
<td>Top executive at Cisco, public speech</td>
<td>GE installed sensors in the jet engines that provide knowledge about the performance of the engines, remote engine management and enabling optimized energy consumption</td>
<td>Appolonian (optimization and control of an uncontrolled situation)</td>
</tr>
</tbody>
</table>

**IBM metanarrative**

“Humanity or individuals experience problems. Watson artificial intelligence has skills that humans do not have, and wants to collaborate with humans. Using Watson improves users’ skills, helps solve the problems of humanity or individuals, and creates a brighter future for its recipients.”

<table>
<thead>
<tr>
<th>Name or source of the narrative</th>
<th>Story and notable characters (only characters that vary are mentioned, not the company and its solutions)</th>
<th>Selected illustrations of links to archetypical myth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watson at work/Airline Maintenance (30 s, video)</td>
<td>Story of how Watson can help improve airline maintenance</td>
<td>Appolonian (optimization of maintenance)</td>
</tr>
<tr>
<td>Conversation with Watson/Serena Williams (30 s, video)</td>
<td>Story of how Watson analyses information collected from previous tennis matches to create customized training programs</td>
<td>Appolonian (optimization of performance)</td>
</tr>
</tbody>
</table>

(continued)
same metanarrative (Table I). Thus, in the Cisco stories, characters include: a cyclist saved by a connected ambulance (“Typical day”), humanity (“Anthem”) and a banana that travels through the supply chain to offer a delicious desert on demand (“Banana story”). These stories also vary in size (from one sentence to several minutes) or in style (fiction vs documentary): IBM’s “Therapy sessions” is a science fiction video, featuring Carrie Fisher, who played in Star Wars movie, when IBM’s industry story with Honda mimics a report in a news magazine.

However, these variations do not impair the brand. On the contrary, by creating a rhizome-like or web-like structure, comprising elements bound together by their common link to the metanarrative, they enrich the brand world, enabling it to address multiple contexts (e.g. industries, functions) and concerns (uncertainty about the consequences of technological developments, resistance to change, barriers to adoption and clarity of benefits). As long as they are built from the same metanarrative, these multiple stories are mutually reinforcing and flexible: stories can vary but they remain consistent while addressing specific issues. The web of stories linked by the metanarrative is “liquid” and pliable.

Another characteristic of this rhizomatic narrative world created by the brand is its close connections with other types of discourses produced by the brand. The narrative and paradigmatic knowledge modes described by Bruner (1987) are entangled. Narrative discourses are incorporated into paradigmatic discourses (technical or business reports for example), narrative discourses refer to paradigmatic discourses and paradigmatic discourses refer to narrative discourses. Each of these types of discourses covers specific areas. The narrative world sets up the future as a spectacle, except that, as it is presented as inevitable, the distinction between reality and fiction tends to blur, but nonetheless induces emotion and gives meaning to events. For example, in Cisco’s “Typical Day,” it is not clear whether the connected ambulance already exists but the situation depicted (rescuing an injured person) demonstrates the benefits of the Internet of Everything. In IBM’s “Coping with Humans,” the situation is clearly unrealistic (a discussion between robots attending a therapy session) but it delivers a clear message that Watson is not like other (evil or stupid) robots. The paradigmatic discourse addresses practical concerns, offering detailed, apparently rational, information about the product itself. For example, a sales meeting at Cisco, which we observed, started with a narrative discourse evoking Cisco’s “Anthem” and continued with a discussion of the technological features of the Internet of Everything. An interview with a former key account manager confirmed that Cisco tried to link paradigmatic discourses to individual narratives in the videos.

4.1.2 Brand narratives articulation with sociocultural narratives

The brand world designed by the firms using a web of narratives is not closed. As pointed out by Holt (2003), successful brands know how to forge a deep connection with culture. The narrative world of each of the brands relates to other narratives, ideologies or discourses on technology that circulate on markets, in the media or in daily life. The two brands recycle existing narratives and try to counter others. And by doing so they further shape these narratives.

As alluded to in the previous section, Cisco and IBM spread similar metanarratives. They both present a utopian future offered by a technology that makes life easier and solves the problems that humanity faces today. Their webs of narratives are also entwined, reinforcing and vindicating each other. And this does not only concern these two companies. Similar metanarratives are used by most high-tech companies and start-ups. They all refer to an ideology of progress (Kozinets, 2008) or technology enchantment (Bailey, 2005; van der Laan, 2016).

However, pro-technology narratives are not the only ones circulating in the social sphere (Kozinets, 2008). Technology is paradoxical (Mick and Fournier, 1998), being both good and bad, an opportunity and a threat. This creates tensions for people and organizations. One example of this tension is the debate on artificial intelligence. Many experts, including Stephen Hawking, Elon Musk and even Bill Gates argue that

| Table I | Industry stories/Honda (2’30, video) | Story of how Honda, the car manufacturer uses Watson. The web of stories linked by the metanarrative, these multiple stories are mutually reinforcing and flexible: stories can vary but they remain consistent while addressing specific issues. The web of stories linked by the metanarrative is “liquid” and pliable. | Appolonian (optimization of production and control) |
| Therapy sessions/coping with humans (1’30, video) | Shows robots in a therapy group discussing with a therapist that confronts them with Watson, the source of their contempt being that Watson collaborates with humans. | Appolonian (negative robots are chaos, Watson is order) |
| Ginni Rometty IBM CEO, Keynote 2016 | “...let me thank you for helping us build the world of Watson. You just saw a glimpse of what this world will be, it will be safer, more secure, it will be healthier, more productive, more sustainable and that’s the world that I want to be in. I am more than optimistic and it isn’t a world of Watson, it is a world with Watson” | Appolonian (more order and control) |
| Wild Ducks/episode 10 (12’24, audio podcast) | Stories of African schools using cognitive systems to help shape the future of education | Appolonian (improves the functioning of a system often stereotyped as chaotic) |
A.I. is a threat that may end human ascendency. IBM is well aware of this debate:

[...] the moment you talk about artificial intelligence, they all think, “Ah, but it means my work is going to disappear and I’m going to fight people and there’s no work anymore, and machines take over’. In the end, artificial intelligence is not here to replace the things that we do today [...] or to replace the humans by machines (senior solution architect electronics at IBM).

One of the roles of the narrative world constructed by Cisco and IBM is to offer narrative resources to help people and organizations reduce the cultural tensions produced by the paradox of technology. Both firms resort to mythical archetypes to help customers and stakeholders give meaning to the uncertainty of the changing world (Thompson, 2004). The Cisco and IBM narratives use mostly two archetypical myths (Table I).

The first is the Gaian myth (Robert-demontrond and Özçaglar-Toulouse, 2011). In Greek mythology, the goddess Gaia personifies the Earth, and the myth highlights the mutual dependence between humanity and the earth. One recurring narrative in western societies is based on the opposition between technology and nature, with technology being seen as a threat to nature, humans and tradition (Kozinets, 2008; Thompson, 2004). Both companies use the Gaian myth to defuse such a negative view. Cisco’s “Anthem” regularly features images of nature and technology is even presented as part of nature: “trees will talk to networks that talk to scientists about climate change.” In IBM’s therapy session series, robots tell a psychotherapist that they are angry with Watson because it collaborates with a human. Watson is, thus, presented as “on the side of” humans and willing to “improve” them, unlike other robots, which at best replace them and at worst aim to destroy them. The two brands also use the Apollonian myth. In Greek mythology, Apollo is the god of light, defeating darkness and the forces of evil (Robert-demontrond and Özçaglar-Toulouse, 2011). In the Cisco and IBM narratives, technology is pictured as enlightening the world, both metaphorically and literally, by replacing chaos with rationality. For example, Cisco’s “Museum of the Lasts” series takes place in the future, in a museum where today’s problems (missed deliveries, traffic jams) are presented as if they belonged to the dark age of humanity.

The narratives created by Cisco and IBM relate and echo narratives that circulate in the social world, sometimes countering them and sometimes recycling them. As shown by Thompson (2004) and Holt (2003), the ability to tap into these ancient narratives is crucial when the goal is to help people make sense of uncertain events and to reduce cultural tensions. These ancient narratives are widely shared and understood by members of a society (Campbell, 1991), which facilitates the understanding of the firms’ narratives.

We have shown that the narratives of both firms are connected to a metanarrative and relate to sociocultural narratives. These narratives are abstract entities. Now, we analyze the materialization of these narratives via the media.

4.2 Transmedia strategy
4.2.1 Transmedia as creation not adaptation

Our analysis shows extensive use of nearly all the possible media (see Tables II for an overview of the two companies’ transmedia strategies), enabling them to address most stakeholders involved in Cisco and IBM businesses (customers, partners, suppliers, research institutes, governments, NGOs, etc.). Of more interest is how the media are used. Porter Abbot (2015) highlighted the difficulties of translating a narrative across media boundaries. Traditional branding strategy focuses on adapting a key message accurately across media (Visconti, 2010). However, IBM and Cisco focus more on creating narratives for each of the media than on adapting their message. Even if they adapt, they also undertake a process of “adaptation as creative destruction” (Porter Abbot, 2015), possible only because the strong metanarrative acts as an anchor. Coherence does not seem to be the Holy Grail here. The rhizomatic narrative structure is materialized in the transmedia strategy used, which results in synergies. For each media used, Cisco and IBM reinvent not only the content but also the tone and style of their stories. For example, Cisco imitated super hero comics to illustrate the Internet of Everything (“supersmart in the smartest cities”) and proposed various styles of videos: documentary (e.g. “successful customer cases”), comedy (“banana story,” “circular story”) and poetics (“anthem”). The transmedia strategy allows for apparently opposing actions (control and user-generated content; paradigmatic and narrative discourse; mass-communication and customization), making it possible to vary the genre (science fiction, comedy and documentary), the content and the length of the narratives.

4.2.2 Organizing for transmedia

Both firms support their transmedia strategy by developing skills and new partnerships that help orchestrate both the media strategy and the creation of narratives.

Both companies have created new positions focusing on the creation and management of narratives within dedicated divisions that work closely with marketing and top management. The example that opens our introduction is telling:

The marketing storyteller will be a Subject Matter Expert (SME), and a key member of the BMEAR Marketing team. This is a pivotal role within Cisco’s exciting new content marketing organization, and will involve working very closely with Content Managing Editors (CMEs), Customer Experience Managers (CXEs) and Content Marcoms Managers (CMMs), as well as global and local marketing, solutions marketing, sales and technical experts. (Job Opportunity, posted on Cisco website, February 2017).

IBM has a “creative narrative strategy leader” working with a team of “narrative developers” dedicated to the creation of narratives, a structure recalling the organization of cinema studios. However, the creation of new divisions and skills was not the only organizational change at the two companies. Staff, particularly senior executives, are trained in storytelling, so that the narrative branding strategy is not confined to media interactions; it also exists in human interactions. For example, one senior marketing manager at Cisco described himself as “corporate comedian” as much as marketing manager.

Both companies employ or work closely with experts from the cultural industries. Thus, Cisco partnered Bloomberg media to develop its video series. IBM works closely with TED, which helped construct conversations about innovation. Another example from IBM is the development of their podcast series entitled “Wild ducks.” The stories were developed by a freelance journalist hired to create and produce audio content telling stories of companies that used Watson for different purposes (food supply, supply chain, cognitive computing,
5. Conclusions and recommendations

The goal of this paper was to analyze the general structure of B2B narrative-based brand strategies. By analyzing the cases of IBM and Cisco, we have shown that the narrative world of brands comprises a plethora of little stories. These stories are based on a broader metanarrative, with a variation of characters and sometimes temporality. The causal link stays the same in every story. These stories are also inspired by broader narratives and myths that circulate in the sociocultural sphere. We have also shown that both Cisco and IBM use a transmedia strategy, in which they can re-create narratives, in addition to adapting them, across media. The narrative strategy of both firms is also supported by developing new skills in narrative design, either internally, by hiring staff trained in narrative writing or externally, by partnering with firms in creative industries.

One limit of this research is that we chose two firms from the high-tech industry, and that both companies have huge financial resources. The narrative strategy may not be the same in other industries or for smaller firms. Another limit is our focus on the story-provider side. We did not analyze how customers or stakeholders react to this narrative strategy. Nor did we study how customers or stakeholders contributed to the creation of the narratives. However, as mentioned before, our aim was to understand the structure of the brands’ narratives, not its creation or influence. The two cases chosen are exemplary because they successfully created a narrative-based

---

### Table II Overview of transmedia strategies at CISCO and IBM

**Cisco transmedia strategy**

**Videos**

<table>
<thead>
<tr>
<th>Science fiction style (40+ videos)</th>
<th>Two series of videos: depiction of a future with the Internet of Things</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tomorrow starts here (December 2012-June 2014) with three series (tomorrow starts here (10 episodes), museum of the lasts (4 episodes), the next wave of internet (5 episodes)</td>
<td></td>
</tr>
<tr>
<td>There’s never been a better time (may 2016, still running) with 3 series (There’s never been a better time (8 episodes), Reimagine (3 episodes), Connected conversations (3 episodes) and stand-alone videos (9)</td>
<td></td>
</tr>
</tbody>
</table>

**Documentary (BBC or Nature like) style**

<table>
<thead>
<tr>
<th>(hundreds of video)</th>
<th>Depicts a “real” case of adoption of Cisco solutions, although it is sometimes hard to tell the part of fiction and reality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer cases series</td>
<td></td>
</tr>
</tbody>
</table>

**Written documents**

<table>
<thead>
<tr>
<th>Documentary style</th>
<th>Customer cases (hundreds), research papers, research collaboration, white papers/reports</th>
</tr>
</thead>
</table>

**Conversation style**

<table>
<thead>
<tr>
<th>Fiction style</th>
<th>Interviews in journals (paper, web, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphic novel (comic) (2 episode)</td>
<td></td>
</tr>
</tbody>
</table>

**Oral communication**

<table>
<thead>
<tr>
<th>Documentary style</th>
<th>Public speeches (keynotes, conferences, TEDx and shows)</th>
</tr>
</thead>
</table>

**Conversation style**

| Private exchanges at shows, employee/stakeholder interactions (e.g. salesforce/customer), interviews |

**Physical/architectural communication (dedicated spaces in the physical world whose images can be (and usually are) broadcasted on any compatible media)**

<table>
<thead>
<tr>
<th>Live performing art style</th>
<th>Company incubators (e.g. Paris start-up incubators)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Exhibition/museum style</th>
<th>Demonstration spaces for technologies (e.g. Barcelona flagship space for smart city technology in 2014)</th>
</tr>
</thead>
</table>

**IBM transmedia strategy**

**Videos**

<table>
<thead>
<tr>
<th>Science fiction/humor style (11)</th>
<th>Therapy sessions for evil/stupid robots, upset by Watson collaboration with humans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapy sessions (11 episodes)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comedy/humor/biopic style (17)</th>
<th>Conversations between Watson and someone (usually a reference in his/her domain) Conversations with Watson (17 episodes)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Documentary (BBC or Nature like) style</th>
<th>Describe Watson, what it is, what it does and the consequences of using it</th>
</tr>
</thead>
<tbody>
<tr>
<td>(hundreds of video)</td>
<td>What is Watson? (7)</td>
</tr>
<tr>
<td>Watson at work (10+) (includes 360° videos)</td>
<td></td>
</tr>
<tr>
<td>Industry stories (hundreds)</td>
<td></td>
</tr>
</tbody>
</table>

**Written reports**

<table>
<thead>
<tr>
<th>Documentary style</th>
<th>Industry stories (hundreds), research papers, research collaboration, white papers/reports</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Conversation style</th>
<th>Interviews in journals (paper, web, etc.)</th>
</tr>
</thead>
</table>

**Oral communications**

<table>
<thead>
<tr>
<th>Documentary style</th>
<th>Public speeches (keynotes, conferences, TEDx and shows)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Podcast series Wild Ducks (10 episodes)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conversation style</th>
<th>Private exchanges at shows, employee/stakeholder interactions (e.g. salesforce/customer), interviews</th>
</tr>
</thead>
</table>

---

connected cars, data security, business intelligence, personalized medicine, mobile banking and education).
brand world, which we describe. The question of the financial or even sales relevance of such a strategy will need to be addressed in future research.

While acknowledging the limits of our research, we see the following contributions to the B2B branding literature.

First, recent work on B2B branding has offered a new perspective on brands, showing that they were better considered as “gestalt,” “multilogue” or even polyphony (Diamond et al., 2009; Holt, 2002; Törmälä and Gyrd-Jones, 2017; Visconti, 2010). The question this approach raises is: if a brand is a polyphony, what holds it together? How is the shared understanding of its sense guaranteed? What is its coherence? Our two cases support the findings of Bublitz et al. (2016) in a B2B context, showing that the “glue” for the polyphonic brand is its metanarrative. However, we go further, by detailing the process that links the metanarrative to the smaller stories. Limited changes to selected elements to the structure of the metanarrative (characters, temporality), and consistency in others (causal link), hold the little stories together and preserve the coherence of the brand world, while allowing the possibility of variation, and hence, flexibility.

Our research also extends previous research on the use of myths in marketing (Preece and Kerrigan, 2015; Stevens and Maclaran, 2007; Thompson, 2004) in the B2B context. B2B firms also use myths as a resource for their business customers. Cisco and IBM use ancient myths to try and reduce the tensions raised by the uncertainty their innovative technology products induce. One interesting point is the recycling of archetypical myths considered as opposed to technology. Several IBM and Cisco narratives echo the ancient Greek myth of Gaia and aim to counter the narrative of “technology as the destruction of the natural” (Kozinets, 2008). The analysis of myths is also an important way to understand B2B brands.

Our final contribution lies in the use of the concept of transmedia. IMC research has tended to detail the process of integrated communication or, in its cross-media subsection, the media used. Little research has investigated the message itself and its cross-media variations. The dominant view is often a “one voice,” “one sound” and “one sight” approach (Orazi et al., 2017; Šerčić, 2017). As mentioned above, we have seen how metanarrative is a key concept to understand how brands can offer variations in their narratives while preserving coherence. The concept of transmedia is another central concept. It is the twin of cross-media but for the message. Narratives are not only adapted to different media but also are often re-created for specific media. Narratives vary considerably in form, style and content across media. Transmedia analysis allows firms to break free from the rigid view of the brand message often implicitly conveyed by IMC. It is closer to new brand realities and the multiplication of new kinds of media.

At the managerial level, we believe our research can inform B2B brands, especially smaller ones, on how to design their narrative strategies. Narratives are important for B2B firms, especially in the technology industry, where the ability to reduce uncertainty and make sense of innovation is crucial to company growth. Our analysis of IBM and Cisco provides managers with a number of steps to follow when developing their narrative strategies. First, create a metanarrative by identifying key characters (the firm, customers and other stakeholders) and a causal link (how the firm’s product solves a problem). While seemingly obvious, this step is essential, for it is the heart of the brand. Then, firms can decide how to vary its narratives to create a myriad of small stories that will be delivered across channels. They also can identify potential counter-narratives, by monitoring the press and social media, and obtain inspiration from classical myths, from the lists we alluded to above, to counter the counter narratives. Another managerial lesson is the cohabitation of the two types of discourses, namely, narrative and paradigmatic. A narrative only strategy may be a mistake. Our findings show that an important feature of the narrative strategies of the two brands is their ability to mix narrative and paradigmatic discourse. The narrative strategy does not oppose other types of discourses. Its strength lies in its ability to incorporate other types of discourse.

References


Bailey, L.W. (2005), The Enchantments of Technology, University of IL Press, Champaign IL.


What makes the difference? Employee social media brand engagement

Sherese Y. Duncan
Luleå University of Technology, Luleå, Sweden

Raeesah Chohan
Luleå University of Technology, Lulea, Sweden and Department of Management Studies, University of Cape Town, Cape Town, South Africa, and

João José Ferreira
Department of Management and Economics and NECE- Research Unit in Business Sciences, University of Beira Interior, Covilhã, Portugal

Abstract

Purpose – This paper aims to explore, using the employee lens of business-to-business firms, word use through brand engagement and social media interaction to understand the difference between employees who rate their employer brands highly on social media and those who don’t.

Design/methodology/approach – We conducted a textual content analysis of posts published on the social media job evaluation site glassdoor.com. LIWC software package was used to analyze 30 of the top 200 business-to-business brands listed on Brandwatch using four variables, namely, analytical thinking, clout, authenticity and emotional tone.

Findings – The results show that employees who rate their employer’s brand low use significantly more words, are significantly less analytic and write with significantly more clout because they focus more on others than themselves. Employees who rate their employer’s brand highly, write with significantly more authenticity, exhibit a significantly higher tone and display far more positive emotions in their reviews.

Practical implications – Brand managers should treat social media data disseminated by individual stakeholders, like the variables used in this study (tone, word count, frequency), as a valuable tool for brand insight on their industry, competition and their own brand equity, now and especially over time.

Originality/value – This study provides acknowledgement that social media is a significant source of marketing intelligence that may improve brand equity by better understanding and managing brand engagement.

Keywords Brand engagement, Social media, Business-to-business

Paper type Research paper

1. Brand engagement and brand equity

Brand equity, often referred to simply as the “value of a brand”, or, as Keller (2012) views it, a customer’s awareness of a brand’s features and associations, is a critical indicator of the success of a firm’s marketing strategy. Effective marketing strategies are those that successfully increase brand equity, and it follows that this impacts the overall value of a firm (Dutordoir et al., 2015; Hsu and Lawrence, 2016; Rahman et al., 2018; Vomberg et al., 2015; Voss and Mohan, 2016). A key driver of brand equity, in turn, is brand engagement, a concept that has gained much attention in the recent marketing literature (Schivinski et al., 2016; Baldus et al., 2015; Brodie et al., 2011; Brodie et al., 2013; Graffigna and Gambetti, 2015; Hollebeek et al., 2014). Brand engagement has been conceptualized as the extent to which stakeholders involve or commit themselves emotionally to or with the known identity of an organization in terms of what products and services it offers, as well as the essence of what the organization stands for in terms of service and other emotional, non-tangible stakeholder concerns (Pitt et al., 2017; Kumar and Pansari, 2016; Sprott et al., 2009).

The advent of social media in the early years of the century changed the nature of brand engagement considerably. Now stakeholders as varied as customers, suppliers, employees and investors, have additional channels that offer increased bandwidth, and access to far larger audiences (Paschen & Pitt, forthcoming). The best-known social media include the social networking platform Facebook, the micro-blogging website Twitter, and the video-sharing website YouTube. However, there are also more specialized social media platforms such as the travel and hospitality platform TripAdvisor, the picture-sharing platform Instagram and the ephemeral content sharing platform, Snapchat. There are also social media platforms with more of a business-to-business slant, including the peer-to-peer platform LinkedIn, and the job description and employer evaluation site Glassdoor.com. Not only do users of these social media share personal information with each other, they also comment on, contribute to, and share opinions on
the brands that engage them (Berthon et al., 2012; Kietzmann et al., 2011).

The literature is extensive on brand engagement and social media. However, while brand engagement is about a brand’s interaction with all stakeholders, two observations are clear on the extant research. First, the research focuses almost entirely on brand engagement between businesses and private consumers (B2C) rather than on the industrial and organizational customers of business-to-business (B2B) firms or their stakeholders. Second, the emphasis is almost exclusively on customers, rather than other stakeholders such as employees, suppliers and investors. The research presented in this paper focuses first on brand engagement in B2B firms rather than B2C. It also focuses on a stakeholder group other than customers, namely, the employees of B2B firms. Moreover, it does this through the employee lens, rather than the lens of the firm; it explores how employees engage with firms rather than how firms engage with their employees. Thus, the overall objective of the study in this paper is to explore whether there are differences in brand engagement, as revealed in posts on the employer review site Glassdoor.com, between highly rated employer brands and low-rated employer brands.

The paper is structured as follows: First two bodies of literature are briefly considered, namely, stakeholder engagement with brands on social media, and the literature from linguistic psychology on what written text can tell us about the psychology of the author at the time of writing. Next, an empirical study of the reviews on a social media website of their employers by employees of B2B firms is described. Then, the results of the study are reported and discussed. The paper concludes by acknowledging the limitations of the research, considering the implications for brand management in the B2B environment, and identifying avenues for future research.

2. Social media and brand engagement

According to Berthon et al. (2012), Web 2.0 has had two main consequences of importance to marketers: First, it has given rise to what has been termed “social media”, and second, it has allowed the phenomenon that has been termed “user generated content” (content created by individuals such as customers and employees, rather than firms or organizations) to flourish. These authors contend that Web 2.0 technologies have caused three effects:

• a shift in locus of activity from the desktop to the Web, and therefore also to other devices such as smartphones and tablets,
• a shift in the locus of value production from the organization to stakeholders, and
• a shift in the locus of power away from the organization to the individual.

Thus, while social media comprise both the conduits and the content disseminated through interactions between individuals and organizations (Kietzmann et al., 2011), it is overwhelmingly produced by individuals rather than organizations.

The evolution of social media and its role in marketing have been thoroughly explored by Lamberton and Stephen (2016) in a recent review article, with reference to social media’s capability to engage with consumers. Using keyword counts from the premier general marketing journals, these scholars track the changes in academic perspectives that have occurred, to gain a macro-level view of the shifting importance of topics related to social media since 2000. Two key themes that emerged from this research are first, the role of social media to facilitate individual expression, and second, social media as a source of market intelligence. Stated differently, the implications are first, that marketers should understand social media as a vehicle for brand engagement because stakeholders will use it to express themselves and their perspectives on brands. Second, that these expressions of self and brand engagement will be a valuable source of information for marketing decision makers. Social media strategies cannot be copied from one organization to another; what B2B employees say about their organizations in social media such as Glassdoor needs to be understood by these organizations (Keinänen and Kuivalainen, 2015). Furthermore, this content becomes a valuable source of information for marketing decision makers, as well as an interesting and rich new source of data for B2B marketing scholars. For the B2B marketing practitioner, insights derived from social media can achieve a variety of business objectives, including increasing efficiency of communication and transaction exchanges, providing brand related information to build brand awareness, improve brand attitude, and possibly increasing sales through purchasing intentions (Järvinen et al., 2012).

The management literature has long asserted, “that brands and human capital constitute some of the firm’s most important assets” (Wilden et al., 2010, p. 57). More recently, Vomberg et al. (2015) have argued that while there have been separate streams in the marketing and human resources management literatures focusing on these two forms of capital as valuable assets (Farjoun, 1994; Mizik and Jacobson, 2008), this limits our understanding of their potential inter-dependencies and contingencies. There is a need to study both in concert, for each impacts the other: Strong brands influence employees in a positive manner, and by living the brand, employees enhance it in the eyes of other stakeholders, especially customers.

Specifically, in the context of the research presented in this study, namely, the use of the social media job evaluation site Glassdoor.com, Dineen and Allen (2016) contrast the large number of social media sources enabling comparisons for consumers (e.g. TripAdvisor) with those facilitating evaluations for job seekers. These authors argue that rankings of “best-places-to-work” and similar sources of information (almost entirely user generated content) are “a proliferating form of third-party employment branding” (p. 91). They also plead for a greater empirical and theoretical understanding of how these sources of employment branding impact key human capital outcomes. Their extensive research finds that high ratings by employees on social media such as Glassdoor are associated with lower staff turnover rates, as well as higher quality applicant pools for vacant positions. A key research question suggested by these findings is: to explore differences in the interaction of those employees who rate their employer brands highly on social media versus those who don’t? The primary aim of this paper is to shed light on these issues.

3. Automated text analysis: insights from linguistic psychology

Content analysis is a systematic and objective research method that describes and quantifies inferences from text (Weber, 1994).
It is a common term used for a range of techniques for gathering and analyzing text of various formats. Not surprisingly, social media has caused massive volumes of textual data to be produced. The sheer volume and velocity of data produced today, and as a result are available to marketing researchers, makes manual content analysis futile at best, and mostly, impossible to conduct. As Humphreys and Wang (2017, p. 1274) point out, “Researchers, consumers, and marketers swim in a sea of language, and more and more of that language is recorded in the form of text.” Fortunately, the recent past has not only seen a significant rise in the amount of unstructured textual data available to researchers, but also a noteworthy increase in the number and sophistication of tools available to perform textual content analysis using computers. These range from software that relies on supplied- or user-created dictionaries, such as WordStat (Pitt et al., 2007) and DICTION (Short and Palmer, 2003, 2008; Paschen et al., 2017), to packages that produce graphic output that users then need to interpret, such as Leximancer (Campbell et al., 2011), and more recently, artificial intelligence systems such as IBM’s Watson (Pitt et al., 2018; Treen et al., 2018; Kietzmann et al., 2018).

Some psychologists have argued that the words people use to express their thoughts and ideas, and to communicate in everyday life, say a lot about their psychological and social worlds, as well as their social status, motives, and even gender and age (Pennebaker et al., 2003). While qualitative language scholars might contend that language can only be studied in context, others (Popping, 2000; Smith, 1992; Weber, 1994; West, 2001) have countered that the features of language and words can at least be counted, and therefore statistically analyzed.

One of the major computerized text analysis tools in use today is LIWC (Linguistic Inquiry and Word Count), the development of which is described by Pennebaker and his colleagues (Pennebaker et al., 2001). Originally designed to discover which features of writing about negative life experiences could predict subsequent health improvements (Pennebaker and Francis, 1996), the tool's use has since been expanded to analyze text in sources as varied as classical literature, personal narratives, press conferences, and transcripts of everyday conversations (Pennebaker and Graybeal, 2001).

The LIWC software is quite simple in concept, and to use it reads a piece of text and counts the percentage of words that reflect different emotions, thinking styles, social concerns, parts of speech and even punctuation if required. LIWC then compares each word in the text against a user-defined dictionary and the dictionary identifies which words are associated with which psychologically relevant categories. The software calculates the percentage of total words that match each of the dictionary categories, and the researcher can use these data for subsequent statistical analysis. At the heart of the program is a group of dictionaries that tell the text analysis module which words to identify and classify (the master dictionary is composed of almost 6,400 words, word stems and even selected emoticons).

For this study, we focus on four summary variables that LIWC calculates for a piece of text, namely, analytical thinking, clout, authenticity, and emotional tone. Each of the summary variables are algorithms constructed from different LIWC variables based on previous language research (Pennebaker et al., 2015). The numbers are standardized scores that have been converted to percentiles (based on the area under a normal curve) ranging from 0 to 100. These variables can be summarized as follows:

### 3.1 Analytical thinking

This dimension captures the degree to which people use words that suggest formal, logical and hierarchical thinking patterns (Pennebaker et al., 2014).

### 3.2 Clout

This dimension refers to the relative social status, confidence or leadership that people display through their writing or talking (Kacewicz et al., 2014).

### 3.3 Authenticity

When people reveal themselves in an authentic or honest way, they are more personal, humble and vulnerable. The algorithm for Authenticity was derived from a series of studies where people were induced to be honest or deceptive (Newman et al., 2003).

### 3.4 Tone

The Tone dimension combines scores for words expressing positive emotions and scores for words expressing negative emotion into a single summary variable, so that the higher the number, the more positive the tone (Cohn et al., 2004). This is in some ways akin to the sentiment variable (Turney, 2002) used in a lot of content analyses of social media textual data nowadays.

### 4. A study of online employee brand engagement: methodology

The overall objective of the research described in this paper was to determine whether there were significant differences between the words used by employees who rated their employer brands highly, and those of employees who rated their employer brands as low. More specifically, the study investigates to what extent employees who rate their employer brands highly differ significantly on the LIWC dimensions of analytical thinking, clout, authenticity and tone, from those who rate their employer brands as low.

This research was conducted using the publicly available data found on the employer review site Glassdoor.com. Like most social media, Glassdoor is not bound to a country—employees from all over the world are able to access it and post content on it in the form of reviews, questions and ratings. It has become the job market equivalent of the social media travel website TripAdvisor – most of the content is generated by users, not by firms themselves. The firms chosen for the research were selected from a study by Brandwatch (2015) using its social media monitoring platform Brandwatch Analytics. The Brandwatch report uses this platform to search for mentions of a B2B brand from over 90 million web sources such as news portals, social networks, blogs and forums. Brandwatch then ranks the top 200 B2B brands according to their social media presence. We chose the top ranked and bottom ranked 30 firms as the subjects to be studied. It should be emphasized that, as a result of our selection method, all the...
brands belong to the top 200 brands. In other words, the top brands picked (ranks 1-30) have the strongest social media presence; however, even the bottom companies chosen here (ranks 171-200) outrank many other brands. Our intention was to analyze the differences between brands with relatively strong and weak social media presences, not to compare the absolute best with the absolute worst brands.

Targets were set for the following:

- To identify 100 5-star reviews on Glassdoor from each of the 30 top ranked and each of the 30 bottom ranked B2B firms according to Brandwatch (2015). In other words, in total, 3,000 reviews of the highly ranked B2B firms with 5-star ratings, and 3,000 reviews of the lowest ranked B2B firms with 5-star ratings were sought.

- To identify 100 1-star reviews on Glassdoor from each of the 30 top ranked and each of the 30 bottom ranked B2B firms according to Brandwatch (2015). In other words, 3,000 reviews of the highest ranked B2B firms with 1-star ratings, and 3,000 reviews of the lowest ranked B2B firms with 1-star ratings were sought.

As it turned out, these targets could not be met entirely, because not all the firms (both highest- and lowest ranked) had 100 5-star ratings and/or 1-star ratings. Therefore, as many as possible reviews were identified in each case: For the highest ranked firms, 2,315 5-star and 1,983 1-star reviews; for the lowest ranked firms, 1,013 5-star and 1,025 1-star reviews were identified. Thus, while the targets were not met, the study still ended up with large samples of reviews in all four instances, as shown in Table I below.

Each of the reviews identified on Glassdoor was “scraped” – captured by copying and pasting the words from the review – into a separate text file. The text files were then separately labeled and then classified either as 5-star or 1-star reviews. This activity prepared the data for the next step in the analysis process, namely, examination by the LIWC software to compute the four dimensions referred to above. All the reviews – a total of 6,336 – were then simultaneously read and analyzed by the LIWC content analysis software package. Following the data processing by LIWC, the data were transferred to a spreadsheet file, from which it could be checked for correctness and cleaned to eliminate unnecessary or superfluous columns. The spreadsheet could then be used by statistical software, in this case JMP.

5. The results

To explore the differences between employees who rate their employer brands highly and those who rate them low on Glassdoor, we ran a series of one-way ANOVAs on the total word count used in the reviews as well as the key LIWC dimensions of Analytic, Clout, Authenticity, and Tone. These are presented and discussed in more detail below.

Table I Summary of total 1- and 5-star reviews gathered

<table>
<thead>
<tr>
<th>Rank</th>
<th>1-star reviews</th>
<th>5-star reviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 30 brands</td>
<td>1,983</td>
<td>2,315</td>
</tr>
<tr>
<td>Bottom 30</td>
<td>1,025</td>
<td>1,013</td>
</tr>
<tr>
<td>Total</td>
<td>3,008</td>
<td>3,328</td>
</tr>
</tbody>
</table>

5.1 Word Count

As can be seen in the ANOVA presented in Table II below, employees who rate their employer brand low (1-star) use significantly more words than do those who rate their employer brand highly (5-star). Indeed, employees who only award the brand a 1-star rating use more than twice as many words on average (109 words) than do those who rate the brand highly (only around 46 words).

5.2 Analytic

The results for the dimension of Analytic are presented in Table III. The extent to which text is analytic refers to the degree to which people use words that suggest formal, logical and hierarchical thinking patterns. LIWC calculates the analytic dimension as an index of the number of articles, prepositions, personal pronouns, impersonal pronouns, auxiliary verbs, adverbs, conjunctions and negations in text, which Pennebaker et al. (2014) also refer to as function words, in relation to the entire corpus. These authors have, for example, established that students who used a higher proportion of function words (such as greater article and preposition use and referenced complexly organized objects and concepts) in their college application essays scored higher grades. Students who achieved lower grades used more dynamic language (i.e. personal narratives) in their essays. This is obviously not to suggest that there are intellectual differences between those that rate brands low and those that rate them high. Rather, when employees rate brands low they tell personal stories when they talk about these brands, while those who rate brands highly write in a more organized fashion.

5.3 Clout

The results for the dimension of Clout are presented in Table IV. Clout refers to the relative social status, confidence or
leadership that people display through their writing or talking, and is based on the results from a series of studies where people were interacting with one another (Kacewicz et al., 2014). These authors found that people with higher status consistently used fewer first-person singular (“I”), and more first-person plural (“we”) and second-person (“you”) singular pronouns. Furthermore, the research found that status is associated with attentional biases, such that high rank is linked with other-focus while lower rank is linked with self-focus. In simple terms someone with a higher clout score would be more likely to focus on others than someone with a lower clout score, who would be more likely to focus on themselves.

As can be seen from Table IV, employees who rated their employer brand low scored significantly higher on clout than did those who rated their employer brand highly. One could speculate whether this is linked to self-perceived status differences, or perhaps more likely, whether employees who rate their employer brand low are more other-focused than the more self-focused employees who rate their employer brand highly.

5.4 Authenticity
The results for the dimension of Authenticity are presented in Table V below. Authenticity refers to the extent that people reveal themselves in an authentic or honest way, and the degree to which they are more personal, humble and vulnerable. The algorithm for Authenticity was derived from a series of studies where people were induced to be honest or deceptive (Newman et al., 2003) as well as a summary of deception studies published in the years afterwards (Pennebaker, 2011). The latter author refers to the differences between formal and informal writing. The former, he argues, “often appears stiff, sometimes humourless, with a touch of arrogance. It high rates of articles and prepositions but very few I-words[...](p. 44).

Among the characteristics that those who write more formally display is a tendency to be less honest. Thus, those who score highly on authenticity tend to be more honest and humble. As can be seen from Table V, employees of firms who rate their employer brands highly score significantly higher on authenticity than those who score their employer brands low.

5.6 Tone
The results for the dimension of Tone are reported in Table VI. LIWC combines the scores for the positive and negative emotions expressed in a piece of text into a single variable called emotional tone. Emotional tone is scored on a 100-point scale, with any score under 50 viewed as a more negative emotional tone. Not surprisingly the reviews by employees who awarded their employer brands five stars score significantly higher on tone than do those who only rated their employer brand as a 1-star. However, as can also be seen from Table VI, most employees who rated their employer brands as a 1-star were reasonably positive (mean = 63.53) on tone.

6. Discussion
Social media is the online equivalent of conversations human beings encounter every day; this is a powerful source of facilitating evaluations for job seekers in relation to their work environment, brand perception and firm authenticity. B2B marketers, specifically, industrial marketing scholars and practitioners, can potentially gather valuable information from customers and job seekers by establishing a communication link through their employees (Keinänen and Kuivalainen, 2015). The aim of this study was to shed light on sources of employment branding, namely, social media, and how they impact key human capital outcomes. Our key objective was to study what B2B employees say about their employer brands on social media as a valuable source of marketing intelligence for B2B marketing scholars and practitioners. The results show that employees who rate their employer brands low use significantly more words in their online reviews of these brands. They are also significantly less analytic in their reviews, probably because they tell more personal stories, and write with significantly more clout, because while they may focus more on personal stories, they also focus more on others rather than themselves (Bonnin and Rodriguez, forthcoming). In contrast, employees who rate their employer brands highly write with significantly more authenticity, which suggests that they might be honest and humble in their reviews. Finally, and not surprisingly, employees who rate their employer brands highly
exhibit a significantly higher tone and display far more positive emotion in their reviews.

7. Implications, limitations and future research

7.1 Managerial implications

Our sample here included B2B firms of different sizes and from different industries. Thus, our findings are rather general in nature. However, industries and sectors vary dramatically, and managers can use industry-specific employee reviews and ratings to understand how employees comment on their employers, and to gauge what they care about based on how they express themselves online.

In their study of Glassdoor reviews, Dabirian et al. (2017) for example, found interesting differences between how companies operating in the IT industry, with its demand for highly skilled and loyal employees, are perceived to treat their personnel compared to companies operating in the hospitality industry, with its churn and seasonal labor fluctuations. We expect that there are similarly significant differences with respect to analytical thinking, clout, authenticity and tone across industries. For instance, our general findings were that those who rated a company highly scored higher on authenticity than those who rated a company low. However, it might well turn out that in specific industries, honest and humble employees might be the ones who rate a company low – possibly suggesting that their feedback should be taken seriously by managers.

Similarly, on an even more granular level, managers can compare how their brand fares against competing brands. Are others’ employees equally analytical, or show less or more logical or hierarchical thinking patterns? Do they speak with the same clout? Are the distributions similar, or possibly diametrical opposites? When, for instance, employees write their negative (e.g. 1-star) reviews about a firm in an organized fashion (rather than simply posting unorganized stream of consciousness outbursts), others might pay more attention to them. Managers might want to analyze such postings in more detail, whether they are about their own, or the competition’s brand.

Additionally, the combined lessons one can learn from each of the variables add further brand insight. If, for instance, former or current employees write reviews in a highly analytical and organized fashion AND have a high clout score, their social media postings are likely more impactful than if the opposites were true. Once tone, word count and frequency are added to the equation, managers might see, for instance, that a lot of rants and raves” that can be ignored, but instead to value the brand-specific insights they can gain about their industry, their competition and own brand, especially over time. Longitudinal studies could prove to be especially useful.

7.2 Limitations

This study has four notable limitations. First while Glassdoor is probably the largest social medium focused on employer reviews of their employer brands, there are other sources of similar data, and these were not considered here. For example, many members of the social medium LinkedIn very frequently post comments on their past- and present positions, frequently in even greater detail than those on Glassdoor, and without necessarily rating them. These types of social media might provide a different perspective on social media brand engagement by B2B employees. Second, our source of a data set for B2B employer brands was Brandwatch. Brandwatch conducts rankings for commercial purposes, and not for purposes of academic research. This study might have obtained different results had it used another source of B2B brand rankings. Third, while LIWC and Pennebaker and his colleagues’ work on language analysis offers a solid conceptual framework and means for analyzing text, in the way it was used here, the research was constrained to using four dimensions, and word count only. Fourth, Glassdoor relies on voluntary contributions from employees, and the posts may be skewed towards extreme comments. Just as hotel guests who fill in-room questionnaires tend to do so because they either hate or love the hotel, and not because they are just satisfied, there is a possibility that employees who submit 1-star reviews are very, very unfavorable toward their employer, and those who write 5-star reviews really love their jobs. This research only looked at extremes (one and 5-star reviews), and so does not account for the whole spectrum of reviews that are present on Glassdoor.

7.3 Avenues for future research

Several avenues for future research could stem from this work. First, while the research tells us what employees are saying, it does not tell us more about why they are saying it. Future research could combine the LIWC analysis employed here with depth interviews or focus groups that dug deeper into the motivations for B2B employees’ engagement with these brands, perhaps by focusing on those employees who responded at the extremes, either low or high, of the four dimensions of analytic, clout, authentic and tone. In this way, for example, it would be possible to probe deeper into the feelings of an employee who scored at the extreme low of the analytic dimension, of at the extreme high on the dimension of tone.

Second, while the study has used LIWC’s predefined master-corpus to gauge analytic, clout, authentic and tone, LIWC also has the facility for the user to also define and employ their own dictionaries instead. Users might be interested in doing so, probably with reference to other important dimensions of study in either marketing or management in general, and to explore the relationships between the fundamental dimensions analyzed in this study and other variables of interest.

Other content analysis software, such as DICTION, Leximancer or IBM’s Watson could also be applied to analyze employee reviews of B2B brands, and these could be compared to LIWC data. For example, Leximancer provides detailed graphic maps of texts, which highlight the main concepts that appear in a piece of text. For example, Robson and her colleagues (Robson et al., 2013) used Leximancer to analyze the text contained in a large number of smartphone game apps to compare the differences between 1- and 5-star reviews.
Finally, the fact that LIWC produces numerical data means that this can be used to position of objects and characteristics in a multidimensional space. For example, 1- and 5-star reviews could be used as columns and the LIWC dimensions could be used as rows as input to a correspondence analysis procedure (Bendixen, 1995; Greenacre, 2007; Hoffman and Franke, 1986) that would permit these to be displayed graphically so that further conclusion and inferences could be drawn.

8. Conclusion

Brand engagement drives brand equity, and brand equity is not only a significant indicator of marketing effectiveness, it is also a fundamental driver of firm value. Understanding brand engagement nowadays needs special attention by brand management to what stakeholders are saying in social media, for social media has for many stakeholders become the primary platform on which they can engage with the brand. This is true for B2C and B2B firms alike and is as relevant to other stakeholders such as investors, suppliers and employees as it is to customers. As noted, according to Lamberton and Stephen (2016) social media facilitates individual expression for an organization’s stakeholders. As a result, social media has also become a significant source of market intelligence for all those with an interest in brand engagement. Are there differences between those who rate their employer brands highly and those who rate them low? This research demonstrates that there are several significant differences and armed with powerful automated text analysis tools, practitioners and scholars alike can tap a rich source of data to better understand and manage these differences, and better understand and manage brand engagement.

References


About the authors
Sherese Y. Duncan, BS, MBA, is a PhD candidate at Luleå University of Technology. Her research interests are focused on entrepreneurial cognition and behavior, innovative marketing, economic intelligence and social power relationships. Duncan is also President and CEO of Efficiò, Incorporated, an entrepreneurship education company; her outreach efforts are...
dedicated to serving higher education institutions with transformative curriculum, pedagogical support and academic rigor. Sherese Y. Duncan is the corresponding author and can be contacted at: sduncan@efficio.org

Raeesah Chohan (M.Bus.Sci in Marketing) is a PhD candidate at Luleå University of Technology, Sweden. Her research interests include theory development, principal-professional agent relationships, opportunistic behavior, and entrepreneurial marketing. She is a marketing lecturer at the University of Cape Town, South Africa.

João José Ferreira (PhD in Management) is Associate Professor at the University of Beira Interior (UBI)– Portugal. He holds a PhD in Entrepreneurship and Small Business Management from the Autonomous University of Barcelona (UAB), Spain. Currently, he is Scientific Coordinator of NECE – Research Centre in Business Sciences. His research interests include strategy, competitiveness and entrepreneurship. He is Editor and Reviewer Board of some International Journals, author of some books and he has published extensively in a variety of leading journals.
Blurring the borders between B2B and B2C: a model of antecedents behind usage of social media for travel planning

Atanu Nath  
Department of Business Administration, Hogskulen pa Vestlandet – Campus Sogndal, Sogndal, Norway and  
Department of Business Administration, Technology and Social Sciences, Luleå University of Technology, Luleå, Sweden  
Parmita Saha  
Department of Business Administration, Hogskulen pa Vestlandet – Campus Sogndal, Sogndal, Norway, and  
Esmail Salehi-Sangari  
Department of Business Administration, Technology and Social Sciences, Luleå University of Technology, Luleå, Sweden and  
Department of Industrial Economics and Management, Kungliga Tekniska Hogskolan, Stockholm, Sweden

Abstract

Purpose – The purpose of this paper is to call for a scrutiny of the dualist approach to business-to-business (B2B) and business-to-customer (B2C) marketing in industries driven by consumer-generated content. It posits that individual consumer-centric factors are influential for B2B marketing as well in sectors such as the travel industry and investigates the determinants of tourists’ intention to use social media websites for travel planning.

Design/methodology/approach – Integrating constructs from IS and marketing literature, the paper proposes information quality and perceived enjoyment as antecedents of perceived usefulness, attitude and intention to use. The research model is tested using data from social media users with experience in travel planning.

Findings – Results show that perceived usefulness and information quality are stronger predictors of attitude and behavioral intention than perceived enjoyment. Enjoyment was not found to be strongly influential. Relevancy and reliability of information and its usefulness concerning travel-planning needs were found more influential.

Research limitations/implications – Data were collected from social media users, raising possible issues of representativeness.

Practical implications – The paper offers clarity regarding antecedents of downstream user behavior which can be of significant value. Demarcations in B2B and B2C perspectives blur in the context of social media, enabling more effective integration.

Originality/value – The paper brings in information quality and enjoyment as influencers of behavior. Identifying the travel industry as a sector having greater likelihood of B2BC convergence, the paper extends IS adoption research to user-interactive sites in the travel-planning context, which can benefit the consumer as well as the supply side.

Keywords Perceived enjoyment, Information quality, Behavioral intention, B2B B2C convergence, Travel planning

1. Introduction

1.1 Debating the currency of the B2BC dichotomy

The dualist approach to organizing perceptions of the business-to-business (B2B) and business-to-customer (B2C) dichotomy has been questioned before (Cova and Salle, 2008; Fern and Brown, 1984; Wilson, 2002; Wind, 2006) but perhaps not loudly or frequently enough. Wilson (2002) mused whether separate theories were even necessary to explain individual’s exchange behavior that may occur in different contexts. Wilson (2002) points out that any differences in such contexts are likelier to be differences in degrees of complexity and protraction of the process while retaining similarities within human choice making and cross-context learning. The B2BC dichotomy assumes varying levels of assiduousness on the part of the buyer – yet why should the buyer, who is inherently the same person, be less conscientious in one context and not the other? Foxall (1993) had pointed to the placeless characteristic of choice behavior in his discussion of behavioristic perspective. He stressed that attributing causation to systemic processes often overshadows the study of the behavior itself, as may be the case in industrial marketing. Cova and Salle (2008) also questioned whether

The current issue and full text archive of this journal is available on Emerald Insight at: www.emeraldinsight.com/0885-8624.htm

© Emerald Publishing Limited [ISSN 0885-8624]  
DOI 10.1108/JBIM-11-2018-0329

This paper forms part of a special section “Emerging Technologies in Business and Industrial Marketing”, guest edited by Jeannette Paschen, Leyland Pitt and Jan Kietzmann.

Received 5 November 2018  
Revised 23 February 2019  
27 March 2019  
Accepted 24 April 2019
this dichotomy is still relevant while remaining fully aware of the universalistic claims of consumer marketing management and acknowledging the unique characteristics distinguishing industrial marketing. However, they conclude that the four key criteria deployed by the Industrial Marketing and Purchasing group (IMP) – time perspective, customers’ role, market structure and unit of analysis – may well be out of date and irrelevant today. Wilson (2002) mentioned the increasing sophistication of the customers enabled by information and communication technology on one side and increasing competitive pressure among supplier on the other as contributing factors to the erosion of differences between B2B and B2C. Wind (2006) reached similar conclusions and highlighted five forces as being instrumental in bringing about the convergence of B2B and B2C; advances in the internet, prevalence of value networks across firms and countries, opening of corporate research and development, empowered customers and their involvement in manufacturing and marketing and the move away from an industrial to a knowledge-based context.

This “blurring” between B2B and B2C implies that understanding factors driving individual consumer behavior is not the sole domain of the B2C managers, and B2B managers may ignore doing so at their peril in making strategic decisions. Wilson (2002) highlighted that individual consumers do not purchase only for themselves to meet own perceptions and wishes, but they do so collectively on behalf of others and under societal and organizational influences. Conversely, the bulk of B2B purchasing rests upon managers acting with delegated discretion as individuals (Wilson, 2002), placing added impetus on understanding of individual behavior within a B2B context. This paper focuses on the aspect of aforementioned internet-induced changes as a major factor eroding differences between B2B and B2C, particularly social media, and looks to the travel industry where such phenomenon may be more apparent in application. Consumer-generated websites increasingly play a crucial role in tourists’ travel planning activities and which are becoming a major information source for travel-related decisions with regard to destination and activity selection. It is our view that a focus on consumer-generated websites has significant relevance for the B2B context.

From a customer empowerment perspective, the advances in internet technologies and the blossoming of Web 2.0 saw the interconnectivity between individuals explode and enabled collaboration between customers and businesses (Füller et al., 2009). The natural progression was the advent and drove the proliferation of social media that enables consumers to generate content as well as engage in social interactions online.

1.2 The greater role of electronic word-of-mouth in eroding differences

In case of the travel industry, different social media platforms are becoming increasingly popular among tourists because of improved information accessibility for their travel planning process. In the case of tourism products, consumers perceive higher risks, and prior consumption quality is often unknown (Schmallegger and Carson, 2008). Most tourism products are highly priced, and high consumer involvement is associated with them (Jeng and Fesenmaier, 2002). Because of these aspects of tourism products, consumers rely more on word-of-mouth (WoM) communication from those experienced with the products and willing to spread their experiences within their network. With the ubiquity of the internet, this communication has become much easier, and electronic word-of-mouth (eWoM) has become an important aspect of tourism product evaluation and tourists’ travel decision process (Hsu et al., 2006; Litvin et al., 2008). The platform creates new opportunities for consumers to share their experiences through consumer review sites, social networking sites, blogs and media sharing sites in both text form and media (Xiang and Gretzel, 2010). Senecal and Nantel (2004) note that consumers today can tap into multiple sources of information and experiences, which in turn are generated from other customers’ information and recommendations. Thus, involving the customer on social media is a key factor for marketing efforts (Park et al., 2007). While social media can renew and reinvigorate marketing efforts in non-traditional ways, similarly, it may pose problems for businesses that are less than agile in their understanding and reactiveness on social media platforms. As Kietzmann et al. (2011) note, corporate communication has now become democratized, and traditional roles of marketing and public relations are now dominated by individuals, sometimes influencers, rather than corporate parties. They also carry higher credibility (Gretzel and Yoo, 2008; Yoo and Gretzel, 2010) than formal corporate communication, which may lead to repercussions for businesses if they are not careful. The collective response of the internet to United Airlines forcibly ejecting a passenger from its flight was to drive down its market capitalization by 6.3 per cent in one day (Shen, 2017).

Pitt et al. (2017) highlight the duality of the consumer as an employee who engages with brands on social media, sharing personal information as well as opinions on brands that engage them (Kietzmann et al., 2011). Thus, it may be myopic to continue to cling to a B2B or B2C perspective when it comes to social media; the lines between internal and external stakeholders are blurred with their interchangeableness. We may suggest that the identity at the core of the social media functionality honeycomb structure (Kietzmann et al., 2011), as well as the building blocks of reputation, groups, conversation, etc., will remain in effect in one form or other whether it is a B2C or B2B transactional realm. Thus, it is all the more crucial to pay attention to business interactions on social media without musing over whether it falls into the arenas of business to business or consumer-driven, especially where narratives are created and dominated by individuals, as Wilson (2002) suggested. The dynamics of B2C may eventually be reflected in B2B relationships, and the study of one may complement understanding of the other. To such an end, the present study proposes a conceptual model that is composed of a nomological net of determinants of tourists’ intention to use social media sites for their travel planning process. As argued before, it is our contention that an understanding of the factors is crucial for managerial
understanding, regardless of whether we subscribe to the B2BC dichotomy or not.

1.3 Purpose and research questions

The purpose of this study is twofold; first to highlight the need to revisit the question whether drawing a distinction between the B2B and B2C realms are still relevant, particularly in industries where the customer generates the consumable. Second to such end, investigate the determinants of tourists’ intention to use social media websites that can help managerial decision-making within the industry as a whole, rather than the consumer purchaser IMP perspective. This stance conforms to the treatment of individuals and organizations as comparable rather than parallel conceptualizations, as suggested by Wilson (2002). The present study borrows constructs from the technology acceptance model (TAM) and integrates them with the constructs’ “information quality of the websites” and “perceived enjoyment” and “proposes a model to examine the role of social media in consumers’ travel planning process.

The following descriptive and explanatory research questions are established towards addressing the second purpose:

RQ1. What are the determinants of tourists’ intention to use social media websites in their travel planning process?

RQ2. Which factors are more important in determining tourists’ intention to use social media websites in their travel planning process?

The rest of the article is structured as follows: first, the conceptual background discusses an overview of relevant literature following the research purpose, followed by proposed research model and hypotheses. Following this, the research methods used in the study are discussed, followed by presentation of data analysis, results and discussion thereof. The theoretical and managerial implications drawn from the study are highlighted, and limitations of the study as well as suggestions for future research are described at the end.

2. Theoretical background, research model and hypotheses

2.1 Sources of information and social networking sites

Social media as a technological platform is increasingly characterized by user-generated content that facilitates user participation and information sharing and, in the process, changing the asymmetry and balance of power otherwise dominant in communication. This burgeoning influence takes on added importance for businesses, as the effect of social media is felt upon all facets of communication, including business to business, business to customer, as well as customer to customer (Kietzmann et al., 2011).

The growing adoption and usage of social media within the business–consumer realm has attracted its share of researcher attention in the tourism and hospitality sector. Several studies have been conducted focusing on the role of social media in consumers’ travel planning process and the impact on travel businesses. Law et al. (2010) have even called impact of social media in travel and tourism research a “mega trend”, after conducting a review of social media-related research articles pertaining to both consumer and supply sides. Within these research trends, relatively less research focuses on determinants of tourists’ usage of social media and consumer-generated websites for their travel planning process (Ayeh et al., 2013). The internet creates a participatory platform for users by introducing social media such as online communities, which allow them to share information and collaborate. Consumers can interact with other consumers and businesses, generate online content by sharing photos and videos and discuss their concerns and experiences. This prevalence of social media has an impact on tourists’ travel planning processes. Travelers are using social media to search and organize information before and during their travel planning, as well as to share their experiences after travel. This opportunity makes information more accessible, increases consumers’ bargaining power and allows them to ensure the best possible option in terms of destination and hotel choice (Hernández-Méndez et al., 2015; Leung et al., 2013).

Nowadays, almost all tourism businesses have online presence and engage and maintain their relationship with potential customers by understanding their preferences on social media platforms. Businesses can understand their customers’ needs and wants by analyzing their comments and travel information search patterns and can respond accordingly (Sanchez-Franco and Rondan-Cataluña, 2010). Tourists use online communities such as TripAdvisor, Booking.com, Hotels.com or aggregators such as Momondo or Trivago for their travel planning activities such as flight arrangements, destination selection, hotel booking and the planning of holiday activities. TripAdvisor is a well-known and successful social networking website where users can access travel-related information from the participating user base and also have the opportunity to share their opinions or advice with other travelers (Buhalis and Law, 2008). Tourists share their travel experiences by posting pictures, videos and comments on other social networking sites such as Facebook and Instagram, which also allow other travelers to get information relevant to their travel plans. Information sharing and content generation are facilitated through a large number of social media platforms such as Wikipedia, Facebook, Twitter and Instagram. To interact with other online users and to exchange information, individuals use online forums, rating and review sites as well as online communities (Ye et al., 2011). With regard to travel-related decisions, tourists search for information using social media sites and form their perception and images regarding destinations and other travel-related products (Arsal et al., 2008). Thus, such websites increasingly play a crucial role in tourists’ travel planning. Users continue to use such sites provided they find them useful for their travel planning activities and if the sites fulfill their need criteria. Following this view, the technology acceptance model TAM (Davis, 1986; Davis et al., 1989) will be applicable as a theoretical framework to understand the antecedents of tourists’ intention to use social media websites. This well-known model has proven...
to be one of the most applicable frameworks for predicting usage and acceptance of new technologies in different fields. It has been widely used for explaining individuals’ acceptance and use of information systems (Lee et al., 2003), to determine user acceptance of e-commerce websites (Cao et al., 2005) and travelers’ intention to use a specific CGM site for travel planning (Ayeh et al., 2013).

2.2 The effect of electronic word-of-mouth
We have previously mentioned a higher perceived risk or concern related to travel products. Litvin et al. (2008) note that the large-scale, anonymous and ephemeral nature of the internet enables consumers to capture, analyze and interpret available information in newer ways. This very same nature also generates concerns as to whether consumers can be confident that the reviews and opinions they come across are independent and trustworthy (Burgess et al., 2009; Gretzel et al., 2006). Hsu et al. (2006) highlight that the hallmarks of service products – intangibility, perishability, heterogeneity and simultaneous production and consumption – are all pertinent in the case of tourism; and with no objectively measurable qualities applicable before purchase, such products are prone to higher risk perceptions. Thus, WoM communication from friends and relatives take on added importance in making travel-related purchases, as they can reduce the risk perception (Litvin et al., 2008). As internet-enabled sharing platforms become more pervasive, the “word of mouth” phenomenon is transferred onto online domains (Yoo and Gretzel, 2010), implying that the trust component associated with a prior close network is transferred as well. This notion is supported by Gretzel and Yoo (2008), who stated that readers find reviews by other travelers to be more current, enjoyable and reliable.

Cheung et al. (2004) and Zhu and Zhang (2006) underlined the importance of online reviews to both consumers and businesses. Zhu and Zhang (2006) stated that the need to manage online WoM is especially important for firms that deal with experience goods, that is, tourism products. Cheung et al. (2004) identified systems factors to be responsible, rather than self-motivation, in affecting consumer attitude and behavior on online sharing sites. This renews the notion that factors responsible for affecting attitude and motivation are as pertinent for businesses in the industry as they are for consumers, particularly with a view of systems design and knowledge sharing. As Ye et al. (2011) highlight, it is crucial to achieve efficiency in the marketing of tourism products because of their seasonality and perishability, and organizations need to adapt their e-business models to cope with the impact of user-generated content. Hernández-Méndez et al. (2015) echo a similar sentiment, stating that the emergence of new ICT has substantially altered the relationship between service companies and their audiences, where the latter has become increasingly well-informed, and perhaps more importantly, self-sufficient. They view the “Travel 2.0” application paradigm as an opportunity for businesses to gain firsthand knowledge and, thus, tailor their products. However, the same self-sufficiency will induce the customer to switch to a different provider if a business fails to cater to his or her virtually limitless ability to refine demand. This would indicate that approaching the management of expectations of experience customers as isolated B2C efforts to be less efficient and productive; there is only so much a business in the industry, often a single entity, can manage.

2.3 Social media interactions in a business-to-consumer context and the implication for business-to-business realm
A problem faced by marketers is that it is not often clear which features are valued more by the users, making social media integration in marketing efforts more challenging. As Weinberg and Pehlivan (2011) note, companies large and small may have tweeted on Twitter and created fan pages on Facebook, yet the constant challenge to show return on marketing investment remains, as does the uncertainty regarding how to allocate marketing efforts and budgets among different types of social media. This lack of understanding is compounded by what Parise et al. (2008) dubbed as “the urge to explicitly and constantly close a sale”. This inability to move away belies qualities that are valued for social media engagement, such as authenticity, reciprocity, ceding control and being human (Weinberg and Pehlivan, 2011). Weinberg and Pehlivan (2011) identified three approaches taken by businesses using social media, that of the traditional that views social media as being similar to established media channels, a mix of experimental and traditional that values conversation but is driven by thoughts of return on investment (ROI) and a third one based on the discovery of factors distinct about social media that can lend a human voice to businesses hoping for engagement. It is this third path, an emulation of human voice and the factors that contribute to it, we believe merits closer scrutiny. We disregard the ROI-driven legacy approaches precisely because they are a legacy; we believe the changed asymmetry and balance of power in communication requires this shift. This paper is an effort at such a scrutiny, by bringing in additional constructs from IS research and empirically testing their viability in the context of social media marketing. Earlier, Felix et al. (2017) proposed a holistic framework for social media marketing, composed of a marketing scope involving communication with internal and external stakeholders, a marketing culture that can be conservative or modern, a marketing structure that deals with hierarchies or a lack thereof in social media management and marketing governance involving policies and rules. Thus, while the endgame may be to better engage the customer, whether a business does so as a defender or an explorer or if it takes a path that might cause it to tumble down to anarchy can affect not only its own operations, but also its relations with upstream partners and other businesses in the industry. Coupled with the need for the discovery of factors, we believe this strengthens what we have discussed earlier, the blurring of lines between B2B and B2C – a compartmentalization that have served well otherwise but are perhaps counter-productive when it comes to social media.

2.4 Applying the technology acceptance model
The TAM (Davis, 1986; Davis et al., 1989) predicts perceived usefulness and perceived ease of the factors that determine user acceptance of any information system. Perceived usefulness and perceived ease of use has an impact on the individual’s
attitude towards use and intention to use a particular technology. According to Davis et al. (1989), perceived usefulness is defined as the degree to which a person believes that using a particular technology will improve his or her performance. The concept of perceived usefulness was found to occupy an important role in e-commerce research and is stated to be of similar importance within the social commerce environment as well (Hajli, 2014). Within the hospitality and tourism sphere, the importance of perceived usefulness as a key construct for technology utilization was confirmed in a number of studies (Huh et al., 2009; Law and Jorgaratnam, 2005; Morosan, 2012; Morosan and Jeong, 2008). Perceived usefulness was treated as travelers’ expectations that usage of consumer generated media (CGM) will aid in the travel planning process. It is based on the premise that individuals will use an application if they consider it to be useful for achieving specific results. This also implies applications or systems losing their usefulness outside of their context, as usefulness is relative to the accomplishment of specific tasks or objectives (Xiao and Smith, 2007). In the context of tourism, such an objective can be the facilitation of travel planning and related decision-making. As such, perceived usefulness can be hypothesized to influence travelers’ attitudes and intention to use CGM sites in their travel planning (Huh et al., 2009; Pavlou, 2003; Pavlou and Fygenson, 2006).

Following earlier work, in this study, perceived usefulness is defined as the extent to which tourists believe that using social media websites will be beneficial for them during their travel planning process. The other antecedent from the original TAM model, “perceived ease of use”, is omitted from this study. There are a few reasons behind this choice. Using social media websites is not a new phenomenon to individuals anymore, one may surmise that for many, using such sites constitutes the bulk of their internet usage. If we look back on the dimensions and items used in measuring perceived ease of use, then the measurement items were based on the premise of users encountering frequent design confusion, system errors, system erraticness, rigidity and inflexibility of a system that was still very new. While this framework has worked well in systems where such incidents were quite likely, it is believed that these days, the number of users being confounded by design or system errata or rigidity is virtually nil or will be statistically insignificant in their influence, even if such errors do occur. Thus, we opt to omit perceived ease of use from the construct set for parsimony.

Searching for information on social media websites and finding reliable and relevant information can help potential travelers in their travel planning and decision-making, which in turn can influence their intention to use those sites repeatedly. Thus, usefulness of using social media sites is related to tourists’ attitude and behavioral intention during travel planning processes. Several studies have supported the relation between perceived usefulness, attitude and behavioral intention (Ayeh et al., 2013; Huh et al., 2009; Pavlou, 2003; Pavlou and Fygenson, 2006). Ajzen (1989) defined attitude as an individual’s “disposition to respond favorably or unfavorably to an object, person, institution, or event”. Behavioral intentions indicate desirable behaviors that individuals expect they will perform in the future. Thus, an accurate measurement of behavioral intention can help perfect the prediction of behavior (Ajzen and Fishbein, 1977). In this study, behavioral intention is perceived as a tourist’s likelihood of using social media websites for travel planning. The relationship between attitude and behavioral intention has been tested previously in consumer behavior (Ajzen and Fishbein, 1977; Bagozzi, 1992). In light of this, the following hypotheses are posited:

**H1.** Perceived usefulness of social media websites positively influences attitude towards its use for travel planning.

**H2.** Attitude towards using social media websites positively influences the behavioral intention to use those sites for travel planning.

### 2.5 Information quality

Within the e-commerce realm, the information content of websites is an important element, and information quality is encompassed by information accuracy and relevance (Cao et al., 2005). However, as Wirtz et al. (2013) note, it is not often very clear which features may be more desired or accepted by users, complicating judgments of information quality. Moreover, Zheng et al. (2013) examine the role of information quality to investigate users’ continued intention to participate in virtual communities (VC). In the context of social media, most of the information content is user-generated with limited control on the content and timing of the provided information. Thus, the perceived information quality criteria are deemed to be different compared to the traditional information quality criteria identified in static websites where information content is provided solely by the service providers.

This difference in quality criteria between organization- and user-generated sites merits further scrutiny. Users may have concerns regarding reliability of the information on virtual communities, as there is limited control over what can be posted and by whom, which could be anyone. In contrast, users may perceive more information reliability from organization-generated websites, as information entered is processed and managed before exposure to users. This also brings into focus the objectivity of the contents posted, as VC content is more opinion-based and subjective, whereas organizational and e-commerce website content is by necessity more factual and transactional (Zheng et al., 2013). We should note that the subjectivity is not by itself a disqualifier, as a user may find such information more authentic, allowing more latitude to the user to form their own perception and exercise cognition, influencing information quality perception.

Another metric of perceived information quality is the user experience of system performance in providing sought information (McKinney et al., 2002; Nelson et al., 2005). The system performance may not be performance of the backend, but rather may be equated with the prevalence of valued relevant information or lack thereof. Gu et al. (2007) highlight that perceived low-quality information such as useless posts or posts with outdated information from other users frustrate and increase users’ search and information-processing costs. There is also the risk of biased and motivated information from commercial sources. Conversely, content perceived as high quality and rich discussion provides users with better context, understanding and sense of support from other members, leading to better decisions (Zhang and Watts, 2008).
benefits go both ways, as along with users who receive quality information, users who provide such information also increase their reputation, standing and image in the community (Butler et al., 2002). All these considerations will be weighed by a user seeking quality information and only when VCs provide such quality information will users gain benefits from participation in the online communities (Butler, 2001). Thus, if user valuation of an information-oriented virtual community will rely primarily on the quality of the posts or content, then higher quality will lead to user satisfaction (Gu et al., 2007). This leads us to the following hypothesis:

H3. Perceived information quality of social media websites positively influences users’ perceived usefulness of the sites for travel planning.

2.6 Perceived enjoyment
In the case of new technology usage, one of the major motivating factors is perceived enjoyment. In previous studies (Bruner and Kumar, 2005; Davis et al., 1989, 1992; Lee et al., 2005), perceived enjoyment was identified as one of the determinants of users attitude formation and behavioral intention towards new technology; and enjoyment plays an important role in influencing attitude (Chen and Tan, 2004; Childers et al., 2001). Perceived enjoyment was incorporated as an additional hedonic motivational aspect of the extended TAM model (Davis et al., 1992) as a determinant of technology usage. Lee et al. (2005) have also identified enjoyment as a major determinant of users’ use of new technology. The construct “perceived enjoyment” is related to intrinsic motivation, which captures the perceived pleasure and satisfaction of behavioral consequences (Vallerand, 1997). This leads us to the following hypotheses:

H4. Perceived enjoyment positively influences the usefulness of social media websites for travel planning.

H5. Perceived enjoyment positively influences attitude towards using social media websites for travel planning.

The relational model of the hypotheses is shown below (Figure 1).

3. Research method
3.1 Survey instruments design
A quantitative approach was chosen to test the proposed hypotheses and research model. Reviewing marketing and information system literature, initial item lists were created to measure the variables as identified in the research model. A survey questionnaire (see Appendix) was developed based on the selected items (Table I) and the wording of certain questions was changed to better suit the context. After developing the first draft, the questionnaire was pre-tested by a set of users and experienced researchers. Following the feedback received, some modifications were made, and the questionnaire was distributed online through Facebook.

The attitudes associated with social media website usage was measured using three items: good ideas, pleasant experiences and affinity for the idea. These items were adopted from previous studies conducted by Davis (1989) and Ayeh et al. (2013). Behavioral intention to revisit the social media websites for travel planning purposes was operationalized using four items adopted from Davis (1989) and Ayeh et al. (2013). Information quality was measured with regard to information relevancy, richness and reliability of the content presented in social media websites. The items were adopted from Zheng et al. (2013).

Five items were selected to measure perceived enjoyment following the earlier studies conducted by Chen and Tan (2004) and Ayeh et al. (2013). Perceived enjoyment was measured with regard to the extent to which using social media websites was pleasant, interesting, fun, entertaining and motivated user participation. Perceived usefulness was measured considering the extent to which tourists believed that using social media website was beneficial for them during their travel planning process. Based on the previous studies (Ayeh et al., 2013; Davis, 1989; Davis et al., 1989), six items were selected to measure the perceived usefulness of social media websites (Table I). All the questions were measured on a seven-point scale anchored by strongly disagree (1) and strongly agree (7).

3.2 Sampling
The population of this study was composed of individuals with internet access who take holidays, travel on a regular basis and use social media websites during their travel planning. Potential respondents were reached out to via Facebook, and they were requested to send the survey link to other possible respondents from among their contacts. As the survey was disseminated through Facebook, it is deemed to have a judgmental and snowball sampling methodology using pre-screener questions. While its dissemination over social media entails that it is non-probabilistic, there is evidence this mode of sampling in effect increases sample size and representativeness (Baltar and Brunet, 2012). The online survey was kept open for three months, and 357 valid responses were received within this period.

4. Analysis, results and discussions
To accurately measure results, composite scores were created, and the subsequent data were put through validity and reliability tests, including the assessment of common method bias, reliability and validity. A common method bias (CMB) occurs when the measured variance is attributable to the method used, rather than the constructs represented by the...
Table 1  Conceptualizations of the variables in research model

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Measurement criteria</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information quality: measured by information</td>
<td>Information on the web sites is relevant, information</td>
<td>Zheng et al. (2013)</td>
</tr>
<tr>
<td>relevancy, richness and reliability of the</td>
<td>presented on the websites is sufficient for the needs of users, information content</td>
<td></td>
</tr>
<tr>
<td>content presented on social media websites</td>
<td>is reliable</td>
<td></td>
</tr>
<tr>
<td>Perceived enjoyment</td>
<td>Pleasant, interesting, fun, entertaining, motivates customers to participate</td>
<td>Ayeh et al. (2013), Chen and Tan (2004)</td>
</tr>
<tr>
<td>To what extent tourists enjoy and experience</td>
<td>Good idea for travel planning activities, a pleasant experience, like the idea of</td>
<td>Ayeh et al. (2013), Davis (1989), Davis et al. (1989)</td>
</tr>
<tr>
<td>fun using social media websites for their travel</td>
<td>using them for travel related activities</td>
<td></td>
</tr>
<tr>
<td>planning</td>
<td>Accomplish travel planning activities more quickly, accomplish travel planning</td>
<td>Ayeh et al. (2013), Davis (1989)</td>
</tr>
<tr>
<td>Attitude</td>
<td>accomplish travel planning activities and lower communication cost, reduce errors in</td>
<td></td>
</tr>
<tr>
<td>Attitude has been defined by Ajzen (1989) as an</td>
<td>travel-related activities, helps plan trips more efficiently, useful in doing travel</td>
<td></td>
</tr>
<tr>
<td>individual’s “disposition to respond favorably</td>
<td>planning work, makes it easier to do travel planning</td>
<td></td>
</tr>
<tr>
<td>or unfavorably to an object, person, institution,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or event” (p. 241)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived usefulness</td>
<td>Intend to use, will use on a regular basis in future, will not hesitate and will</td>
<td>Ayeh et al. (2013), Davis (1989)</td>
</tr>
<tr>
<td>To what extent tourists believe that using</td>
<td>strongly recommend to others</td>
<td></td>
</tr>
<tr>
<td>social media websites will be beneficial for them</td>
<td></td>
<td></td>
</tr>
<tr>
<td>during their travel planning process</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention to use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourists’ likelihood of using social media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>websites for travel planning</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

measures (Podsakoff et al., 2012). Harman’s single factor test was used to measure CMB (Podsakoff et al., 2003). All variables were loaded onto a single factor and the unrotated solution was analyzed using SPSS to determine the number of factors needed to account for the variance in the variables (Podsakoff et al., 2003). Ideally the single factor should explain less than 50 per cent of the variance. In the present study, the single factor explained 49 per cent of the variance. It is concluded that common method bias does not occur in this instance.

Following the testing for CMB, the study ensures reliability of the constructs by calculating coefficient alpha which established the internal consistency of the items representing each construct. The constructs had a very high reliability overall (Table III) and above the recommended level of 0.7 (Hair et al., 1998). The reliability values for the constructs are: Information quality (0.913), perceived usefulness (0.907), perceived enjoyment (0.913), attitude (0.90) and intention to use (0.93). High reliability and internal consistency ensure the scale’s construct validity. Perceived usefulness, attitude, intention, information quality and perceived enjoyment are constructs that are all commonly used in information systems and marketing disciplines. Questionnaire items to measure the constructs are adopted from prior well-established literature that increases content validity (Table II).

4.1 Structural model and hypotheses testing

Structural equation modeling (SEM) procedure was used to examine the relationships between information quality, perceived enjoyment, perceived usefulness, attitude and behavioral intentions. Two steps were followed during the analysis procedure. The first step involved conducting confirmatory factor analyses for each of the constructs to examine the factor structures to see if the selected items were indeed measuring the underlying constructs, as well as the fitness of the measurement model. A few items were omitted during confirmatory factor analyses allowing for a better fit. The final standardized factor loadings for the items are presented in Table III.

To test the hypothesized relationships in the research model, a structural model was run (Figure 2). Overall structural model fit was found to be good with the minimum discrepancy (CMIN/DF), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), Tucker–Lewis Index (TLI) and Comparative fit index (CFI) and RMSEA (Table IV), indicating acceptable and good predictive validity.

4.2 Path loadings, critical ratios, probability level from the structural model

In all, 68 per cent of the variance in the intention to use user-interactive sites (the dependent variable) is explained by information quality, perceived enjoyment, perceived usefulness and attitude (Table V). A significant, very strong positive relationship was found between perceived usefulness of user-interactive sites and attitude towards use for travel planning (H1 is accepted). Path loadings between attitude and behavioral intention to use user-interactive sites is positive and significant; thus, the relationship is strongly supported in this context and H2 is accepted. Findings are consistent with previous research results that supported the relation between perceived usefulness, attitude and behavioral intention (Ayeh et al., 2013; Huh et al., 2009; Pavlou, 2003; Pavlou and Fygenson, 2006). According to Ayeh et al. (2013), perceived usefulness has
substantial impacts on attitude and behavioral intention to use consumer-generated media for travel planning. The information quality of user-interactive websites was measured by the information relevancy of the websites, which was found to be positively and significantly related to perceived usefulness of using such sites. Therefore, \( H3 \) is accepted. According to the analysis, perceived enjoyment is positively correlated with perceived usefulness of using user-interactive sites (a moderately strong relation was found) and \( H4 \) is accepted. While \( H5 \) is accepted, we found the relationship to be weak between perceived enjoyment and attitude towards using such websites for users’ travel planning process.

This study explores factors influencing tourists’ usage intention of social media websites for travel planning. The study incorporates information quality and perceived

Table II  Common method bias testing results

<table>
<thead>
<tr>
<th>Component</th>
<th>Total</th>
<th>Initial Eigen values</th>
<th>Total variance explained</th>
<th>Acceptance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10,361</td>
<td>10.361</td>
<td>49.339</td>
<td>49.339</td>
</tr>
<tr>
<td>2</td>
<td>2,836</td>
<td>2.836</td>
<td>13.503</td>
<td>62.842</td>
</tr>
<tr>
<td>3</td>
<td>1,889</td>
<td>1.889</td>
<td>8.996</td>
<td>71.839</td>
</tr>
<tr>
<td>4</td>
<td>1,224</td>
<td>1.224</td>
<td>5.827</td>
<td>77.666</td>
</tr>
<tr>
<td>5</td>
<td>849</td>
<td>0.849</td>
<td>4.043</td>
<td>81.708</td>
</tr>
<tr>
<td>6</td>
<td>557</td>
<td>0.557</td>
<td>2.651</td>
<td>84.359</td>
</tr>
<tr>
<td>7</td>
<td>460</td>
<td>0.460</td>
<td>2.189</td>
<td>86.548</td>
</tr>
<tr>
<td>8</td>
<td>439</td>
<td>0.439</td>
<td>2.092</td>
<td>88.640</td>
</tr>
<tr>
<td>9</td>
<td>342</td>
<td>0.342</td>
<td>1.629</td>
<td>90.270</td>
</tr>
<tr>
<td>10</td>
<td>276</td>
<td>0.276</td>
<td>1.315</td>
<td>91.584</td>
</tr>
<tr>
<td>11</td>
<td>244</td>
<td>0.244</td>
<td>1.164</td>
<td>92.748</td>
</tr>
<tr>
<td>12</td>
<td>227</td>
<td>0.227</td>
<td>1.079</td>
<td>93.827</td>
</tr>
<tr>
<td>13</td>
<td>205</td>
<td>0.205</td>
<td>0.977</td>
<td>94.804</td>
</tr>
<tr>
<td>14</td>
<td>201</td>
<td>0.201</td>
<td>0.957</td>
<td>95.761</td>
</tr>
<tr>
<td>15</td>
<td>175</td>
<td>0.175</td>
<td>0.832</td>
<td>96.594</td>
</tr>
<tr>
<td>16</td>
<td>172</td>
<td>0.172</td>
<td>0.820</td>
<td>97.413</td>
</tr>
<tr>
<td>17</td>
<td>145</td>
<td>0.145</td>
<td>0.689</td>
<td>98.102</td>
</tr>
<tr>
<td>18</td>
<td>136</td>
<td>0.136</td>
<td>0.646</td>
<td>98.748</td>
</tr>
<tr>
<td>19</td>
<td>123</td>
<td>0.123</td>
<td>0.587</td>
<td>99.336</td>
</tr>
<tr>
<td>20</td>
<td>094</td>
<td>0.094</td>
<td>0.450</td>
<td>99.786</td>
</tr>
<tr>
<td>21</td>
<td>045</td>
<td>0.045</td>
<td>0.214</td>
<td>100.000</td>
</tr>
</tbody>
</table>

Note: Extraction method: Principal component analysis

Table III  Reliability coefficients and factor loadings

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient alphas</th>
<th>Coefficients of items</th>
<th>Standardized factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information quality</td>
<td>0.913</td>
<td>Information on web sites is relevant                                                   0.84</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information presented on the websites sufficient for user needs                       0.92</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information content is reliable                                                        0.89</td>
<td></td>
</tr>
<tr>
<td>Perceived usefulness</td>
<td>0.907</td>
<td>Can accomplish travel planning activities more quickly                                  0.82</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Helps me plan trips more efficiently                                                   0.79</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Useful in doing my travel planning activities                                          0.89</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Makes it easier to do travel planning                                                  0.66</td>
<td></td>
</tr>
<tr>
<td>Perceived enjoyment</td>
<td>0.913</td>
<td>Fun                                                                                    0.88</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Entertaining                                                                           0.92</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Motivates customers to participate                                                      0.78</td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>0.90</td>
<td>Good idea                                                                              0.84</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pleasant experience                                                                     0.92</td>
<td></td>
</tr>
<tr>
<td>Intention to use</td>
<td>0.930</td>
<td>Intend to use                                                                           0.83</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Will use on a regular basis in future                                                  0.94</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Will not hesitate to use                                                                 0.92</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Will strongly recommend to others                                                       0.81</td>
<td></td>
</tr>
</tbody>
</table>
enjoyment into the TAM to explore consumers’ intention to use user-interactive sites for travel planning using SEM. According to the results, significant support was found for selected TAM model constructs (perceived usefulness, attitude and intention). Additional constructs from IS research, namely, information quality and perceived enjoyment, were incorporated with the TAM model to test in this context. Information quality was found to be an important predictor, while perceived enjoyment was found as a weaker predictor in consumers’ intention to use the user-interactive sites for travel planning. Perceived usefulness has a greater impact than perceived enjoyment in determining the consumer’s attitude and behavioral intention in the present context. This matches earlier findings from IS literature, which posited perceived usefulness as the stronger and perceived enjoyment as a weaker driver to predict usage intention (Mathieson et al., 2001; Venkatesh and Davis, 2000). Perceived usefulness is one of the strongest antecedent of the users’ social media acceptance (Lo and Lee, 2011).

Results from the study suggest perceived usefulness and information quality are stronger predictors than perceived enjoyment as antecedents of attitude and behavioral intention to use sites for travel planning purposes. This finding aligns with Zheng et al. (2013), who found sites with high quality user-generated content to be more effective in terms of access to resources, facilitating communication and interaction. With regard to information quality, our findings tally with McKinney et al. (2002). Information reliability, sufficiency and relevancy were found to be an important information quality criterion. One of the primary motivations for travelers to use social media websites is to obtain relevant travel-related information (Huang et al., 2010). Enjoyment was not found to be an influential factor, rather relevancy and reliability of information that fulfills consumer needs and usefulness with regard to supporting travel planning was found to be crucial.

Table IV Model fit index

<table>
<thead>
<tr>
<th>Model</th>
<th>RMSEA</th>
<th>CMIN/DF</th>
<th>GFI</th>
<th>AGFI</th>
<th>CFI</th>
<th>TLI</th>
<th>IFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>0.097</td>
<td>4.372</td>
<td>0.866</td>
<td>822</td>
<td>0.930</td>
<td>0.918</td>
<td>0.930</td>
</tr>
</tbody>
</table>

Table V Path loadings

<table>
<thead>
<tr>
<th>Structural relation</th>
<th>Regression weight</th>
<th>Critical ratio</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude ← perceived usefulness</td>
<td>0.845</td>
<td>13.314</td>
<td>***</td>
</tr>
<tr>
<td>Intention to use ← attitude</td>
<td>0.826</td>
<td>17.343</td>
<td>***</td>
</tr>
<tr>
<td>Perceived usefulness ← information quality</td>
<td>0.425</td>
<td>7.451</td>
<td>***</td>
</tr>
<tr>
<td>Perceived usefulness ← perceived enjoyment</td>
<td>0.331</td>
<td>5.971</td>
<td>***</td>
</tr>
<tr>
<td>Attitude ← perceived enjoyment</td>
<td>0.137</td>
<td>3.734</td>
<td>***</td>
</tr>
</tbody>
</table>

Note: *** denotes significance at 0.05 level
5. Implications, limitations and further research suggestions

The stated intent of this paper was twofold. First, to draw attention to the question posed earlier by Wilson (2002), whether a strict parallel conceptualization of marketing into B2B and B2C is as valid today as it may have been before. We contend that such distinctions are no longer paramount, particularly in industries increasingly driven by consumer-generated content and where customers are empowered through erosion of information asymmetry between the firm and the customer. Wilson (2002) had identified the supposed professionalism of organizational buying as a factor that conventionally has set the domains of B2B and B2C apart, yet with the tools at their disposal, the level of professionalism displayed by consumer buying is no longer trivial. Protracted decision-making, which is another distinctive factor of B2B buying (Webster and Wind, 1972), is not necessarily a function of professionalism but rather one of bureaucratic expectations (Wilson, 2002). This may well be an even less potent divider in industries with higher information symmetry between firms and customers, such as the travel industry. As Kietzmann and Canhoto (2013) showed in their integrative model of eWoM, the creation and dissemination of eWoM is a multi-stage multi-level appraisal, reaction and coping process. They made the distinction that where social media is concerned, it is the consumers who pull the firms into social media and not the other way round. This puts further impetus to place the individual customer as the centerpiece and enable us to view the industrial and consumer marketing paradigms as increasingly intertwined.

We are not being so bold as to advocate the nullification of industrial marketing as a separate field of study. Rather, our intent is to draw attention to what Wind (2006) himself suggested in this very journal after pioneering the field, that there is a need to embrace the customer itself within the fold of industrial marketing. That suggestion has since largely gone unheeded. Paschen and Pitt (2019) allude to the Fourth Industrial Revolution, and caution that the breadth, depth and velocity of change brought on by new technologies are going to profoundly impact firms across industries. Acknowledging individual consumers as relevant in B2B marketing where change is primarily driven by such consumers may prove crucial for survival in face of such changes.

A second question raised by Wind (2006) was what should be the right measures of success if there indeed was a convergence between B2B and B2C. There has been an explosion of social media and consequent consumer access to information and empowerment since his work came out. We have argued that industries where such phenomenon are dominant would be likelier to show evidence of a B2BC convergence. Accordingly, this paper explores the travel industry and the role of social media and its influence on tourists’ travel planning processes. In face of convergence, the antecedent factors should be potent for B2B relationships alike.

Identifying the travel industry as a sector where there is greater likelihood of such convergence, the present study extends the possibility of IS adoption research to user-interactive sites in the travel-planning context. This study validates the important roles of information quality, perceived usefulness and perceived enjoyment to predict consumers’ attitude and intention to use social media such as user interactive sites for travel planning. The study introduces and validates the presence and influence of the information quality and perceived enjoyment constructs in this context. Information quality was found to be an important predictor, while perceived enjoyment was found to be a weaker predictor in consumers’ intention to use the user-interactive sites for travel planning. Perceived usefulness was found to have a greater impact than perceived enjoyment in determining consumer’s attitude and behavioral intention.

From an application standpoint, several managerial implications could emerge from the current research. From a B2C perspective, the model could be useful for the managers to understand how consumers assess user-interactive websites for their travel planning and to help them identify the main drivers of their usage. The study explores the factors that may determine consumers’ decision to use such sites. Management of the platforms should address such factors to enable efficient use of resources and effective integration of social media in the hospitality and tourism field.

From a B2B perspective, clarity regarding antecedents of downstream user behavior can be of significant value. Berthon et al. (2005) stated that marketing tends to view technology as a means an end in meeting user requirements. However, in the headlong rush to be on social media, businesses are often forgetful of such axioms; having a certain presence on a technology-enabled platform becomes the end, rather than the means to an end. At the same time, as has been mused before, the demarcation between B2B and B2C perspectives may be blurring when it comes to social media, not least because of the duality of stakeholders that are active in both realms (Pitt et al., 2017). Knowling which factors are valued by and drive end-users is, thus, of importance to businesses in their choice of platforms to focus on and allocate resources to. They can also prove valuable for clarifying and demarking companies’ social media scope, structure, culture and governance (Felix et al., 2017), aiding not just B2C but B2B strategizing alike. A primary contribution of this research lies in bringing in and validating the roles of information quality and user enjoyment as influencers of behavior. Information quality and its dimensions of richness, reliability and relevancy are increasingly connected efforts which can benefit the consumer as well as the supply side, strengthening B2B relationships. Venkatesh and Davis (2000) have acknowledged the presence and influence of subjective norms and social processes in technology adoption and resultant behavior. Information quality is viewed to be a construct that substantially facilitates such social processes as they occur in social media as evidenced by the large collinearity found in the study.

The limitations of the research center on the generalization of the results of this study. The study conducted surveys among Facebook and TripAdvisor users, which could be deemed a use of judgmental and snowball sampling methodology. We are
aware of this limitation. However, it could be argued that because of the ubiquity and familiarity of the platforms among the masses, the sampling method may not be as void of representativeness as in earlier days. In fact, in the case of non-probabilistic samples (which is by definition, being conducted through social media platforms), the use of virtual networks can in effect increase the representativeness (Baltar and Brunet, 2012). We recommend future research to be conducted incorporating other social media platforms to test the model as well as the veracity of the methodological supposition stated above. The issue of trust was not included in this study, but we deem it worthy of scrutiny. As information in the context of social media comes from strangers, trust will be an important consideration for users. We have implicitly subsumed trust in our discussion and formulation of the information quality construct. However, future research may consider the viability of including trust as an explicit construct.

References


Blurring the borders between B2B and B2C

Atanu Nath, Parmita Saha and Esmail Salehi-Sangari

No. 8, pp. 7-16, available at: https://doi.org/10.1108/03090569310042891


Blurring the borders between B2B and B2C
Atanu Nath, Parmita Saha and Esmail Salehi-Sangari


Appendix

Questionnaire items used in the survey for measuring visitors’ usage of social media websites
Information presented on the web sites is relevant to me during my travel planning.
Information presented on the websites is reliable. Information content presented on the websites is sufficient for my travel planning needs.
Information content presented on the websites is reliable. Using such sites lets me accomplish my travel planning needs.
Using such sites lets me accomplish my travel planning activities more quickly.
Using such sites lets me accomplish my travel planning activities at a lower communication cost.
Using such sites reduces errors in my travel planning activities.
Using such sites helps me plan trips more efficiently.
Using such sites is useful for doing my travel planning work.
Using such sites makes it easier to do travel planning.
Using social media sites while planning travel is pleasant.
Using such sites is interesting.
Using such sites is a fun activity.
Using social media sites is entertaining.
These sites motivate me to participate.
Using the social media sites is a good idea for travel planning activities.
Using social media sites is a pleasant experience.

I like the idea of using such sites for my travel-related activities.
I intend to use social media sites for travel planning.
I will use such sites for travel planning on a regular basis in the future.
In the future, I will not hesitate to use such sites during my travel planning.
I will strongly recommend others to use social media sites for travel planning.

Corresponding author
Atanu Nath can be contacted at: atanu.k.nath@hvl.no
Social media influence on the B2B buying process

Hoda Diba
Department of Business Administration, Technology and Social Sciences, Luleå University of Technology, Lulea, Sweden and
Department of Information Systems and Decision Sciences, California State University, Fullerton, California, USA

Joseph M. Vella
Department of Corporate Communication, University of Malta, Msida, Malta, and
Russell Abratt
Gordon Institute of Business Science, University of Pretoria, Johannesburg, South Africa

Abstract

Purpose – This study aims to explore if and how business-to-business (B2B) companies can use social media to influence the buying process.

Design/methodology/approach – The study uses an exploratory approach into the existing literature related to the B2B buying process and its relationship with social media.

Findings – The study shows that companies in a B2B context can use social media as a means of influencing the stages of the buying process by means of using one or more of the seven functional blocks of social media.

Research limitations/implications – The findings demonstrate the relation that exists between each stage of the buyer process in a B2B organization and the functional blocks of social media. This study opens the door for further research into the influence of each of these blocks on the buying process stages and the roles involved.

Practical implications – This study identifies how social media’s blocks influence the different stages and how organizations can use that to their benefit.

Originality/value – Few studies have investigated the use of social media in a B2B context. However, not many have looked into the influence of social media in the B2B buying process and buying center. This study looks into the relationship between the buying process stages and social media’s functional blocks as related to the different roles of the buying center.

Keywords B2B, Social media, Business-to-business marketing, Buying centre, OBB, Organizational buying process

Paper type Research paper

Introduction

The vast amount of literature on social media (SM) focuses on business-to-consumer (B2C) organizations (Kaplan and Haenlein, 2010; Berthon et al., 2012; Kohli et al., 2015; Laroche et al., 2013; Gefen and Straub, 2004), whereas business-to-business (B2B) organizations and their use of SM receive comparatively little attention (Järvinen et al., 2012; Jussila et al., 2011; Rapp et al., 2013; Michaelidou et al., 2011). This is perhaps not surprising, as despite initial investigations into SM’s usefulness for B2B, the actual usage is relatively low. For instance, only 15 per cent of Finnish companies in technology industries considered the development of a SM strategy toward their customers (Keinänen and Kuivalainen, 2015). Although the top three social networking sites for B2B employees are Facebook, LinkedIn and Twitter (Nanj, 2017), nearly half of all companies do not provide any financial support for SM in their marketing budget (Michaelidou et al., 2011) despite their potential impact. For instance, IBM’s security business has roughly 23,000 followers on LinkedIn which raises awareness and allows the firm to collect useful feedback through the volume of “likes” and comments. Maersk Line has 1.1 million followers on Facebook, where the firm publishes captains’ blogs and stories about people and other issues at a fraction of the cost of advertising. Useful content distributed by IBM and Maersk, for example, show that it can be distributed through digital channels and can be as effective as face-to-face selling (Kovac, 2016).

Nonetheless, the widespread adoption of SM in B2B is impeded by a lack of executive support (Keinänen and Kuivalainen, 2015), continued skepticism about how SM can assist the selling function (Agnihotri et al., 2012) and generally a low level of preparedness for how digital marketing and sales channels can significantly change customer behavior (Kovac, 2016). There is some evidence that these trends are changing and that B2B managers are more welcoming toward new technologies. Buyers in the USA are more active online than before, and they are spending more time and company dollars...
in the digital space. A 2014 Accenture report emphasizes that 68 per cent of B2B buyers purchased goods online, up from 57 per cent of in 2013. In total, 33 per cent of B2B buyers in 2014 reported that they researched at least 90 per cent of products online before purchasing, up from 22 per cent in 2013. In 2014, 44 per cent of respondents had researched company products on a smartphone or tablet compared with 41 per cent in 2013 (Accenture, 2014). However, these increasing rates of technological acceptance and adoption in the B2B context do not speak to the specific usefulness of SM. Although 94 per cent of B2B marketers (Beets and Handley, 2017) use SM posts for content marketing purposes, managers and researchers remain doubtful and concerned (Agnihotri et al., 2012) about the fact that SM’s dark side might influence them in negative ways, much like it impacted B2C companies (Baccarella et al., 2018; Pfeffer et al., 2014; Wilburn and Wilburn, 2016; Grégoire et al., 2015; Cheung and Lee, 2008). Based in part on the bad press that SM has received in the past (DeMers, 2017; Griffith, 2018), most recently, with regard to Cambridge Analytica, managers are reluctant to develop strategies and to allocate resources to engage effectively with SM. As a result, they might miss many of the benefits SM present to B2B. The objective of this article is not to focus on the dark side (Baccarella et al., 2018), but to shed light on these opportunities and to provide managers with an understanding of SM in B2B firms. More specifically, this article explores how the seven functional building blocks of SM add value at each stage of the organizational buying process.

After the introduction, demonstrating both the lack of research and usage of SM in B2B environments, we continue by describing the functional blocks of SM as proposed by Kietzmann et al. (2011) followed by an introduction into the organizational buying process, the buying center and the actors that build it with their roles. We then follow with setting up a path for more in-depth research by creating a matrix of buying process tasks on the basis of the breakdown given by Webster and Wind (1972) as one axis and the SM building blocks as identified by Kietzmann et al. (2011) as the other axis. We then try to identify which buying center roles are involved with which function within each task. This will allow us to see where and how B2B buyers and sellers can focus their SM efforts to get the most return from their investments.

### Business-to-business social media

SM is made up of both the platforms (i.e. that contain knowledge stocks) and the content disseminated through interactions between individuals and organizations (i.e. knowledge flows) (Kietzmann et al., 2011), leading to a state where “we are all connected” (Hanna et al., 2011, p. 265). In a B2C context, this has meant a new relationship between organizations and their customers, one where firms, individuals and communities share, co-create, discuss and often modify user-generated content. Eight years ago, Kietzmann et al., introduced an SM honeycomb, as shown in Figures 1 and 2, consisting of seven functional building blocks of SM (i.e. identity, conversations, sharing, presence relationships, reputation and groups) and the fundamental implications that each block presents to B2C firms. Although B2C and B2B vary in fundamental ways, this framework is also useful for explaining the functional traits of different SM activities to B2B executives.

**Identity** refers to the information users disclose, portraying them the way they wish to be seen online. For some platforms, this could mean name, age, gender and profession that are accurately representative of the individual, but for others, it may just appear as a self-generated username with no actual substance. In a B2B context, this identity-building block can refer to the corporate identity or brand identity, which in industrial marketing are essential strategic differentiation elements. SM marketing has been known to lower barriers to entry (Kim, 2013) by providing a level playing field within which all B2B companies, irrespective of their size, are able to
create a unique identity, upon which they gradually build a following.

Most SM platforms were created to provide a forum for conversation among their users which, within this context, refers to the extent to which users communicate with each other. These forums have allowed for an enormous amount of information to be generated and preserved on any range of topics. In a B2C setting, firms have used these conversations as ways to launch and monitor campaigns, contributing when necessary to engage with their customer base directly. In a B2B environment, marketers usually start by casting a “wide net” of unobtrusive content via popular platforms such as Facebook, Instagram or Twitter, and then they move on to more specific content via B2B inclined platforms like LinkedIn. Corporate messages are created, composed and disseminated in a more personalized fashion to appear to be more authentic and give them a better chance of connecting with their target audiences (Lefebvre, 2011). In a B2B setting, where conversations typically have been with fewer individuals and more direct than in B2C settings, conversations are no longer only two-way. B2B SM communication is networked (Dahl, 2015; Kitchen and Schultz, 2009) involving multiple intra-business interactions, and also inter-business conversations across various sites (Mehmet and Clark, 2016). Conversations include, among other topics, discussions around needs for specific solutions, product training, online product demonstrations and comparative positioning of one offering versus its competition. Typical conversations may also serve to attract the attention of potential B2B suppliers and/or customers who may then choose to gain further information by visiting the pertinent source websites.

Sharing can be defined as the exchange, distribution or receipt of content between users on SM. Although not entirely separable from the conversations building block, sharing refers more directly to the content rather than the individuals associated with it. In a B2C context (or even peer-to-peer context), tweets and posts are clearly associated with the individuals sending them, whereas many videos are consumed without a clear sense of who the producer was. In a B2B context, this is again different, as most content is shared within the relationships that already exist. The more astute marketers are fully aware of the potential risk B2B buyers face when recommending products or services to their respective buying centers. It is thus imperative to share appropriate content that reinforces the buyer’s recommendation. By leveraging the sharing functionality, B2B firms are able to observe and monitor commonalities between their users, as well as determine what content they create and share to respond more quickly to changes or requirement. Firms are also able to study the boundaries of sharing and learn why particular content is shared widely or not shared at all.

According to Kietzmann et al. (2011), relationships may be defined as the way users are related to one another on different SM platforms. In a B2C context, relationships refer to the extent to which users can be related to other users; how they create “forms of association that leads them to converse, share objects of sociality, meet-up or simply just list each other as a friend or fan.” (Kietzmann et al., 2011, p. 246). This development is very much in line with Vargo and Lusch’s (2004) prediction that marketing thought is shifting from tangibles and toward intangibles and from a transaction focus to a relationship focus. In contrast to a B2C context where awareness is the most prominent reason for adopting SM (e-Marketer, 2010), for B2B organizations, awareness is not the top reason for adopting SM but it is placed lower down the list of importance. In a B2B setting, firms focus more strongly on relationships with their corporate suppliers and customers to create a web of users throughout the SM platform that they are able to leverage (Gil-Saura et al., 2009). In contrast to the analog world, where B2B relationships were based on power, conflict and opportunism (Young and Wilkinson, 1989), relationships forged during the digital age have disrupted these traditional B2B relationship marketing rules to the extent that connected consumers today focus on relationships based primarily on person-to-person trust, as the cornerstone of a successful business strategy (Hyder, 2018).

Presence may be defined as the extent to which users are aware of other users’ availability and online or physical presence. This would enable firms to develop an understanding of user habits. By leveraging a user’s sharing of their location and availability to determine their presence, firms are able to analyze customer preferences toward receiving information. They are able to determine whether users prefer their information presented in real time or through posts they can actively retrieve themselves. Likewise, by being on SM, B2B firms create a sense of “perceived social presence” that positively impacts consumer attitudes, the perceived responsiveness to consumer issues and trust (Hassanein and Head, 2007, p. 689).

Reputation, which the authors define as the extent to which users understand the social standing of others, including their respective content, varies throughout SM platforms and serves to designate the attitude of the community toward a user. Whether their (or their content’s) social standing is determined through the view count, “likes” or a “thumbs up,” a user’s reputation is seen through the eyes of the beholder, the ever-present online community of invested consumers and of the less active yet equally observant onlookers. As a result, especially in a B2B context, SM “should not be thought of as simply another channel, another means by which to interact with the customer or another tool by which to manage brand and firm reputation but, rather, all of those things (and likely many more) simultaneously” (Andzulis et al., 2012, p. 306). In other words, the reputation of the firm reflects such intangibles as its goodwill, brand equity and trust. It has long been argued that institution-based trust develops in online B2B marketplaces to facilitate interorganizational trust (buyers’ trust in sellers) (Pavlou, 2002). Such variables as credibility and benevolence in buyer-seller relationships influence the trustworthiness of and the transaction success in B2B marketplaces.

Kietzmann et al. (2011) define groups as communities that users can create on an SM platform to share content with like-minded users. In a B2C setting, as these friendship networks grow larger, this type of segmentation allows users to stay connected and interact with a population created for a specific purpose. Firms can craft specific messages to groups based on their purpose, as well as which groups they could support most effectively. In a B2B setting, these are more likely to reflect different types of stakeholders, including those that constitute
Social media influence

Hoda Diba, Joseph M. Vella and Russell Abratt

Journal of Business & Industrial Marketing

Volume 34 · Number 7 · 2019 · 1482–1496

formally recognized business relations and those that are informal and might not have been known previously. For instance, B2B firms increasingly make use of crowdsourcing (Prtić et al., 2015) to receive new ideas, feedback and solutions for improving their products and services (Simula and Vuori, 2012).

These building blocks, individually and together, illustrate that SM has the ability and capacity to influence B2B marketing significantly. “The firm as a nexus of exchange relationships” (Håkansson, 1982) might no longer be an appropriate philosophy. As the interaction approach makes way to more and more relationship-based marketing (Möller and Wilson, 1995), the role of SM becomes increasingly important. However, not all SM platforms are equal; each platform or each B2B engagement purpose may rely more heavily on one or more of the seven functional dimensions than others (Kietzmann et al., 2011).

The platform LinkedIn, for instance, focuses prominently on providing professionals with an opportunity to connect and form relationships with each other. According to the Content Marketing Institute, 80 per cent of B2B content marketers agree that their organization is focused on building audiences, of which about 97 per cent use LinkedIn (Content Marketing Institute, a UBM Company, 2017). LinkedIn provides a way for firms to connect their corporate identity with their corporate audiences and to recruit talent. The platform relies primarily on the conversations, relationships and reputation (trust) building blocks, while also making use of the sharing building block. Professionals on LinkedIn connect, converse and form relationships with each other, and they associate with brands within their industries to learn and grow together and to share professional content. There are a number of different platforms that make use of these building blocks in different ways.

Organizational buying process

As illustrated above, SM has a host of advantages and potential roles in a B2B environment. In this section, we focus on the usefulness of SM for organizational buying, a particularly important B2B function. Organizational buying is a decision-making process carried out by individuals, in interaction with other people, in the context of a formal organization (Webster and Wind, 1972). Organizational factors cause individual decision-makers to act differently than they would if they were functioning alone, or in a different organization. Organizational buyer behavior (OBB) is motivated and directed by an organization’s goals and is constrained by its financial, technological and human resources. Therefore, the buying process within a B2B organization and its related tasks are conducted and also influenced in a different manner, from those in a B2C organization. Fundamentally, there are three main elements that shape the organizational buying decision process: first, the specific tasks at each stage of the process; second, the roles of the individuals involved in this process; and third, the type of decision-making adopted by these individuals within their organizations. We will be focusing on the roles within the buying center. The different roles that individuals may play in various steps of the organizational buying process may result in a conflict between individuals, which, as Sheth (1973) argues, is prevalent in most joint decisions. This also demonstrates the importance of influence between the parties involved.

Finally, decision-making by individuals within the various roles of the buying process is impacted by three distinct aspects. The first aspect is the psychological world of the individuals involved in the decision-making process, which encompasses a combination of factors such as their expectations, the individuals’ background, their information sources, perceptual distortion and satisfaction with past purchases. Second, the specific conditions that precipitate joint decisions among these individuals and finally, the inevitable conflict among these individuals (Sheth, 1973).

However, as discussed by Sheth (1973), the buying decision might change from a joint decision-making process to an autonomous decision-making process. Three factors influence the choice of joint versus autonomous decision-making. First are the characteristics of the product or service such as the perceived risk in buying decisions or the type of purchase. The second factor influencing the choice is the buyer company, such as company orientation (a technology-oriented company has a tendency to have more decisions made by engineers), company size (larger organizations tend to be practicing joint decision-making) and degree of centralization (the more centralized the organization, the more chance of autonomous decision-making). The last factor related to the product is the time pressure. If there is a level of urgency in the purchase of the product or service, it might become an autonomous decision rather than a group process.

At the end of the day, the buying process within an organization is a combination of individual and organizational decision-making processes. Buying behavior involves individuals making decisions in interaction with other people, both within and outside their organizations (Webster and Keller, 2004). As such we will be focusing on the individuals within the buying center and their roles during the different stages. Locating the actors and their roles inside the buying center might be easy, but identifying and understanding each actor’s level of influence and the dynamic of power within the buying center is more difficult (Johnston and Bonoma, 1981).

SM gives customers immediate access to information pertaining to various suppliers’ offerings and sometimes even other buyers’ experiences. Thus equipped, customers can make more informed choices while increasing their buying power. These customers also rely less and less on traditional sources – such as trade shows, catalogs, trade publications or intermediaries – than on the internet to stay informed. This change is altering the role of salespeople and channels in B2B customers’ decision processes and buying behaviors. It is also shifting part of the sales force’s role as an information conduit to other channels more readily managed by marketing, including websites and digital media (Wiersema, 2013).

B2B buying and selling have become less linear as customers research, evaluate, select and share experiences about products. More people within and outside the organization are playing pivotal roles in sizing up offerings, so the path to closing sales has become more complicated Lingqvist et al. (2015). Sellers who are ready to meet customers at different points on their journeys will exploit digital tools more fully, allocate sales and marketing resources more successfully and stimulate collaboration between these two functions, thereby helping to
win over buyers. Lingqvist et al. (2015) share their experience with over 100 B2B sales organizations and suggest that as the change required is significant, so are the benefits, which include up to a 20 per cent increase in customer leads, 10 per cent growth in first-time customers and a speedup of as much as 20 per cent in the time that elapses between qualifying a lead and closing a deal.

Organizational buying process and social media

A set of stages can define the specific tasks that must be performed to solve a buying problem. However, there are a few different schools of thought regarding the number of stages. A few authors have suggested four stages (Webster, 1965; Hillier, 1975; Laczniak, 1979; Naumann et al., 1984; McQuiston and Dickson, 1991; Laios and Xideas, 1994; Xideas and Moschuris, 1998), whereas another group of authors have taken a six-stage approach (McQuiston, 1989; Ghingold and Wilson, 1998; Dadzie et al., 1999). There are also studies with 7 stages (Kennedy, 1983; Lilien and Wong, 1984), 8 stages (Tanner, 1998), 9 stages (Bellizzi, 1981) and 12 stages (Wind, 1978). We will be studying the five-stage model defined by Webster and Wind (1972) and later by Garrido-Samaniego and Gutiérrez-Cillán (2004) in the buying decision process. The main reason for choosing this model, besides its simplicity, was that its five stages were common with the models in other studies which had five or more stages. These five phases as defined by Webster and Wind (1972) are identification of need, establishment of specification, identification of alternatives, evaluation of alternatives and selection of suppliers.

Identification of needs

The likelihood of SM use during this step is rather low. Nevertheless, individuals who make use of SM for private

Figure 3 demonstrates the functional blocks of SM and their relationship with each of the steps in the buying decision-making process of a B2B organization. In addition, it identifies the role of individuals involved in the buying process as part of the buying center in each cell.

With the introduction and infiltration of SM within the context of marketing, the traditional role that the gatekeeper has played is changing. The gatekeeper has traditionally played the role of the individual(s) that manage(s) the flow of information within the organization and the buying center in particular. However, SM and its exponential pervasiveness have democratized the flow of information, potentially giving all parties access. Webster and Wind (1972) defined five roles attributed to the members of the buying center. These five roles are users, buyers, influencers, deciders and gatekeepers. In a more recent article, Keller (2009) defined seven roles. In addition to the previous five roles, the roles of initiators (users or others in the organization that request a purchase) and approvers (the people who authorize the deciders or buyers’ decision) were added too. The size of the buying center differs, usually depending on the buy class. In straight rebuy situations, the buying center may consist of only two to three members, whereas in a new task and in modified rebuy situations, the size of the buying center is usually larger, with three to six members (Doyle et al., 1979).

In this article, we will focus on the original five roles.

Identification of needs

The likelihood of SM use during this step is rather low. Nevertheless, individuals who make use of SM for private
purposes are more likely to use SM for work purposes. This is because in B2B markets, corporate culture plays a major role on the adoption and use of SM for work. If the general perception is that corporate culture views the use of SM as important, then a person is more likely to make use of SM (Keinänen and Kuivalainen, 2015). The three roles that play major roles in the first step of OBB are those of the users, buyers and gatekeepers. Users, as the individuals directly affected by the need that is satisfied by the purchase of a service or product, are typically the ones who initiate the communication process with the buyer once specific needs are identified. This step is mostly an internal process within the organization, where SM can be used for internal communications. The three SM functional blocks can be used in this process. Buyers and users establish their profile as their identity. Conversations on SM between users and buyers take place to establish a need and initiating this process. Information and data sharing can be used to identify the users’ needs. Although other SM building blocks such as presence, reputation and groups could be used, it is unlikely that they would normally be needed during this step of the buying process. However, external relationships in certain instances can be a source of initiating “Identification of Needs” by creating awareness and bringing the need to the buyers’ attention. In this case, buyers will become aware of a solution that might be a possible buy scenario, through their SM relationships, that they were not initially aware of. This possibility could potentially be enhanced further by a greater presence on SM. The emergence of social buying has led to the formation of two segments of B2B buyers: traditional buyers and social buyers who rely extensively on SM and online communities (e.g. IT Knowledge Exchange) during the purchase process (Grewal et al., 2015).

Establishment of specifications

After the need is identified and subsequently it has been established that a purchase is necessary, the buyer works with the users and, if needed, engineers and other specialists to define the exact specifications and requirements. This process is usually an internal process as the discussions are being conducted within the organization’s buying center. However, there could be instances where external sources may influence the process. For example, evaluation, authorization and restriction of chemicals and restriction of hazardous substances standards for hazardous substances pose new, costly challenges that require buyers to carefully vet, document and monitor global networks of suppliers, to an unprecedented degree (Grewal et al., 2015). These influences usually lead to a quest for obtaining additional knowledge about the product or service, which could be acquired through one or more SM platforms, and includes suppliers and consultants. The use of SM during this stage is typically quite extensive, given that the perceived risk faced by the buying decision-maker could be significant.

All seven SM functional blocks are involved in this process. Buyers and users establish their profile as their identity. Knowing more about the prospect helps to mitigate invasiveness, because all interactions would be targeted to the prospect’s profile (Rodriguez et al., 2012). There are conversations between users and buyers, as well as third party experts, whose opinion or expertise may have been sought, establishing the exact specifications required to meet the users’ need, by distributing and sharing information that is needed to establish the specifications. Pertinent information is conducive to rational decision-making, where an objective or rational decision style is deemed to be the degree to which a manager relies on deliberation and calculation in making decisions (Simon, 1987). SM facilitates the creation of content that can be shared with both internal and external stakeholders and thus can challenge organizations with traditional hierarchies and centralized control structures (Habibi et al., 2015; Kaplan and Haenlein, 2010). Presence can provide a better understanding of how buyers and other members of the buying center use SM internally, within their organizations. Presence is also a key determinant toward subsequent corporate success; in fact, back in 2013, Marx observed that B2B firms possessed a limited knowledge of SM, which prevented the buyers from adopting SM as a strategic tool, to gain corporate advantages (Marx, 2013).

Established relationships within or outside of the buying center, or organization, using SM channels can be used for conversations, information gathering and discussions that ultimately help the buying center define the specifications of the needed product or service. During this step, evaluation entails examining the conformance, effectiveness and efficiency of all buying activities implemented within the parameters of the deal, such as rating seller performance or tracking acquisition cost metrics (Grewal et al., 2015). These relationships can also be used to find and “connect” with additional individuals inside or outside of the organization, as well as with suppliers and specialist consultants who can be helpful in the process. Reputation is the functional block that establishes the level of trust that exists between individuals and the weight given to the communication between the buying center individuals, in particular, the buyers and users. In this day and age, advances in communications technology have practically eliminated any significant geographical or temporal boundaries between B2B buyers and sellers. This explains why, specifically during this early stage of the buying process, brand reputation is particularly important in B2B contexts (Bendixen et al., 2004; Glynn, 2012).

The collective knowledge, creativity and skill set of the group are always assets and helpful in establishing the specification details, especially for large projects and complicated purchases. Having different groups with different skill sets and preferences can also help in having simpler, yet more defined communication for the members of the buying center. Once prospects are qualified, the next step in the sales process would be to manage the opportunity by gaining a deeper understanding of these prospects’ needs. Sales professionals spend significant time on this intricate step, which involves converting prospects into first-time clients, assuming that the client sees a value match (Rodriguez et al., 2012). SM enables salespeople to offer customers various touch-points, thereby influencing customers’ perceptions of a salesperson’s sensitivity toward the relationship. Again, any temporal and/or geographical barriers could be mitigated by online meetings with all members of the buying center, concurrently, from a distant location, with tools such as GoToMeeting (Agnihotri et al., 2012). In this case, the buyer and members of the
different groups could potentially include brand communities and technical groups.

Identification of alternatives

Most of the processes up to this step have been internal by nature, with an occasional external approach. The identification of alternatives consists of a step in which the external aspects of SM play a significant role in the decision-making process. This step is very important for the buyer to be able to gather information regarding the product or service they desire to purchase. Before the advent of SM, the buyer was limited in choice and awareness of solutions, to those that they would personally hear about, come across while browsing journals or visiting trade shows, which they ultimately had to pursue by first contacting the relevant supplier and ask for salespersons to call and arrange for an in-person demonstration. However, today, the buyer can easily search for, find and extract information from a multitude of sources on the internet, and he/she is not bound by limitations such as geographical distance or budget. In the industrial selling context, buyers are using SM for their purchases as they compare products, research the market and build relationships with salespeople (Itani et al., 2017). SM can be used to qualify leads early in the sales cycle by researching the profile of the ideal target prospect (Shih, 2009).

The multitude of information available today provides the buyer with more information and knowledge about alternatives, thus allowing the buyer to evaluate different options and making the best and most educated choice. At the same time, SM enables the sellers to create and distribute much more information about their solutions on the internet, with a much broader reach, generating awareness and educating potential buyers of their products and services. This information can be easily gathered and assimilated by the buyer organization. By using SM to qualify prospects, sales firms can focus on ideal clients that fit their business model, thereby reducing time wasted on less than ideal customers, whilst maximizing time looking for more promising opportunities (Rodriguez et al., 2012).

Another important feature available through SM is the expanded electronic word of mouth available through different sites such as forums reviewing the suppliers’ different solutions. This could enable potential buyers to verify certain claims from unknown suppliers, thereby mitigating the associated risk further. It is not uncommon for potential B2B buyers to consult peers within their industry, who in turn tend to influence their buying decision more than any other source (Ramos and Young, 2009). Suppliers, on the other hand, can use private or public SM platforms to increase their credibility, thereby facilitating this process. The result of this step is a group of packages that will be sent to the evaluation process.

The importance of SM during this step is paramount, and all seven functional blocks are involved during this process. Suppliers, buyers and users establish their profile and identity. To this end, companies make use of SM to communicate with their customers (or suppliers), to build relationships and trust and to identify prospective trading partners (Shih, 2009).

Conversations between suppliers, buyers and users throughout this process take place. Here, sellers need to avoid being overzealous, as they may risk being branded as potential online stalkers. Lager (2009) suggests creating a two-way conversation with the aid of white papers, a “pull” strategy rather than a “push” strategy. Organizations can accomplish this by coordinating webinars with potential buyers to elaborate on specific topics and create a value conversation. Webinars provide the means by which customers can interact via social technology, enabling “them to feel like they have immediate and direct access to the company” (Lager, 2009, p. 32).

Sharing can be used to distribute information and data needed to identify viable alternatives. From a seller’s perspective, SM platforms such as Facebook and LinkedIn may prove to be ideal sources of information pertaining to potential buyers. Such information should enable sellers to target the “right” buyers and subsequently share pertinent product information that closely matches their requirements. Furthermore, fully understanding the prospect makes the initial contact seem less invasive, because the interaction, questions and presentation are more targeted to the prospect’s profile (Rodriguez et al., 2012).

Although it may be much more difficult to use SM in B2B relationships, mainly because of the many significant differences in typical B2B products, markets and product development (Lehtimäki et al., 2009), presence is a key component that needs to be fully exploited. SM presence enables buyers to find additional information. Moreover, sellers become more visible to and can be entertained by buyers as potential vendors. Thus, both need to establish their presence within the necessary and appropriate SM channels. According to Gartner (2018), in the current increasingly complex B2B sales environment, customers mostly value suppliers who provide them with the right information, through the right channels, to make the purchase process easier. This is equally true for both buyers and sellers. SM helps sales professionals in pursuing the right decision-makers during this stage (Rodriguez et al., 2012).

As demonstrated, relationships are of utmost importance in organizational buying behavior and as such these established relationships could be crucial in determining alternative solutions. These relationships are between individuals with different roles, buyers, sellers and users, both internal and external across organizations and departments, with current and previous employees, in different positions within either the buyer or seller organizations. Consequently, SM can be used not only to identify new business opportunities, or to create new products, but also to forge stronger relationships with customers and to foster collaboration not only within but also between companies and other parties (Jussila et al., 2014).

Reputation is a functional block that demonstrates the trust of the communication between all parties. During this step, it is of utmost importance that potential sellers manage to project a positive image to their prospective buyers. Brand reputation is especially important within B2B contexts (Bendixen et al., 2004; Glynn, 2012), There is empirical evidence that suggests that B2B companies use SM not only to increase brand awareness, but also to manage their reputation (McCarthy et al., 2014). Due to the potentially high levels of risk involved in B2B purchasing, both buyers and users would like to make sure that there is high-value reputation for the supplier information and product/services. Consequently, groups are
helpful for the collection of information and collaboration among group members assisting in the process of identifying the best among alternative solutions. Different SM platforms provide excellent channels of communication among different groups, as well as between members within groups, during this particularly important step of the decision-making process; hence the use of SM for such purposes should be encouraged. In B2B markets, we can assume that corporate culture has an impact on the use of SM for work. If the corporate culture sees the use of SM as important, then a person uses SM (Keinänen and Kuivalainen, 2015).

**Evaluation of alternatives**

This is the process where suppliers would have submitted their respective packages to the buyer for review. Packages are usually submitted on a timeline which starts the evaluation process. The buyer and users review the packages and compare their required specifications to the respective packages. Both buyers and users and possibly other observers can benefit significantly from SM platforms by reviewing customer reviews and available data, for their own evaluation. During this process, influencers can play a vital role as they attempt to sway both evaluations and potential outcome.

Again, SM has an indispensable role during this stage and all seven functional blocks are involved in this process. This is where evaluation entails examining the conformance, effectiveness and efficiency of all buying activities implemented within the parameters of the deal, such as rating seller performance or tracking acquisition cost metrics (Grewal et al., 2015). Buyers, users, influencers and suppliers establish their profile as identity in their attempt to become part of a larger network of stakeholders. Such connections are especially important in intermediate transactions in business markets where customer needs stem from making products for customers in subsequent transactions and a buying center with individuals from different departments and hierarchical levels of the organization emerges to determine product choices (Sashi, 2009).

Back and forth **Conversations** take place between suppliers, buyers and users. These are particularly important during this step, where typically several sellers could be competing for the same business. To complicate matters even further, such conversations are not normally only restricted to buyers and sellers, but they usually also take place between a network of buyers, sellers and influencers (Mehmet and Clark, 2016). Hence, apart from securing the attention of prospective buyers, sellers would also need to find ways of winning over influencers to increase their chances of being “shortlisted” into the buyers’ consideration set. Understanding customers can be very difficult at times, especially because the complexity of the buying process, including dealing with multiple decision-makers, could be a challenging experience. To manage these obstacles, sales professionals must maintain continuous collaboration both with their clients and key influencers (Rodriguez et al., 2012).

**Sharing** can be used to distribute information and data assisting in selecting a suitable solution. Cohen (2011) argued that SM has been defined as digital content and network-based interactions that are developed and maintained by and between people. This would explain why individuals have used SM “to participate in social networks, which enabled them to create and share content, communicate with one another, and build relationships” (Hennig-Thurau et al., 2010, p. 312). Astute sellers tend to be more creative in identifying new, effective ways of engaging and interacting with customers, without being overbearing (Jones et al., 2003). Salespersons, in particular, need to be prudent and refrain from hounding potential buyers in their quest to win more sales (Agnihotri et al., 2012). The authors further posit two forms of interaction-enhancing technologies focused on “pulling” customers (e.g. blogs and wikis) toward salesperson-generated content at one end versus those geared toward “pushing” information through expanding networks of connections (e.g. LinkedIn and Facebook) at the other.

A seller’s presence can provide a buyer with information and a certain level of comfort. Both buyers and users would like to see the vendors’ or suppliers’ presence, which seems to provide potential buyers with some additional form of assurance. Although, traditionally, B2B decision-makers are considered to be more rational than their B2C counterparts, a recent global study from the B2B agency Gyro and the Financial Times (Schick, 2018) confirmed the role of emotion in B2B buying, and they identified confidence and optimism as the most influential forms of emotional capital for B2B brands to invest in.

**Relationships** are an important functional block for the evaluation process. This step is particularly attention demanding because the risks involved, especially within a B2B context, could be significant. Having adequate and correct information usually serves as a cornerstone to this step, which mainly concerns suppliers and their products or services, and is essential to the selection process. SM not only enables the collection of customer data (and information) that could help identify business opportunities but also facilitates communications which, in turn, strengthen firms’ B2B relationships (Gruner and Power, 2018). Existing relationships between different parties have always been a great source of information. The functional block that involves the reputation of the parties includes the level of trust between all parties. This affects how the communication of each individual is perceived by others. Buyers and users would like to make sure that suppliers enjoy a good reputation, leading to higher levels of trust toward supplier information, products and/or services. SM platforms such as Facebook and LinkedIn provide detailed information on prospects. These tools enable sales professionals to increase their social capital and build deeper relationships by sharing content that is a better fit for the prospective client (Rodriguez et al., 2012). **Groups** may provide useful ways of segmenting different product lines and services. From a selling perspective, once prospects are qualified, salespersons need to gain a deeper understanding of their clients’ needs, which may necessitate their spending significant time on this intricate step of the B2B buying process (Rodriguez et al., 2012).

**Selection of suppliers**

The final step of the process is choosing the best among several alternatives and identifying the supplier of choice. This is the step where deciders play an essential role, as they will be
reviewing the final evaluation summary sheets, as well as the functional specification before making their final decision. They will be looking at available information channels to facilitate their decision-making process, including supplier related SM content and contacting customers for their final review and reference checks. Internally, the decision-maker would typically consult key influencers which could include engineers or financial specialists. In general, B2B purchasers are more knowledgeable than B2C purchasers. To some degree, this is due to the higher level of risk involved in high-value purchases (Jerman and Završnik, 2012). Moreover, B2B purchasers rely on personal sales relatively more than advertising as a source of product information (Urban and Hauser, 1993). Hence, the complexity of products, high-value exchange and more intense relationship demand a richer and more personalized communication and media strategy (Habibi et al., 2015).

Industrial products are usually purchased by professionals who consider several different criteria before making any buying decision. They tend to acquire plenty of information about the industrial products to be purchased, and they normally evaluate the different alternatives objectively (Jussila et al., 2014).

Again, the use of SM during this stage is quite intensive and all seven functional blocks are involved in this process. Identity is for the buyers and the deciders to establish their profile. When dealing in industrial products, there is more emphasis on physical performance and personal selling than there would be in consumer products, where psychological attributes and advertising are critical for success (Urban and Hauser, 1993). Thus, potential buyers would need to make sure that they attract the best sources, which explains Kahar et al.’s (2012) observation that the primary reason small and medium enterprises use SM applications is to establish visibility among present and prospective customers, as well as to keep in touch with them. Conversation refers to communications between suppliers, buyers and deciders. Effective communications are of paramount importance for successful B2B relationships, as the economic impact of these communications within and across organizations has been estimated to have exceeded $1tn (Kane et al., 2014). In the same context, using SM to create a “corporate narrative” can play an important role for B2B firms’ ability to reduce uncertainty (Bonnin and Rodriguez, 2019). During this final step of the decision-making process, it is imperative that all parties attempt to build strong and profitable B2B relationships, which is why it is typical of B2B firms to engage in frequent and direct communications with their customers (Crosby et al., 1990). To this end, firms need to consistently engage in direct marketing communications that fit customers’ preferences, help foster positive perceptions, influence purchase behavior and eventually improve financial performance (Narayandas and Rangan, 2004). Indeed, evidence pertaining to B2B interactions not only attests to SM’s potential within this context but also suggests that it remains challenging for managers to decide how to best use SM to communicate effectively with trading partners (Gruner and Power, 2018). Sharing can be used to share information and data to identify the needs. SM enables all parties to participate simultaneously in quick and responsive communications. SM also offers trading partners an opportunity to establish their credibility through more targeted one-to-one (rather than conventional broadcast) communications (Gruner and Power, 2018). Presence is a key determinant during this process. Buyers and deciders would like to see the vendors or suppliers’ presence. SM platforms have proliferated during recent years, and many companies have more than 20 SM accounts (Rapp et al., 2013); yet, despite this seemingly abundant choice, some organizations choose to focus on a single SM platform, like LinkedIn (Kumar and Mirchandani, 2012).

Relationships constitute one of the fundamental functional blocks, especially for the process of supplier selection. Relationships can exist between any of the roles on both sides of the fence, buyers, suppliers, deciders and even individuals who do not form part of the buying center, including previous and current customers. SM may have facilitated the process of relationship building; however, this would have come at the expense of introducing further layers of complexity to the entire process (Quinton and Wilson, 2016). Having the necessary information about suppliers and their products or services is essential to the selection process, as was the case with the evaluation process. Existing relationships have always been an excellent source of information. The reputation of the parties involved is an important functional block. The level of trust between all parties affects how others perceive communication between every individual. Buyers and users would want to ensure that suppliers enjoy a good reputation and, as a result, there is a high level of trust toward suppliers’ information and their products and/or services. Moreover, because reputation is experienced before it is assessed, one could conclude that it is dependent on the medium through which it is experienced and the context of the assessment (Zarkada and Polydorou, 2014). Li and Zhang (2019) also demonstrated that SM usage affects customer loyalty and is mediated by buyers’ trust in salespersons’ integrity/benevolence and as such can indirectly improve a buyer’s loyalty. Also, as seen in the employee branding literature by Dabirian et al. (2019) and Duncan et al. (2019), employees participate and contribute information related to their employers on the different available SM channels. As these contributions increase, they indirectly contribute to the overall brand image and reputation of their employers, the seller organizations. This further emphasizes the importance of SM during this step. Groups are useful in segmenting different product lines and services. The emergence of SM networks has changed the rules of the game by providing unparalleled opportunities for businesses. However, these opportunities may give rise to tensions within the established understanding of business relationships and networks (Quinton and Wilson, 2016). In terms of SM, B2B marketers are likely to use webinars, blogs and platforms, like LinkedIn, rather than Pinterest and Instagram (Habibi et al., 2015).

Conclusion: social media in business-to-business

The economic power of B2B transactions has not been reflected in terms of published research in marketing journals, and the relevance that these publications have for practitioners has been questioned over the past 20 years (Cortez and Johnston, 2017).
We have demonstrated that SM has an important place in B2B organizations in general and OBB in particular. We have also shown that SM is particularly relevant to OBB as it is useful to the buying center in all the functional blocks and in all the stages of the buying process. This finding is in accordance with the results obtained during a survey of over 500 decision-makers of mid- and large-size companies, across industries, commissioned by Forbes in an attempt to better understand how B2B vendors were being assessed and how these executives were being influenced by marketing channels. Results showed that 83 per cent of these executives used SM when choosing a vendor. Moreover, 92 per cent of this segment claimed that SM influenced a purchase decision (Schimel, 2018).

This article has mapped out lots of avenues for future research. Michaelidou et al. (2011) mentioned that many organizations are not using SM in support of their brand strategies for a perceived lack of relevance with respect to the industry. Several things have happened since then, and research on adoption need to be updated. Likewise, in the B2B context, research into the required investment into human resources to improve the overall capability and knowledge to use digital marketing tools (Järvinen et al., 2012) is warranted, as is cost, such as in the amount of time required to effectively use SM (Buehrer et al., 2005). Furthermore, research should further explore specific issues such as branding (Brennan and Croft, 2012; Gupta et al., 2015; Leek and Christodoulides, 2011); relationship building, barrier of use, measurement (Michaelidou et al., 2011); blogging (Steyn et al., 2010); sales techniques (Andzulis et al., 2012); and lead generation (Bodnar and Cohen, 2011) in B2B marketing.

By looking at the different stages of an organization’s buying process within their buying center and identifying the relationships between the various roles and SM dimensions defined in the article, we hope to shed further light on the impact of SM on each stage of the buying process, as it relates to the roles.

As for its practical contributions, this article looks into ways to use SM in helping both the buyer and seller in a B2B setting to make a purchase possible. We have dissected the buying process via the relationship of its stages with the essential building blocks of SM. We have considered each dimension of SM and established which roles the actors in a buying center can play by using them during each stage of the buying process. This will not only allow buyers to focus their efforts on the most effective SM channels, but also the sellers to focus their marketing efforts more effectively, in the right areas of SM, using appropriate tools. By using appropriate SM channels, both sellers and buyers can forge their desired identity, while connecting and sharing the appropriate information with their target parties. For example, despite being targeted at a niche audience of fleet buyers, the Volvo Trucks “Live Test” series of videos have been viewed over 120 million times on YouTube, over a period of three years (Iankova et al., 2018). From the buyers’ side, having the ability to use SM for enhancing operations and using the knowledge acquired through the various channels could prove to be invaluable.

During the course of our research, we found that relatively few successful B2B organizations seem to be aware of the power of SM in this respect. Although there are obvious uses of SM in B2B companies, academic research indicates that B2B marketers are not as sophisticated or skilled in SM usage as B2C marketers (Simmons et al., 2010). Hence, in accordance with Andresson and Wikström’s (2017) findings, we have shown that SM should not simply be viewed as a mere customer-communication platform, but rather as a means of enabling firms to communicate with their customers and other stakeholders. In fact, according to Kunz and Werning (2013), failing to think strategically in terms of SM may lead to cross-functional coordination issues.

However, it seems that things may indeed be changing. According to Kunz and Hackworth (2011), user behavior is also likely to change with SM. B2B buyers now seem to have unlimited access to information to enable them to compare vendors and offerings; however, researchers found that they only spend 17 per cent of their time meeting their potential suppliers. Moreover, when comparing several suppliers, the actual time spent went down to 5–6 per cent (Gartner, 2018).

Overall, both the sellers and the buyers can benefit from using SM in their marketing campaigns and their buying processes, respectively. This article looks at the usage of SM in B2B marketing through the lens of OBB and the buying center’s decision-making process and highlights the motivations for B2B organizations to use SM in buying decisions.

Meanwhile, it would be worth noting that companies including Ernst & Young and Accenture reported that millennials make up two-thirds of their entire employee base, whereas it is estimated that by 2025, 75 per cent of the American workforce will consist of millennials, many of whom will occupy key decision-making roles, including c-suite positions (Hall, 2018; Economy, 2018). Millennials are known to be attached to their smartphones and also to be totally captivated by SM (Sashittal et al., 2016).

Future research

As for the future research, the scope of this article is to pave the way for additional in-depth research into the level of influence exerted by each SM dimension, on the associated buying stage, and how each dimension can be used to maximize the level of influence to the organizations’ ultimate advantage from both the sellers’ and the buyers’ perspectives. There has not been much theoretical research regarding B2B organizations and the influence that SM can have on their buying and selling behaviors. Indeed, Gummesson (2014, p. 260) has come forward with his criticism toward B2B marketing theory, or rather the lack of it, by highlighting the fact that most companies have been successful without any significant academic input. We recommend both conceptual and empirical studies regarding B2B organizations and the influence of SM in the buying process, focusing on the buying center.

References

Social media influence

Hoda Diba, Joseph M. Vella and Russell Abratt


Bodnar, K. and Cohen, J.L. (2011), The b2b Social Media Book: Become a Marketing Superstar by Generating Leads with Blogging, LinkedIn, Twitter, Facebook, Email, and More, John Wiley & Sons, Hoboken, NJ.


Social media influence

Hoda Diba, Joseph M. Vella and Russell Abratt


Further reading


Robinson, P.J., Faris, C.W. and Wind, Y. (1967), ” Industrial Buying and Creative Marketing, Allyn and Bacon, Boston, MA.


**Corresponding author**

Hoda Diba can be contacted at: hdiba@fullerton.edu
Crowdsourcing to manage service gaps in service networks

Amanda Blair
Industrial Economics, Royal Institute of Technology, Stockholm, Sweden

Thomas Martin Key
Department of Marketing, Strategy and International Business, University of Colorado at Colorado Springs, Colorado Springs, Colorado, USA, and

Matthew Wilson
Department of Marketing and Hospitality Services Administration, Central Michigan University, Mt. Pleasant, Michigan, USA

Abstract
Purpose – The purpose of this paper is to illustrate and conceptualize how crowdsourcing can be implemented as a potential means to address gaps in service quality within service networks and to provide guidance to marketing practitioners on the use of crowdsourcing within service networks.

Design/methodology/approach – This paper conceptualizes how crowdsourcing can be used to address service quality gaps in service networks and provides propositions regarding the effects of crowdsourcing on service quality gaps.

Findings – Conceptual paper with a literature review, suggested a model for service quality gaps in service networks and propositions regarding the effects of crowdsourcing to manage service quality gaps.

Research limitations/implications – This research contributes to the literature on crowdsourcing by theorizing how crowdsourcing impacts service quality in service networks.

Practical implications – Considerations for managers implementing crowdsourcing strategies and activities within service networks are provided. In particular, implications with regard to forming the crowd, developing the most appropriate approach and integrating value into the firm are discussed.

Originality/value – This paper offers an original contribution linking crowdsourcing to service quality.

Keywords Industrial marketing, B2B marketing, Business networks, Crowdsourcing, Service networks, Service quality gaps

Paper type Conceptual paper

Introduction
For industrial marketers, the delivery of services is becoming both more important and more complex. Today, service offerings are increasingly used as part of a strategy to respond to changing markets because they can offer firms alternate growth options (Kumar and Kumar, 2004; Kowalkowski et al., 2017). As a result, not only are firms re-orienting themselves to service strategies but also partnering with others to provide the required services to customers. In particular, firms are developing service networks to meet market needs that are beyond their own capabilities (Weigel and Hadwich, 2018). For business-to-business (B2B) firms that rely on services provided by partners in their network, the quality of the services is very important. That is, these firms rely on services, such as delivery, warranties and troubleshooting, to ensure their own performance (Kumar and Kumar, 2004; Morgan et al., 2007). Yet, managing quality across service networks is underrepresented in both the industrial marketing and services marketing literatures.

Service delivery creates challenges for managing quality. The differences between the consumer’s expected, perceived and actual service experience present gaps in the management of service quality. This is exacerbated in service networks – as inevitably more gaps exist and the management across firms becomes more complex.

As highlighted in this special issue, emerging technologies offer business and industrial marketers new means of addressing challenges that they face (Paschen and Pitt, 2019) – including challenges related to managing service quality across service networks. Crowdsourcing is one such technology-enabled opportunity. In fact, the majority of the best performing brands use crowdsourcing to achieve some aspect of value creation (Fedorenko and Berthon, 2017). For example, in their study of performance during the economic downturn of the early 2000s, Nickell et al. (2013) gathered data from more than 120 executives and managers of American B2B firms. They found that the top performing firms through the recession were using crowdsourcing to engage their business
networks and employees. With this in mind, consider if crowdsourcing was a tool to better manage quality issues in service networks in the B2B context. Specifically, crowdsourcing provides an avenue for firms to strengthen their service quality through the access of high-knowledge stakeholders within their industry. This high-knowledge base of stakeholders eliminates potential blind spots for B2B enterprises that rely on fewer, but vastly more relationship-dependent interactions that often constitute high-value exchanges. Moreover, business networks provide conditions that inherently lend themselves to crowdsourcing opportunities. That is, B2B firms often face problems that require industry expertise to be solved. As a result, the opportunity to crowdsource from sources with relevant expertise is essential. At the same time, B2B firms tend to have fewer (but more substantial) network relationships, and can turn to both internal and external “crowds” when seeking input. Specifically, B2B firms can leverage both employees’ expertise (within the firm) and value chain expertise (external to the firm) in crowdsourcing, ultimately, creating the strong potential to enhance intra-firm collaboration and service (Simula and Vuori, 2012; Zahay et al., 2018). This perspective essentially suggests that B2B firms can benefit from social capital (Laud et al., 2015), which can be captured through crowdsourcing initiatives.

In this paper, crowdsourcing is proposed as a way to address service quality gaps in service networks. First, an overview of the literature on business and service networks is presented. Second, the literature on service quality and service quality gaps is reviewed as it pertains to service networks. Next, a model to illustrate service gaps in service networks is offered, and crowdsourcing, particularly as it pertains to business networks, is discussed. These topics are then linked to suggest crowdsourcing may address specific service quality gaps with propositions suggested for future research. Finally, managerial considerations for engaging in crowdsourcing activities within business and service networks are outlined.

### Service quality gaps in business networks

#### Business networks

Business networks emerged as a topic within the industrial and B2B literature in the 1990s (Möller, 2013). The network perspective looks beyond the dyadic or one-to-one, relationship of the firm with a specific entity. Instead, it considers the firm’s partners, the partners’ partners, etc., as they exist in a series of relationships in business to business exchanges (Anderson et al., 1994; Möller and Halinen, 1999; Håkansson and Ford, 2002; Johanson and Vahlne, 2011; Banoun et al., 2016). Not only are suppliers, customers, competitors and legislative entities all part of the networked web (Möller and Halinen, 1999) but also other more complex assessments of organizations of varying scales (from the micro to the macro) are also considered as part of the business network (Chandler and Vargo, 2011). Somewhere between firms engaging in the market-driven transaction and vertical integration, business networks are made of mutually beneficial relationships of more than two firms (Weigel and Hadwich, 2018). Behaviors and relationships are contemplated from individual actors and departments to the firm, to markets (Möller, 2013).

These networks are conceptualized by some as forming service ecosystems, in which all actors within the network can impact each other (Vargo and Lusch, 2011; Banoun et al., 2016; Hartmann et al., 2018). In particular, the conceptualization of these service ecosystems highlights how value is co-created by multiple stakeholders in service networks (Vargo and Lusch, 2010). Thus, the service ecosystem perspective focuses on the processes that lead to the co-creation of value within service networks, and identifies a range of complexities that occur in these settings. Further, this literature suggests that conceptualizations of co-created value in these settings are varied (Kohtamäki and Rajala, 2016), which further adds to the complexity of understanding the processes that lead to value co-creation in business networks.

Other research on business networks focuses on what they do, rather than on the processes that occur within them. That is, business networks both rely on and provide services. For example, industrial firms have long provided product support services. From installation to training, to performance optimization, the industrial consumer is willing to invest more to support the performance of the product (Kumar and Kumar, 2004). There is also a growing trend for industrial and manufacturing firms to diversify with services due to market changes. As product lifecycles reach the maturity phase, adding services offers the opportunity to innovate, often at increased margins compared to traditional product offerings (Kowalkowski et al., 2017; Weigel and Hadwich, 2018). Daimler AG is an example of a mature manufacturing company that incorporated services into its business model with the launch of car2go, a car-sharing service. Daimler has accessed more than 600,000 customers through its vehicles to address the service-need of urban transportation for consumers (Matzler et al., 2015). The concept of service networks has emerged from this type of transition. Weigel and Hadwich (2018, p. 255) offer the following definition:

> Service networks, in turn, link business networks and services and can be characterized as business networks in which partner firms jointly produce services or product-service-bundles with a dominating service share.

### Service management gaps

With the context of service networks, it is useful to turn to the services marketing literature. In their seminal work on service quality, Parasuraman et al. (1985) present a model that defines quality as it pertains to services. The model includes both the consumer and the marketer. For the consumer, both the expectation of the service and the perceived service experience are part of the model. On the side of the marketer, management’s understanding of the customer expectations, how that translates into quality specifications, the actual delivery of service, and the ongoing external communication to consumers are included. The model highlights five gaps that can occur between the various components of the model outlined (Table I). It is worth noting that in the context of B2B service networks, the customer is another business who will also have their own customers.

Means for addressing the four gaps on the firm’s side are further developed in subsequent work and can be largely summarized as the control processes and the associated consequences within the firm to manage service delivery (Zeithaml et al., 1988). For industrial marketers, the
potential gaps with the quality of services are even greater (Moore and Schlegelmilch, 1994), as issues happen within the focal firm and on the partner firm’s side. In addition, business networks are dynamic and there is the possibility of compounding effects across the relationships in the network; these can work to both strengthen or detract from the relationships (Anderson et al., 1994). That is, gaps between expected, perceived and actual service experiences across several partners in a service network can be amplified beyond the boundaries of a given firm. The assessment of quality gaps is generally limited to dyadic firm relationships, as the reciprocal impacts of performance within service networks are often overlooked (Morgan et al., 2007). Thus, this paper begins by discerning the potential gaps affecting service quality in the network.

To illustrate (Figure 1), consider Firm A as the focal firm in partnership with Firm B; this is the focal relationship of the model. In this model, Firm C is also in partnership with Firm A as a service supplier and Firm D is in partnership with Firm B as a service consumer. The firms are both service suppliers and service consumers simultaneously, which adds to the complexity of understanding service quality expectations and delivery across intra- and inter-firm interactions. Building on the service quality model, there is the potential for upwards of 13 quality gaps; each of these potential gaps are represented by an asterisk in Figure 1. These potential gaps can affect the entire service network. Using this model, it is clear that service gaps in business networks are potentially significant. Further, as this representation is intended to illustrate the nature of potential service gaps in business networks, it is simplified.

Table I Summary of Parasuraman et al.’s (1985) service quality model gaps

<table>
<thead>
<tr>
<th>Gap</th>
<th>Actors</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The consumer and the firm</td>
<td>Between the consumer’s expectations of the service experience and management’s understanding of those expectations</td>
</tr>
<tr>
<td>2</td>
<td>The firm</td>
<td>Between management’s understanding of consumers’ expectations and the translation of that into specifications</td>
</tr>
<tr>
<td>3</td>
<td>The firm</td>
<td>Between service quality specifications and the actual delivery of the service</td>
</tr>
<tr>
<td>4</td>
<td>The firm</td>
<td>Between the delivery of the service and external communications about that service</td>
</tr>
<tr>
<td>5</td>
<td>The consumer</td>
<td>Between the consumer’s expected service experience and the perception of that service experience</td>
</tr>
</tbody>
</table>

Figure 1 Service gaps across service networks

Legend
* Potential service quality gaps
--- Firm A
----- Firm B
///// Firm C
--- Firm D
Crowdsourcing to manage service gaps

Amanda Blair, Thomas Martin Key and Matthew Wilson

compared to business networks in practice. In reality, service networks are not linear. Instead, they are a web of players with a variety of nuanced and dynamic relationships, and as a result, the gaps are inevitably much more complex.

The complexities of managing quality in service networks have been explored as they pertain to customer service (Parasuraman, 1998), brand strength (Morgan et al., 2007), buyer satisfaction and the effect on the supplier-buyer relationship (Ashok et al., 2018) and customer-perceived value in the IT sector (Lapierre, 2000). This paper takes a new approach and suggests that crowdsourcing can be a tool for addressing service quality gaps in service networks. Specifically, this paper suggests that crowdsourcing from focal firm employees and service network partners or customers can be used to address the complex array of service gaps that form in service networks. In the following section, we review the concept of crowdsourcing, with particular emphasis on how it has been used in B2B contexts and business networks.

The network as the crowd

Crowdsourcing

Advances in technology have allowed firms to tap into greater numbers of stakeholders and harness more value, more quickly. As evidenced by the growth of online tools such as Wikipedia and Amazon’s Mechanical Turk, crowds are a powerful source of knowledge and labor. The understanding of crowdsourcing has continued to evolve for firms and scholars alike. The first distinct definition of crowdsourcing emerged in the mid-2000s, conceptualized as a firm outsourcing a function that was once performed within the firm to a large group of undefined people, typically through an open call (Howe, 2006). For example, Frito Lay generated new product ideas from the crowd through its Do us a Flavour campaign, which invited the public to submit regionally-inspired potato chip flavor ideas and then chose the winners through a crowd-vote (Djelassi and Decoopman, 2013; Burlingame, 2015). By effectively tapping into the crowd in a deliberate and thoughtful way, firms can derive value with regard to ideation, research and development, decision-making and job completion (Prippić et al., 2015; Zahay et al., 2018).

Crowdsourcing has since been studied in several disciplines, including marketing (Wilson, 2018), entrepreneurship (Brabham, 2008), technology (Kosonen and Hettonen, 2014), human resources (Jayanti, 2012) and management (Afuah and Tucci, 2012). Simultaneously, there have been advances in technology platforms supporting crowdsourcing strategies and firms have developed their competencies for structuring successful crowdsourcing campaigns. Scholars are proposing a refined definition based on these developments. Kietzmann (2017, p. 152) updated the definition of crowdsourcing to mean “the use of IT to outsource any organizational function to a strategically defined population of human and non-human actors in the form of an open call.” This recent interpretation of crowdsourcing modifies the research agenda to include functions that were never originally done by the firm, highlights the deliberate and strategic nature of planned access to the crowd and embeds the reality of ongoing technological advances needed to conduct the initiative.

Crowdsourcing in business networks

In the B2B context, crowdsourcing has been associated with innovation, new product development and solving complex problems (Zahay et al., 2018). In addition, crowdsourcing has been investigated in the context of service innovation (Ommen et al., 2016). Firms recognize that there is information that is important to their products and operations that cannot be accessed without looking beyond department-specific internal capabilities. This means that expanding crowdsourcing opportunities to employees from various areas of the enterprise, rather than specific departments or silos, can increase the available insight accessible to an organization. Crowdsourcing employee-based firm information can help attract, keep and improve employee relations (Dabirian et al., 2017; Duncan et al., 2019). Additionally, technology and web-based systems facilitate garnering ideas or opinions from large groups of people faster and easier than it has ever been (Kietzmann, 2017). This can be applied through the construction of business network platforms that tap into the industry expertise of value chain members to lower ambiguity about service specifications and expectations. For example, open innovation platforms have been a means for firms to find and co-create with partners within dispersed business networks (Codini et al., 2018). Thus, within the service network, the quality of ideas generated by the crowd can be particularly valuable. Leveraging network members to increase innovation is an established tactic within industrial marketing, and it has been demonstrated that the involvement of suppliers early on in the innovation process, such as when solutions are being generated, improves the overall performance of the innovation (Hagedorn, 1993, 2002; Gassmann et al., 2010).

Crowdsourcing has been used to address supply chain management issues across the value chain, including the involvement of end consumers to determine supplier selection and upstream value creation (Ta et al., 2015; Boyce and Mano, 2018) and solving issues with logistics (Frehe et al., 2017). Crowdsourcing not only has the potential to generate innovative ideas and solve problems but also can drive emotional and psychological commitment in a service network. There are tangible benefits of being a supplier’s top-of-mind customer or vice versa – these include shorter lead times, more tailored services, greater flexibility in payment terms, among others. In addition, many businesses consider employee engagement as a factor that drives profitability (HBR Analytics Services, 2013). The notion of engagement evokes involvement and commitment on the part of the network (Macey and Schneider, 2008; Stieger et al., 2012).

Addressing gaps in service quality with crowdsourcing

As the preceding section reveals, crowdsourcing has already been used to create value in B2B contexts. One area that crowdsourcing has the potential to contribute to, but which research has not yet explored in detail, is how crowdsourcing can be used to address service gaps. Linking service networks, service quality gaps and crowdsourcing, is the central goal of this research. In what follows, we present a series of propositions on the potential effects of crowdsourcing activities to manage service quality gaps for service networks (Figure 2).
Crowdsourcing to manage service gaps
Amanda Blair, Thomas Martin Key and Matthew Wilson

Figure 2 Summary of propositions: the effects of crowdsourcing to address quality gaps in service networks

Between the consumer’s expectations of the service experience and management’s understanding of those expectations
Factors driving misalignment between consumer expectations and the firm’s understanding of those service expectations are largely linked to market orientation and communication. The more layered the management structure of the firm, the more opportunity for distortion of customers’ perspectives as they are communicated up the organization (Zeithaml et al., 1988). Crowdsourcing can be used to improve collective intelligence and can lead to richer information than traditional information gathering methods such as focus groups and surveys (Stieger et al., 2012). Further, Stieger et al. (2012) note that crowdsourcing as a strategic tool can leverage employee buy-in, implementation and understanding. In this way, crowdsourcing from employees provides a counterpoint to crowdsourcing with partner firms through the amplification of industry knowledge from within the firm that reflects front-line experiences in high-value service network relationships. In both cases, there is a sense in which two types of stakeholders can be accessed for collective improvements to specific service-based issues.

In the past, the majority of partners in a business network were difficult to access (Anderson et al., 1994). An additional challenge has been with the costs of relationship management between firms, as these must remain low enough so that the benefits harnessed can outweigh the resources invested (Cannon and Perreault, 1999). With this in mind, crowdsourcing and technology has the potential to shrink distance within the networks – essentially bringing partners closer and enabling engagement that is more readily accessible to the firm. This distance reduction results in more clarity about what service partners expect and ways in which these expectations can be met. Crowdsourcing through internal and external stakeholder expertise magnifies business network intelligence generation and dissemination. In particular, crowdsourcing can be used to target network partners who are also focal firm service customers for the purposes of increased understanding of service expectations, the same way business-to-consumer (B2C) companies rely on end consumers’ insights to improve service quality. Moreover, crowdsourcing with front line employees who have relationship-based knowledge of firm partners can increase the overall structural clarity and sources of information the focal firm enjoys. Thus, this paper proposes the following:

1. Engaging in crowdsourcing will positively affect the focal firm’s understanding of the service expectations of partner firms in the service network, thus reducing the service quality gap.

2. Engaging in crowdsourcing will not impact the focal firm’s ability to translate the network’s service quality expectations to service specifications.

Between management’s understanding of consumer expectations and the translation into specifications
The firm’s ability to communicate and embed the service expectations of consumers within the firm may result in service quality shortages. The likelihood of having accurate service quality specifications will be increased with a better management commitment to service quality and a means of integrating that approach into the firm’s business planning approach (Zeithaml et al., 1988). Crowdsourcing literature has discussed similar themes. For example, using crowdsourcing with a new product or service development will only achieve the intended business benefits if the firm’s internal capabilities and processes align with intended outcomes. Intended outcomes may relate to product funding cycles, various metrics or management focus (Zahay et al., 2018). For crowdsourcing efforts to be successful, firms not only need to understand how to acquire the desired outcome but also need to have processes in place to assimilate and absorb the crowdsourced outputs into the firm (Prpić et al., 2015). Although the literature indicates that crowdsourcing may lead to a clearer understanding of service quality expectations, the translation of those expectations into business processes does not appear to have a direct link; subsequently, it is proposed that:

P2. Engaging in crowdsourcing will not impact the focal firm’s ability to translate the network’s service quality expectations to service specifications.

Between service quality specifications and the actual delivery of the service
The service performance gap is the difference in management’s expectations of the service employee’s performance and the employee’s actual performance (Zeithaml et al., 1988, p. 41). In service networks, the service provider is not an internal employee but is likely another firm. That is, service networks often develop with partners that offer complementary services to enable firms to focus on their respective core competencies (Weigel and Hadwich, 2018). Although not extensively studied, customer orientation and innovation performance have been found to have a positive effect on the performance of partners in service networks (Weigel and Hadwich, 2018). Customer orientation and innovation performance are both improved through crowdsourcing, as crowdsourcing can be used as a mechanism to push the boundaries of innovation. For example, scholars have identified that in a business network, cross-disciplinary ideas generated from a crowd can provide solutions to complex problems (Simula and Vuori, 2012; Simula and Ahola, 2014). Some management literature considers the value for participants, as opposed to firms, in
engaging in crowdsourcing activities. Participants are defined as a distinct stakeholder group that derives value from the co-creation experience with the firm and the other participants, whether they are customers or not (Fedorenko and Berthon, 2017; Fedorenko et al., 2017). This work suggests that “the contributor’s subjective assessment of control and power relations lies at the heart of value co-creation” (Fedorenko and Berthon, 2017, p. 184). Extending this line of thinking to service networks, stakeholders participating in crowdsourcing are likely to be partners that deliver service in the focal firm’s network to the focal firm’s customers. This means that crowdsourcing is poised to enrich the overall knowledge base of business partner networks, including both B2B customers and end consumers. Ultimately, this results in partners having a more complete understanding of their customers’ customer and a greater commitment to providing superior service to the focal firm. A more complete picture of the value chain becomes an incentive to increase superior service delivery; therefore, this paper proposes:

P3. Engaging in crowdsourcing activities in a service network will positively affect the participant partner firms’ commitment to the delivery of quality service, thus reducing the service quality gap.

Between the delivery of the service and external communications about that service

The actual delivery of a service and what is communicated about it outside the firm is not always consistent. This is another opportunity for a gap in service quality leading the service partner/customer to expect a service that is different than what is provided (Zeithaml et al., 1988). In the time, as the service quality gap model was originally envisioned, the landscape of public communications has changed significantly. Through the advent of Web 2.0, social media and creative consumers, dialogues about brands are happening entirely outside of the firm’s purview (Berthon et al., 2012). The notion that the firm is able to “control” external communications is no longer valid.

Inherently, crowdsourcing is a form of communication with information exchange between the focal firm and participants. In service networks, this opens the door for communication with and between partners. Two factors have been identified to maintain positive communication outcomes with crowdsourcing activities – “engaged people and high-quality content” (Fedorenko et al., 2017, p. 156). It is proposed that:

P4a. Engaging in crowdsourcing with engaged participants from partner firms in a service network will positively affect communications, thus reducing the service quality gap.

P4b. Using high-quality content as part of crowdsourcing in a service network will positively affect communications, thus reducing the service quality gap.

Managerial considerations

The foundational concept of crowdsourcing is that the value of the knowledge of many outweighs that of a few (Surowiecki, 2005; Brabham, 2008; Edgeman et al., 2015a). This is a critical consideration when setting up a crowdsourcing activity using a business network. Members of a firm’s network will likely know more about the specific industry and associated business issues than the average person. If the objective of the crowdsourcing activity is to have a high degree of diversity of thought, it may be better to use the general public to participate rather than the business network. However, for certain problems, expertise may be a prerequisite and defining a minimum level of expertise at the outset is likely to improve outcomes (Rosen, 2011). Although there is some risk to the diversity of outputs from the crowd when restricting it from an expert perspective, firms have successfully tapped into their business networks for solutions they could not achieve on their own (Simula and Vuori, 2012).

In addition to diversity and expertise, independence and collaboration need to be considered when constructing a crowd. The independence of crowd members should be balanced with the benefits from crowd member collaboration. Independence between members of the crowd helps to reduce the impact of issues such as “crowdthink” (Wilson et al., 2017), decision-making bias and abuse of authority, which can occur when participants are able to influence each other (Bonabeau, 2009; Rosen, 2011; Stieger et al., 2012). However, collaboration is a core benefit of certain crowdsourcing techniques. It is through collaboration that complementary ideas are able to come together and evolve to solve complex problems. Determining how to balance independence and collaboration is an important step in determining participation. This is particularly true in a service network, where participants are likely in direct competition with each other for the focal firm’s business and for the business of other firms.

Participation in crowdsourcing activities is voluntary, and has important implications for achieving success in crowdsourcing initiatives (Estelles-Arolas and González-Ladrón-de-Guevara, 2012). Indeed, issues related to voluntary participation become even more crucial when using crowdsourcing to engage a service network because the structure of the activity needs to be sufficiently appealing to attract voluntary engagement from participants that are likely already resource-constrained and have a complex array of interests or agendas. As with traditional industrial marketing avenues to manage business partners, informal relationship management often is more successful (Johanson and Vahlne, 2011). More structured techniques, such as contract management, are unlikely to result in successful crowdsourcing efforts.

Crowdsourcing techniques take on many forms and produce different results. Seeking input from a service network will provide maximum benefit if the membership and the purpose of the crowdsourcing activities are well-defined and aligned to the focal firm’s objectives (Andersen et al., 2013; Ej delind and Karlsson, 2014; Lüttgens et al., 2014; Pripič et al., 2015). Ultimately, the outcomes need to be thought through and the crowd established accordingly. For crowdsourcing in the business network context, intellectual property and market competition are likely of greater concern than in the B2C environment. Third-party intermediary crowdsourcing firms can be used to maintain the anonymity of participants mitigating concerns (Simula and Ahola, 2014). There are also
Crowdsourcing solutions that assume the legal obligations on behalf of the host firm (de Beer et al., 2017). In addition, and as with the implementation of an effective business strategy, measurement and integration play a part. Metrics should be defined at the outset to assess if the crowdsourcing results are aligned to the business strategy (Stieger et al., 2012; Edgeman et al., 2015a; Pripi et al., 2015).

In business networks the incentives that can be tapped into, to generate participation are complex. For suppliers, there is the ability to influence a firm’s solution to a given business issue so that their products are best suited to address that issue. Participation holds the opportunity to come up with solutions that maximize value for multiple partners. The co-creation of value for participants has been found to be an incentive (Fedorenko and Berthon, 2017; Fedorenko et al., 2017). Communicating with the crowd throughout the crowdsourcing interaction is essential in ultimately fulfilling the intended objective (Rosen, 2011). Focusing on the benefits generated by the crowd, and subsequently, communicating these benefits back is a tactic that will help the crowd learn how to contribute effectively (Edgeman et al., 2015a, 2015b). The problems facing firms looking to solve specific problems through a crowd in a business network are likely complex and may require significant time investments to address them. With these longer time spans, communication between the firm and the network becomes increasingly important to encourage advancement.

In a business network, it is possible to piece together many different techniques with different subsets of the crowd. Managers have at their disposal a variety of different crowdsourcing techniques that can be combined for many different potential outcomes (Pripi et al., 2015). Considering the lifecycle phase of the firm and the product or service may lead to better results due to more appropriate crowdsourcing techniques (Paschen, 2017; Zahay et al., 2018). As opposed to a crowdsourcing approach that is a one-time event, using crowdsourcing as a means to manage a business network is a business capability – its application will mature with practice and extension (Pripi et al., 2015). This maturation has the potential to occur within both the focal firm and the network, eventually, becoming the norm for intra- and inter-firm engagement; “The parties learn from each other and adapt their routines so that they match each other’s needs and capabilities, thus building inter-organizational routines” (Johanson and Vahlne, 2011, p. 486). Ultimately, crowdsourcing has to become a developed organizational and network capability to achieve these repeatable mutual benefits.

#### Implications and conclusions

The contribution of this paper is twofold – it further defines service quality gaps in service networks and proposes crowdsourcing as a means to address these service quality gaps. Literature was explored on business and service networks and the management of service quality and crowdsourcing in business networks. A model for the identification of service gaps in a network was presented. Propositions were offered for future research to better understand the effectiveness of crowdsourcing as a means to address service quality in networks. Managerial considerations for implementation were also offered. Service quality in service networks and crowdsourcing in business networks are both underexplored areas in the practitioner and academic literature. Thus, this paper aims to provide a starting place for the continued exploration of this area and offer a foundation for future understanding.

#### References


Codini, A., Abbate, T. and Aquilani, B. (2018), “Knowledge co-creation in open innovation digital platforms: processes,
tools and services”, *Journal of Business and Industrial Marketing*, Vol. 15.


Nickell, D., Rollins, M. and Hellman, K. (2013), “How to not only survive but thrive during recession: a multi-wave,
Crowdsourcing to manage service gaps

Amanda Blair, Thomas Martin Key and Matthew Wilson


Further reading


Corresponding author

Amanda Blair can be contacted at: amandajaneblair@gmail.com

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com
Gender effects on buyer perceptions of male and female sales representatives in China

Stephen J. Newell and Duke Leingpibul
Department of Marketing, Haworth College of Business, Western Michigan University, Grand Rapids, Michigan, USA

Bob Wu
Bowling Green State University College of Business, Bowling Green, Ohio, USA, and

Yang Jiang
School of Business Management, Shandong University of Finance and Economics, Jí’nan, China

Abstract

Purpose – Women in many countries are breaking through the gender barrier and are working in positions where they have a major impact on the buying and selling activities in business-to-business relationships. A number of studies have investigated the role gender plays in driving perceptions of sales representatives in the USA, however, little research has been undertaken on this important topic in China, one of the largest and most influential countries. Consequently, the purpose of this study is to examine whether the gender of both the buyer and seller, affects perceptions of expertise, trust and loyalty in business relationships.

Design/methodology/approach – A survey instrument was developed, tested and used on individuals with purchasing responsibility in China. Confirmatory factor analysis was used in the pre-test and the final study data to develop and refine measurement instruments, assessing construct validity, identifying method effects and evaluating factor variance across groups. Independent t-tests were used to compare male and female buyers on their evaluation of sales reps.

Findings – The results indicate that the gender of the sales person does not seem to be a consideration for male buyers in evaluating reps in any of the variables tested. However, female buyers consistently give less favorable evaluations to female sales people than male sales representatives. The possible implications of these findings are discussed.

Research limitations/implications – First, this research uses a quantitative methodology in both the collection and analysis of the data. Thus, future studies may want to use a qualitative data set to gain a more in-depth understanding of the business-to-business relationships between men and women in the workplace. Also, as the study was concentrated on a relatively small number of business professionals from only one area in China, subsequently researchers should consider increasing the geographic domain where respondents are sampled, to help improve the generalizability of the results.

Practical implications – The gender bias by female buyers found in this study has several important implications for businesses in China. Specifically, the suggests that female buyers may carry with them a “collective negative bias” against other women, in this case, female sales reps. The solution to this problem is not to avoid assigning female sales reps to female buyers, rather, it is to change the negative collective social-esteem identity preconceptions. Organizations can do this through training by making women aware of their own predisposition to unfairly evaluate women that they interact with in the workplace.

Originality/value – It has been argued that gender plays a small role in perceptions of sales representatives in buyer-seller relationships. While this seems to be true in the USA, it has not (until now) been empirically tested in China. Somewhat surprisingly, the gender differences we did uncover are not from male buyers in their assessments, but from female buyers in their evaluation of women sales representatives. This result provides some interesting insight into Chinese business relationships and how some women in positions of power are more critical of other women within their sphere of influence.

Keywords China, Customer loyalty, Gender, Queen bee phenomenon, Buyer perceptions, Sales representatives

Paper type Research paper

Introduction

Developing strong business associations through the application of “relationship marketing” has become a central objective for many companies (Day, 2000). Relationship marketing can be defined as using marketing-focused activities to develop and maintain long-term loyal connections with other businesses (Morgan and Hunt, 1994). To develop these strong and loyal relationships between buyers and sellers, it is essential for both parties to trust and respect each other (Rauyruen and Miller, 2007). Consequently, it is important to understand the variables that may contribute to or detract from, creating long-lasting partnerships. One of those variables is gender.
A number of studies have investigated whether gender affects buyer perceptions of the sales rep and the company that he or she represents (Belonax et al., 2006; Cook and Corey, 1991; Henthorne et al., 1992; Lambert et al., 2004; Swan et al., 1984b; Swift and Gruben, 2000; Whipple and Simmons, 1987). Some research suggests gender differences in perceptions of sales representatives, while other studies have found that gender does not play a significant role in affecting the outcomes of business-to-business relationships (Pullins et al., 2004). This inconsistency in research findings pertaining to the effect of gender on buyer-seller relationships, indicate the need for further investigation.

Though the effect of gender on buyer perceptions have been, to some degree, examined in the USA, little research in this area has been undertaken in other countries, such as China, with different cultural and gender norms. One notable exception is the study by Lui et al. (2001), who investigated the attitudes of salespeople in China toward female sales managers. The results found that male sales representatives rated female sales managers consistently lower than male sales managers on a variety of characteristics. Though Lui et al. (2001) provide useful insight into attitudes about women in sales management positions, the current research expands our understanding of how gender perceptions in China affect business relationships from the perspective of the buyer. Specifically, this investigation offers insight into how gender affects supervisor-subordinate relationships in China within a sales management context, while the current study provides an understanding of the impact of gender on buyer-seller relationships within a broader business-selling context.

Accordingly, the purpose of this study is to contribute to the business-to-business marketing literature by providing new insights about the role gender plays in Chinese business relationships. More specifically, this paper will assess whether the gender of both the sales rep and the buyer, influences buyer perceptions of trust, expertise and loyalty. First, we review the literature on gender and the role it plays in information processing and perceptions of individuals in business-to-business relationships. After, we discuss three related theoretical perspectives: the similarity-attraction paradigm, social identity theory and the queen bee phenomenon. Next, we present some generalizations about Chinese culture as it relates to women and propose hypotheses. Then we outline the current research in which we survey Chinese business people with purchasing responsibilities about their perceptions of sales reps from suppliers who service their companies. Finally, we present the results of our findings and discuss implications and potential areas of future research. Overall, this research will help academics expand their knowledge about business-to-business relationships globally and inform practitioners in China about potential gender bias within their organization and in the companies they partner with.

Background

Past research has explored the differences in how men and women process information and make decisions. In their study, McGuiness and Pribram (1979) found that women are more sensitive than men to most stimuli and suggest this may affect how information is processed. Similarly, other research has concluded that women use a high-context communication style and respond to non-verbal stimuli interpreting it with associative imagery and providing more elaborate descriptions than men (Darley and Smith, 1995; Meyers-Levy, 1988). One study found that men tend to use different hemispheres of their brain for specific tasks (left-side verbal and right-side visual) while women often use both sides of their brain for information processing (Meyers-Levy and Maheswaran, 1991). In addition, women have been found to exhibit greater sensitivity to information relevant to others when making judgments (Meyers-Levy and Sternthal, 1991). In another study, Watts et al. (1982) suggested that women tend to consider others well-being to a greater degree than their male counterparts. Further, women are reported to have higher activations of mirror neurons than men. This enhanced ability to process mirror neurons improves an individual’s ability to detect subtle facial expressions and help them to understand another’s intention and state of mind. Such understanding leads to more empathy (Enticott et al., 2008) and having greater empathy positively impacts trust (Aggarwal et al., 2005). This more empathetic viewpoint of women has been corroborated in other research (Meyers-Levy, 1988; Areni and Kiecker, 1993). In summary, there seems to be some indication that men and women process information in different ways (Lewis, 2013), specifically, women tend to be more context-dependent in their decision-making than do men (Miller and Ubeda, 2012).

More specifically and related to the current research, there have been a number of studies that have focused on whether gender plays a role on how those in purchasing positions perceive sales representatives in business-to-business relationships. Some of these investigations have indicated no effect on buyer perceptions of competency, trust, power and likability (Henthorne et al., 1992). Other findings suggest no difference in overall evaluation (Whipple and Simmons, 1987) or in negative stereotyping of male or female sales people (Cook and Corey, 1991). Similarly, Swan et al. (1984b) found that buyers accepted both men and women equally in their selling roles. In addition, Pullins et al. (2004) in their study of purchasing agents, failed to find any gender differences in perceptions of sales person credibility and customer-orientation.

On the other hand, there has been research proposing that buyers perceive male and female representatives to have different traits and behaviors. For example, buyers in one study felt that female reps were more trustworthy and had better listening and rapport building skills, while men, on the other hand, were identified as having greater knowledge and technical expertise (Swan et al., 1984b). Another investigation found that companies represented by women, were considered more trustworthy and credible than those firms with male salespeople (Pullins et al., 2004). In a study by Belonax et al. (2006), the results indicated that female purchasing agents tended to give sales reps (regardless of gender) higher evaluations of expertise and report less conflict in their relationships than with male agents. In addition, Swift and Gruben (2000) in their study of purchasing managers stated that female buyers felt that issues of support and dependability were significantly more important to them than they were to male buyers when making buying decisions.
Sojka et al. (2001) conducted one of the few studies in Asia in which they surveyed 88 purchasing agents in Pakistan about perceptions of male and female sales reps. They found that male and female buyers had similar evaluations of representatives of both genders in regard to the degree of enthusiasm, work ethic, ambition, intelligence, articulation, honesty and cheerfulness. Both male and female buyers thought male reps were more assertive, competent and willing to take risks while perceiving that female reps were more understanding, courteous, good listeners and sincere. Female buyers thought male reps were more confident and outspoken and that female reps were more trustworthy and energetic. In the same study, male buyers felt that female reps were more organized.

**Theoretical foundation**
The inconsistency in findings within existing gender-related research points to the need for further study on the impact of gender on the perception of salespeople. Gender differences are attributed to both biological and sociological variables (Bussev and Bandura, 1999). Of particular interest to the current study is how these sociological factors play a role in these business interactions. To help us better understand how gender may affect perceptions, we present an overview of three related theories. Specifically, we briefly explain the similarity-attraction paradigm and the social identity theory – both of which focus on an individual's group identification based on similar characteristics and traits. We then go into more detail (because of its relevancy to the current research) about the queen bee phenomenon, which argues that individuals may abandon their primary group identity and align with an alternative group that they feel increases their standing and improves the probability of future success in an organization.

**Similarity-attraction paradigm**
Byrne (1971) proposed the similarity-attraction paradigm, which suggests that people are attracted to, prefer and support, relationships with individuals who have similar characteristics. “Similarity” is the extent to which members of a group are alike in personal attributes such as gender, race, personality, etc. Past research indicates that comparable attitudes, values, gender and age between individuals increases interpersonal attraction and liking (Byrne et al., 1986). In addition, Smith (1998) found that similarity in gender and life stage was positively related to perceptions about the quality of the relationship between buyers and sellers. Consequently, the perception of others seems to be affected by the perceptions of how similar another is to oneself.

**Social identity theory**
The social identity theory states that a person’s sense of who they are and what defines them is based on their perceptions of the group in which they are a member. Such identification often creates a desire to conform to group norms and support members of their own group (Tajfel and Turner, 1986). Specifically, people tend to be more supportive and evaluate more favorably those from their same group while being more critical of those considered to be outside of those they most closely identify with.

**Queen bee phenomenon**
The queen bee phenomenon describes situations in which women with leadership positions in a company, in order to assimilate and succeed in a male-dominated work environment, feel the need to distance themselves from other women. Specifically, if the group they consider themselves a part of is not as valued as other groups, their identity is often threatened and instead of objecting and working against this inequality, the individual may distance themselves from those they initially identified with and psychologically create an identification with the higher-status group. This coping mechanism may manifest itself in a subtle (or not so subtle) hostility toward other women (Cowan et al., 1998). One experimental study found that women were more likely to evaluate male candidates more favorably than similarly qualified female candidates for prestigious work groups (Duguid, 2011). Lublin (2018, p. B5) suggests that “women who undermine other women sometimes do so when they feel precarious about their own position and view the other women as a competitive threat. Derks et al. (2016, p. 457) state that women in leadership positions in male-dominated organizations may distance themselves from other women in the company “to reduce the association between themselves and the less successful group of women. As a result, organizations with queen bees at the managerial level may offer fewer opportunities to junior women than organizations in which there are no queen bees”.

It seems that the queen bee phenomenon may be context dependent. Derks et al. (2016) argue that this effect is especially present in situations where women experience a social identity threat at work and come to see their gender as a liability to career success. Distancing themselves from other women is a way for these women in an organization to improve their personal outcomes. Being more critical of fellow women’s performance than their male counterparts, is a strategy for them to assimilate into the male culture and a way of advancing and protecting themselves at the expenses of other women. They further argue that the queen bee phenomenon is a misnomer. It is only one example of “self-group distancing” and is not unique to women alone. The same psychological reaction can apply to all “minority” groups when faced by the social identity threat in an organization.

Considering the similarity-attraction paradigm, social identity theory and the queen bee phenomenon (Derks et al., 2016), we argue that, in general, people will associate with and be supportive of others who they consider to have greater similarity with themselves. Such attraction and identification may have a positive halo effect on their behavioral responses to in-group others. However, when a person’s social identity is perceived to be a significant liability (for example, in a professional career situation), one may adapt and choose to make a connection with those groups that have stronger status and distance themselves from those whom they originally identified (self-group distancing response).

**Chinese culture and gender**
Historically, Chinese women have been raised under Confucian doctrines, which teaches that the virtue of a woman lies in the three obediences: obedience to the father, husband and son (Ware, 1988). In the past, the role of women has been defined as being house-centered, submissive and ultimately, as
second-class citizens. Recently, through governmental initiatives that have championed economic development and modernization efforts, the plight of Chinese women has improved dramatically. However, even today, differences in perceptions between the sexes still reflect past inequities. One study (Chen et al., 1995) concluded that for women, relative to men, achievement, filial duty and dominance were less valued, whereas fatalism was more valued. Chia et al. (1997) in their study indicated that men were perceived to have higher status than women both in the home and at work. Men had more job prospects, more professional development options and more advancement opportunities. In general, women in China were found to be more liberal, of lower social status and had fewer career-advancement opportunities than men.

In response to the long struggle for Chinese women to advance their social status, these women are likely to be more “gender sensitive.” Such gender sensitivity can work in two opposite ways. In a private, non-business, setting, women may show more empathy toward other women as a way to stand against inequality and to bring social justice needed because of the collective deprivation women have experienced in society. This is consistent with the social justice motive observed in the psychological act of rooting for the underdog (Frazier and Snyder, 1991; Learner, 1977). However, in a public business setting, women may hesitate to openly identify with and support members of a group that have less power and may actually take punitive action toward other women in their organizations to illicit support from those in power (Derks et al., 2016).

Hypotheses

A number of studies have investigated the importance of the perceived credibility of salespeople (Landeros et al., 1995; Shepherd, 1999) and the firms that they represent (Goldsmith et al., 2000; Kantsperger and Kunz, 2010; Ou et al., 2012; Shim et al., 2007; Solomonson, 2012; Sun and Lin, 2010). Most researchers have conceptualized credibility as having two major components. One, an affective-based dimension that is represented by perceptions of trust and the second, a cognitive dimension, is characterized by the perceived expertise of the source (Dholakia and Sterntahl, 1977; Hovland et al., 1953; Newell and Goldsmith, 2001; Rarick, 1963; Sharma and Sheth, 1997).

Trust

Trust can be defined as the belief that an individual (or organization) can be relied on to fulfill promises that have been made (Alcaniz et al., 2010; Plank et al., 1999; Wang, 2009). Extensive research on trust indicates that it plays an important role in buyer-seller relationships (Dowell et al., 2013; Solomonson, 2012; Young, 2006). There are two types of trust between business-to-business partners; interpersonal and firm-specific. Interpersonal trust is created through interactions with company representatives and firm-specific trust through a variety of experiences between the parties (Wang, 2009). Both forms of trust drive loyalty and business interactions (Morgan and Hunt, 1994; Wang, 2009). As discussed earlier, women have more empathy due to higher activation of mirror neurons (Enticott et al., 2008) and higher empathy is positively related to higher levels of trust (Aggarwal et al., 2005). Furthermore, in a number of studies, women are perceived to be more trustworthy than men who are in sales positions (Pullins et al., 2004; Sojka et al., 2001; Swan et al., 1984b).

Overall, in the related research conducted in the USA and in the one study in Pakistan, there seems to be a tendency by buyers to perceive female sales reps as possessing greater levels of trust than male sales reps. Furthermore, given the very high context and holistic thinking style of the Chinese, female buyers will give greater consideration to the gender of the seller, when forming judgments about trust. Because women in China hold more liberal and egalitarian view than men (Chia et al., 1997) there should be a lower likelihood of stereotyping female sales people as inferior and a greater willingness to accept those women as individuals as capable as their male counterparts (Liu et al., 2001). However, as discussed earlier, in the context of a business organization, female group identity may be perceived as a liability, which could result in a self-group distancing response (Chia et al., 1997). Specifically, to protect their position in the firm, female Chinese buyers will likely be more critical of female sales people than male Chinese buyers. Contrastingly, because of the higher status of men in the organization and society, gender identification is not as important for men when decision-making. Thus, it is hypothesized that:

H1a. There will be no significant difference in male buyers’ evaluation of trust between female and male salespeople.

H1b. Female buyers will evaluate male salespeople to be significantly more trustworthy than female salespeople.

Salesperson trustworthiness has been linked to perceptions of company trust (CoTrust) (Chow and Holden, 1997; Morgan and Hunt, 1994; Wang, 2009). Wood et al. (2008) in their research, discovered a significant relationship between CoTrust and salesperson trust. Sun and Lin (2010) found that in retail-based consumer encounters, greater trust in the salesperson leads to more trust in the store. Given that holistic thinkers tend to be field dependent and focus the relationship between an object (sales rep) and its field (a company in which the rep works), such “interlocking” mechanism between sales rep and company will be strong for the holistic thinking Chinese in general. Given that it has been hypothesized that men buyers perceive no difference in perceptions of trust between male and female sales rep, it is posited that these same buyers will not perceive any differences in organizational trust in the companies represented by the male and female reps. Thus, it is hypothesized that:

H2a. There will be no significant difference in male buyers’ evaluation of trust between companies represented by female and male salespeople.

In addition, as postulated earlier, because female buyers are expected to perceive male sales reps as more trustworthy than female reps, it would be expected that the level of trust in the organizations that use male salespeople will be greater than in those companies who employ female sales reps. Thus, it is hypothesized that:
H2b. Female buyers will evaluate companies represented by male salespeople to be significantly more trustworthy than those organizations represented by female salespeople.

Expertise

Expertise can be defined as the knowledge and competency held by an individual or organization (Alcaniz et al., 2010; Belonax et al., 2007; Goldsmith et al., 2000; Hovland et al., 1953; Lagace et al., 1991; Ou et al., 2012). Knowledge is founded upon the accumulation of information through either experience (empirical knowledge), education and/or training. Competencies incorporate “skills” “knowledge” and “abilities” into on-the-job behaviors. Those behaviors demonstrate the capabilities to perform the job requirements competently and contribute to overall perceptions of his or her knowledge and experience (Liu and Leach, 2001) and is essential to developing loyalty and trust (Doney and Cannon, 1997; Liu and Leach, 2001; Palmatier et al., 2007). Overall, perceptions of salesperson expertise are a key component in defining business relationships.

As previously discussed, the perceived expertise of the sales rep in regards to gender, has been addressed in a few studies. Specifically, Swan et al. (1984a) found buyers reported that male reps had greater technical skills and had more extensive knowledge than female sales people. In another study, male salespeople were considered to be more competent than women in similar roles by buyers of both genders (Sojka et al., 2001). Consequently, there is some indication that buyers perceive male salespeople as possessing greater levels of knowledge than female sales reps. Despite the improvement in the social status of Chinese women over the years, gender roles in China remain traditionally oriented and women continue to receive less than equal treatment in society. Such long-term inferior treatment may cause women to subconsciously perceive men to be more competent. As recently as 2013, Leta Hong Fincher (2013) reported that according to a 2010 survey by the All-China Women’s Federation and National Bureau of Statistics, Chinese who believe that “men belong in public, women belong at home” has increased over the past decade. This suggests that the perception that women are not as qualified or knowledgeable as men in the business environment still seems to be a part of the cultural norm in China. Thus, it is hypothesized that:

H3a. Male buyers will perceive that male salespeople have significantly greater levels of expertise than female reps.

H3b. Female buyers will perceive male salespeople to have significantly greater levels of expertise than female reps.

Perceptions about company expertise (CoExp) is important when making purchase decisions and determining the image and credibility of a firm and developing business partnerships (Bunn, 1993; Newell and Goldsmith, 2001; Vincent and Webster, 2013). As is often the case, the sales rep is the buyer’s most significant contact and consequently, opinions of CoExp are driven, in large part, by the buyer’s perception of the rep’s expertise (Doney and Cannon, 1997; Crosby et al., 1990). Dimopoulou and Fill (2000) reported in their study that as perceptions of salesperson expertise increased, company image was significantly improved, which would affect the implied expertise of the rep’s company.

In general, sales rep expertise is important in helping to define the overall perceived knowledge of the company that they represent. As indicated in H3, it is posited that both male and female Chinese buyers will conclude that male sales reps have greater expertise than female sales reps. Consequently, companies represented by male salespeople will be thought to have more expertise than organizations with female reps. This reasoning is based on a strong transference effect driving these perceptions of CoExp. Thus, it is hypothesized that:

H4a. Male buyers will perceive that companies represented by male salespeople have greater levels of expertise than those companies represented by female reps.

H4b. Female buyers will perceive that companies represented by male salespeople have greater levels of expertise than those companies represented by female reps.

Loyalty

Morgan and Hunt (1994) emphasize the importance of developing loyal business-to-business relationships. In general, if business partners acknowledge the value in their association, greater loyalty is often the result (Neal, 1999; Payne and Holt, 2001; Ravald and Gronroo, 1996; Sirdeshmukh et al., 2002). Positive financial outcomes, such as increased sales and higher profit margins are more likely to occur when business relationships have an increased level of loyalty (Palmatier et al., 2007; Rauyruen and Miller, 2007; Zeithaml et al., 1996).

Trust has been determined to be a very important variable when developing business partnerships (Croby et al., 1990). The connection between salesperson trust and loyalty has been confirmed in a number of studies (Chow and Holden, 1997; Doney and Cannon, 1997; Foster and Cadogan, 2000). Specifically, trust leads to increased cooperation, greater loyalty and a reduction in conflict between buyer and seller (Morgan and Hunt, 1994; Goa et al., 2005). In another study, as buyer trust in a salesperson increases, repeat purchase intentions are positively influenced (Guenzi and Georges, 2010). This relationship between salesperson trust and loyalty seems to be applicable in various cultures. In studies conducted in China, feelings of sales rep trust positively affected commitment (Ou et al., 2012; Wang, 2009).

Similarly, sales rep expertise has also been linked to enhancing the probability of business partners committing to one another (DeVincentis and Rackham, 1999). Specifically, past research has indicated that perceptions of expertise of the sales rep is directly tied to the perceived quality of the business relationship (Boles et al., 2000; Crosby et al., 1990; Lai et al., 2013). Liu and Leach (2001) reported that evaluations of rep expertise significantly affected satisfaction with the rep’s company. They also found that the sales rep’s consultative capabilities (expertise) were a key component in developing greater loyalty between firms. Another study reported that task behaviors (those actions that indicate an expert understanding of the business situation) of a sales rep significantly affected how loyal the relationship was (Newell et al., 2011).
Overall, past research indicates that buyer perceptions of both salesperson trust and expertise are important factors in developing relationship loyalty. Men and women compute information in different ways (Cahill, 2006). Men tend to focus more on the left part of the brain in their thinking (logic, detail and linear), while women more often use both their left-brain and right brain in comprehending their surroundings (holistic, intuitive and abstract) (Cunningham and Roberts, 2012; Miller and Ubeda, 2012). Therefore, it can be surmised that men will give more weight to expertise (rational, logic), while women will focus more on the perception of trust (attitude, feeling) in their decision-making. Swift and Gruben (2000) in their study of purchasing managers found that female buyers felt that issues of support and dependability were significantly more important to them when making buying decisions, than did their male counterparts. Consequently, because male buyers perceive male salespeople to be more knowledgeable than (H3a), but equally as trustworthy as (H1a), female reps and perceptions of expertise seem to drive much of their decision-making, it would be expected that male buyers will have indicate greater loyalty to those firms that are represented by male salespeople. On the other hand, because female buyers perceive female salespeople to be less trustworthy and have less expertise, it would be logical to assume that female buyers will have greater loyalty to those companies in which the salesperson is a male. Thus, it is hypothesized:

\[ H5a. \text{ Male buyers will have significantly greater loyalty to companies represented by male salespeople than they will for companies that are represented by female reps.} \]

\[ H5b. \text{ Female buyers will have significantly greater loyalty to companies represented by male salespeople than they will for companies that are represented by female reps.} \]

**Methodology**

**Questionnaire development**

An US-based English-speaking professor, with expertise in the area, formulated the initial survey questionnaire. The survey instrument used a five-point (strongly disagree-strongly agree) Likert scale for the constructs. As questionnaires were adopted from previous research conducted in the USA (Newell and Goldsmith, 2001; Newell et al., 2011), this preliminary instrument was subject to a pretest analysis. The measurement items of all constructs were adopted from the work of Newell and Goldsmith (2001) and have been used and deemed robust in a number of business-to-business studies both in the USA (Newell et al., 2011) and across cultures (Newell et al., 2017).

Because of the differences between American and Chinese cultural and business environments, it was necessary to modify the survey instrument with instructions and measurement items that were easy for the Chinese to understand and comprehend, and were not vague or difficult to answer (Dillman, 2000; Belson, 1981). This study, in general, followed the six steps recommended by Broyles et al. (2009) to validate items in a cross-cultural questionnaire. First, content validation was conducted to help modify the adopted measures. A focus group interview was conducted to develop insights into individuals’ experiences regarding CoExp, CoTrust, salesperson expertise, salesperson trust and loyalty. The interview was conducted with a group of eight Chinese purchasing/procurement managers who were familiar and had experience with the sales negotiation process.

Next, measurement adaptation was accomplished by using interview data from the focus group to modify questions to fit the context of the study. Then, to ensure the content validity of the measures, the initial questionnaire was reviewed by three subject matter experts (SMEs) to confirm the appropriateness of the measures were in representing the constructs used in this study. As part of the review process, the SMEs were asked to identify any measurement items that should be modified or dropped from the survey (Maurer and Tross, 2000). Once content validity was established, a cross-cultural face validity check was performed. Specifically, after using SME feedback to make the appropriate corrections, the resulting questionnaire was examined by various American and Chinese researchers to confirm that the survey and its instructions and measures were easily understandable (Dillman, 2000).

At this point, the survey was still in English. The draft English questionnaire was then subjected to a pre-test. The pretest questionnaire consisted of 22 items that measured five constructs in a five-point Likert scale, where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. This approach also was adopted from the study of Newell et al. (2011). The instructions directed each respondent to “think about an on-going business relationship you have with a specific supplier” before answering the questions. For the sections related to sales representatives, the respondents (buyers) were asked to answer the questionnaire based on their experience with the most important sales representative from that specific supplier. This pre-testing used data from surveys taken from a group of 35 Chinese MBA students. The item analysis in SPSS 23.0 led to the removal of two measurement items due to having kurtosis values >2.0 or standardized regression weights <0.4 (criteria suggested by Hair et al., 2010; Beer et al., 1998). Confirmatory factor analysis (CFA) was conducted to ensure that the scales appeared to be performing appropriately. This factor analysis also indicated that items on the scales were appropriate. CFA also helped ensure the validity of the retained measures by identifying any abnormality in the factor loading pattern, such as a cross or weak loading (Podsakoff et al., 2003).

Next, a double translation was performed. After minor changes, the survey instrument was translated into Chinese by a bilingual academic with expertise in business in China, and then back-translated into English by another bilingual business professor in the USA. The two professors conducted follow-up discussions and made necessary changes to correct all discrepancies. Finally, the bi-lingual Chinese professor then met the American English-speaking professor who designed the initial survey to fix all minor changes. This was to confirm the similarity of the two versions, such that the scores obtained from the original American English version in the previous research and Chinese version would have similar meaning and interpretation (Mullen, 1995). Because of the significant dissimilarities between the English and Chinese languages, we took the additional step of having the English and Chinese
versions of the corrected survey evaluated by another university professor and a Chinese visiting scholar, all of whom are proficient in English and Chinese. They confirmed that the survey instructions and measures were conceptually the same. The vetted items were included in the final Chinese version of the questionnaire.

CFA in SPSS 23.0 was used to examine the final study data (as in the pre-test). CFA is often the analytic tool of choice for developing and refining measurement instruments, assessing construct validity, identifying method effects and evaluating factor invariance across groups (Brown, 2006; Russell, 2002; Jackson et al., 2009).

Sample
The survey was conducted in paper/pencil format in a classroom environment. The sample consisted of Chinese business professionals, taking MBA classes, who had purchasing responsibilities with their firms at the time they took the survey. Subjects were instructed to respond to the questionnaire in the context of their company’s business purchases, not their purchases for personal uses. In total, 199 students with purchasing backgrounds were eligible to answer the survey and all eligible students completed the surveys. To select the sample frame for an empirical study to test the noted hypotheses, it was necessary to find Chinese respondents that had similar levels of experience with these concepts. As indicated by Steenkamp and Baumgartner (2000), this minimizes within-group heterogeneity, reduces measurement and random errors and strengthens the validity of the study. The average years of experience in purchasing jobs is 3.04 years ($M = 3.04$, $SD = 2.89$) and most of the respondents work for medium-sized firms (54 per cent Medium, 26 per cent Small and 20 per cent large). The sample consists of 62 per cent male and 38 per cent female business people.

Of the completed surveys, 181 were deemed usable (18 surveys were discarded, primarily due to illegibility, too much missing data, not passing the multivariate outlier test, etc.). CFA indicates that the measured variables do load onto the appropriate constructs.

For scale purification, the results from CFA suggested dropping loyalty 01, 03 and 06 from the original scales. In addition, the Contrast 04 also dropped out after common method bias analysis using the common latent variable test (Chang et al., 2010). The final 16 items after purification were shown in Table I. All, other constructs met the oft-cited targeted Cronbach’s $\alpha$ value of $\geq 0.7$ (Hair et al., 2010; Nunnally and Bernstein, 1994). In addition, as all constructs were the reflective measurement, the average variance extract was also calculated to help identify convergent validity (MacKenzie et al., 2011) and the results were satisfied ($>0.5$) (Fornell and Larcker, 1981). As shown in Table I, Cronbach’s alpha, variance extracted tests and CFA results presented above provide enough evidence to suggest that this questionnaire exhibits adequate reliability and validity.

Next, instead of performing an independent $t$-test for each item between male and female groups, the composite mean score approach was adopt as suggested by Ackerman and Cianciolo (2000, p. 264) “To provide more stable measures of the underlying abilities, composites were formed with unit-weighted $z$ scores of constituent tests”. The composite mean scores, standard deviations and standard error of each construct was computed as shown on Table II. In addition, the $z$ score of composite means and standard deviations were calculated and presented in the last two columns of Table II.

To help simplify the data complexity and be able to present a more parsimonious explanation, the $z$ score of composite means (grouping by each factor) was used to perform the independent $t$-test between male and female group in SPSS 23.0 (Goff and Ackerman, 1992; Ackerman and Cianciolo, 2000). The results of the $t$-test were shown in Table III.

An independent-samples $t$-test was conducted to compare male buyers and female buyers in regard to their perception on male and female sale representations in these five following areas:

1. sale representative expertise;
2. level of trust of sales representative;
3. CoExp;
4. CoTrust; and
5. loyalty.

Hypotheses results
$H1a$ There will be no significant difference in male buyers’ evaluation of trust between female and male salespeople.

The results indicate no significant difference in the perception of sale representative trust (SRT) by male buyers between female sales reps and male reps. Though the mean rating of SRT for female sales rep (3.93) was greater than for male reps (3.72), the difference was not significant (Table IV and Figure 1). Thus, the results suggest that the gender of sales representatives really does not influence the perception of SRT among male buyers. Therefore, $H1a$ is accepted:

$H1b$ Female buyers will evaluate male salespeople to be significantly more trustworthy than female salespeople.

The results reveal that female buyers evaluate male reps trustworthiness greater than female reps as predicted. Specifically, women buyers rate male reps slightly more trustworthy (mean = 3.90) than their female counterparts (mean = 3.22, $p = 0.065$) (Table V and Figure 2). Thus, $H1b$ is marginally accepted:

$H2a$ There will be no significant difference in male buyers’ evaluation of trust between companies represented by female and male salespeople.

The results indicate no significant difference in the perception of CoTrust by male buyers for firms represented by female sales reps and male reps. The male buyers mean scores for the perceived trust for those companies of female salespeople was 3.67 and for male reps 3.56 (Table IV and Figure 1). These results suggest that the gender of the sales representative does not influence the perception of CoTrust among male buyers. Therefore, $H2a$ is accepted:

$H2b$ Female buyers will evaluate companies represented by male salespeople to be significantly more trustworthy than those organizations represented by female salespeople.

The results reveal that female buyer’s perception of CoTrust is significantly more favorable to firms represented by male sales people (mean = 3.81) than companies with female sales people (mean = 2.99, sig = 0.011) (Table V and Figure 2). These results indicate that being a female sales representative really does influence the perception of CoTrust for female
buyers, except in the opposite direction hypothesized. Thus, 

$H2b$ is accepted:

$H3a$ Male buyers will perceive that male sales reps have 

significantly greater levels of expertise than female reps. 

The analysis concludes that male buyers do not perceive that 

male sales reps possess significantly greater expertise than 

female salespersons. The mean scores were almost identical 

between male and female reps (2.87 and 2.83, respectively) 

(Table IV and Figure 1). These results suggest that the gender 

of the sales representative really does not in 

fluence the 

perception of sales representative expertise among male buyers. 

Therefore, $H3a$ is rejected: 

$H3b$. Female buyers will perceive male reps to have 

significantly greater levels of expertise than female buyers. 

The results fail to confirm a significant difference between 

perceptions of expertise between male and female salespeople 

by female buyers. Specifically, though women buyers rated 

male rep expertise (mean = 3.04) greater than female reps 

(mean = 2.60) as predicted, it was not significant (Table V and 

Figure 2). These findings indicate that the gender of the sales 

representative really does not significantly influence the 

assessment of sale representative expertise by female buyers. 

Therefore, $H3b$ is rejected: 

$H4a$. Male buyers will perceive that companies represented 

by male sales reps have greater levels of expertise than those 

companies represented by female sales reps. 

The results indicate no significant difference in the 

perception of CoExp between firms represented by female sales 

reps and male reps, as assessed by male buyers. The male 

buyers mean scores for perceived expertise for those companies 

of female salespeople was 3.39 and for male reps it was 3.17 

(Table IV and Figure 1). Consequently, it seems that the
gender of the sales representative really does not significantly influence perceptions of CoExp among male buyers. Thus, H4a is rejected:

H4b. Female buyers will perceive that companies represented by male sales reps have greater levels of expertise than those companies represented by female sales reps.

The findings results indicate that though female buyers are more favorable, in terms of their perceptions of CoExp, to organizations represented by male salespeople (male mean = 3.05, female mean = 2.55) as hypothesized, the difference is not significant (Table V and Figure 2). Thus, the gender of the sales rep does not significantly play a role in female buyer perceptions of CoExp. Thus, H4b is rejected:

H5a. Male buyers will have significantly greater loyalty to companies represented by male salespeople than they will for companies that are represented by female reps.

There is no indication that gender plays a role in forming opinions about company loyalty for male buyers. Specifically, the mean loyalty rating for firms that were represented by male salespeople was 3.34, while for firms in which women were reps the mean was 3.24 (Table IV and Figure 1), the difference was not significant. Consequently, the results suggest that the gender of sales representative really does not influence the perception of loyalty among male buyers. Therefore, H5a is rejected.

H5b. Female buyers will have significantly greater loyalty to companies represented by male salespeople than they will for companies that are represented by female reps.

Consistent with the hypothesis, the results indicate that female buyer’s loyalty to a company is significantly higher to firms represented by male sales people (mean = 3.46) than companies with female sales people (mean = 2.65, sig = 0.005) (Table V and Figure 2). These results indicate that being a female sales representative negatively influences loyalty perceptions of female buyers. Thus, H5b is accepted.

**Discussion and implications**

This study, conducted in China investigating whether gender plays a role when evaluating the attributes of sales representatives by buyers, provides a number of intriguing results that should be of interest to both researchers and

### Table II  Male and female buyers descriptive statistic and composite Z scores

<table>
<thead>
<tr>
<th>Measure</th>
<th>Sale rep.</th>
<th>N</th>
<th>Composite mean</th>
<th>Composite SD</th>
<th>Composite Z score</th>
<th>Composite Z score SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Both male and female buyers descriptive statistic and composite Z scores</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRE</td>
<td>Male</td>
<td>125</td>
<td>2.92</td>
<td>1.35</td>
<td>0.04</td>
<td>0.85</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>56</td>
<td>2.70</td>
<td>1.48</td>
<td>-0.10</td>
<td>0.94</td>
</tr>
<tr>
<td>SRT</td>
<td>Male</td>
<td>125</td>
<td>3.77</td>
<td>1.40</td>
<td>0.05</td>
<td>0.87</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>56</td>
<td>3.54</td>
<td>1.54</td>
<td>-0.10</td>
<td>0.95</td>
</tr>
<tr>
<td>CoEXP</td>
<td>Male</td>
<td>125</td>
<td>3.13</td>
<td>1.36</td>
<td>0.04</td>
<td>0.90</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>56</td>
<td>2.92</td>
<td>1.45</td>
<td>-0.10</td>
<td>0.95</td>
</tr>
<tr>
<td>COTRUST</td>
<td>Male</td>
<td>125</td>
<td>3.63</td>
<td>1.43</td>
<td>0.07</td>
<td>0.93</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>56</td>
<td>3.29</td>
<td>1.28</td>
<td>-0.15</td>
<td>0.83</td>
</tr>
<tr>
<td>LOYALTY</td>
<td>Male</td>
<td>125</td>
<td>3.37</td>
<td>1.29</td>
<td>0.09</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>56</td>
<td>2.91</td>
<td>1.19</td>
<td>-0.21</td>
<td>0.78</td>
</tr>
<tr>
<td><strong>Male buyer descriptive statistic and composite Z scores</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRE</td>
<td>Male</td>
<td>89</td>
<td>2.87</td>
<td>1.34</td>
<td>0.01</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>25</td>
<td>2.83</td>
<td>1.42</td>
<td>-0.02</td>
<td>0.90</td>
</tr>
<tr>
<td>SRT</td>
<td>Male</td>
<td>89</td>
<td>3.72</td>
<td>1.42</td>
<td>0.01</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>25</td>
<td>3.93</td>
<td>1.38</td>
<td>0.14</td>
<td>0.85</td>
</tr>
<tr>
<td>CoEXP</td>
<td>Male</td>
<td>89</td>
<td>3.17</td>
<td>1.42</td>
<td>0.07</td>
<td>0.94</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>25</td>
<td>3.39</td>
<td>1.42</td>
<td>0.21</td>
<td>0.93</td>
</tr>
<tr>
<td>COTRUST</td>
<td>Male</td>
<td>89</td>
<td>3.56</td>
<td>1.49</td>
<td>0.02</td>
<td>0.97</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>25</td>
<td>3.67</td>
<td>1.17</td>
<td>0.09</td>
<td>0.76</td>
</tr>
<tr>
<td>LOYALTY</td>
<td>Male</td>
<td>89</td>
<td>3.34</td>
<td>1.33</td>
<td>0.07</td>
<td>0.87</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>25</td>
<td>3.24</td>
<td>1.24</td>
<td>0.01</td>
<td>0.81</td>
</tr>
<tr>
<td><strong>Female buyer descriptive statistic and composite Z scores</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRE</td>
<td>Male</td>
<td>36</td>
<td>3.04</td>
<td>1.39</td>
<td>0.12</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>31</td>
<td>2.60</td>
<td>1.54</td>
<td>-0.16</td>
<td>0.97</td>
</tr>
<tr>
<td>SRT</td>
<td>Male</td>
<td>36</td>
<td>3.90</td>
<td>1.36</td>
<td>0.12</td>
<td>0.85</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>31</td>
<td>3.22</td>
<td>1.61</td>
<td>-0.30</td>
<td>0.99</td>
</tr>
<tr>
<td>CoEXP</td>
<td>Male</td>
<td>36</td>
<td>3.05</td>
<td>1.20</td>
<td>-0.01</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>31</td>
<td>2.55</td>
<td>1.38</td>
<td>-0.34</td>
<td>0.91</td>
</tr>
<tr>
<td>COTRUST</td>
<td>Male</td>
<td>36</td>
<td>3.81</td>
<td>1.24</td>
<td>0.18</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>31</td>
<td>2.99</td>
<td>1.30</td>
<td>-0.35</td>
<td>0.84</td>
</tr>
<tr>
<td>LOYALTY</td>
<td>Male</td>
<td>36</td>
<td>3.46</td>
<td>1.20</td>
<td>0.15</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>31</td>
<td>2.65</td>
<td>1.11</td>
<td>-0.38</td>
<td>0.72</td>
</tr>
</tbody>
</table>
practitioners. The most significant finding is the surprising bias toward female sales representatives by women buyers. In addition, the research also indicates that though there are still significant cultural differences between China and the USA, factors such as expertise and trust similarly seem to drive loyalty in business-to-business relationships. Below we discuss in more detail these outcomes and their implications.

Table III Both male and female buyers independent samples test

<table>
<thead>
<tr>
<th>Measure</th>
<th>F</th>
<th>Significance</th>
<th>t</th>
<th>df</th>
<th>Significance (two-tailed)</th>
<th>Mean Difference</th>
<th>Std. error difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRE</td>
<td>0.003</td>
<td>0.953</td>
<td>0.975</td>
<td>179</td>
<td>0.331</td>
<td>0.138</td>
<td>0.141</td>
<td>-0.141</td>
<td>0.417</td>
</tr>
<tr>
<td>SRT</td>
<td>1.419</td>
<td>0.235</td>
<td>1.02</td>
<td>179</td>
<td>0.309</td>
<td>0.147</td>
<td>0.144</td>
<td>-0.137</td>
<td>0.430</td>
</tr>
<tr>
<td>COEXP</td>
<td>1.146</td>
<td>0.286</td>
<td>0.963</td>
<td>179</td>
<td>0.337</td>
<td>0.142</td>
<td>0.147</td>
<td>-0.148</td>
<td>0.432</td>
</tr>
<tr>
<td>COTRUST</td>
<td>1.067</td>
<td>0.303</td>
<td>1.532</td>
<td>179</td>
<td>0.127</td>
<td>0.221</td>
<td>0.144</td>
<td>-0.064</td>
<td>0.506</td>
</tr>
<tr>
<td>LOYALTY</td>
<td>0.018</td>
<td>0.893</td>
<td>2.271</td>
<td>179</td>
<td>0.024</td>
<td>0.301</td>
<td>0.132</td>
<td>0.040</td>
<td>0.562</td>
</tr>
</tbody>
</table>

Male buyer independent samples test

<table>
<thead>
<tr>
<th>Measure</th>
<th>F</th>
<th>Significance</th>
<th>t</th>
<th>df</th>
<th>Significance (two-tailed)</th>
<th>Mean Difference</th>
<th>Std. error difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRE</td>
<td>0.037</td>
<td>0.712</td>
<td>0.155</td>
<td>122</td>
<td>0.877</td>
<td>0.030</td>
<td>0.194</td>
<td>-0.354</td>
<td>0.414</td>
</tr>
<tr>
<td>SRT</td>
<td>0.625</td>
<td>0.431</td>
<td>-0.654</td>
<td>122</td>
<td>0.514</td>
<td>-0.129</td>
<td>0.197</td>
<td>-0.520</td>
<td>0.262</td>
</tr>
<tr>
<td>COEXP</td>
<td>0.049</td>
<td>0.824</td>
<td>-0.666</td>
<td>122</td>
<td>0.507</td>
<td>-0.141</td>
<td>0.212</td>
<td>-0.562</td>
<td>0.279</td>
</tr>
<tr>
<td>COTRUST</td>
<td>2.140</td>
<td>0.146</td>
<td>-0.322</td>
<td>122</td>
<td>0.748</td>
<td>-0.068</td>
<td>0.210</td>
<td>-0.484</td>
<td>0.349</td>
</tr>
<tr>
<td>LOYALTY</td>
<td>0.003</td>
<td>0.957</td>
<td>0.321</td>
<td>122</td>
<td>0.749</td>
<td>0.062</td>
<td>0.194</td>
<td>-0.322</td>
<td>0.446</td>
</tr>
</tbody>
</table>

Female buyer independent samples test

<table>
<thead>
<tr>
<th>Measure</th>
<th>F</th>
<th>Significance</th>
<th>t</th>
<th>df</th>
<th>Significance (two-tailed)</th>
<th>Mean Difference</th>
<th>Std. error difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRE</td>
<td>0.134</td>
<td>0.715</td>
<td>1.213</td>
<td>65</td>
<td>0.230</td>
<td>0.274</td>
<td>0.226</td>
<td>-0.177</td>
<td>0.726</td>
</tr>
<tr>
<td>SRT</td>
<td>2.585</td>
<td>0.113</td>
<td>1.876</td>
<td>65</td>
<td>0.065</td>
<td>0.422</td>
<td>0.225</td>
<td>-0.027</td>
<td>0.870</td>
</tr>
<tr>
<td>COEXP</td>
<td>1.622</td>
<td>0.207</td>
<td>1.600</td>
<td>65</td>
<td>0.114</td>
<td>0.332</td>
<td>0.208</td>
<td>-0.082</td>
<td>0.747</td>
</tr>
<tr>
<td>COTRUST</td>
<td>0.979</td>
<td>0.756</td>
<td>2.627</td>
<td>65</td>
<td>0.011</td>
<td>0.530</td>
<td>0.202</td>
<td>0.127</td>
<td>0.933</td>
</tr>
<tr>
<td>LOYALTY</td>
<td>0.005</td>
<td>0.943</td>
<td>2.878</td>
<td>65</td>
<td>0.005</td>
<td>0.533</td>
<td>0.185</td>
<td>0.163</td>
<td>0.903</td>
</tr>
</tbody>
</table>

Note: *Equal variances are assumed*

Table IV Summary of the mean ratings of male buyers of sales reps

<table>
<thead>
<tr>
<th>Gender</th>
<th>SRT</th>
<th>CoTrust</th>
<th>SRE</th>
<th>CoExp</th>
<th>Loyalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>3.72</td>
<td>3.57</td>
<td>2.87</td>
<td>3.17</td>
<td>3.34</td>
</tr>
<tr>
<td>Female</td>
<td>3.93</td>
<td>3.67</td>
<td>2.83</td>
<td>3.38</td>
<td>3.24</td>
</tr>
</tbody>
</table>

Notes: Means based on a five-point Likert scale where 5 indicates strongly agree and 1 strongly disagree. SRT: sales reps trust; SRE: sales reps expertise; CoTrust: company’s trust; and CoExp: company’s expertise

Table V Summary of the mean ratings by female buyers of reps

<table>
<thead>
<tr>
<th>Gender</th>
<th>SRT</th>
<th>CoTrust</th>
<th>SRE</th>
<th>CoExp</th>
<th>Loyalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>3.90</td>
<td>3.81</td>
<td>3.04</td>
<td>3.05</td>
<td>3.46</td>
</tr>
<tr>
<td>Female</td>
<td>3.22</td>
<td>2.99</td>
<td>2.60</td>
<td>2.55</td>
<td>2.65</td>
</tr>
</tbody>
</table>

Notes: Means based on a five-point Likert scale where 5 indicates strongly agree and 1 strongly disagree. SRT: sales reps trust; SRE: sales reps expertise; CoTrust: company’s trust; and CoExp: company’s expertise

When developing the hypotheses, the assumption was that the long-standing, male-dominated, society in which men thought women inferior, would provide a guide to understanding current business relationships in China (Chia et al., 1997). Specifically, we expected that not only would male buyers evaluate women less favorably on most attributes, we argued...
that women in positions of power (i.e., the buyer) would more positively assess other women (sellers) as a way to restore “social justice”, (Liu et al., 2001). Contrary to this understanding, the results suggest that in general, male buyers rate men and women reps equally, while female buyers consistently evaluate female reps lower than their male counterparts across all of the variables tested.

Based on the findings of this study, it seems that the perceived gender identity liability due to the lower social status associated with the female group in China, may trigger a self-group distancing response (i.e., the queen bee phenomenon). Female Chinese buyers evaluate women representatives significantly less favorably than male Chinese buyers do. It may be, that to assimilate and succeed in a male-dominated work environment, these women buyers feel the need to distance themselves from other women and more critically evaluate other women with whom they professionally interact. Specifically, it may be that “when women as members of a traditionally oppressed group are dissatisfied with themselves, this dissatisfaction may be extended to other women” (Cowan et al., 1998, p. 270).

The self-group distancing perspective may also help to explain why there seems to be no outwardly negative bias by male buyers toward male or female reps. Men in China tend to enjoy a superior social position to women and receive little negative consequences from their male group identity. Consequently, they perceive no real social or professional threat from women. Thus, male buyers feel free to evaluate both female and male sales reps more equally and with less bias than their female counter parts.

The gender bias by female buyers found in this study has several important implications for businesses in China. First, the ratings of reps by male buyers suggest that female salespeople are performing at a level that is equivalent to their male counterparts. Consequently, the Chinese female salespeople deserve sincere praise for their hard work and perseverance in the face of long-held and entrenched discrimination. However, the current study also indicates that female buyers may carry with them a “collective negative bias” against other women, in this case, female sales reps. The solution to this problem is not to avoid assigning female sales reps to female buyers, rather, it is to change the negative collective social-esteem identity preconceptions, manifested by the queen bee phenomenon. Organizations can do this by making women aware of their own predisposition to unfairly evaluate the women that they interact with in the workplace.

In addition, even though Hofstede (2001) suggests that China and the USA have significantly different cultural norms, this study indicates that in terms of evaluating sales reps and developing business partnerships, the similarities seem to be greater than the differences. This may reflect the realities of the new global business environment. Specifically, a country’s social and cultural norms (in China’s case - a strong gender-based hierarchy) may not translate directly to their business practices, particularly, if that country participates in commerce with other nations of different cultural philosophies. It seems that today’s global business relationships tend to be based to a great degree on a western-style, free market, perspective in which the gender of the sales rep plays a limited role in defining expertise, trust or loyalty toward the salesperson or their company.

**Limitations**

There are a number of limitations within the current study. First, this research uses a quantitative methodology in both the collection and analysis of the data. Thus, future studies may want to use a qualitative data set to gain a more in-depth understanding of the business-to-business relationships between men and women in the workplace. Also, as the study was concentrated on a relatively small number of business professionals from only one area in China, subsequently researchers should consider increasing the geographic domain where respondents are sampled, to help improve the generalizability of the results. Specifically, it may be that business professionals residing in more developed east coast provinces with large cities have different perspectives from those living in more rural and less modern communities. Additionally, future research should be conducted with purchasing agents in a variety of other countries to empirically test the proposed model (using the same measures). This will help researchers to better understand the differences and similarities of the roles that expertise, trust and loyalty play in business-to-business relationships in cultures around the world. In addition, though the instruments show strong reliability and validity, this is the first study for which they have been adapted for use in China; thus, future research should be undertaken using these scales to firmly establish them as acceptable measures for similar investigations on business relationships in this and other, geographic areas. Finally, additional studies should include an investigation on whether the queen bee phenomenon for Chinese women applies to evaluations of women in situations other than those within the work environment.

**Conclusion**

It has been argued that gender differences in perceptions of buyer-seller relationships are growing narrower (Pullins et al., 2004). While this seems to be true in the USA, it has not (until now) been empirically tested in China. Somewhat surprisingly, the gender differences we did uncover are not from male buyers in their assessments, but from female buyers in their evaluation of women sales representatives. This result may be explained by a condition known as the queen bee phenomenon, in which women in positions of power are more critical of other women in their sphere of influence. Understanding how these and other gender perceptions impact buyer-seller relationships, is an interesting and potentially fruitful area of future research and may have some significant implications for business practice. By gaining answers to these and other questions that relate to facilitating relationships across borders, organizations doing business in China will be more likely to successfully navigate cultural hurdles on the road to long-term successful business partnerships.

**References**


Gender effects on buyer perceptions

Stephen J. Newell, Duke Leangphul, Bob Wu and Yang Jiang


Gender effects on buyer perceptions


developing businesses-to-business relationships in France”, Journal of Selling, Vol. 18 No. 1, pp. 31-46.

Journal of Business & Industrial Marketing

Volume 34 · Number 7 · 2019 · 1506-1520


Further reading

Gender effects on buyer perceptions

Stephen J. Newell, Duke Leingpibul, Bob Wu and Yang Jiang


About the authors

Dr Stephen J. Newell is a Professor of Marketing at Western Michigan University. He has his PhD from Florida State University, an MBA from Indiana University and an Undergraduate Business Degree from Michigan State University. He has a variety of research interests and has published over 40 articles, which have appeared in publications such as: The Journal of Advertising, The Journal of Consumer Affairs, Psychology & Marketing, Industrial Marketing Management, The Journal of Marketing Theory and Practice and The Journal of Business Research. Much of his research has focused on sales both at a national and international level.

Before pursuing his graduate studies, Dr Newell worked as a sales representative for a consumer goods company and as the sales and marketing manager for an environmental consulting firm. Stephen J. Newell is the corresponding author and can be contacted at: steve.newell@wmich.edu

Dr Duke Leingpibul is an Associate Professor of Logistics and Supply Chain in the Haworth College of Business at Western Michigan University. Duke Leingpibul received his BSc in Food Science and Technology from Kasetsart University in Bangkok, Thailand; his MBA is from Missouri State University, and his PhD from the University of Tennessee. He has presented at various conferences, and his work has been accepted for publication in various marketing journals. His research interests include cross cultural branding, Food/CPG Logistics and Supply Chain, E-commerce and Global Outsourcing. Dr Leingpibul has been presented his works in several conferences and publications. Dr Leingpibul is active as a guest speaker and consultant with several Thai corporations.

Dr Bob Wu is an Associate Professor and Chair for the Marketing at Bowling Green State University. He holds a DBA in Business Administration from Indiana University. He has published in a number of journals including the Journal of the Academy of Marketing Science, Psychology & Marketing and the Journal of Health Care Marketing, in addition to numerous conference proceedings.

Dr Yang Jiang is a Professor of Business Management at Shandong University of Finance and Economics.

For instructions on how to order reprints of this article, please visit our website: www.emeraldgrouppublishing.com/licensing/reprints.htm
Or contact us for further details: permissions@emeraldinsight.com
Towards a better understanding of organizational buying behavior across cultures: empirical evidence from the Arabian Gulf

Alexandre Anatolievich Bachkirov
Department of Management, College of Economics and Political Science, Sultan Qaboos University, Muscat, Oman

Abstract

Purpose – The purpose of this study is to examine, through the lens of the buying center concept, a theorized link between organizational buying behavior (OBB) and a national culture of collectivism, large power distance, particularism and a wasta practice.

Design/methodology/approach – A qualitative methodology was used to gain better understanding of OBB in an under-researched business environment of the Arabian Gulf. The data come from 41 organizational practitioners who reported on the industrial buying processes in their organizations with reference to the buying center framework.

Findings – The study developed a model of the buying center for the emerging markets governed by socio-political institutions.

Research limitations/implications – The data were obtained only from one culturally specific world region.

Practical implications – To attain efficacious results in culturally distant business environments, industrial marketers should complement home country experience with a thorough understanding of how national cultures affect the dynamics of OBB.

Originality/value – The study updates the conceptualization of the buying center’s organizational actors (OAs) for business contexts beyond traditional, mature markets. It reveals the typology of decisional influencers, introduces and defines the role of advisers and clarifies the role of the gatekeeping bureaucracy and differing perceptions thereof by OAs.

Keywords Power distance, Wasta, Collectivism, The Arabian Gulf, Organizational buying behavior, Particularism, The buying center

Paper type Research paper

Introduction

The realities of globalization create pressing challenges for industrial marketing, while the growing role of emerging markets worldwide demands new theorizing in the field of organizational buying behavior (OBB) (Spekman, 2015). In addressing the issue, Sheth (2011) emphasized the need to develop fresh perspectives on OBB because of the unique characteristics of emerging markets. These characteristics distintively differentiate the emerging markets from mature ones and include market heterogeneity, chronic shortage of resources, unbranded completion, inadequate infrastructure and socio-political governance. The last-mentioned factor denotes an environment in which faith-based political governance, coupled with the power of business groups and the influence of local communities, creates markets that tend to be controlled by socio-political institutions rather than governed by competition (Sheth, 2011). This is descriptive of the Arabian Gulf – a world region of growing international importance and the focus of the present study.

The challenges of globalization notwithstanding, industrial marketers can increase the likelihood of success in emerging markets by gaining a systematic knowledge of OBB processes (Johnston and Lewin, 1996; Webster and Wind, 1972). This knowledge requires a thorough understanding of the actual nature of organizational buying. Typically, several departments contribute to purchasing decisions, various organizational actors (OAs) are involved in the process, and multifarious objectives are pursued simultaneously (Johnston and Lewin, 1996). To mark a collection of organizational members who are involved in and influence the buying process, research developed the concept of the buying center (Webster and Wind, 1972); this continues to be the dominant notion in OBB theorizing (Wind and Thomas, 2010). Industrial marketers must have a good command of the buying center concept to ensure that their efforts are parsimoniously focused on pragmatic interactions with the powerful OAs and not on marginally influential members of the buying center (Garrido-Samaniego and Gutiérrez-Cillán, 2004). Therefore, researchers face an imperative need to advance our understanding of OBB outside of the traditional, industrialized markets. Defining the current priorities for OBB research, Wiersema (2013) emphasized that:

While buying patterns are evolving greatly, our knowledge and models have not kept up with the dynamics of changing and emerging markets […] We
are in need of new insights and an up-to-date taxonomy as a foundation for future research and practice enhancement. (p. 488).

An important factor in understanding OBB beyond the traditional developed markets are the effects of national cultures on purchasing behavior. This particular influence, however, remains under-researched. For instance, Corić et al. (2017) summarized over 30 determinants influencing organizational buying process and purchasing decisions. Their list revealed that national culture, which systematically alters various aspects of human behavior (Hofstede et al., 2010), has not fully received the empirical attention of OBB scholars.

The present research addresses the aforementioned issue and makes the following contributions. First, it answers the call of Wiersema (2013) to investigate purchasing behavior in new and emerging markets and casts light on the theorized link between national cultures and OBB. The study informs the practice of international B2B relationships by examining the ways in which the pattern of cultural characteristics found in the Arabian Gulf business environment shapes the decision-making processes of local organizational buyers.

Second, the study introduces the buying center configuration for a collectivistic and large-power distance (Hofstede et al., 2010) business environment characterized by particularism (Hooker, 2003; Noer et al., 2007) and pervaded by wasta, an informal influence practice indigenous to the Arab world (Berger et al., 2015). In doing this, the study offers a rich understanding of in-house decision-making processes in a strategically important region of the Arabian Gulf.

Third, the present investigation uses a behavioral approach based on the assumption that purchasing decisions are made not by anthropomorphically abstracted procurement units but by specific individuals in specific circumstances. The behavioral approach overcomes the limitations of a rationalist perspective and the pseudo-causal models it engenders (Wilson, 2000); this study is the first, to the best of the author’s knowledge, to apply the behavioral approach to research on OBB in the context of the Arabian Gulf.

The remainder of this paper is organized as follows. First, a literature review presents the theoretical background of OBB and the buying center research. Next, the methodology section explains the qualitative approach of the study, offers a description of the research setting and elaborates on the methods of data collection and analysis. The final section reports the results, which are followed by a discussion of the study’s findings and implications.

2. Literature review

2.1 Theoretical background

OBB is an extensive research field that has been growing over decades with many influential studies advancing our understanding of this key component in business marketing (Reid and Plank, 2000). The foundations of OBB as a separate research discipline are found in the seminal work of Sheth, Webster and Wind and their colleagues (Robinson et al., 1967; Sheth, 1973, 1996; Webster, 1965; Webster and Wind, 1972; Wind and Webster, 1972). Today, OBB continues stimulating prolific research output (Bachkirov et al., 2016; Chavan et al., 2018; Haensel and Hofmann, 2018; Mogre et al., 2017; Kauffman, 1996; Lewin and Johnston, 1996; Liu and Chen, 2018; Mahapatra et al., 2018; Madhavaram et al., 2011; Wilson, 1996). Developing OBB models has become an established way of creating knowledge in the field, and a major review of foundational work (Johnston and Lewin, 1996) generated an overarching model of OBB that integrates previous conceptualizations.

The earlier models, although insightful into organizations’ purchasing behavior, were linked to two acknowledged limitations: Western-centric theorizing (Lilien, 2016) and assumptions of rationality in OBB (Wilson, 2000). The first limitation is a corollary of the field’s development dynamics: the earlier OBB models were built around the North American and Western European organizational structures (Lilien, 2016). It is an important limitation, because conceptualizations and frameworks rooted in the mature markets’ processes may be inappropriate for application in emerging markets and, thus, lead to spurious findings (Sheth, 2011). Given that there is a clear reconfiguration of the industrial marketing focus from advanced economies towards developing markets (Wiersema, 2013), there is an urgent need for a concerted research effort to examine OBB processes in newer and emerging business environments.

Current thinking in the field suggests that this can be achieved by examining whether and how industrial marketers establish appropriate relationships (Chicksand and Rehme, 2018) with the key decision-makers in the buying organizations (Järvi and Munnukka, 2009). This, however, can become an Achilles’ heel in cross-cultural contexts. Specifically, in collectivistic and large-power-distance societies with convoluted communication hierarchies (Gudykunst et al., 1996), the relationship between organizational actors (OAs) can mask the ultimate source of the purchase decision. Additionally, in Arab countries, the intra-organizational currents of decision-making influence can be further obfuscated by wasta – a social principle underlying information sharing, opportunity generation and power exertion in social networks (Berger et al., 2015). Finally, the wasta processes occur against a background of a more general phenomenon of particularism, as opposed to universalism (Hooker, 2003). The particularists are guided in their judgments and decisions by the type of a relationship they have with others and by the specific nature of circumstances, which they view as unique. In contrast, the universalists emphasize uniform rules and expect everyone to follow these rules in all applicable situations. Thus, in the particularist environment of the Arabian Gulf (Noer et al., 2007), the OAs’ business judgments and decisions are determined by the nature of personal ties (or lack thereof), rather than by universal laws or standard company regulations. The latter, while important, are taken as mere guidelines and are only binding if enforced. All these national culture characteristics – collectivism, large power distance, particularism and the wasta tradition – can encumber the efforts of industrial marketers to build the relationships with appropriate people in the buying firm. Accordingly, how the national cultural characteristics of the Arabian Gulf shape OBB is one void in our knowledge that this study addresses.

The second limitation of the original OBB models is that they derived from normative approaches, which assume managerial rationality. Those models depicted organizational purchasing processes as a notional sequence of elements and factors presented in the form of a logical flow chart of boxes and
arrows, ostensibly leading to a maximized outcome of a purchasing exercise. Such modeling, while meeting the assumptions of rationality, fails to capture the actual processes taking place (Wilson, 2000). To address this limitation, scholars turned to exploring process-driven organizational purchase management and OBB-related decision-making. An important finding was that OBB is a boundedly, not a completely rational process (Kemp et al., 2018). Subsequent research (Turnbull et al., 1996) marked an important shift in research focus from purchasing decision processes to decision-relevant relationships in OBB (Håkansson, 1982). The behavioral approach, however, has not yet been applied to the study of OBB in the Arabian Gulf, thus limiting our understanding of organizational purchasing dynamics in this region. This is the second knowledge gap that this study seeks to redress.

In sum, although earlier studies acknowledged the role of cultural dynamics in cross-cultural B2B contexts, this work is scant (Garrido-Samaniego and Gutiérrez-Gillán, 2004; Mintu-Wimsatt and Gassenheimer, 1996) and has not been updated for decades as far as the Arabian Gulf is concerned (Baker and Abu-Israil, 1993). In addition, empirical behavioral research of OBB has not yet been extended into the new and emerging markets. These are two considerable limitations of the current OBB field because national cultures – in conjunction with economic, political, legal and technological aspects of the global environment – are a vital factor that differentially shapes organizational purchasing behavior across the borders. Given an important role that the progressive states of the Arabian Gulf play in the global economy, it is an urgent research task to update our understanding of the behavioral aspects of the organizational buying processes in this world region. Responding to this task, the present paper empirically addresses the above two knowledge gaps.

2.2 The buying center
This study uses the concept of the buying center, because of its key role in organizational buying processes (Johnston and Bonoma, 1981; Osmohbekov and Johnston, 2018), as a vehicle to better understand OBB in the Arabian Gulf. According to the foundational model of Webster and Wind (1972), the five core roles entail the following: deciders have the legitimate power to make a choice from the available options; influencers affect – directly or indirectly – the buying decisions by giving details on alternatives and their attributes; buyers hold both authority and responsibility for negotiating with the suppliers; users are those for whom an organizational purchase is intended; gatekeepers are in charge of the information flow and the purchasing department acts in the capacity of gatekeepers (Theng Lau et al., 2003). Subsequently, Bonoma (1982/2006) and Dadzie et al. (1999) identified the role of initiators, who are the first to recognize the need for purchasing a product or service as a means to resolve the company’s current issues.

From a behavioral perspective, all OAs are likely to have different expectations resulting from varied individual backgrounds, perceptual and judgmental distortions and dissimilar information sources (Sheth, 1973). This can create situations in which the buying center members have different vendor preferences (McNally, 2002). Another important behavioral aspect of the buying center is related to whether it should be conceptualized as a buying group or as a buying network. The buying group approach has received criticism on its appropriateness (Bristor, 1992); the current perspective is that of a buying network (Wind and Thomas, 2010).

A major development in the field was the introduction of an integrative framework of OBB (Johnston and Lewin, 1996), according to which the buying decisions of OAs in the buying center are impacted by several major influences and characteristics. The influences are: process/stages, buyer–seller relationships, conflict/negotiation tactics, communication networks, decision rules and stress; the characteristics are purchase, organizational, group, participant, seller, informational and environmental. All these powers have received thorough research attention (Reid and Plank, 2000), yet a sub-set of environmental influences stemming from the dynamics of national cultures has largely remained unexplored. The studies that did look into international differences in the buying centers did not link those differences to specific national cultural traits (Herbst et al., 2008), which has created an incomplete picture of OBB in a globalized business environment. Specifically, although the traditional OA taxonomy (Webster and Wind, 1972) is aptly descriptive for the contexts in which it originated, that is, mature markets marked by individualism, low power distance (Hofstede et al., 2010) and universalism (Hooker, 2003), it might be unable to capture accurately the configurations of the buying center in the world regions with a dissimilar cultural profile.

Given the national idiosyncrasies of the Arabian Middle East discussed in the methodology section, it is theorized that the buying center configuration in the Arabian Gulf may differ from those in traditional mature markets.

3. Methodology
The qualitative methodology was chosen because of the study’s focus, that is, to gain a better understanding of OBB in an under-researched business environment. The new knowledge emerged from hermeneutic circles of coalescing data collection, data analysis, reflection and interpretation (Dubois and Gadde, 2002). The hermeneutic approach, which is qualitative interpretive in nature, highlights the importance of meanings that the study participants draw from their experiences. Eliciting such meanings and standpoints from the respondents was the methodological aim of this study. The hermeneutic approach was augmented by an empirical contextualization strategy (Ketokivi and Mantere, 2010), the purpose of which is to ensure the contextual authenticity of reasoning. It implies, in this study, that the research context, such as the characteristics of the national culture (collectivism, large power distance, particularism and wasta), are pertinent to the process of conceptualization.

3.1 Research contexts: the Arabian Gulf
The study was conducted in the Sultanate of Oman in the Arabian Gulf. The main reason for contextualizing this inquiry is that qualitative OBB investigations have not yet been done in this region of growing importance. Oman is a prosperous, oil-rich country that strategically fosters economic growth and development while sensitively protecting its culture and belief systems. This progressive nation is taken as a typical
representative of the Arabian Gulf countries (Bachkirov, 2018) and has experienced intensive economic growth and accelerated urbanization in recent decades (Bachkirov and Shamsudin, 2017).

Regarding the region’s cultural characteristics, Hofstede et al. (2010) argued that Arabic societies are collectivistic, high in uncertainty avoidance, high in power distance and moderate in masculinity/femininity. In organizations, collectivism leads to accentuated in-group cooperation, a salient psychological need for affiliation and a focus on the well-being and purposes of the in-group, rather than on the pursuit of personal goals. High uncertainty avoidance is associated with risk aversion, fear of failure, a strong need for harmony, conflict avoidance and views that the subordinate initiative must be restrained. Large power distance is evident in centralized and hierarchical decision-making, deference and submission to superiors and a general attitude of conformity and compliance. Managers in large-power-distance contexts, while avoiding direct guidance from their superiors, aim to anticipate their wishes and demands (Smith et al., 2007). A moderate score on masculinity is linked to such values as benevolence, concern for the weak and the importance of interpersonal relationships. Empirical evidence provides support for Hofstede’s theorizing. For example, Smith et al. (2007) demonstrated that Arab managers are highly reliant on formal rules, unwritten rules and on their co-workers, yet they tend to depend less on their own knowledge and experience or on their superiors. In terms of business models in the Arabian Gulf, these are primarily driven by relationships, not exchange (Rice, 1999). In sum, the current knowledge in international management suggests that the cultural properties of the research context are likely to play a role in shaping OBB and purchasing decision-making processes in the Arabian Gulf.

3.2 Data collection
Snowball sampling was used to recruit study participants. The starting point was the MBA students enrolled in an Organizational Behavior course at a large public university in the Arabian Gulf region. Next, each of them recruited work colleagues with reasonable organizational experience. All study participants worked at different job levels, ranging from operatives through supervisors and middle managers to top managers, and they occupied various positions in their companies. Their role in OBB included one or more of the following: making decisions in organizational purchases, advising on organizational purchases, being directly involved in the organizational buying process or being a direct user of a recent organizational purchase. Thus, all the study participants were “information rich” (Patton, 2002) and in a position to provide relevant and insightful qualitative data. A summary of study participant profiles is shown in Table I and detailed participant profiles are found in Table II.

The study participants were asked to evaluate organizational buying decision-making and purchasing process in their organizations. The evaluation entailed assessing the elements of the OBB model used by their organizations as well as the relationships between the elements. The total of 41 evaluations was returned as written reports, which were used to develop the buying center model for the Arabian Gulf.

3.3 Data analysis
English is the lingua franca in the Arabian Gulf’s business community and is the medium of communication in local companies, which employ both local and expatriate workers and professionals. Therefore, the study participants were asked to write their reports in English. To preserve the authenticity of the participants’ language, their errors (syntactical, grammatical, of appropriacy, etc.) were not edited. Through an iterative process, the author and two research assistants separately scrutinized the reports to identify any important observations related to OBB processes in the participants’ organizations. The analysis entailed a continuous reflection on the data, their bearing on the study’s focus and on the established perspectives in OBB. The data analysis process included a continuous self-challenging of one’s own theoretical assumptions and questioning what empirically is assumed to be true.

The thick qualitative data generated from the participants’ reports enabled the conceptualization of the buying center model for the Arabian Gulf. The model’s characteristics emerged through the accrual, analysis and interpretation of the data. During the analysis, it was aimed to triangulate the essential characteristics of the emerging model to validate the analysis. There was an ongoing movement between the obtained data and published OBB research to ensure the rigor of the analysis. Thus, the proposed model, while being inductively constructed, is both grounded in empirical data and informed by existing theory. Exemplary excerpts from the reports were chosen to demonstrate the point for the key characteristics of the model.

4. Findings
The analysis of the data lead to a fuller understanding of the aspects related to the roles of influencers, deciders, buyers, users and the gatekeeping bureaucracy (the study adopts the term gatekeeping bureaucracy rather than gatekeepers because of
<table>
<thead>
<tr>
<th>Ref.</th>
<th>Role in organizational buying</th>
<th>Position in the company</th>
<th>Industry</th>
<th>Job level</th>
<th>Years of prof. exp.</th>
<th>Gender</th>
<th>Company size (approximately employees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Adviser user</td>
<td>Financial Analyst</td>
<td>Administration of Women’s Counselling Affairs</td>
<td>O</td>
<td>3</td>
<td>Female</td>
<td>500</td>
</tr>
<tr>
<td>02</td>
<td>Adviser user</td>
<td>Information Security Specialist</td>
<td>Ministry of Religious Affairs</td>
<td>O</td>
<td>2</td>
<td>Male</td>
<td>2,000</td>
</tr>
<tr>
<td>03</td>
<td>Decider adviser user</td>
<td>Nursing Instructor</td>
<td>Medical Education</td>
<td>S</td>
<td>8</td>
<td>Female</td>
<td>120</td>
</tr>
<tr>
<td>04</td>
<td>User</td>
<td>Auditor</td>
<td>State Audit</td>
<td>O</td>
<td>4</td>
<td>Female</td>
<td>2,000</td>
</tr>
<tr>
<td>05</td>
<td>Adviser</td>
<td>Auditor</td>
<td>Mining</td>
<td>O</td>
<td>2</td>
<td>Male</td>
<td>1,000</td>
</tr>
<tr>
<td>06</td>
<td>Adviser</td>
<td>Auditor</td>
<td>Fishing</td>
<td>O</td>
<td>12</td>
<td>Male</td>
<td>2,000</td>
</tr>
<tr>
<td>07</td>
<td>User</td>
<td>Marketing Executive</td>
<td>Publishing and Advertising</td>
<td>O</td>
<td>3</td>
<td>Female</td>
<td>550</td>
</tr>
<tr>
<td>08</td>
<td>Adviser user</td>
<td>Head of Communication</td>
<td>Oil &amp; Gas</td>
<td>MM</td>
<td>7</td>
<td>Male</td>
<td>450</td>
</tr>
<tr>
<td>09</td>
<td>Decider</td>
<td>Head of Purchasing Department</td>
<td>Publishing and Advertising</td>
<td>MM</td>
<td>9</td>
<td>Male</td>
<td>600</td>
</tr>
<tr>
<td>10</td>
<td>Adviser buyer</td>
<td>Senior Contracts Engineer</td>
<td>Oil &amp; Gas</td>
<td>O</td>
<td>6</td>
<td>Female</td>
<td>7,500</td>
</tr>
<tr>
<td>11</td>
<td>Adviser buyer</td>
<td>Contract Analyst</td>
<td>Oil &amp; Gas</td>
<td>O</td>
<td>4</td>
<td>Female</td>
<td>7,500</td>
</tr>
<tr>
<td>12</td>
<td>Adviser buyer</td>
<td>Contracts Officer</td>
<td>Public Sector</td>
<td>O</td>
<td>6</td>
<td>Male</td>
<td>500</td>
</tr>
<tr>
<td>13</td>
<td>Adviser user</td>
<td>Head of HRM Department</td>
<td>Public Sector</td>
<td>S</td>
<td>9</td>
<td>Male</td>
<td>100</td>
</tr>
<tr>
<td>14</td>
<td>Decider adviser user</td>
<td>General Manager</td>
<td>Civil Engineering and Construction</td>
<td>MM</td>
<td>10</td>
<td>Female</td>
<td>24,000</td>
</tr>
<tr>
<td>15</td>
<td>Adviser user</td>
<td>Administrator</td>
<td>Higher Education</td>
<td>S</td>
<td>15</td>
<td>Male</td>
<td>50</td>
</tr>
<tr>
<td>16</td>
<td>User</td>
<td>Investment Analyst</td>
<td>Finance</td>
<td>O</td>
<td>3</td>
<td>Female</td>
<td>12</td>
</tr>
<tr>
<td>17</td>
<td>Decider adviser user</td>
<td>Deputy General Manager</td>
<td>Finance</td>
<td>TM</td>
<td>20</td>
<td>Male</td>
<td>12</td>
</tr>
<tr>
<td>18</td>
<td>Adviser user</td>
<td>Acting Branch Manager</td>
<td>Finance</td>
<td>MM</td>
<td>15</td>
<td>Female</td>
<td>50</td>
</tr>
<tr>
<td>19</td>
<td>Decider</td>
<td>Managing director</td>
<td>Retail</td>
<td>TM</td>
<td>10</td>
<td>Male</td>
<td>300</td>
</tr>
<tr>
<td>20</td>
<td>Adviser</td>
<td>LPO officer</td>
<td>Retail</td>
<td>O</td>
<td>7</td>
<td>Female</td>
<td>300</td>
</tr>
<tr>
<td>21</td>
<td>Adviser</td>
<td>Purchasing committee member</td>
<td>Healthcare</td>
<td>MM</td>
<td>15</td>
<td>Male</td>
<td>600</td>
</tr>
<tr>
<td>22</td>
<td>Adviser</td>
<td>Purchase officer</td>
<td>Services</td>
<td>O</td>
<td>5</td>
<td>Female</td>
<td>500</td>
</tr>
<tr>
<td>23</td>
<td>User</td>
<td>Accountant</td>
<td>Services</td>
<td>O</td>
<td>6</td>
<td>Female</td>
<td>500</td>
</tr>
<tr>
<td>24</td>
<td>Adviser user</td>
<td>Senior Project Manager and Member of the Procurement Committee</td>
<td>Wastewater industry (projects and operations)</td>
<td>MM</td>
<td>15</td>
<td>Male</td>
<td>800</td>
</tr>
<tr>
<td>25</td>
<td>Adviser</td>
<td>Senior buyer</td>
<td>Wastewater industry (services)</td>
<td>S</td>
<td>10</td>
<td>Female</td>
<td>700</td>
</tr>
<tr>
<td>26</td>
<td>Adviser</td>
<td>Purchase officer</td>
<td>Pharmaceutical</td>
<td>O</td>
<td>4</td>
<td>Female</td>
<td>20</td>
</tr>
<tr>
<td>27</td>
<td>Adviser</td>
<td>Supply Chain Analyst</td>
<td>Oil and Gas</td>
<td>S</td>
<td>15</td>
<td>Male</td>
<td>1,900</td>
</tr>
<tr>
<td>28</td>
<td>Decider adviser user</td>
<td>General Manager</td>
<td>Finance</td>
<td>TM</td>
<td>16</td>
<td>Male</td>
<td>1,400</td>
</tr>
<tr>
<td>29</td>
<td>Decider adviser user</td>
<td>Head of Department</td>
<td>Finance</td>
<td>MM</td>
<td>6</td>
<td>Male</td>
<td>1,400</td>
</tr>
<tr>
<td>30</td>
<td>Buyer</td>
<td>Oil and Gas</td>
<td>O</td>
<td>3</td>
<td>Female</td>
<td>1,600</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Decider</td>
<td>CEO</td>
<td>Telecom</td>
<td>TM</td>
<td>17</td>
<td>Female</td>
<td>1,000</td>
</tr>
<tr>
<td>32</td>
<td>User</td>
<td>Accountant</td>
<td>Oil and Gas</td>
<td>O</td>
<td>3</td>
<td>Female</td>
<td>8,000</td>
</tr>
<tr>
<td>33</td>
<td>Adviser</td>
<td>Procurement Specialist</td>
<td>Oil and Gas</td>
<td>O</td>
<td>3</td>
<td>Female</td>
<td>7,700</td>
</tr>
<tr>
<td>34</td>
<td>Adviser</td>
<td>Account Relationship Manager</td>
<td>Banking</td>
<td>O</td>
<td>3</td>
<td>Female</td>
<td>200</td>
</tr>
<tr>
<td>35</td>
<td>User</td>
<td>Head of Department</td>
<td>Public Sector</td>
<td>S</td>
<td>5</td>
<td>Male</td>
<td>4,000</td>
</tr>
<tr>
<td>36</td>
<td>Adviser</td>
<td>Head of Department</td>
<td>Higher Education</td>
<td>S</td>
<td>15</td>
<td>Female</td>
<td>100</td>
</tr>
<tr>
<td>37</td>
<td>User</td>
<td>Senior Geophysicist</td>
<td>Oil and Gas</td>
<td>MM</td>
<td>13</td>
<td>Male</td>
<td>500</td>
</tr>
<tr>
<td>38</td>
<td>User</td>
<td>Finance officer</td>
<td>Investments</td>
<td>O</td>
<td>2</td>
<td>Male</td>
<td>50</td>
</tr>
<tr>
<td>39</td>
<td>Decider adviser user</td>
<td>Head of Information Technology</td>
<td>Investments</td>
<td>MM</td>
<td>15</td>
<td>Male</td>
<td>50</td>
</tr>
<tr>
<td>40</td>
<td>Decider adviser user</td>
<td>Acting Catering Officer</td>
<td>Health service (hospital)</td>
<td>S</td>
<td>11</td>
<td>Female</td>
<td>4,000</td>
</tr>
<tr>
<td>41</td>
<td>Decider adviser user</td>
<td>Catering Supervisor</td>
<td>Public Sector</td>
<td>S</td>
<td>9</td>
<td>Female</td>
<td>20,000</td>
</tr>
</tbody>
</table>

**Notes:** Key and abbreviations: Ref. – participant reference; Decider – makes decisions in organizational buying; Adviser – advises on organizational buying; User – is a direct user of a recent organizational purchase; Buyer – is directly involved in organizational buying process; TM – top manager; MM – middle manager; S – supervisor; O – operative; prof. exp. – professional experience; and LPO – local purchase order.
the content of this role in the research context). In addition, the data analysis allowed to identify and define the role of advisers and revealed the interplay between rules and relationships in purchasing processes.

4.1 Influencers

The data revealed several types of influencers. The first two types are those who directly and/or indirectly provide information on alternatives and criteria (Webster and Wind, 1972) and those who are powerful internal or external stakeholders in a position to influence purchasing decisions by virtue of various factors. The following comment exemplifies the first type:

The organizational purchasing decisions making is done by operation manager in the head office [...]. The operation manager get the advice from planning department since the planning department have full database of fish required and types of the fish the company should purchase. Also, the finance department play as a main influencer for the decision; they prepare a yearly budget for fish purchase. [Ref.06]

The second type of influencers is illustrated by this observation:

Influencers are the internal and external stakeholders of the company i.e. internal stakeholders (owners and investors) and the external stakeholders (customers, suppliers, creditors, and the government). [Ref.16]

The data also showed that the local community may act as an important stakeholder-influencer (cf. Sheth, 2011):

The community where the company has operations in the interior can have influence on company’s decisions because the company has obligations to satisfy them [community members] so [that] the operations can run safely without interruptions. [Ref.10]

Influence can originate not only from OAs but also from contextual dimensions:

Influence is considered as any factor that affects the decision makers, including government policies, company policies, stakeholders, cost cutting. [Ref.32]

The study participants noted a potentially negative effect that influencers can exert on a purchasing process if/when they pull deciders in differing directions and, thus, delay the decision:

The General Manager is the decider […] The decision could be affected by the influencers who will look to the purpose of purchasing from different points of view. For example, the head of purchasing unit will prefer to approve the quotation of the supplier who has a long term relation with the establishment even if their price is a little bit more than others'. On the other hand, the director of print department will focus on the quality of the item as they will be the end-users and their work will rely on it. However, in the finance and auditing department will focus and try to influence the decider to choose the less expensive item as they mostly care about the budget. [Ref.07]

The findings showed that the government can effectively act as influencers (Sheth, 2011). The type of sector – private versus public – may be a factor. In heavily regulated governmental organizations, people may subjectively perceive an absence of influencers, while in actuality, this role is enacted by governmental authorities:

As the establishment is a government entity, there are no direct internal or external influencers on the purchasing decisions. In addition, the whole buying process is very systematic and the communication runs according to a specific instructions. [Ref.09]

4.2 Advisers

Deciders receive both informal inputs from influencers and formal inputs from advisers in large organizations with complex decision-making processes. The difference between the two is based on the (non)involvement of gatekeeping bureaucracy in purchasing decision interactions. The interactions between influencers and deciders flow smoothly and are unobstructed by gatekeeping bureaucracy. The interactional process between advisers and deciders, in contrast, has to go through bureaucratic barriers. In a report by an information security specialist, the computer technicians were identified as advisers, while the information security specialist and the finance department were identified as influencers:

The computer technicians, first, identify the need to acquire new computers. They have to communicate this need through formal letter to the head of the information technology and the head of networks. These two managers are in charge to decide whether to buy, what to buy, where to buy, and how to buy. The process of informing the managers about the needs may take time because of the bureaucratic and gatekeepers that impede the flow of information [...]. The deciders are influenced by the information security specialists and the finance department. They exchange information smoothly and decide the most appropriate computers that fit with the nature of the work. [Ref.02]

4.3 Users

The findings suggested two categories of users: willing users and reluctant (unwilling) users. The former know that the purchase will be suitable for their job or project and appropriate for their skill level. Reluctant users, in contrast, doubt the appropriateness of the purchase. Such perception can be induced by circumstances in which the reasons for a purchase are not the operational requirements but an unrelated motivation; for example, a purchase deal is a result of pressures by dominant stakeholders or an exercise in relationship maintenance. It emerged that users’ orientation, that is, willing or reluctant, may depend on the nature of their organizational roles. One participant reported that: “Willing users […] are employees working within the administration. On the other hand, the unwilling users are the field workers”. [Ref.01]

An important observation was that the input received from reluctant users must be treated with caution:

The unwilling users cannot be a good communication element in this process because they cannot give appropriate opinion on such organizational buying decision and may transfer ambiguous feedback. [Ref.01]

Depending on the nature of the business, users may or may not be able to communicate directly with deciders. This study revealed an additional reason: when a specialized knowledge is required, an intermediary link is established, for example, technicians:

Information flows from the deciders to the technicians and they in turn pass on the information to the users. [...] The users' feedback or suggestions regarding the planned purchase are transmitted to the technicians with no communication barriers [...] If the users want to change their computer types they have to write a formal letter mentioning significant reasons for their requests and send it through technicians to the deciders. After studying the reasons, decider will take an action whether to change or not. [Ref.02]

Alternatively, users communicate directly with the purchasing unit rather than with deciders:

Users communicate with purchasing unit about their need, which, in turn, contact the deciders to obtain approvals. [Ref.10]

The latter pattern is likely to exist in organizations, in which end users have a high status because of their role:

The end users are those who define the overall organization’s demand and as they are responsible for delivering the job in the organization, it’s their responsibility to define the job needed to be done to achieve the objectives, not only defining what needs to be done but also why, how and when; so, if we talk about procurement in specific, they will be in a better position to
define the procurements required for a specific year in order for them to deliver. [Ref.33]

Expanding the categorization of users, the data revealed two additional types: direct users and indirect users or sub-users. The latter are units subordinate to direct users and have a limited role in the organizational buying process:

The direct users not only receive the decisions, they can also interact, negotiate and give feedback in order to have effective decisions that meet overall goals. And the sub-units, that come under the main users, are indirectly related to the deciders and don’t give feedback [on decisions]. [Ref.34]

4.4 Gatekeeping bureaucracy

The data demonstrated contrasting views on the gatekeeping bureaucracy in the organizational buying process. Users tend to perceive bureaucratic barriers negatively: “Bureaucracy plays a major role in the process which in fact causes unwanted hassle.” [Ref.35]. Top management, however, discerns advantages of having bureaucratic barriers in place:

This model offers a strong barrier for the organization and this barrier ensures strong control on hand of senior management. [Ref.14]

Bureaucratic barriers can be perceived positively because:

[…] if you, as a user, want to break the barrier, you must convince the people who represent this barrier by using the following methods: (1) competitive cost; (2) easily, readily, and globally available; (3) approved by major organizations and government organizations according to the specification and quality; (4) unique product. [Ref.14]

Large organizations for which safeguarding standards are important may have multidimensional bureaucratic structures:

This organization has relatively high assurance standards. Therefore, the bureaucracy comes at two intersections. [The first] is between the purchase unit and the decision makers in order to maintain transparency and to have clear documented guidelines and submissions. The bureaucracy also appears between the purchase units and the units (end users). The demand or the requests from the units are submitted along with the approval from the individual unit’s line managers. This is to maintain accountability and for assurance purposes, making sure the managers are aware of the requests raised by his/her team to avoid duplication. [Ref.32]

4.5 Rules and relationships: Buyers

The data captured the principle of pliability of rules for organizational purchasing. An industrial company, for example, may have an established process: the board of directors and the general manager formally approve a purchase; the approval is forwarded to the operations manager, who tasks the purchasing department; the latter selects the best vendors and effectuates the purchase. Yet this process enjoys certain flexibility:

Not all the time the purchasing department follows this procedure; sometimes they broke the rules by make the order based on unapproved request from top management. And sometimes they do not double-check the budget from finance department. [Ref.06]

Similarly, a supervisor in a large hospital confirmed that:

[…] the official structures not applied in daily practices, where the contribution of unofficial aspects occurs to meet the organizational purposes […]. Many written communications tend to ignore many hierarchical managers in order to reduce time constrain and get things done faster. In other words, purchasing communication flows has been changed in the firm unofficially. [Ref.40]

An intricate structure of the relationship between the OAs involved in the buying process can mask the ultimate source of the decision to purchase. The following comment illustrates the point:

The official authority for all furnace purchasing is the general manager, the purchase committee and the finance manager. The influencer of the decision is the outside consultant hired by the company in the period they want to purchase the furnaces as well as the operator of these furnaces. […] However the decider of purchasing are the maintenance department and the mining department. Both of them work together to decide whether there is need for the purchase […] Before they make a decision they sent a request to the general manager to get the advice from such consultation parties who have experience in furnaces manufacturing industry. When the consultant give a clear feedback whether the company require to buy a new furnace or to maintain the available one, the mining department sent a request to the purchasing department. Then purchasing department play a role of [em] powered buyer. [Ref.05]

While identifying the initiator role – the maintenance department and the mining department – this excerpt illustrates a convoluted decisional structure that puts particular pressure on buyers. From the above comment, it is evident that buyers can feel empowered: in addition to official authority and formal responsibility for negotiating with suppliers they enjoy the support of deciders and/or influencers in their buying role. Some buyers, however, take an avoidant stance. One senior buyer elaborated on the factors prompting avoidance predispositions and stressed that they use: “avoidant buyer [approach] due to some facts like government bureaucracy, [requirements to] follow purchasing policies and procedures, budget influence […] all that effect in decision making.” [Ref.25].

4.6 The buying center model for the Arabian Gulf

The findings suggested the buying center model (Figure 1) that is grounded in empirical data obtained from organizations in the Arabian Gulf and aimed at describing OBB in emerging markets with socio-political governance (Sheth, 2011). As the figure illustrates, before deciding on an organizational purchase, deciders receive an input from influencers and advisers. Four types of influencers are captured by the model. First, informational influencers are those OAs who provide information on a purchase’s alternatives and their attributes (Webster and Wind, 1972). Second, internal and external stakeholders are those whose influence is derived from various relational factors stemming from the collectivistic nature of the business environment. Third, the organizational context (policies, operational needs, etc.) is conceptualized as a symbolic OA and is denoted as contextual influencers. Finally,
socio-political influencers include government, religious institutions and local communities (Sheth, 2011). The pointer of the influencer cluster is located opposite a dashed circumference line that demarcates deciders. The dashed line suggests an unrestricted interaction between influencers and deciders whereby influencers provide their input at will without going through gatekeeping bureaucratic barriers depicted as an incomplete thick black circumference line around the decider area. Such an interaction mode, however, is not available to advisers. The role of advisers, although somewhat similar to influencers, is to provide formal rather than informal inputs into purchasing decisions, which does require crossing the gatekeeping bureaucracy.

The model details the ways in which willing and reluctant users may engage in organizational purchasing decisions. The interactions of User “A” illustrate a scenario in which, because of the nature of an organization’s business model, users and deciders can interact unhindered with each other; this concept is represented by a two-directional arrow linking User “A” and the dashed section of the deciders’ symbol. User “A” is also connected to a set of sub-users who report to direct users and do not participate in purchasing decision-making. Sub-users are shown for User “A” for illustrative purposes only; any other user can have a set of sub-users. The second scenario depicts User “B” interactions. Here, the attempts of User “B” to make suggestions about a planned purchase encounter a barrier of the gatekeeping bureaucracy; this can lead to a frustrated interaction attempt, shown here by a broken arrow. The third scenario involves User “C”, who directly interacts with buyers, rather than with deciders. This situation can arise when users have a high-level status in their organization and are the key OAs in determining the company’s performance.

Finally, a common shade for the components of the model symbolizes the presence of a unifying, underlying dimension of particularism (Noer et al., 2007).

5. Discussion

In view of the field’s shifting from transaction- to relations-focused approaches and transitioning from domestic to global sourcing processes, Sheth (1996) emphasized the need for OBB scholars “to learn new concepts, methods and theories appropriate for the new world of OBB” (p. 12). The differences in cross-cultural values that are critical to OBB have emerged as a dynamic demanding urgent scholarly attention. Responding to the call of Wiersema (2013), this study uses empirical behavioral data to update our understanding of OBB in the Arabian Gulf.

5.1 National cultural influences on OBB

The reported findings and the proposed model contribute to our better understanding of the organizational buying decision processes beyond the established, mature markets. A comparative table (Table III) summarizes the similarities and differences in the buying center configuration in the traditional mature industrial markets and the emerging markets with socio-political governance. To achieve a comprehensive insight into OBB in the Arabian Gulf, both etic and emic perspectives were applied. The etic paradigm describes behavioral phenomena using criteria and notions external to a researched culture. In contrast, the emic approach describes behaviors identified in a particular culture by using the concepts originated in that culture without imposing external conceptualizations.

5.1.1 OBB in the Arabian Gulf: an etic perspective

From the etic standpoint, the current thinking in the field of international management (Hofstede et al., 2010) suggests that the two cultural dimensions—collectivism and large power distance—can be factors in the profile of OAs and their buying center interactions. Collectivism promotes a clear distinction between the in-groups and out-groups that is a fundamental and integral part of people’s construction of social reality in collectivistic cultures. Large power distance is linked to resources being available only to a few at the top of hierarchies and information being localized and hoarded.

Collectivism and large power distance are theorized to shape the profiles of deciders and influencers in the Arabian Gulf. The former exercise their power by endorsing, modifying, or cancelling the buyer’s tentative decisions. Prior to choosing a particular action, though, deciders obtain the influencers’ perspectives, as their power stems from their membership in professional, personal, or hereditary networks and hierarchical structures. Influencing forces also come from government, religion, and local communities, which is in agreement with a recent proposition that emerging markets tend to be governed by socio-political institutions rather than competition (Sheth, 2011).

From the collectivist perspective, organizational buyers who belong to an in-group comprising deciders and influencers acquire an empowered buyer status. Buyers who are outside of such an in-group perceive themselves, in contrast, as disempowered and act the role of avoidant buyers, which would involve trying to evade answerability for purchasing. Such behavioral intentions and actions of avoidant buyers can also be interpreted within the power distance dimension. Hierarchically divided employees in large-power-distance environments view each other as existentially unequal in power. Within these mutually shared perceptions, the subordinates expect the boss to be a “good and benevolent father”. Should this expectation be unmet, the superior’s authority is ideologically rejected. If the “bad” superior abuses power, however, the subordinates who become victims are unlikely to attempt to rectify the situation and would passively accept their

Table III The buying center configurations: a comparison

<table>
<thead>
<tr>
<th>Traditional mature markets</th>
<th>Markets with socio-political governance (the Arabian Gulf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiators</td>
<td>Initiators</td>
</tr>
<tr>
<td>Influencers</td>
<td>Informational influencers</td>
</tr>
<tr>
<td></td>
<td>External stakeholders</td>
</tr>
<tr>
<td></td>
<td>Contextual influencers</td>
</tr>
<tr>
<td></td>
<td>Socio-political influencers</td>
</tr>
<tr>
<td>Not identified</td>
<td>Advisers</td>
</tr>
<tr>
<td>Deciders</td>
<td>Deciders</td>
</tr>
<tr>
<td>Buyers</td>
<td>Empowered buyers</td>
</tr>
<tr>
<td></td>
<td>Avoidant buyers</td>
</tr>
<tr>
<td>Users</td>
<td>Willing user</td>
</tr>
<tr>
<td></td>
<td>Unwilling users</td>
</tr>
<tr>
<td></td>
<td>Sub-users</td>
</tr>
<tr>
<td>Gatekeepers</td>
<td>Gatekeeping bureaucracy</td>
</tr>
<tr>
<td>Not identified</td>
<td>Particularism as an underlying environment</td>
</tr>
</tbody>
</table>

Table III: The buying center configurations: a comparison.

<table>
<thead>
<tr>
<th>Traditional mature markets</th>
<th>Markets with socio-political governance (the Arabian Gulf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiators</td>
<td>Initiators</td>
</tr>
<tr>
<td>Influencers</td>
<td>Informational influencers</td>
</tr>
<tr>
<td></td>
<td>External stakeholders</td>
</tr>
<tr>
<td></td>
<td>Contextual influencers</td>
</tr>
<tr>
<td></td>
<td>Socio-political influencers</td>
</tr>
<tr>
<td>Not identified</td>
<td>Advisers</td>
</tr>
<tr>
<td>Deciders</td>
<td>Deciders</td>
</tr>
<tr>
<td>Buyers</td>
<td>Empowered buyers</td>
</tr>
<tr>
<td></td>
<td>Avoidant buyers</td>
</tr>
<tr>
<td>Users</td>
<td>Willing user</td>
</tr>
<tr>
<td></td>
<td>Unwilling users</td>
</tr>
<tr>
<td></td>
<td>Sub-users</td>
</tr>
<tr>
<td>Gatekeepers</td>
<td>Gatekeeping bureaucracy</td>
</tr>
<tr>
<td>Not identified</td>
<td>Particularism as an underlying environment</td>
</tr>
</tbody>
</table>

Table III: The buying center configurations: a comparison.
plight. If a purchasing decision goes wrong and things turn out differently than anticipated, disempowered buyers would try to avoid answerability to evade such predicament.

The notion of large power distance also explains the appropriateness of classifying users into willing and reluctant. Willing users understand the reasons behind an organizational purchase and are clear about how this will benefit their performance. Reluctant users, in contrast, are not convinced of the purchase’s suitability for their operational needs. Due to large power distance, however, reluctant users do not engage in discussions on purchase appropriateness but display psychological resistance once the purchase has been made.

Large power distance strengthens the role of the gatekeeping bureaucracy – a hierarchical structure whose purpose is to serve the top executives’ need for managerial control. Such positioning makes the role of the gatekeeping bureaucracy qualitatively distinct from the role of gatekeepers in the developed markets. There, the purchasing department obtains information from the external sources, pre-screens it and decides whether and how to disseminate the pre-selected content to which members of the buying center (Theng Lau et al., 2003); the strategic aim is to regulate customer relationships. The gatekeeping bureaucracy’s role in the emerging markets of the Arabian Middle East is determined by socio-political, faith-based governance of organizations (Sheth, 2011); the strategic aim here is to regulate the relationships with institutions and their leaders and to enhance managerial control.

5.1.2 OBB in the Arabian Gulf: an emic view

To further evaluate the proposed model, it was examined through an emic lens. Recall that the current view is that the buying center constitutes a buying network (Wind and Thomas, 2010), rather than a buying group (Reid and Plank, 2000). Recent research showed that the conceptualization of business networking is influenced by national cultures (Ivanova-Gongne and Torkkeli, 2018). The networking force and a major emic phenomenon that permeates Arab culture in the Middle East is wasta (“going in between”), a process that people use to achieve their goals via connections with key individuals. As a social capital process (Burt, 1997), wasta is a distinctive phenomenon although other cultures developed comparable modes of informal influence, for example, guanxi, jeitinio, blat (Michailova and Worm, 2003; Smith et al., 2012) through strong and weak ties in high- and low-density networks (Granovetter, 1983). Wasta’s origins come from low-trust environments where people are hesitant to delegate key business decisions to the out-groups; the primary concern here is to reinforce family control and ownership rather than effectiveness (Sidani and Thornberry, 2013). Wasta is conceptualized as a three-dimensional construct (Berger et al., 2015). Mojamala, the affective component, denotes a socio-emotional bond rooted in the sense of loyalty, harmony and trust. Hamola, the volitional element, comprises empathetic benevolence, mutual reciprocity and unreserved duty to help when asked. Finally, somah is the cognitive aspect that defines the extent of the reciprocal credence in a business relationship and predictability of a partner’s future actions.

Although initially wasta mainly served the interests of the family and tribe, it has additionally become a tool in modern Arab societies for intercessions with the government and in business transactions (Berger et al., 2015). Wasta’s effects on the latter have not been conclusively established. Some argue that this practice is destructive of corporate performance (Sidani and Thornberry, 2013), but others advocate the benefits of a wasta network in business (AL-Husan et al., 2015). Wasta’s advantages as a type of organizational politics arguably include access to business opportunities, risks and costs minimization, access to decision-makers, acquisition of private and confidential information and intellectual capital and generation of trust (AL-Husan et al., 2015). The latter is particularly important because of the relational benefits it provides (Chou and Chen, 2018; Dadzie et al., 2018; Youssef et al., 2018).

Wasta’s ubiquitous presence in the Arabian Middle East and the dual nature of its organizational consequences both brings together OAs in the buying center and introduces tensions between them. Influencers may pursue dissimilar, if not opposite, goals when interacting with deciders. Whose influence prevails may be determined by the strength of individual influencers’ wasta links. Similarly, the support of a wasta network encourages buyers in their proactivity and stimulates them to adopt an empowered buyer’s role. Buyers outside of wasta networks, in contrast, are unlikely to be able to minimize the risks of a poor course of action and, thus, intuitively prefer an avoidant buyer’s role.

To sum up, both etic and emic interpretations of the findings suggest that OBB in the Arabian Gulf, as elsewhere, is a boundedly rational process, in which intuition and political behavior play a definitive role in organizational purchasing processes (Wilson, 2000).

5.2 Implications, limitations, future directions

5.2.1 Theoretical implications

This study’s findings are valuable for both theorists and practitioners. Based on the fine-grained analysis of 41 evaluative reports generated by deciders, advisers and users of organizational purchases, the study provides several substantive theoretical contributions to the field of international OBB. The first theoretical contribution lies in answering the call of Wiersema (2013) for examining OBB in new and emerging markets and elucidating the possible links of purchasing behavior with the etic cultural dimensions of collectivism and large power distance and with the emic phenomenon of wasta in the Arabian Gulf. Access to in-group membership (collectivism) and wasta networks may explain the dynamics between the deciders and influencers and whether the buyer is empowered or avoidant; large power distance is likely to play a role in the shaping willing/reluctant stance of users and strengthening the status of the gatekeeping bureaucracy.

The second theoretical contribution consists in advancing our understanding of OBB from an international perspective and developing the buying center model for the Arabian Gulf. The study reveals the typology of decisional influencers, introduces and defines the role of advisers and differentiates it from the role influencers, clarifies the role of the gatekeeping bureaucracy and differing perceptions thereof by OAs. It empirically validates the theoretical proposition that a reconceptualization of the buying center’s OAs is required for emerging markets with socio-political governance (Sheth, 2011) found in collectivistic and large-power-distance cultures (Hofstede et al., 2010) and associated with particularism (Hooker, 2003; Noer et al., 2007).
The third theoretical contribution is that the buying center model for the Arabian Gulf is based on the descriptive behavioral data directly obtained from OAs involved in the organizational purchasing process. This approach draws understanding of OBB from reports describing OAs’ actual behaviors and is not restrained by the drawbacks of rationalist theorizing about speculative causal relationships (Wilson, 2000).

5.2.2 Managerial implications
The theoretical contributions of the study define its managerial relevance. The paper addresses the pressing need of industrial marketers for new, enriched and hands-on understanding of the emerging markets’ unfamiliar environments (Wiersema, 2013) and contributes to reducing the theory/practice gap in business-to-business marketing (Gummesson, 2014). The overall practical value of the findings lies in the richness of new knowledge about how cultural idiosyncrasies of the business environment in the Arabian Gulf shape the purchasing behavior of organizational buyers. It provides the practitioners – international industrial marketers – with insights that organizational buyers in the Arabian Gulf are likely to retain their decision-making patterns when dealing with international vendors. This is a particular case of a general notion that in cross-cultural business interactions, economic actors replicate their social order, that is, culture (Haugland, 1998).

The distinctive managerial implications of the study are, first, that the industrial marketers from individualistic and low-power-distance societies – for example, the Anglo world – should not regard their business-to-business selling proficiency acquired in home country as a guarantee of efficacious results in a culturally distant setting of the Arabian Gulf. Discerning the power relationships and decision-making dynamics in the buying center is already challenging because of organizational politics and influence processes (Johnston and Bonoma, 1981). In the Arabian Gulf, the collectivistic and large-power-distance environments, coupled with a wasta networking tradition, present additional challenges for accurate identification of the actual decision maker (s) in the buying firm. The opaque nature of decisional dynamics, a convoluted structure of communication patterns and interactions between the OAs of the buying center, all of whom are likely to have competing vendor preferences (McNally, 2002), are liable to obfuscate who propels the organizational purchasing action. A vital requirement for business-to-business industrial marketing success in the Arabian Gulf is, thus, an extensive and conclusive knowledge of how collectivistic and large-power-distance values, embedded in wasta practice, influence OBB.

The second managerial implication is that international industrial marketers may have to reframe their conception of how purchasing decisions are likely to be made in the Arabian Gulf. The study revealed that, in addition to collectivism and large-power-distance, cultural particularism needs to be considered when approaching organizational buyers. Rather than anticipating a set of universal principles to govern business processes, industrial marketers may want to embrace the particularist nature of the Arabian Gulf business community.

The third managerial implication stems from the empirical confirmation of the conjecture that the buying center can expand beyond the firm (Wind and Thomas, 2010). Extending those authors’ theoretical proposition that the buying center can incorporate outside partner organizations, this study has demonstrated that external stakeholders (e.g. the governmental regulatory bodies and the communities) can have a role in the buying center. This agrees with the recent theorizing (Sheth, 2011) that the Arabian Gulf’s emerging markets are governed by socio-political and faith-based forces, that is, the government, religion and the local community. From the practical vantage point, these influences, too, should be regarded by international vendors pursuing superior industrial marketing outcomes in this region.

The final managerial implication is that when applying the proposed model in markets with socio-political governance, industrial marketers should consider that the role of the gatekeeping bureaucracy in organizational purchasing decision processes generates mixed perceptions from OAs. On the one hand, historical legacies in the Arabian Gulf region (Baker and Abu-Ismail, 1993), where “the stamp of approval” remains an inalienable part of organizational processes (Rice, 2003), can explain positive views of bureaucracy. On the other hand, the dynamic changes in organizational cultures brought about by globalization trigger critical attitudes to the gatekeeping bureaucracy. It is within this ambiguous context that industrial marketers should correctly identify the stance of the ultimate decision-maker and act accordingly.

5.3 Limitations and future directions
The limitations of the study suggest future research avenues. The data were obtained only from one culturally specific world region. Extending the line of reasoning that national cultures are a significant force exerting profound influences on OBB, future research should aim to investigate organizational purchasing decision processes beyond the Anglo world and the Arabian Middle East to include other cultural clusters, for example, Nordic Europe, Germanic Europe, Eastern Europe, Latin Europe, Latin America, Southern Asia and Confucian Asia (Gupta et al., 2002). This may necessitate revisiting the OAs’ taxonomy and re-examining the content of the roles of those involved in organizational buying. Additionally, while validating the presented model of the buying center for different cultural environments could be one option, an alternative strategy would entail conducting exploratory studies guided by grounded theory to understand the complex array of factors that influence OBB internationally. Future studies should also look into how to synthesize different culturally determined patterns of OBB to create an overarching global model of the buying center.

References


Organizational buying behavior
Alexandre Anatolievich Bachkirov


Further reading

Corresponding author
Alexandre Anatolievich Bachkirov can be contacted at: alexbach@squ.edu.om

For instructions on how to order reprints of this article, please visit our website:
www.emeraldgrouppublishing.com/licensing/reprints.htm
Or contact us for further details: permissions@emeraldinsight.com
Are marketing strategies correlated with financial outputs? A longitudinal study

Erika Sydney-Hilton and Natalia Vila-Lopez
Comercialización e Investigación de Mercados, Facultad Economía, Valencia, Spain

Abstract
Purpose – The relevance of marketing to explain financial success has been seldom investigated. In this scene, the purpose of this study is to analyze whether the correlations between four marketing strategies and seven financial measures has increased (or not) over time.

Design/methodology/approach – To reach these objectives, secondary information about 500 companies operating in the USA was analyzed. This information was listed on the US Standard & Poor’s 500-company index (SPX Charts, 2019). Data were collected for eight different periods of time (from year 2009 to year 2016) and for 11 different industries. Multiple regression analysis and ANOVA tests were used.

Findings – First, two marketing investment decisions out of four (brand value and price) have displayed a significant and incremental change over time. The other marketing investment decisions (brand rank, communication and service) have not increased their importance with time. Second, in two investment decisions (brand value and price), correlations found with financial measures have strengthened over time.

Research limitations/implications – This study was conducted on large US public companies. Studying other sectors within the USA such as small capitalization firms or privately owned firms can lead to future discoveries, while looking at similar companies in different countries, could provide compare and contrast opportunities. Second, no qualitative data were obtained in this study, leaving potential for gaps in knowledge that could be remedied by qualitative analysis. Third, given that all marketing investment was considered of equal value in the present paper, future research could be done to avoid this limitation.

Practical implications – From a practical approach, the authors want to eliminate the dissonance between marketing and accounts as far as the lack of “marketing accountability” (Webster et al., 2003, p. 27) has lead marketing to “lost its seat at the table” (Kumar and Shah, 2009, p 119). That is, they want to call the attention to the relevance of investing in diverse marketing tools at the same time from an accounting approach, showing how these tools can be used to improve financial results. Kumar (2015) explains how, as companies strive to cut costs, meet annual revenue targets and maximize efficiency, less attention is being placed on the importance of forward-looking marketing strategies. The authors would like to show how favorable financial results are linked to diverse marketing investments. As Arslanagic-Kalajdzic et al. (2018) have underlined, there is a need for building, improving and sustaining marketing accountability within the firm and its relevance for value.

Originality/value – From an academic approach, the added value is to adopt a longitudinal perspective to analyze the evolution of marketing investment over time and its interesting results, given that, until now, most of the studies have focused on a specific period (Anderson et al., 2004; Fornell et al., 2006). Previous works have scarcely noticed that by better understanding how marketing investments impact regularly used financial variables, stakeholders can better assess the inner workings of a company (Ambler et al., 2001). Bridging this academic gap from a longitudinal perspective will enable marketing workers and accounting workers to act cohesively to cultivate successful companies.

Keyword Marketing strategy
Paper type Research paper

1. Introduction

“Over the years, it has been clear that the marketing discipline is evolving continuously” (Kumar, 2015, p. 1). Actually, marketing is defined as “the creation of value for customers; the emerging paradigm for marketing seems clear: “it must be an integral part of the organization’s decision making-framework. This calls for a complete integration of marketing activities with the other business functions” (Kumar, 2015, p. 4). As this author explains, several factors triggered the expanded marketing focus to include an investment-based outlook. From this approach, an emphasis on justifying marketing actions in financial terms has been developed.

The main problem is that many times accountants believe that marketing investments cannot be measured with sufficient accuracy” (Doyle, 2000, p. 302). For example, regarding product investments, accounting has not defined the notion of innovation and does treat it as a separate asset recognized in the financial balance sheet (Dyhdalewicz and Widelska, 2017). Regarding communication investments to build brand and reputation (intangible assets), they are considered expenditures that do not generate economic benefits in the short term, so they are recognized as company expenses the moment they are incurred (Dyhdalewicz and Widelska, 2017). That is, the valuation of intangible assets (largely linked to marketing decisions) within an accounting framework raises several problems relating to their identification, measurement, and
control. “These problems imply that the traditional accounting model, which is based on tangible assets, historical costs, and accounting conservatism, is incapable of fully evaluating the new economy companies” which are marketing orientated (Dyhdalewicz and Widelska, 2017, p. 7). There is a need of multidisciplinary research groups to progress (Bigné Alcañiz, 2016).

To cover this gap, the general aim of this research is to analyze whether the correlations between four marketing strategies and financial measures has increased (or not) over time. More specifically two main questions want to be solved: Are companies investing on marketing more during the last years than eight years ago? Has the potential link between marketing investments/inputs and financial indicators/outputs increased with time? Solving both question is important to recommend managers (or not) the use of marketing tools if they want to improve their financial success.

On one side, regarding the inputs, four marketing investment decisions have been examined in this work based on Madhavaram et al. (2005) proposal:

- brand investment;
- communication investment;
- price investment; and
- service marketing investment.

These four marketing decisions were chosen due to their heavy use and relevance within the marketing field, because these are four marketing areas in which the expenditures could generate the greatest impact (Kumar, 2015). On another side, regarding the outputs, seven financial measures have been considered in this study to approximate success based on Firer and William’s (2003):

- return on equity;
- return on net assets;
- return on gross investments;
- price to book ratio;
- market capitalization;
- net income margin; and
- Tobin’s Q.

To reach our two objectives, we have analyzed the US Standard & Poor’s 500-company index (SPX Charts, 2019). These 500 companies are considered to be the largest and most impactful publically traded companies in the United States and collectively are often used to indicate the trajectory of the entire US stock market. In addition to do a longitudinal analysis, data were collected for eight different periods of time – from year 2009 to year 2016. Denizci and Li (2009) employed a similar methodology, but their research only looked at two marketing variables, and only across the tourism and hospitality sectors. To this point, it should be remarked that previous literature has often used qualitative information (such as customer satisfaction and customer loyalty) to explain financial measures (Rust and Huang, 2013). By focusing on accounting information, this paper has approximated customer results through the American Customer Satisfaction Index, because as Fornell et al. (1996) explain, this index measures the quality of the goods and services as experienced by the customers that consume them, once they have been delivered.

Compared to previous literature, the added value of the present research from an academic approach is to adopt a longitudinal perspective to analyze the evolution of marketing investment over time and its interesting results, given that, until now, most of the studies have focused on a specific period of time (Anderson et al., 2004; Fornell et al., 2006). A stream of research has started to investigate how marketing and accountability could be successfully linked. This group of researchers has begun to link marketing to finance through what is called the marketing-accounting interface (Ambler et al., 2001; Madden, 2006; Mizik and Nissim, 2011; Kosan, 2014; Stewart and Gugel, 2016). These studies emphasize the gravity of the situation. While the articles listed above support a myriad of solutions such as changing accounting measures, including marketing metrics in financial reports, or finding new indicators that address the problem, rarely do researchers suggest identifying the link between easily accessible financial data and the mystery that is marketing. Previous works have scarcely noticed that by better understanding how marketing investments impact regularly used financial variables, stakeholders can better assess the inner workings of a company (Ambler et al., 2001). Bridging this academic gap from a longitudinal perspective will enable marketing workers and accounting workers to act cohesively to cultivate successful companies.

From a practical approach, we want to eliminate the dissonance between marketing and accounts as far as the lack of “marketing accountability” (Webster et al., 2003, p. 27) has lead marketing to “lost its seat at the table” (Kumar and Shah, 2009, p 119). That is, we want to call the attention to the relevance of investing in diverse marketing tools at the same time from an accounting approach, showing how these tools can be used to improve financial results. Kumar (2015) explains how, as companies strive to cut costs, meet annual revenue targets, and maximize efficiency, less attention is being placed on the importance of forward-looking marketing strategies. We would like to show how favorable financial results are linked to diverse marketing investments. As Arslanagic-Kalajdzic, Žabkar and Diamantopoulos (2018) have underlined, there is a need for building, improving and sustaining marketing accountability within the firm and its relevance for value.

2. Marketing investments over time: effects on financial measures

Marketing literature dates as far back as the 1911 work of Charles Coolidge Parlin (the acknowledged founder of marketing research), and has since expounded at such a rate that “the mind falters in searching for a single, dominant theme (or even a few themes) to cover its progress” (Green et al., 2003, p. 1). Editor of Journal of Marketing Research, Bob Ferber called market behavior, “a multivariate, multidisciplinary problem” (Myers et al., 1980, p. 8). Drawing from economics, psychology, business and more, marketing goal is the creation of value for customers, but the ambiguity of such terms has left the concept to develop into an entire field with massive implications for how business should be conducted (Definition of Marketing, AMA, 2013).

To reach this marketing goal, several marketing investments must be assumed. “Marketing costs represent a significantly large component of the cost structure in many industries.
Relative to research on manufacturing costs, however, marketing costs have received very little attention in the accounting literature" (Foster and Gupta, 1994). Therefore, to investigate the evolution of marketing costs, different accounting items have been analyzed in diverse papers sharing all of them a common denominator: they are discretionary even just prior to their incurrence, so, they can be tailored in a relatively short period to respond to changes in the market environment. The main problem is that Annual Reports of companies do not disclose the magnitude of marketing costs in a consistent way.

In sum, there is an ever proliferating number of marketing costs which differ greatly in the time-horizon of their effect (Foster and Gupta, 1994). This means that, within the business cycle of a firm, different marketing investments are necessary. A lot of diverse investigations have been done considering alternative proposals (Foster and Gupta, 1994). In the present paper, and based on Salinas and Ambler (2009), Denizici and Li (2009), Cheng and Wu (2011), and Caruso (2017) we have synthetized the most relevant marketing costs into four main areas: brand, communication, pricing, and service. We assume that considering only these four investment decisions leads to biases, however, and in line with Qureshi et al. (2017), we believe that these four main areas represent the main marketing capabilities of a firm.

The following lines explain to what extent these areas have gained weight over time. Since now most marketing costs are treated as period costs. However, for an accounting cost-benefit analysis of resources a time horizon much longer than one year is appropriate (Foster and Gupta, 1994).

First, focusing on brand costs, a vast body of work, conducted by marketers, financiers, and businesses, examine the increasing importance of this investment item. That is “the function and art of branding is a major contributor to the success of product or service sold by the company that markets it” (Phillips, 2006, p. 1). In the same year, Madden (2006) remarks that branding is an important marketing activity to reach financial success. These statements, built upon research such as Aaker (1991), Doyle (2000), Lehmann (2004), Rust et al. (2004), and Hyman and Mathur (2005) among others, conclude the importance of investing in brand to increase financial indicators. That is, companies that invest in building a brand now, have the potential to grow future sales and other financial measures. This longitudinal approach explains the greater role of the brand now than years ago. Therefore, although the financial outcome of brand expenses is hard to determine, what seems true is that customers are willing to spend more as an effect of these marketing efforts, and long run stock prices are indicative of this effect.

Second, together with brand expenditures, marketing communication investment is gaining weight in the marketing sphere as an efficacy vehicle to get financial performance. With growing forms of communication, companies face more complex conundrums on how to reach their target audience. For this reason, while researchers such as Vargo and Lusch (2004) argue that marketing is moving towards more dynamic processes, marketing communication has remained at the forefront global terms, because the financial benefits of communication strategies have been traced by literature showcasing the cost-effectiveness and higher return on investment gained through integrated marketing communication investments’ (McGoon, 1998; Duncan and Mulhern, 2004; Reid et al., 2005; and Holm, 2006). In sum, communication budgets have gone on growing because companies’ results have also gone on augmenting.

Third, pricing has become a complex component of marketing that has a direct impact on company’s sales. Pricing decisions do not stand-alone; pricing of competitors can “interfere and have an effect on products” (Faith and Edwin, 2014, p. 89). Additionally, Rosa and Rodan (2011) establishes that price as a purchase stimulus determines not only how prices are perceived and valued, but also how it influences consumer purchase decisions, which lastly determines financial results. In this vein, Indounas (2015) concludes that a fundamental advantage to adopting a strategic pricing orientation is that pricing decisions are viewed as policy decisions with long-term consequences on strategic performance and competitive advantage. The complexities of pricing strategies however, have not impeded it as a heavy contributor to financial success. Compared to other marketing costs, effective pricing has the harvest impact on business success (Kellogg et al., 1997, p.210). As presented in the literature, goodwill and intangible assets are related to a company’s price strategy (Caruso, 2017). For Foster and Gupta (1994) most marketing assets are intangible (e.g. brand names, and customer base), and prices are used to sustain them. That is, “significant resources are often spent to maintain and enhance the value of such assets” (Foster and Gupta, 1994, p. 43), whose visible reflect is the price of the product. In sum, intangible assets investments are gaining importance because they lead to success, being the price decisions that support this chain a growing concern.

Finally, regarding services investments, a shift from goods marketing to service marketing has catalyzed a new, continually growing concept. Now, “the relationship-marketing paradigm prevails in contemporary marketing” (Wells and Foxall, 2012, p. 36). Because of researchers such as Parasuraman et al. (1985), Holbrook (1999), and Lovelock and Wirtz (2011), service marketing has become one of the most prominent factions of marketing. Such research has led marketers to assert the expanse which service marketing has grown to encompass, “increasingly and inevitably, all marketing will come to resemble to a greater degree the formerly specialized area of service marketing” (Rust and Huang, 2013, p. 210). Co-creation of value (created by both consumer and company personnel) is a foundational concept of service marketing that has led to heavy emphasis placed on employees focused on satisfying customer needs (Vargo and Lusch, 2004). That is why services costs have been linked to an American Customer Satisfaction Index.

In sum, as previous lines have showed, we can ascertain that “marketing strategy plays a central role in winning and retaining customers, ensuring business growth and renewal, developing sustainable competitive advantages, and driving financial performance through business processes (Srivastava et al., 1999)” (Rust et al., 2004, p 78). Also, as Arslanagic-Kalajdzic, Žakbar and Diamantopoulos (2018. p. 166) affirm, “research focusing specifically on marketing accountability has been gaining momentum only in the last decade”. So, based on this premise the following hypotheses have been stated:
Marketing strategies

Erika Sydney-Hilton and Natasha Vila-Lopez

H1. The average investment on marketing has been augmenting.

H1a. The average investment on brand strategy has been augmenting.

H1b. The average investment on communication strategy has been augmenting.

H1c. The average investment on price strategy has been augmenting.

H1d. The average investment on service strategy has been augmenting.

Measuring the effectiveness and efficiency of marketing outlays has long been recognized as a major challenge (Foster and Gupta, 1994, p. 43). It is expected that the evolution of marketing expenditures over time has been accompanied by better financial results. As Qureshi et al. (2017) remark, developing marketing capabilities enables firms to achieve competitive advantage and this explains the growing relevance of this area.

More specifically, regarding brand costs, it can be observed that companies are paying higher attention over time in developing brand equity, because they think they will be more likely to reach business success as it related to market valuation (Kumar and Shah, 2009). In the same vein, Davcik and Sharma (2016) underline how literature in strategic management has also explored marketing competencies of organizations for a long time reflecting its growing influence on business results. In sum, the increasing correlation of brand costs with results has been highlighted in different fields of research.

Second, the relevance of communication expenditures over time to explain success can be seen in the work of Golob et al. (2013). These authors review how communication is gaining more significant attention in academia and practice. As they point out, some indicators of this may be one of the first Special Issues on CSR communication-related topics that was issued in Journal of Marketing Communications in 2008 and the first comprehensive handbook of CSR communication that was issued in 2011. That is, communication expenditures have been increasing during the last years due to the better sales results and greater profits achieved by well-known companies than by the anonymous ones.

Third, and in the same vein, those costs associated to prices (to support intangible assets) have also been gaining weight during the last years because they lead to success. However, an empirical validation of the impact of strategic pricing on company performance is still lacking (Indounas, 2015), despite the importance that this strategy is acquiring over the years due to the increase of competition in all sectors, and to the big amount of information available to consumers thanks to new technologies.

Finally, and when services investments (Customer Satisfaction Index) are taken into consideration, firms also show a greater concern. As Baker (2016) has underlined, compared to previous works, nowadays there is an increase in importance to the service strategy over time. That is why the marketing definition has evolved to be worried with the creation and maintenance of mutually satisfying exchange relationships to improve financial results.

In sum, and based on the recent work of Arslanagic-Kalajdzic et al. (2018, p. 166), it can be affirmed that “marketing accountability describes the firm’s capability to link marketing strategies and actions to financial performance measures”. This link is clearly evolving with time. So, the following hypotheses can be stated:

H2. Any correlation found between marketing investment and financial measures will be greater along time.

3. Research methodology

3.1 Sample and collection procedure

In the US, public companies must adhere to US Securities and Exchange Commission (SEC) and Generally Accepted Accounting Principles (GAAP) regulations. These rules promote timeliness and uniformity among publicly traded companies’ financial statements (FASB, 2019). We used the Standard and Poor’s list of 500 companies (S&P 500). The S&P 500 is an index of 500 companies traded in the US that are collectively seen as an, “indicator for US equities and a reflection of the performance of the large cap universe” (Staff, 2014). Economists determine which 500 companies comprise the index algorithmically, weighing companies with a higher market capitalization more heavily. For this reason, the S&P 500 works in conjunction with data pulled from sources such as Brand Finance and the American Consumer Satisfaction Index to maximize the possible sample size. Eight periods of time: 2009, 2010, 2011, 2012, 2013, 2014, 2015 and 2016.

3.2 Scales used to measure each concept

All data collected for this study is quantitative, deriving from either financial information provided by each company or from large indexes such as ACSI, which uses scientific models and over 180,000 customers each year provide the most accurate gauge of customer perception (Building the Cross-Industry Index, 2019). To test our hypotheses, we approximated marketing investments using key performance indicators (KPIs) that represent the costs that companies have made to apply each marketing strategy. Using marketing KPI’s to measure the strength of marketing allows us to place marketing investments as an independent variable, while having financial information act as our dependent variable. That is, to approximate each marketing variable a group of KPI indicators were chosen following the authors shown in Table I. As Bauer (2004) underlines, selecting KPIs is not as easy as it sounds. A protocol must be followed to retain a manageable group of indicators (Parmenter, 2015). The ultimate goal must be to have useful tools that are easy to apply for the purpose of the analysis. That is why, based on research included in Table I, we have chosen transversal indicators for all the industries and types of companies available in our database. Annex 1 shows how each marketing investment decision was approximated and our sample characterization.

More specifically, in our analyses we tried to explain the impact of marketing investments on financial indicators over time. Therefore, for the dependent variable, we use seven financial ratios:
### Table 1: Measurement tools to approximate marketing strategies and financial outputs

<table>
<thead>
<tr>
<th>Literature</th>
<th>Concepts to be analyzed</th>
<th>Secondary variables for measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent variables: marketing strategies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salinas and Ambler (2009)</td>
<td>Branding</td>
<td>Marketing KPI (variables used to measure each marketing strategy)</td>
</tr>
<tr>
<td>Caruso (2017)</td>
<td>Communication</td>
<td>Branx rank</td>
</tr>
<tr>
<td>Morrow et al. (2004)</td>
<td>Price</td>
<td>Selling, general and administrative expenses (includes advertising expense)</td>
</tr>
<tr>
<td>Caruso (2017)</td>
<td>Service</td>
<td>Goodwill and intangible assets</td>
</tr>
<tr>
<td>Barth and Clinch (1998)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denizci and Li (2009); Angelova and Zekiri (2011)</td>
<td></td>
<td>American customer satisfaction index</td>
</tr>
<tr>
<td><strong>Dependent variables: financial variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gallo (2016)</td>
<td>Return on assets</td>
<td>RONA = Net income/(Fixed assets + net working capital)</td>
</tr>
<tr>
<td>Kabajeh (2012)</td>
<td>Return in investments</td>
<td>ROGI = Net income/(Total assets-current financial assets – current liabilities)</td>
</tr>
<tr>
<td>Branch et al. (2005)</td>
<td>Price to book ratio</td>
<td>Price to book ratio = (# outstanding shares * stock price)/(Total assets – total liabilities)</td>
</tr>
<tr>
<td>Branch et al. (2005)</td>
<td>Market capitalization</td>
<td>Market capitalization = # outstanding shares * stock price</td>
</tr>
<tr>
<td>Bragg (2016)</td>
<td>Net income margin</td>
<td>Net income margin = Net income/revenue *100</td>
</tr>
<tr>
<td>Roslander and Fincham (2004)</td>
<td>Tobin’s Q</td>
<td>Tobin’s Q = (# outstanding shares * stock price)/Total asset value</td>
</tr>
</tbody>
</table>

1. The first three financial ratios assessed are: (i) the return on equity (ROE), (ii) return on net assets (RONA) and (iii) return on gross investments (ROGI). All values are presented as a percentage, and compare net income to equity, net assets, and gross investments, respectively. For example, 15-20 per cent is considered a healthy ROE value to investors (Buffett and Clark, 2002). This value suggests that for every dollar of equity that the company has, the company has $0.15–$0.20 of net income. This stipulation remains for all three variables.

2. The fourth financial variable used is: (iv) price to book ratio. This ratio shows how much more the market values a firm in comparison the sum of the company’s assets minus intangible assets and liabilities. A higher ratio suggests that the public perceives the company to be worth more than what is stated on the balance sheet.

3. The fifth financial variable: (v) the market capitalization. This is the market value of a company. While it is a component of the price to book ratio, the value on its own is a commonly used financial measure. This dollar amount suggests how much the public thinks the company is worth, and is calculated as the sum of the company’s outstanding shares (Market Capitalization, 2017).

4. The sixth is: (vi) the net income margin, or “the net after-tax income of a business, expressed as a percentage of sales” (Bragg, 2016.). Often used to gauge trends, it shows a factional measure of a company’s profitability. The percentage shows for much of sales is translated into a company’s net income.

5. The last financial variable used is; (vii) Tobin’s Q. Tobin’s Q is defined as the market value of the firm divided by the total asset value (Q Ratio, 2015). If the ratio is below 1 this suggests that the company requires more money to replace the company than it is worth (Q Ratio, 2015). For a company this can be risky, but from an investor’s perspective, this indicates that the company is undervalued and can potentially be a good investment. However, when the value is over 1, the company is worth more than the assets (Q Ratio, 2015). This suggests to investors that the stock price is overvalued.

Additional information concerning the variables can be found in the Appendix.

### 3.3 Data analysis techniques

Standard multiple regression and one-way ANOVA tests will be used to determine the relationship between marketing investments and financial data and the impact of time on the marketing costs. Results from these tests will help determine which financial metrics account for marketing efforts along time and how changes over time have enhanced or deteriorated. The use of regression models to examine the relationship between marketing efforts and financial outcomes has been also used in the work of Denizici and Li (2016).

### 4. Research results

First, we performed a one-way ANOVA test to determine if brand expenditures, communication expenditures, price expenditures, and service expenditures have improved their average relevance over time. Our results displayed in 2 show the higher importance of 2 marketing investment decisions out of 4 over time. So, $H_1$ was partially accepted. More specifically it should be remarked that:

- In regards to brand investment, our results show that for one of the indicators (brand rank), no differences exist among the periods of time ($F = 0.679; p < 0.6$). This means that the companies in our study seem to invest relatively similar amounts in branding throughout the 8 years. Diverging from this analysis of brand investments, the other indicator (brand value) displays significant
differences in mean over the period of 8 years ($F = 10.422; p < 0.00$). A significant increase of brand value is observed from period 1 (mean value 2009 = 14393.2) to period 8 (mean value for 2016 = 31226.4). That is, the value of companies has been on the rise for the past seven years (except a decrease in brand value means from 2009 to 2010). So, $H_1a$ could be partially accepted, as far as brand investments have been greater during the last years for one of the two analyzed indicators.

On the contrary, we can find in Table 2 that no significant differences exist overall ([$F = 0.806; p < 0.509$]) for communications expenditures. Although the average expense has increased from -3,309,679.47 USD in 2009 to -4,003,324.87 USD in 2016, significant differences have not been found among different years. Therefore, there is no significant difference to show that communication strategy relevance has changed over time and thus, there is little change in money being spent on communication decisions. So, $H_{1b}$ should be rejected. The average investment on communication remains stable.

- **Price investment** displayed through goodwill and intangible assets exhibits a significant and incremental variation from years 2009 to 2016 ($F = 2.805; p < 0.007$) as shown in Table 2. All 8 years have seen periodic increases in price values starting from 5,003,996.85 USD in 2009 to 8,623,196.72 USD in 2016. This difference of over 3 million USD signifies an increase either in purchasing or value of marketing assets that allows corporations to employ more competitive price strategies. So, $H_{1c}$ could be accepted.

- Lastly, **service** results show significant differences in values over the 8 years ($F = 8.212, p < 0$) (Table 2). While there is no trend showing that service expenditure has increased or decreased consistently over time, we see that 2012 had the highest satisfaction average at 77.5 per cent and the lowest satisfaction average in 2015 at 74.4 per cent. Thus, the relevance of service decisions in the companies of our sample significantly varies from year to year, but there is not upward or downward trend. This fluctuation can either be caused by changes in public perception of service marketing quality or by companies’ efforts to change service marketing and occurs on an annual rate. This result leads us to reject $H_{1d}$, because an ascendant tendency has not been observed when comparing the media.

In sum, regarding $H_1$, two marketing decisions out of four (brand value and price) have displayed a significant and incremental change over time. The other marketing decisions (brand rank, communication and service) have not increased their importance with time.

While $H_1$ allow us to determine that some market strategies vary based on time period, $H_2$ allows us to see whether the correlations found between marketing strategies and financial measures are higher for the last years.

Based on the results, two analyses are used for each marketing strategic:

1. First, a one-way ANOVA test was conducted. The average values for each marketing strategy over the 8-year period (e.g., brand rank for years 2009 to 2016) was the independent variable, and the 7 financial variables over the 8 year period (e.g., return on equity for years 2009 to 2016) were the explanatory variables. This first one-way ANOVA provided the predicted/dependent values that would be used in the second phase.

2. Second, each predicted value (significant financial indicator) was then used in a regression analysis as a dependent variable and year was used as the independent variable where 1 = 2009, 2 = 2010 ... 8 = 2016. The porpoise was to test to what extent the evolution of each financial indicator depends on time.

This method was used for all marketing investment decisions listed below:

1. First, regarding brand investment, we measure the relationship with financial variables over time:
   - **For brand rank** (Table III), the ANOVA test shows two significant financial indicators that seem to change over time: market capitalization and net income margin.
   - For each financial indicator, a regression analysis was run (Table 3). $P$ values of 0.55 for market capitalization and for net income margin over time

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Evolution of brand strategy over time</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brand rank</td>
<td>42.5</td>
<td>37.9</td>
<td>33.5</td>
<td>44.5</td>
<td>42.3</td>
<td>41.0</td>
<td>44.2</td>
<td>44.2</td>
</tr>
<tr>
<td>Brand valuation</td>
<td>14393</td>
<td>12673</td>
<td>14459</td>
<td>20157</td>
<td>22820</td>
<td>27389</td>
<td>30078</td>
<td>31226</td>
</tr>
<tr>
<td><strong>Evolution of communication strategy over time</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S&amp;GA expense</td>
<td>-3309679</td>
<td>-3569018</td>
<td>-4200172</td>
<td>-4352104</td>
<td>-4066721</td>
<td>-4377527</td>
<td>-4033538</td>
<td>-4003324</td>
</tr>
<tr>
<td><strong>Evolution of price strategy over time</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goodwill and intangible assets</td>
<td>5003996</td>
<td>5451394</td>
<td>6197335</td>
<td>6423367</td>
<td>6563214</td>
<td>7003051</td>
<td>7781740</td>
<td>8623196</td>
</tr>
<tr>
<td><strong>Evolution of service strategy over time</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACSI</td>
<td>76.8</td>
<td>77.1</td>
<td>77.4</td>
<td>77.5</td>
<td>77.4</td>
<td>76.4</td>
<td>74.4</td>
<td>76.4</td>
</tr>
</tbody>
</table>

Note: The boxes show average values for each marketing strategy along time.
show that both indicators do not change over time when brand rank decisions change. That is, a consistent correlation from 2009 to 2016 exists between brand rank and market capitalization, and between brand rank and net income margin.

- For brand value, the ANOVA test shows five financial indicators (ROE, ROA, market capitalization, net income and Tobin’s Q) that appeared to have fluctuating relationships over time (Table IV).
- The five regressions (one for each significant financial indicator) show p-values below 0. This means that the correlation between brand value and the five financial variables are changing over time. The graphs (Figure 1) show that the predicted financial variables increase over time. This means that the financial variables are related to brand value at an increasing rate.

Table III Evolution of the impact of brand rank on financial results over time

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on equity</td>
<td></td>
<td>0.253</td>
<td>0.771</td>
<td>0.775</td>
<td>0.768</td>
<td>0.902</td>
<td>0.911</td>
<td>0.719</td>
<td>0.951</td>
</tr>
<tr>
<td>Return on assets</td>
<td></td>
<td>0.01</td>
<td>0.217</td>
<td>0.265</td>
<td>0.15</td>
<td>0.785</td>
<td>0.781</td>
<td>0.782</td>
<td>0.526</td>
</tr>
<tr>
<td>Return on investment</td>
<td></td>
<td>0.853</td>
<td>0.817</td>
<td>0.931</td>
<td>0.413</td>
<td>0.281</td>
<td>0.895</td>
<td>0.209</td>
<td>0.049</td>
</tr>
<tr>
<td>Price to book</td>
<td></td>
<td>0.256</td>
<td>0.068</td>
<td>0.451</td>
<td>0.886</td>
<td>0.749</td>
<td>0.453</td>
<td>0.304</td>
<td>0.383</td>
</tr>
<tr>
<td>Market capitalization</td>
<td></td>
<td>0.013*</td>
<td>0.027*</td>
<td>0.007***</td>
<td>0.002**</td>
<td>0.001**</td>
<td>0.006**</td>
<td>0.002**</td>
<td>0**</td>
</tr>
<tr>
<td>Net income margin</td>
<td></td>
<td>0**</td>
<td>0.02*</td>
<td>0.067</td>
<td>0.123</td>
<td>0.305</td>
<td>0.909</td>
<td>0.371</td>
<td>0.046*</td>
</tr>
<tr>
<td>Tobin’s Q</td>
<td></td>
<td>0.018</td>
<td>0.267</td>
<td>0.216</td>
<td>0.054</td>
<td>0.492</td>
<td>0.571</td>
<td>0.841</td>
<td>0.136</td>
</tr>
</tbody>
</table>

Regression analysis

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
<th>F-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market capitalization</td>
<td>Brand rank</td>
<td>Market capitalization</td>
<td>35.784</td>
</tr>
<tr>
<td>Market cap. over time</td>
<td>Time</td>
<td>Unstandardized predicted value</td>
<td>0.358</td>
</tr>
<tr>
<td>Net income margin</td>
<td>Brand rank</td>
<td>Net income margin</td>
<td>13.936</td>
</tr>
<tr>
<td>Net income margin over time</td>
<td>Time</td>
<td>Unstandardized predicted value</td>
<td>0.358</td>
</tr>
</tbody>
</table>

Notes: The boxes show p-values for the multiple regressions analysis; **p < 0.01; *p < 0.05

Table IV Evolution of the impact of brand value on financial results over time

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on equity</td>
<td></td>
<td>0.078</td>
<td>0.662</td>
<td>0.735</td>
<td>0.005**</td>
<td>0.902</td>
<td>0.911</td>
<td>0.719</td>
<td>0.985</td>
</tr>
<tr>
<td>Return on assets</td>
<td></td>
<td>0.006**</td>
<td>0.026*</td>
<td>0.243</td>
<td>0.003**</td>
<td>0.069</td>
<td>0.408</td>
<td>0.025*</td>
<td>0.526</td>
</tr>
<tr>
<td>Return on investment</td>
<td></td>
<td>0.157</td>
<td>0.601</td>
<td>0.958</td>
<td>0.673</td>
<td>0.458</td>
<td>0.983</td>
<td>0.154</td>
<td>0</td>
</tr>
<tr>
<td>Price to book</td>
<td></td>
<td>0.788</td>
<td>0.102</td>
<td>0.89</td>
<td>0.594</td>
<td>0.373</td>
<td>0.887</td>
<td>0.268</td>
<td>0.405</td>
</tr>
<tr>
<td>Market capitalization</td>
<td></td>
<td>0.016*</td>
<td>0.00**</td>
<td>0.003**</td>
<td>0.00**</td>
<td>0.00**</td>
<td>0.00**</td>
<td>0.00**</td>
<td>0.00**</td>
</tr>
<tr>
<td>Net income margin</td>
<td></td>
<td>0.004**</td>
<td>0.043*</td>
<td>0.059*</td>
<td>0.02*</td>
<td>0.144</td>
<td>0.448</td>
<td>0.137</td>
<td>0.062</td>
</tr>
<tr>
<td>Tobin’s Q</td>
<td></td>
<td>0.032*</td>
<td>0.015*</td>
<td>0.153</td>
<td>0.005**</td>
<td>0.034*</td>
<td>0.402</td>
<td>0.505</td>
<td>0.266</td>
</tr>
</tbody>
</table>

Regression analysis

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
<th>F-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on equity (ROE)</td>
<td>Brand value</td>
<td>Return on equity</td>
<td>1.11</td>
</tr>
<tr>
<td>ROE over time</td>
<td>Time</td>
<td>Unstandardized predicted value</td>
<td>47.251</td>
</tr>
<tr>
<td>Return on assets (ROA)</td>
<td>Brand value</td>
<td>Return on assets</td>
<td>11.83</td>
</tr>
<tr>
<td>ROA over time</td>
<td>Time</td>
<td>Unstandardized predicted value</td>
<td>47.251</td>
</tr>
<tr>
<td>Market capitalization</td>
<td>Brand value</td>
<td>Market capitalization</td>
<td>296.95</td>
</tr>
<tr>
<td>Market cap. over time</td>
<td>Time</td>
<td>Unstandardized predicted value</td>
<td>47.251</td>
</tr>
<tr>
<td>Net income margin</td>
<td>Brand value</td>
<td>Net income margin</td>
<td>19.056</td>
</tr>
<tr>
<td>Net income margin over time</td>
<td>Time</td>
<td>Unstandardized predicted value</td>
<td>47.251</td>
</tr>
<tr>
<td>Tobin’s Q</td>
<td>Brand value</td>
<td>Tobin’s Q</td>
<td>28.065</td>
</tr>
<tr>
<td>Tobin’s Q over time</td>
<td>Time</td>
<td>Unstandardized predicted value</td>
<td>47.251</td>
</tr>
</tbody>
</table>

Notes: The boxes show p-values for the multiple regressions analysis; **p < 0.01; *p < 0.05
Third, as shown in Table VI, the ANOVA test for price investment shows 4 testable correlations with four financial indicators: ROA, market capitalization, net income margin, and Tobin’s Q.

- The regression of pricing against ROA shows that the average ROA values predicted from price decisions (goodwill and intangibles) are increasing over time ($F = 18.839; p = .00$) (Table VII). The same occurs for the regression of pricing against market capitalization over time; for the regression of pricing against net income margin over time; and for the regression of pricing against Tobin’s Q. Figure 2 shows the incremental tendency of the correlations found between these 4 financial indicators and price investment (goodwill and intangible assets).

Finally, regarding service investment the ANOVA test shows a significant relationship between this variable and just one financial indicator: price to book ratio (Table VII).
Table V  Evolution of the impact of communication strategy on financial results over time

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on equity</td>
<td>0.675</td>
<td>0.771</td>
<td>0.799</td>
<td>0.717</td>
<td>0.558</td>
<td>0.511</td>
<td>0.722</td>
<td>0.918</td>
</tr>
<tr>
<td>Return on assets</td>
<td>0.922</td>
<td>0.398</td>
<td>0.439</td>
<td>0.115</td>
<td>0.444</td>
<td>0.11</td>
<td>0.344</td>
<td>0.331</td>
</tr>
<tr>
<td>Return on investment</td>
<td>0.908</td>
<td>0.312</td>
<td>0.815</td>
<td>0.678</td>
<td>0.88</td>
<td>0.552</td>
<td>0.215</td>
<td>0.583</td>
</tr>
<tr>
<td>Price to book</td>
<td>0.816</td>
<td>0.742</td>
<td>0.376</td>
<td>0.718</td>
<td>0.846</td>
<td>0.721</td>
<td>0.238</td>
<td>0.851</td>
</tr>
<tr>
<td>Market capitalization</td>
<td>0</td>
<td>0.005</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Net income margin</td>
<td>0.62</td>
<td>0.989</td>
<td>0.386</td>
<td>0.229</td>
<td>0.231</td>
<td>0.113</td>
<td>0.653</td>
<td>0.739</td>
</tr>
<tr>
<td>Tobin’s Q</td>
<td>0.85</td>
<td>0.322</td>
<td>0.003**</td>
<td>0.008**</td>
<td>0.03*</td>
<td>0.03*</td>
<td>0.048*</td>
<td>0.214</td>
</tr>
</tbody>
</table>

Regression analysis

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
<th>F-statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin’s Q</td>
<td>SG&amp;A</td>
<td>23.234</td>
<td>0</td>
</tr>
<tr>
<td>Tobin’s Q over time</td>
<td>Time</td>
<td>2.081</td>
<td>0.149</td>
</tr>
</tbody>
</table>

Notes: The boxes show $p$-values for the multiple regressions analysis; **$p < 0.01$; *$p < 0.05$.

Table VI  Evolution of the impact of price strategy on financial results over time

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on equity</td>
<td>0.078</td>
<td>0.662</td>
<td>0.735</td>
<td>0.005</td>
<td>0.496</td>
<td>0.739</td>
<td>0.859</td>
<td>0.819</td>
</tr>
<tr>
<td>Return on assets</td>
<td>0.006**</td>
<td>0.026*</td>
<td>0.243</td>
<td>0.002**</td>
<td>0.053*</td>
<td>0.412</td>
<td>0.118</td>
<td>0.159</td>
</tr>
<tr>
<td>Return on investment</td>
<td>0.157</td>
<td>0.601</td>
<td>0.958</td>
<td>0.646</td>
<td>0.551</td>
<td>0.587</td>
<td>0.165</td>
<td>0</td>
</tr>
<tr>
<td>Price to book</td>
<td>0.788</td>
<td>0.102</td>
<td>0.89</td>
<td>0.594</td>
<td>0.142</td>
<td>0.431</td>
<td>0.454</td>
<td>0.501</td>
</tr>
<tr>
<td>Market capitalization</td>
<td>0.016*</td>
<td>0.00**</td>
<td>0.003</td>
<td>0.00**</td>
<td>0.00**</td>
<td>0.00**</td>
<td>0.00**</td>
<td>0.00**</td>
</tr>
<tr>
<td>Net income margin</td>
<td>0.004**</td>
<td>0.043*</td>
<td>0.059*</td>
<td>0.02</td>
<td>0.11</td>
<td>0.288</td>
<td>0.113</td>
<td>0.122</td>
</tr>
<tr>
<td>Tobin’s Q</td>
<td>0.032*</td>
<td>0.015**</td>
<td>0.153</td>
<td>0.005**</td>
<td>0.025*</td>
<td>0.214</td>
<td>0.415</td>
<td>0.276</td>
</tr>
</tbody>
</table>

Regression analysis

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
<th>F-statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on assets (ROA)</td>
<td>Goodwill and intangibles</td>
<td>0.918</td>
<td>0.338</td>
</tr>
<tr>
<td>ROA over time</td>
<td>Unstandardized predicted value</td>
<td>18.839</td>
<td>0</td>
</tr>
<tr>
<td>Market capitalization</td>
<td>Goodwill and intangibles</td>
<td>340.272</td>
<td>0</td>
</tr>
<tr>
<td>Market cap. over time</td>
<td>Time</td>
<td>18.839</td>
<td>0</td>
</tr>
<tr>
<td>Net income margin</td>
<td>Goodwill and intangibles</td>
<td>2.527</td>
<td>0.112</td>
</tr>
<tr>
<td>Net income margin over time</td>
<td>Time</td>
<td>18.839</td>
<td>0</td>
</tr>
<tr>
<td>Tobin’s Q</td>
<td>Goodwill and intangibles</td>
<td>40.14</td>
<td>0</td>
</tr>
<tr>
<td>Tobin’s Q over time</td>
<td>Time</td>
<td>18.839</td>
<td>0</td>
</tr>
</tbody>
</table>

Notes: The boxes show $p$-values for the multiple regressions analysis; **$p < 0.01$; *$p < 0.05$.

Table VII  Evolution of the impact of service strategy on financial results over time

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on equity</td>
<td>0.102</td>
<td>0.105</td>
<td>0.932</td>
<td>0.089</td>
<td>0.317</td>
<td>0.093</td>
<td>0.352</td>
<td>0.25</td>
</tr>
<tr>
<td>Return on assets</td>
<td>0.779</td>
<td>0.896</td>
<td>0.82</td>
<td>0.892</td>
<td>0.492</td>
<td>0.678</td>
<td>0.906</td>
<td>0.147</td>
</tr>
<tr>
<td>Return on investment</td>
<td>0.649</td>
<td>0.592</td>
<td>0.612</td>
<td>0.908</td>
<td>0.21</td>
<td>0.258</td>
<td>0.717</td>
<td>0.63</td>
</tr>
<tr>
<td>Price to book</td>
<td>0.553</td>
<td>0.521</td>
<td>0.008**</td>
<td>0.511</td>
<td>0.77</td>
<td>0.09</td>
<td>0.046*</td>
<td>0.326</td>
</tr>
<tr>
<td>Market capitalization</td>
<td>0.532</td>
<td>0.682</td>
<td>0.514</td>
<td>0.489</td>
<td>0.985</td>
<td>0.901</td>
<td>0.625</td>
<td>0.092</td>
</tr>
<tr>
<td>Net income margin</td>
<td>0.481</td>
<td>0.47</td>
<td>0.105</td>
<td>0.079</td>
<td>0.64</td>
<td>0.263</td>
<td>0.862</td>
<td>0.193</td>
</tr>
<tr>
<td>Tobin’s Q</td>
<td>0.001</td>
<td>0.049</td>
<td>0.001</td>
<td>0.008</td>
<td>0.002</td>
<td>0.015</td>
<td>0.005</td>
<td>0.002</td>
</tr>
</tbody>
</table>

Regression analysis

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
<th>F-statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price to book</td>
<td>ASCI</td>
<td>0.219</td>
<td>0.64</td>
</tr>
<tr>
<td>Price to book over time</td>
<td>Time</td>
<td>0.02</td>
<td>0.888</td>
</tr>
</tbody>
</table>

Notes: The boxes show $p$-values for the multiple regressions analysis; **$p < 0.01$; *$p < 0.05$.
This regression done for this financial indicator shows that the relationship between service investment (ACSI) and price to book ratio does not have significant changes over time ($F = 0.02; p$-value $= 0.888$).

In sum, and based on results in Tables III, IV, V, VI and VII, we can conclude that $H2$ can be partially accepted. More specifically, in two investment decisions (brand value and price) correlations found with financial measures have strengthened over time. On one side, regarding to brand value, five financial indicators (ROE, ROA, market capitalization, net income and Tobin’s Q) are significantly related to this marketing decision at an increasing rate. On another side, the relationships between price decisions and ROA, market capitalization and net income increases also over time. Curiously, the predicted Tobin’s Q decreases over time.

6. Conclusions and managerial implications

On one side, an inconsistency among the evolution of diverse marketing costs over time has been obtained. More specifically, only two marketing investment decisions out of four (brand value and price strategy) have displayed significant and higher means in recent years, as stated in $H1$. The other marketing investment decisions (communication strategy, brand rank and service strategy) have not increased their importance with time, which means that firms’ expenditure on these concepts has remained stable. First, communication budgets have not significantly augment, so, while methods of communication may have changed (newspaper to eWOM), time has not changed the general purpose of communication strategies and the budgets used to obtain these results. Second, the same occurs for brand rank, which also follows a stable pattern over time. That is, companies in our study seem to invest relatively similar amounts in branding strategies throughout the 8 years. Third, correlations between the ACSI values (American Customer Satisfaction Index with service quality) and financial indicators do not show significant changes over time. Therefore, the satisfaction measures also seem to remain stable.

On another side, our results have demonstrated that correlations between marketing expenditures and financial measures are significant and incremental for different periods of time in two areas (brand value and price) as stated in $H2$.

In sum, our results have demonstrated the impact of different marketing practices on performance as previous works anticipated (Abu Farha and Elbanna, 2018).

Therefore, our first recommendation for suppliers, based on Arslanagic-Kalajdzic, Žabkar and Diamantopoulos (2018) proposal, is that they should become accountable or concerned with the effectiveness of their marketing actions. Therefore, a platform for investors to better predict future trends for financial measures via marketing investments information and
vice versa could be built. Given marketing’s forward-looking nature, understanding future trends can help marketers predict the future implications of their actions. Additionally, integrating marketing decisions into forecasting models often based on financial indicators will help executives get a holistic view of their company’s trajectory. More specifically, the increase in competition and the greater information that consumers have, justify our results: the need to place greater emphasis on those decisions affecting brand and prices (goodwill and intangible assets). This recommendation supports Indounas (2015) conclusions, which underlines the relevance of strategic pricing to improve various performance dimensions.

Second, comparing the evolution of the seven financial indicators, we can appreciate that market capitalization is heavily influenced by the marketing capabilities of a company (brand value, brand rank and price decisions). Consequently, our second managerial implication will be to recommend marketers and executives to look at a company’s market capitalization to determine the need for corrective action within its marketing strategy. If market capitalization grows, this reflects increased confidence on the part of investors, largely thanks to the marketing efforts that had been done to increase brand value.

Third, the same results have been observed for net income margin. More specifically, this financial indicator is strongly dependent on brand value, brand rank and price decisions over time. Therefore, it could be interesting to manage these variables to improve net income margins. In words of Doyle (2000, p. 302):

[... ] successful brand names convey powerful images to customers that make them more desirable than competitive products. Owners of strong brands possess assets that attract customers, often earn premium prices and can be enduring generators of cash.

Therefore, marketing investments permit higher net income margins because buyers perceived the value of these investments, and are willing to pay for it.

Finally, and in line with Abu Farha and Elbanna (2018) our results suggest that managers should be cautious when deciding which marketing practices to adopt because not all of them lead to the same financial results.

To conclude, and as Doyle (2000) remarks, concentrating on short-term profits and ignoring intangible assets, traditional accounting relegates marketing. This should be avoided by treating marketing expenditures as investments rather than as costs in intangible assets.

7. Limitations and future research lines

Future research can be conducted to overpass the limitations of the present paper on other markets. First, one limitation is that this study was conducted on large US public companies. Studying other sectors within the USA such as small capitalization firms or privately owned firms can lead to future discoveries, while looking at similar companies in different countries could provide compare and contrast opportunities.

Secondly, no qualitative data was obtained in this study, leaving potential for gaps in knowledge that could be remedied by qualitative analysis. Therefore, a future research line could be developed to link customer satisfaction and loyalty with financial results, using other information than the American Customer Satisfaction Index that this paper has used.

Thirdly, given that all marketing investment was considered of equal value in the present paper, future research could be done to avoid this limitation. For example, other pathways for further insight include adding more variables or finding more comprehensive algorithms to better represent marketing strategies. There remains a lack of research conducted on the relationship between marketing and accounting.

Other potential directions of research include using investing techniques to see if marketing information enhances trading knowledge and conducting a longitudinal study within a company to see the direct impact of marketing actions over time. The marketing-accounting interface is engulfed in complexity, but the better we understand it, the more cohesively a company can run. For this reason, future research opportunities are limitless within this subject.

References


Further reading


Appendix

Brand strategy. We cross-referenced the top brands listed on the US Brand Finance list of top brands and their valuation with the S&P 500. Branding Strategy is measured suing two variables: brand rank and brand value following Brand Finance. Brand Finance defines brand as, “Trademark and associated IP including the word mark and trademark iconography” (Explanation of the Methodology, 2017).

• Based on this definition and referencing the Brand Strength Index using a balanced scorecard approach, *brand rank* is determined on an ordinal scale (Explanation of the Methodology, 2017). Each year US companies are listed ordinally based of strength of company’s brand. For example, in 2016 Apple was ranked number 1 and NBC was ranked 100 (Global 500, 2017).

• In addition to brand rank, *brand valuation* is used to measure brand strategy. Brand Finance obtains their brand valuation using an approach outlined in the following figure. The brand valuation builds upon the brand rank by looking at forecasted revenues and the royalty rate. This value is measured in US dollars (millions).

Communication/distribution strategy was measured using SG&A expense. This value is presented on each company’s annual Income Statement. Under Regulation S-X: 17 CFR Part 210 Rule 5-03: Income Statements of the FASB Codification, Selling, general and administrative (SG&A) expenses are a fundamental component of the Income Statement. SG&A expenses are a part of operating expenses and are presented in the currency of the country where the company subsists (FASB, n.d.).
Price strategy was measured using goodwill and intangible assets and were pulled from the database I*Metrics. As presented in the literature, goodwill and intangible assets are related to a company’s price strategy (Caruso, 2017). A pricing strategy consists of linking the perceived value of a product to the price a consumer pays for the product (Four P’s, 2015). Intangible assets are defined as, “certain long-lived legal right and competitive advantages developed or acquired by a business enterprise. Intangible assets are typically acquired to be used in operations of a business and provide benefits over several accounting periods” (CPA exam review 2016, 2017). These advantages ensure the perceived value of a product to increase or decrease, thus influencing a pricing strategy. The goodwill and Intangible assets variable is presented as a dollar amount based on the historical cost of the items. This value can be found on the Balance sheet of each company’s annual report.

Product/service strategy: Lastly, the American Consumer Satisfaction Index provides a percentage for consumers’ satisfaction with certain brands. As explained in the literature review, this grading system is interrelated with the service strategy of a company (Angelova and Zekiri, 2011). Consumer satisfaction was through the American Consumer Satisfaction Index (ACSI), which measured consumers’ satisfaction with commonly used brands.

Corresponding author
Natalia Vila-Lopez can be contacted at: natalia.vila@uv.es

For instructions on how to order reprints of this article, please visit our website:
www.emeraldgrouppublishing.com/licensing/reprints.htm
Or contact us for further details: permissions@emeraldinsight.com
Conceptual blending of meanings in business marketing relationships

Sid Lowe
National Institute of Development Administration, Bangkok, Thailand

Astrid Kainzbauer
College of Management, Mahidol University, Bangkok, Thailand, and

Piya Ngamcharoenmongkol
National Institute of Development Administration, Bangkok, Thailand

Abstract
Purpose – This paper aims to explore the topic of embodiment as a gap in meaning-making within the literature on business relationships in IMP and business marketing academic discourse. Referring to the theories of embodiment, the authors question the dominant worldview of Cartesian dualism which marginalizes the influence of the body in meaning-making and explore relevant implications of an embodiment agenda for research and practice. The aim is to demonstrate that embodiment has a vitally important influence in the construction of meanings.

Design/methodology/approach – The paper provides a review of theoretical and empirical literature on embodied cognition and theories of embodiment to construct a cooking metaphor as an analogical vehicle for exploring meanings within business relationships.

Findings – The authors use a cooking metaphor to explore how meaning is created in human interaction. Body and mind blended together produce meaning through the catalyst of discourse and semiotics. Cognition is described as a mixture of rational and non-rational processes involving blended elements of embodied perceptions and psychological ideas stirred and heated in a semiotic “sauce” of discourse (language, communication, information, power/knowledge).

Originality/value – The contribution of the paper is in proposing that both body and mind influence the creation of meanings in business relationships blended through the mediation of language and discourse. The authors aim to advance a “practice” and “linguistic” turn in the business marketing discourse by proposing that embodied, discursive and cognitive processes are more effectively conceived as blended influences.

Keywords Multi-method research, Embodied cognition, Meaning-making, American pragmatism, Business marketing relationships

Paper type Conceptual paper

Introduction
Some ideas gain universal acceptance by gradually becoming taken-for-granted, unquestioned underlying assumptions. When an idea is widely accepted as to “go without saying”, it becomes a tacit truth, a sense-making foundation upon which other ideas are built upon. In this paper, Descartes’ cogito is regarded as such a tacitly accepted and privileged truth (we explain this in more detail in a later section of this paper). Tacit acceptance of Cartesian dualism that privileges cognition over embodiment has, we suggest, produced a gap in existing literature. This gap either ignores or marginalizes the influence of the body in meaning-making. To begin to challenge such an unquestioned assumption, we use a metaphor which suggests that the body (embodiment) is not secondary to the mind (cognition) in the creation of meaning. Our metaphor of cooking describes and illustrates processes of meaning, and thereby, figuratively assigns embodied influence as the vital “raw ingredient” of meaning-making. As in cooking, meaning-making lacking this “raw ingredient” would be without texture and flavor. Thus, we regard embodiment as the unprocessed source of meaning upon which subsequent refinements of meaning through language and cognition are based. Our emphasis is upon overcoming the Cartesian binary distinction of mind and body, which has privileged the former and marginalized the latter in Western thought. We explore what abandonment of this dualism might promise in terms of better descriptions focusing on embodied action and practice. Our essential proposition is that both body and mind are influences upon the creation of meanings in business relationships blended through the mediation of language and discourse.

In the following sections, we explain the “embodied” approach in the context of emergent theories of embodiment. We explore the implications of a reversal of Cartesian diminishment of embodied influences with the help of embodied cognition and American pragmatism. We do so by endorsing the logic of pragmatic investigation to “treat theory as an aid to practice, rather than seeing practice as a degradation of theory” (Rorty, 1999, p. 30). We then use a

The current issue and full text archive of this journal is available on Emerald Insight at: www.emeraldinsight.com/0885-8624.htm

Received 25 October 2017
Revised 16 August 2018
10 February 2019
19 April 2019
26 April 2019
Accepted 27 April 2019
cooking metaphor to examine the main consequences for seeing mental activity as grounded in sensory experiences during embodied, communicative interaction in the context of business relationships. We believe that, in using such a metaphor, we can emphasize the importance of body, mind and discourse in meaning-making.

A brief summary of theories of embodiment

In this section, we track the slow absorption of theories of embodiment from their philosophical foundations into specific management disciplines via general management and organizational theory. We follow the schema of Oswick et al. (2011), which outlines how radical theories tend to become domesticated into management discourse. This approach serves to emphasize how the twentieth century “radical travelling theory”, which began to question Cartesian thought has only slowly begun to have been taken up by academic management and organization discourse during this century.

The Cartesian distinction of mind and body, privileging the former (“Cogito ergo sum” – I think therefore I am), has been a predominant influence on Western philosophy and provides the foundation of rationalist scientific practice. Descartes (1596-1650) discouraged any dependence on senses, prioritizing cognition (mind) over perception (body) (Wollaston, 1960).

Giambattista Vico (1668-1744) was among the first to challenge Cartesian mind–body dualism, where the body is conceived as an “organic and instrumental functioning or merely as extended, merely physical” (Grosz, 2005, p. 49). Vico suggested (and was overshadowed and ignored by Cartesianians) that human engagement with the world is initially bodily (creative, emotional, instinctive), then linguistic (with particular importance afforded to metaphor) and, resting on top, is a rational “head”. One might say we understand with heart, tongues and minds and “I feel therefore I am” (sentio ergo sum). In the twentieth century, theories of embodiment have enjoyed something of a corporeal renaissance. Corporeal understanding has contemporarily been promoted by Merleau–Ponty (1962), Deleuze (1990), Varela et al. (1991) and Lakoff and Johnson (1999), among others. Departure from Descartes’ cogito means that reason is regarded as a transitory end product, which has beginnings in embodied perceptions. Theories of embodiment have developed and, in keeping with the expectations of Oswick et al. (2011), have become “domesticated” into management and organization theory, as shown in Table I.

This table suggests that “radical travelling theories” (Oswick et al., 2011) (such as those provided by Merleau–Ponty (1962) in embodiment) have slowly become “domesticated” into theories of management and organization very recently. Initially, this involved “innovative” domestication (such as Strati’s (2003) approach to organizational aesthetics), and then “orthodox” domestication, which are adaptations more immediately oriented to functional issues with managerial consequences (as for example in Kašperová and Kitching’s (2014) paper on embodied entrepreneurship).

Embodied influences in business-to-business management and marketing research

Embodiment research in marketing has appeared to move directly to domestication without any extensive engagement with “radical travelling theories”. This line of research has emphasized the significance of sensory marketing, embodiment and grounded cognition (Krishna and Schwarz, 2014). For example, Buchanan–Oliver et al. (2010) demonstrate how technology brands consistently utilize the symbolic representation of the body as a strategic marketing resource. Araujo et al. (2008) initiate the “practice turn” within the international marketing and purchasing (IMP) research tradition in directing attention to the emergent and unfolding practices that actors engage and enact to “make markets” through frames, construction and problematizations. Cayla and Arnould (2013) reveal how marketing can facilitate learning about embodied, “living” market contexts through the generation of ethnographic stories that give executives “thick” and rich descriptions of market realities in practice.

Similarly, business network identities and the performances of entrepreneurs have been investigated from an embodied perspective. The semiotics of entrepreneurial interaction are both gestural and discursive (Cornelissen et al., 2012) so that images of innovations are both seen as embodied practice and represented in discursive exchanges. In support of this, Munoz et al. (2011) report visual representations, as manifested in the drawings of innovators, presage communicative and mental framing of opportunity-identity capability and entrepreneurial competence. Sundar et al. (2017) explore how visual metaphorical cues in a service encounter can evoke the concept of power. Rinallo et al. (2010) provide ethnographic evidence suggesting that such embodied experience is resonant in trade shows. They show that, during these events, the physical touching of products and conversations between network members while “looking them in the eye” through ritualized and habituated, affective interactions are a critical part of the dramas of ongoing buying processes. More recently, Chakrabarti et al. (2013) use a “network-as-practice” perspective in looking at embodied performative aspects of an exchange system moderated by the practical consciousness of actors in interactive enactments. Table II provides an overview of embodied influences in marketing and innovation research.

These studies have mostly employed ethnographic and interpretivist approaches designed to be more sensitive to “emic” conditions and embodied perceptions. These methods are becoming more widespread in marketing research and appear to be expanding into the business-to-business (B2B) marketing field (Rinallo et al., 2010).

Before we explain our cooking metaphor, we provide a brief description of the principal theoretical sources that our analogical approach draws upon.

Embodied cognition is a relatively recent research stream within the field of cognitive science that adopts an anti-dualist approach where body and mind are not seen as separate entities. Rather, the mind is seen as inherently embodied so that, in other words, the body influences the mind as the mind influences the body. This understanding seeks to transcend the divide between objectivist and subjectivist paradigms, by “viewing the rationalist–empiricist dichotomy as too simplistic and unhelpful” (Heracleous and Jacobs, 2008, p. 50). In embodied perspectives, the human mind is not seen as an independent metaphysical identity, but rather as emerging from bodily sensations. “Human embodied existence is experienced and expressed prior to conscious processes of thinking” (Jacobs and Heracleous, 2006, p. 213). Consequently, our embodied “practical intelligibility”
toward the world modifies affective and cognitive structures. In other words, rationality is presaged by perception, and perception is always experienced within bodies in action (Merleau-Ponty, 1962).

Bodily responsive actions accumulate through experience learned from prior activity, communication and knowledge (Merleau-Ponty, 1962) “whereby performances are absorbed into the body as ‘body schema’, as a set of spontaneous incorporated, expressive-responsive skills” (Yakhlef and Essén, 2012, p. 882). Embodied actions, from this perspective, are not some applied, secondary consequence of rational analysis; they are in themselves a constitutive and primary form of cognition.

This broadened conception of cognition is diagramatically represented in Figure 1. In this conception, the three sub-processes of cognition are “panrelational” (Rorty, 1999), meaning they are mutually determined and co-dependent. This conception does not assume the presence of independent and dependent variables but regards outcomes as emergent from the interaction of interdependent processes.

### American pragmatism

American pragmatism is a process theory that connects cognitive structures and beliefs about the validity of action with an embodied activity. It is, therefore, a philosophy concerned with embodied processes, which puts language and communication as the key moderator between cognitive beliefs and embodied action. To put this another way, embodied action is justified through communicative interaction to establish beliefs that serve to frame further embodied activity.

It is a philosophical tradition which began in the nineteenth century and experienced a revival in the 1970s, emphasizing the context-sensitive, embodied nature of thought. Pragmatism departs from a view, whose inheritance is traced back to Plato, of mind as a window on fixed, causal, substantive forms and moves toward a “biologistic” view of mind as a complex, living process (Rorty, 1999).

American pragmatism emphasizes that mind and embodied action are constituted through the linguistic construction of truth and reality. Within American pragmatism, beliefs and

---

**Table 1** Conceptual developments of embodiment theory

<table>
<thead>
<tr>
<th>Central concept</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Radical traveling theory</strong></td>
<td></td>
</tr>
<tr>
<td>Giambattista Vico</td>
<td>Anti-Cartesian “Embodied imagination”</td>
</tr>
<tr>
<td>Dewey</td>
<td>American pragmatism</td>
</tr>
<tr>
<td>Merleau-Ponty</td>
<td>Phenomenology of perception</td>
</tr>
<tr>
<td>Deleuze</td>
<td>Body without organs</td>
</tr>
<tr>
<td>Gibson</td>
<td>Affordances</td>
</tr>
<tr>
<td>Csordas</td>
<td>Cultural phenomenology, Semantic modes of attention</td>
</tr>
<tr>
<td>Varela et al.</td>
<td>Embodied mind</td>
</tr>
<tr>
<td>Damasio</td>
<td>Somatic markers</td>
</tr>
<tr>
<td>Bourdieu</td>
<td>Habitus</td>
</tr>
<tr>
<td>Lakoff and Johnson</td>
<td>Embodied realism</td>
</tr>
<tr>
<td>Waskul and Vannini</td>
<td>Somatic work</td>
</tr>
<tr>
<td>Crossley</td>
<td>Corporeal schemas</td>
</tr>
<tr>
<td>van Manen</td>
<td>“Pathic” embodied phenomenology</td>
</tr>
<tr>
<td>Bargiela-Chiappini</td>
<td>Embodied discursivity</td>
</tr>
<tr>
<td><strong>Innovative domestic theory</strong></td>
<td></td>
</tr>
<tr>
<td>Styhre</td>
<td>Bodies as facta bruta</td>
</tr>
<tr>
<td>Strati</td>
<td>Organizational aesthetics</td>
</tr>
<tr>
<td>Ashcraft et al.</td>
<td>Materializing communication</td>
</tr>
<tr>
<td>Küppers</td>
<td>Embodied practice</td>
</tr>
<tr>
<td>Linstead</td>
<td>Organizational bodies</td>
</tr>
<tr>
<td>Cunliffe and Coupland</td>
<td>Embodied narrative sense-making</td>
</tr>
<tr>
<td>Gärtner</td>
<td>A typology of approaches to embodied knowing</td>
</tr>
<tr>
<td>Wright</td>
<td>Embodied organizational routines</td>
</tr>
<tr>
<td><strong>Orthodox domestic theory</strong></td>
<td></td>
</tr>
<tr>
<td>Sørensen</td>
<td>Embodied innovation</td>
</tr>
<tr>
<td>Hindmarsh and Pilnick</td>
<td>Embodied teamwork</td>
</tr>
<tr>
<td>Heracleous and Jacobs</td>
<td>Strategy and embodied realism</td>
</tr>
<tr>
<td>Hancock</td>
<td>Embodied ethics</td>
</tr>
<tr>
<td>Yakhlef and Essén</td>
<td>Embodied practice/innovation</td>
</tr>
<tr>
<td>Kašperová and Kitting</td>
<td>Embodied entrepreneurial identities</td>
</tr>
<tr>
<td>Courpasson and Monties</td>
<td>Embodied identities</td>
</tr>
</tbody>
</table>
words do not reflect external realities; they are “tools” to project meaning to validate and frame action. These tools enable the creation of a mutual intelligibility of what is happening and what to do about it through language and communication (Rorty, 1999, p. 23). Rorty (1999, p. 134) states that all meanings created from words and numbers are not just relative but “panrelational”, involving a network of “labyrinthine inferential relations”. All expressions of meaning are inter-related. Equally, people do not objectively report on their actions; all accounts are immersed in justifications for embodied actions. Rorty emphasized that truth is not “out there” to be discovered, but rather is endorsed by our beliefs. Truth is made (rather than found) and qualifies as truth because it is consonant with the most culturally credible, shared and workable beliefs about valid activity within the speech community. Pragmatism suggests that beliefs and the discursively created truths that enable them are adaptive tools in the service of the perceived utility of embodied action and improved practice. Embodied activities, therefore, are justified within a web of cultural beliefs in the mind through the mediation of communicative interaction.

In terms of B2B interaction, this would suggest, for example, that embodied trust activities are justified in communicative exchanges that validate beliefs in the trustworthiness of partners. These beliefs, in turn, further frame ongoing embodied trusting activities through a recycling of justifications of trust in communication.

The cooking-up of meaning

Using insights from the traditions of embodied cognition and American pragmatism, we propose to further develop a cooking metaphor (Tonks, 2002; Lowe et al., 2015) to explain meaning-making within B2B relationships. Meaning is regarded as “cooked up” from raw ingredients of embodiment through immersion in the cooking sauce of discourse, semiotics and communicative or symbolic interaction to the served-up dish of rationalizations. The use of a metaphor is suited to serve as our figurative tool to explain meaning-making, as metaphors
have been identified as the main vehicle for expressing abstract concepts (Lakoff and Johnson, 1999). Language is central to meaning-making and can be viewed as a semiotic stock or sauce within which meaning can be cooked up turning embodied ingredients into the servings of conscious rationales.

This conception of meaning is holistic in incorporating embodied, discursive and cognitive elements. Meaning, from this perspective, is predominantly a blended and “cooked up”, indirect accomplishment and always involves situated mixtures of embodied sensing, communicative and semiotic exchanges of meaning and cognitive sense-making through conscious and sub-conscious minds.

The implication is that the interaction between the body and the environment are the basis for all thought. Communication is regarded as an embodied act (Ashcraft et al., 2009) that cooks up embodied perceptions subsequently prepared and served as meanings. Embodied cognition suggests that meaning is a sequenced concoction of processed blendings of different cognitions beginning with the raw ingredients of embodied sentiments. There may be a temptation to regard these processes as different elements of representation (embodied, semiotic/discursive, psychological). However, embodied approaches and pragmatism both regard embodied, semiotic and psychological engagements with environments as “tools” orienting and constituting organizational practice and routine rather than representations of reality (Wright, 2017). This is particularly important because it regards meaning as only ever constituted within situated times and spaces and projected within both talk and body-language gestures, movements and responses (Wright, 2017). Meaning is not, from this perspective, “out there” to be discovered and represented; it is invented and created in embodied context, mostly through abduction and analogy to take appropriate action.

Our embodied cultural experience frames our categorical schemes and conceptual system through semiotic interaction. In most cultures, for example, our human bodily uprightness configures up/head/high as positive/happy and down/foot/low as negative/unhappy. So, for example, in a B2B context, a bidding “war” might be won by the “killer” bid which was emplotted within the internal narratives of the buying organization as “winning the battle” either for the “highest” value added or the “lowest” cost. These metaphors act as a kind of cooking sauce that allows embodied perceptions of space to be cooked up into beliefs justifying actions through the mediation of invented truths. Table III shows how the cooking metaphor can be applied to explain meaning making in business marketing relationships.

The purpose of metaphor is to use the source domain (in our case, the cooking processes) to reveal new understanding of phenomena and characteristics about the target domain (in our case, the processes of meaning creation in business interaction). This is achieved through figurative comparison of similarities between the two domains. It is not, however, as is the case of the trope or simile, intended to suggest that the two domains are closely similar in characteristics or may be regarded in any way as matching phenomena.

In our paper, the main point of the cooking metaphor is to emphasize the figurative similarity of raw ingredients in cooking meals with the importance of “raw”, embodied emotion and sensory perceptions to the making of meanings in business. Meaning-making can be likened to a process that converts raw elements into something produced and consumed daily.

The contribution of the cooking metaphor is in emphasizing the embodied and imaginative basis of meaning within business relationships. Just as good chefs pay particular attention to their ingredients, good research into inter-organizational meaning should pay attention to the raw ingredients of embodiment (in other words, the embodied perceptions of the actors). The suggested implication is that a better comprehension of the embodied source and the discursively infused processes of transforming these somatic ingredients into the servings of meaning will lead to a better understanding of the outcome of meaning. Ultimately, it will contribute to a greater appreciation of the everyday, routine and regular practices that produce and re-produce meaning.

Implications for research

The significance of the cooking metaphor approach for business marketing is to add an additional lens as to how meaning is made and consequently explored in IMP and other B2B marketing research. From this viewpoint, any issue is not likely to have an identifiable cause or a permanent nomothetic solution. Any resolution is likely to be ephemeral, contextual, heterogeneous and unfolding. It is more likely to involve “emic”, unfinished, iteratively (re)negotiated solutions of “becoming” rather than a fixed and measurable, universal completed “outcome” (Bizzi and Langley, 2012, p. 231). For example, embodied realism has tended to give rise to methodologies involving elicitation of metaphors. The most common among these has been in the use of “serious play” involving the use of LEGO modeling used to stimulate and surface unconscious embodied motivations causing problems, resentment, conflict and procrastination in and between organizational cultures (Bürgi et al., 2005; Jacobs and Heracleous, 2006; Heracleous and Jacobs, 2008).

Such departures from linear, representational logic and the “centred” reflexive subject as the rightful medium for any solution is likely, at first least, to seem strange for any practitioner socialized into more orthodox, linear scientific research techniques.

The proposed perspective offers potential for further integrating the agendas of “pictures”, narrative and discourse and “time” within the contemporary IMP research tradition. The IMP agenda is already oriented to psychological and increasingly discursive processes. The addition of embodied, perceptual sensing as a third critical type of process enables further iterative processual connectivity between different aspects of meaning-making and forwards a critical, immediate link between the body, talk and thought. We appreciate that the methodological implications of such “corporeality” require detail, but this is an extensive issue which requires separate, or at least simultaneous, explanation. It is our purpose here to succinctly explain the metaphorical approach with a follow-up detailing methodological issues in a subsequent paper. In such a follow-up, we would expect to track the extensive Cartesian “antibodies”, which are responses that have been critical of embodiment theories and rigorously defensive of the cogito.
Implications for management

For managers, this approach gives further support for their trust in the initial importance of practical, embodied instincts and “gut feeling” about identifying and developing opportunities for innovation and business relationship development. Iterative embodied sensing, “never-ending stories” (Håkansson and Waluszewski, 2013) and revolving ideas need to be managed with artistic and practical skills of the *bricoleur*. This would mean greater reliance upon practical wisdoms gained through experience. It equates to relying more upon “phronesis” or practical wisdom. This effectively means less emphasis upon a scientific logic requiring analysis before action and greater confidence in prioritizing adaptive, embodied action.

From this perspective, successful actors can be expected to be more competent than their peers in configuring new meanings through embodied perception and intuition, communication and cognition. They instinctively understand that each change within the present moment is uniquely contextual and requires a different creative combination of intuitive, emotional, communicative and cognitive response than prior interpretation of previous change.

In cooking up meanings, successful innovators are inevitably more adept improvisers, *bricoleurs* of change, improvising artists of natural creativity. The expectation would be that successful networkers would, at least in the initial stages of opportunity recognition, naturally prioritize intuition and embodied skills over rationality. While successful innovators might be adept at rhetorical conversion of their intuitions into reason because their situated requirement in a culture dominated by logical representation demands it, their ultimate success depends upon their ability to surf and improvise naturally presented opportunities through their tacitly experienced bodily “know how”.

Conclusions

Drawing upon the concepts borrowed and blended from American pragmatism and embodied cognition, this paper has outlined a cooking metaphor to frame understanding of how meaning is created within business relationships. Together, these theoretical resources point to the need to enhance the attention paid to embodied activity in meaning-making.

References


American pragmatism leads us to understand psychological beliefs and embodied action as non-dualistic and co-determined through the mediation of truth socially constructed in discourse. Embodied cognition is used to examine the principal consequences of transcending prevailing Cartesian mind/body dualism. This requires the equalization of embodied, discursive and psychological processes in meaning creation. As a mixture of different aspects, cognition is described as blended and cooked concoctions of rational and non-rational processes involving “raw” embodied activities and “served” psychological ideas stirred and heated in a semiotic “sauce” of discourse (language, communication, information, power/knowledge). The cooking metaphor sees meaning, therefore, as constituted sequentially by embodied, discursive and mental sub-processes.


Strati, A. (2003), “Knowing in practice: Aesthetic understanding and tacit Knowledge”, in Nicolini D., Gherardi S. and Yanow D. (Eds), Knowing in Organizations:
**Business marketing relationships**

Sid Lowe, Astrid Kainzbauer and Pya Ngamcharoenmongkol

**Journal of Business & Industrial Marketing**

Volume 34 · Number 7 · 2019 · 1547–1554


**Further reading**


**Corresponding author**

Astrid Kainzbauer can be contacted at: astrid.kai@mahidol.ac.th

A Practice-Based Approach, M.E. Sharpe, Armonck, pp. 53-75.


For instructions on how to order reprints of this article, please visit our website:

www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com

1554
Coopetition: a fundamental feature of entrepreneurial firms’ collaborative dynamics

Helen McGrath
Department of Management and Marketing, University College Cork, Cork, Ireland

Thomas O’Toole
Waterford Institute of Technology, Waterford, Ireland, and

Louise Canning
Department of Marketing, Kedge Business School, Marseille, France

Abstract
Purpose – This paper aims to explore coopetition as a fundamental feature of the collaborative dynamics inherent in entrepreneurial ventures. The authors present a conceptual model and definition of entrepreneurial coopetition, the latter being explained as entrepreneurial involvement in simultaneous cooperative and competitive interactions with business network actors in a relational environment.

Design/methodology/approach – Using the micro-brewing industry in a Southern State in the USA, as an empirical base, the authors use an abductive case study approach drawing from multiple data sources including semi-structured interviews, marketing materials, information available on websites and social media, as well as information contained in newspaper articles and policy documents.

Findings – Findings suggest that entrepreneurs habitually interact in a coopetitive manner through norms formed in interaction and that these are often in response to the environment.

Research limitations/implications – Findings are limited to one particular context. Future research could include entrepreneurs from other sectors, state or country contexts which may reveal other coopetition themes.

Practical implications – More benefits in coopetition could be reaped if the entrepreneur were more cognitively aware of, and strategically planned for, the coopetitive processes in which they are (or could be) engaged.

Originality/value – The authors open the black box of entrepreneurial coopetition by putting forward and empirically examining a conceptual definition of entrepreneurial coopetition. This work moves the coopetition discussion beyond the motives behind and consequences of coopetition, analysing interactions from a process perspective. The authors respond to recent calls for a deeper understanding of coopetitive mind-sets and a multilevel approach to coopetition.

Keywords Entrepreneurship, Case study, Coopetition, Micro-brewery, Collaborative dynamics

Paper type Research paper

1. Introduction
While coopetition forms a part of everyday organisational life, and has gained currency in the relational and network based literature, we know surprisingly little regarding coopetition in an entrepreneurial context (Bengtsson and Johansson, 2014; Tidström, 2014). The purpose of this paper is to address this salient gap and examine the pervasiveness of coopetitive interactions in an entrepreneurial setting.

Cooperation is important for entrepreneurial firms to survive and succeed (Semrau and Werner, 2014; Newbert et al., 2013). Born with the limitations associated with being new and small, entrepreneurial ventures do not possess or control all the components of the resource combinations that the business requires (Ciabuschi et al., 2012; La Rocca et al., 2013). Cooperation makes sense for entrepreneurs to access external resources and capabilities to achieve their goals. Conversely, the general unwillingness of entrepreneurs to cooperate and their independence-seeking mentality is well documented (DeCarlo and Lyons, 1979; Birley and Westhead, 1994). This, coupled with their reliance on their ability to independently carry their vision through to completion (Lee and Tsang, 2001), can lead entrepreneurs to engage in competitive logics in interaction. Against this backdrop of conflicting cooperation and competitive logics in entrepreneurial interactions, and the importance of both interdependence and independence for the entrepreneurial actor, we pose the following question:

Q1. Is coopetition a fundamental feature of the collaborative dynamics in entrepreneurial ventures?

To answer this question, using the micro-brewing industry in southern USA as an empirical base, we analyse patterns of business-to-business interactions, including events and activities, to gauge the pervasiveness of coopetition in entrepreneurial business relationships and networks. In doing...
so, we adopt a business network and interaction approach (Håkansson, 1982; Håkansson and Snehota, 1995; Håkansson et al., 2009). This approach, developed by the industrial marketing and purchasing (IMP) group, is fitting given that coopetition is actioned and learned by the entrepreneur via interaction with business partners within a relational environment.

Our paper contributes to the ongoing coopetition discussion in four ways. First, coopetition has been analysed at an individual firm and inter-unit level suggesting that the two logics of interactions be separated (Bengtsson and Kock, 2000; Rusko, 2011; Fernandez et al., 2014). We challenge this acknowledged principle, as, within an entrepreneurial context, the entrepreneur, as agent of the firm, needs to play a dual role making the separation between collaborative and competitive interactions impossible. By questioning this principle, we respond to recent calls for a deeper understanding of coopetitive mind-sets (Pattinson et al., 2018), particularly in an entrepreneurial setting. Secondly, research has emphasised the need for a multilevel approach to coopetition to gain a richer and more complete understanding of its dynamics (Bengtsson and Kock, 2014; Patterson et al., 2018; Rusko, 2011). Uncovering whether coopetition is a fundamental feature of the collaborative dynamics in entrepreneurial ventures necessitates the analysis of interactions both within business relationships and across the wider network environment. Besides adding to the limited research that adopts such an approach, our third contribution is in moving the coopetition discussion beyond the motives behind, and consequences of coopetition, analysing instead, interactions from a process perspective (Dahl, 2014; Patterson et al., 2018). Finally, business network research in an entrepreneurial context is reasoned to be an embryonic and emerging field of research worthy of further development (La Rocca et al., 2013; Ciabuschi et al., 2012; McGrath et al., 2018). Taking a coopetition lens is a logical step in adding to this evolving stream of research.

Our paper is set out as follows. We firstly introduce our core concepts, coopetition and entrepreneurship, and detail how they relate to each other. The rationale for the entrepreneurial firm’s engagement in cooperative relationships is presented. In defining entrepreneurial coopetition, we provide a set of characteristics and associated levels that allow for the uniqueness of the entrepreneurial context. These levels represent the boundary of the study and a classification scheme for the coopetitive interactions that emerged from the research. The research design of the study, the empirical context of the micro-brewery sector in a Southern State in the USA, and our choice of methods are presented. Findings and discussion are based primarily on in-depth semi-structured interviews with 17 micro-brewing entrepreneurs and small businesses, the entire population of such businesses in the State.

2. Entrepreneurship and coopetition

Coopetition, defined as relationships between two or more actors simultaneously involved in cooperative and competitive interactions (Bengtsson and Kock, 2014), has gained currency in the recent literature. Coopetition transcends the traditional dichotomy of cooperation and competition as opposing forces (Bengtsson et al., 2010), and is suggested by scholars as being critical for firm performance and success (Bengtsson and Kock, 2014; Fernandez et al., 2014). Extant literature has focussed on the motives and outcomes driving coopetition (Gnyawali and Park, 2009; Ritala et al., 2014), coopetition as a balancing act between two diverse logics of interaction (Bengtsson and Kock, 2000; Bengtsson et al., 2010), change processes in co-operative interactions (Dahl, 2014; Gnyawali and Park, 2011; Luo, 2007), tensions in interaction (Fang et al., 2011; Fernandez et al., 2014; Tidström, 2014), and the link between coopetition and performance (Crick, 2019). The theoretical motivation of this study is to further contribute to this bank of knowledge by exploring whether coopetition is a fundamental feature of the collaborative dynamics in entrepreneurial ventures.

Although current literature has witnessed a surge of interest in coopetition, existing research has predominantly focussed on large firms (Bengtsson and Johansson, 2014; Tidström, 2014), with remarkably few empirical studies in a small firm or entrepreneurial setting. Given their inherent constraints in terms of liabilities associated with being new and small, it has been argued that the importance of coopetition is even greater in such contexts (Bengtsson and Johansson, 2014; Gnyawali and Park, 2009). Access to resources is a key challenge facing entrepreneurs during early venture development (Sullivan and Ford, 2014). Entrepreneurs need to engage strategically within relationships and networks, considering their resource needs and associated access routes (Semrau and Werner, 2014).

Empirical studies featuring coopetition in small firms have concentrated on knowledge-intensive contexts characterised by shrinking product life cycles, heavy investments in research and development, high levels of risk and the convergence of multiple technologies (Bengtsson and Johansson, 2014; Bouncken and Kraus, 2013; Gnyawali and Park, 2009, 2011; Lechner and Dowling, 2003). The drivers for coopetition in such settings centre on the ability to deliver a total systems solution for a business customer, speed in research and development, the creation of novel or advanced products and risk reduction. Similar coopetitive motives are found in empirical studies grounded in a large firm setting, such as the case of Sony and Samsung who established a relationship to develop LCD panels for flat screen TVs (Gnyawali and Park, 2011) or Apple and Google to launch the first iPhone (Raza-Ullah et al., 2014). In addition, coopetition research in a small firm context is often limited to horizontal relationships, with little interest seemingly directed at extending the concept to vertical relationships (Lacoste, 2012).

We depart from, and add to, these studies in two ways. We examine coopetition in a less knowledge intensive industry (micro-brewery) and at multiple levels of analysis. This is important as not all entrepreneurial activities require or develop technology new to the world (Schumpeter, 1934). In fact most new businesses build on largely known technologies and on the entrepreneur’s previous business and professional experience (Bhide, 2000). Autio et al. (2014), citing a recent GEM report, noted that less than 30 per cent of all new ventures declared that their products were new to customers, and that radical novelty accounted for an even lower percentage. We could expect that the motives for this 70 per cent of entrepreneurial firms are different from the high-tech cases that feature in extant literature. Hence, while coopetition is a viable resource pooling strategy and can enhance the firm and/or industry
competitiveness (thus helping firms to achieve both common and individual goals), we know remarkably little about coopetition in the majority of entrepreneurial firms.

2.1 Entrepreneurial coopetition
For this study, we define coopetition as “entrepreneurial involvement in simultaneous cooperative and competitive interactions with business network actors within a relational environment”. Similar to Bengtsson and Kock (2014) our definition adopts a wide lens, inclusive of horizontal and vertical relationships. We differ in that we provide a set of characteristics and associated levels of analysis that allows for the uniqueness of the entrepreneurial context. Our three defining characteristics, conceptually depicted in Figure 1, include the interplay between the entrepreneurial coopetitive mind-set and entrepreneurial coopetitive interactions within, or influenced by, the wider network environment.

2.1.1 Entrepreneurial coopetitive mind-set
Entrepreneurial coopetitive mind-set refers to the relational preferences and choices of the entrepreneurial actor in coopetition. For Brandenburger and Nalebuff (1996) this mind-set means adopting a win/win approach to coopetitive relationships – something which is important in managing the complexities and paradoxical nature of coopetition (Chen, 2008; Gnyawali and Park, 2011). In an entrepreneurial context, we place emphasis on the importance of the actor’s preferences in partnering or remaining independent.

To survive and succeed, cooperative entrepreneurial networks appear to be strategically significant for emerging ventures because they allow access to necessary resources and capabilities (Håkansson and Snehota, 2006; Newbert et al., 2013; La Rocca et al., 2013; Semrau and Werner, 2014). In practice, this interdependence and the logics for cooperation may be at odds with the motivation of the entrepreneur in setting up the business in the first place, that is, a desire to become more independent (McGrath and O’Toole, 2013). Yet, the potential to gain from network resources and the paucity of these resources in new ventures makes the ability for the entrepreneur to deal with coopetition in interactions a necessity.

Prior coopetition research highlights the potential difficulty for individuals in cooperating and competing in relationships simultaneously, suggesting that the two logics of interactions be separated (Bengtsson and Kock, 2000; Fernandez et al., 2014). This presents as difficult, if not impossible, in an entrepreneurial context where a single actor, the entrepreneur, both experiences and must manage the duality in interaction. The idea of developing a coopetitive mind-set is not new. Its application in an entrepreneurial context is. Studies have highlighted the need for individuals and firms to develop a coopetitive mind-set to allow for, and manage, the paradoxical nature of coopetition. For example, Gnyawali and Park (2011) discuss the importance of a coopetitive mind-set at both a firm and executive level in the case of Sony and Samsung. In a multinational context, research has suggested that global managers need to adopt a yin-yang philosophy, and a coopetitive mind-set developed and enhanced through organisational learning and global experience (Chen, 2008; Luo, 2007). For the entrepreneurial firm, a coopetitive mind-set is not a business option, rather an imperative to deal with the dualities of everyday interaction. Given that relational actions are embedded in, and seasoned with the entrepreneur, an analysis of actor preference and choices in relation to independence versus interdependence will influence interaction in a network context (McGrath and O’Toole, 2013; Miller et al., 2007) and coopetitive collaborative dynamics. In this way, understanding the entrepreneurial coopetitive mind-set is important and will influence coopetitive interaction at the relational level.

2.1.2 Entrepreneurial coopetitive interactions
Entrepreneurial coopetitive interactions refer to the entrepreneurs’ actions within their business relationships and networks. Many scholars have examined dyadic and network coopetitive relationship, its drivers and outcomes (Gnyawali and Park, 2009, 2011; Padula and Dagnino, 2007; Pattinson et al., 2018; Ritala, 2012). From an interaction perspective, at this level, relational and network interaction is characterised by content issues including information sharing, mutual adaptations and innovation (Lechner et al., 2006; Jack, 2010). Similarly, coopetitive relationships may provide a means to access market information, general business advice and product and service development (Ritala et al., 2014). Norms and structures for coopetition are formed through recurrent actions and interactions with competitors, suppliers, distributors, and customers with relational structures contingent upon experiences in cooperating and competing in interaction (Dahl, 2014). In the context of this research, at this level of analysis, it is argued that entrepreneurial coopetitive interactions between firms are influenced by and can, through experience, influence the entrepreneurial coopetitive mind-set.

Similar to the social network literature, we argue that coopetitive relationships are central to every aspect of the

Figure 1 Conceptualizing entrepreneurial coopetition
entrepreneurial process (Jack, 2010). Indeed, entrepreneurs have a disproportionate amount to gain, as compared to their larger and more developed counterparts, in mobilising resources early in a new business process (Hoang and Yi, 2015; Hite, 2005; Jack, 2010). Coopetition may extend to a network level with firms coming together as a community of actors or through the use of brokers. Coopetition for the entrepreneur in this way, similar to findings by Ritala et al. (2014) in their analysis of the Amazon business model, can facilitate the reduction of risk and costs, the sharing of distribution channels, co-marketing, and collaborative innovation.

2.1.3 Network environment
The network environment is central to studies within the industrial marketing tradition highlighting that firm actions and interactions are both guided and impacted by the environment in which they are embedded (Håkansson, 1982; Håkansson and Snehota, 1995). Similarly, our definition argues that every entrepreneurial firm is created within a wider network environment that can significantly contribute to coopetition logics within collaboration dynamics.

Empirical examinations of coopetition thus far include a variety of settings, including for example, forestry in Finland (Rusko, 2011), opera houses in Italy (Mariani, 2007), telecommunications in China (Luo, 2004) and tourism in Finland (Kyllänen and Rusko, 2011). These studies emphasise the importance of the public sector in shaping coopetition activities. Miriani (2007) shows how regional policy makers in Tuscany, when making significant financial investment in the sector, triggered competitive activities between opera productions by requiring, for example, common scenery sets and shared orchestras. Similarly, Kyllänen and Rusko (2011) recognise the importance of geographic proximity and the regional project management of tourism including multifaceted public and semi-public networks, which provide several opportunities for different forms of coopetition. Meanwhile Luo (2004) examines a series of dyadic competitive relationships with global rivals, foreign governments, alliance partners and within MNC’s, and Rusko’s (2011) exploration of the forestry industry, conducted at a national level, focuses on national rivals and the Finnish government. In this sector, the government plays a pivotal role as the owner of firms (including Europe’s largest paper company), land and forests (Rusko, 2011).

The inclusion of governments and network environment factors in the coopetition literature is not novel. Brandenburger and Nalebuff (1996, p. 33), in their seminal study, recognise that “the government has the power to make laws and regulations that govern transactions among other players” and hence a network of competitors can take the form of industry associations and lobby groups which can enable action at a group level. However, studies have mainly focussed on large organisations residing in Europe where the relationship and boundaries between private and public sector have become blurred in relation to business activities and responsibilities (Kyllänen and Rusko, 2011). Less focus has been placed on how the network environment can influence the entrepreneurial coopetitive mind-set or entrepreneurial coopetitive interactions.

3. Study design and data collection
The objective of this paper is to examine whether coopetition is a fundamental feature of the collaborative dynamics in entrepreneurial ventures. The methodology adopted to fulfill this objective is that of an abductive case study approach (Dubois and Gadde, 2002). This approach was selected for three reasons. First, an abductive research design was deemed appropriate given the wide scope of the research aim and the lack of prior studies in the area. Second, qualitative case study methods are appropriate for exploring coopetitive relationships often hidden in interaction processes between the entrepreneurs and other actors residing in their network (Lechner and Dowling, 2003; Bengtsson and Johansson, 2014) and are useful to gain a deep understanding of the context of the entrepreneurs’ experience and preferences (McGrath and O’Toole, 2013). This is in keeping with recent entrepreneurship literature, which supports the need for qualitative studies to understand the complex and context dependent nature of relationships and networks (Chen and Tan, 2009; Hanna and Walsh, 2008; Jack, 2010; Bengtsson and Johansson, 2014). Third, our design has the unique strength of being able to deal with a variety of evidence, including but not limited to, documents, artefacts, interviews, and observations (Yin, 2003). Hence, the researchers visited all the entrepreneurs at their premises and viewed their operations. This part of the visit and informal conversations during the process acted as part of the researchers’ observations of the context, which was subsequently used in interpreting the interview data. Rich information was also gathered about the history and background of the firm from non-entrepreneurial sources (Denzin, 1979) including marketing materials, information available on websites and social media, as well as information contained in newspaper articles and policy documents. This diversity of sources facilitated the validity of the emerging findings through triangulation (Yin, 2003).

Semi-structured interviews were conducted with the 17 micro-brewery owners and each participant was interviewed for approximately 2 h. All interviews were conducted with the entrepreneur themselves as they were the actors who could make immediate decisions within the company and were fully responsible for the firm’s relational and network activity. Almost 40 h of interview recordings were transcribed verbatim immediately following the interviews. The authors outlined a series of issues to be explored with each participant prior to interviewing (Patton, 1990) to ensure that no issue pertinent to coopetition remained under explored. Participants were initially invited to speak about their story, how they became interested in beer production and their knowledge and prior experience of the brewing industry. Background company and personal information such as the age of the business, brew size, general education and in brewing were gleaned early in the interview process and can be seen in Table I. Individuals’ relational experience, growth ambitions and development plans were discussed. We explored the entrepreneurial cooperative and competitive interactions with competitors, retailers, consumers, suppliers, distributors, government and, where relevant, complementary firms. In doing so, we focussed on relational content, how they initially formed the relationship, frequency in interaction, the extent to which interactions were
transactional or relational and their interaction preferences. We discussed resource, information and where applicable knowledge exchange in interaction. Where the entrepreneur described problems that they had encountered, we probed further to find out how they had been handled and with whom. The entrepreneurs were asked how the overall market was structured, particularly from a distributor perspective given the three-tier system in place (see Section 3.1). This helped us to understand the network environment and structure, entry barriers, how they viewed the competition and changes in the industry since they had set-up operations.

### 3.1 Sample and industry background

The context for this study is the micro-brewery sector in Southern USA, defined by the US Brewers’ Association as breweries with production of less than six million barrels per year. The brewery industry in the USA is dominated by large, multinational players who have a strong national and international foothold in the market, with the three largest players responsible for 76.8 per cent of production (Euromonitor International, 2014). However, craft breweries are gaining momentum with 1,017 new micro-breweries opening their doors between 2012 and 2014, representing an increase of just over 50 per cent of the total number of micro-breweries in the USA (Euromonitor International, 2014). According to the Brewers Association, craft beers in the USA are typically regionally distributed in the area surrounding their brewery yet, despite their rapid increase in number, still hold only 6 per cent of the overall market share. As a growing industry dominated by larger players, the authors felt that the sector represented a good context for analysing coopetition. The three-tier system of alcohol distribution is also interesting from a coopetition and relational perspective with the tiers representing producers, distributors and retailers. This system, set-up following the repeal of prohibition, ensures that producers can only sell their products to wholesale distributors who then sell to retailers, and only retailers may sell to consumers.

Given that the hallmark of craft beer and craft brewers is innovation, they have the strongest potential for growth in the USA. This view of the sector fits with the seminal view of coopetition, to cooperate to create a bigger business pie, while competing to divide it up (Brandenburger and Nalebuff, 1996). Participation in collective actions to achieve common goals and interests (Bengtsson and Kock, 2000; Tsai, 2002) is important for coopetition, and the entrepreneurial brewers may collaborate to increase their overall share of the beer market through increased awareness of the micro-brand sector. Essentially they may use networks of coopetitive relationships to “make the pie bigger rather than fighting with competitors over a fixed pie” (Brandenburger and Nalebuff, 1996, p. 13) which is facilitated by a surge in consumer interest in the diverse offerings and in-depth flavours from local and regional breweries.

An overview of each entrepreneur and his business is outlined in Table I. Although the South remains behind other areas of the USA for micro-beer production, the sector is growing rapidly, with 10 micro-breweries being established in the last three years (Table I). Seventeen micro-brewery entrepreneurs, comprising the whole network of micro-breweries in the State participated in this study, including two entrepreneurs who contract production, five brewpubs and ten micro-breweries. As can be seen in Table I, the participant firms greatly varied in their output but remained considerably lower than the defining cut off point of six million barrels per year. Entrepreneurship is often defined in terms of the

<table>
<thead>
<tr>
<th>Firm</th>
<th>Age</th>
<th>Employees (E)/Partners (P)</th>
<th>Education</th>
<th>Years in business</th>
<th>Raison D’Être</th>
<th>Export/out of state</th>
<th>Experience</th>
<th>1st business</th>
<th>Brew (in Barrels)</th>
<th>Type of business</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>50</td>
<td>2P, 150E</td>
<td>Master of Literature</td>
<td>12</td>
<td>Hobby</td>
<td>No</td>
<td>2nd beer business</td>
<td>Yes</td>
<td>800</td>
<td>Brew pub</td>
</tr>
<tr>
<td>B</td>
<td>30</td>
<td>2P0E</td>
<td>Genetics and Chemistry</td>
<td>New</td>
<td>Hobby</td>
<td>No</td>
<td>None</td>
<td>Yes</td>
<td>520</td>
<td>Brewery</td>
</tr>
<tr>
<td>C</td>
<td>50</td>
<td>2.5P</td>
<td>News Cameraman</td>
<td>2</td>
<td>Hobby</td>
<td>No</td>
<td>None</td>
<td>Yes</td>
<td>3000</td>
<td>Brewery</td>
</tr>
<tr>
<td>D</td>
<td>43</td>
<td>2P</td>
<td>Engineer</td>
<td>2</td>
<td>Hobby</td>
<td>No</td>
<td>None</td>
<td>Yes</td>
<td>750</td>
<td>Brewery</td>
</tr>
<tr>
<td>E</td>
<td>40</td>
<td>2P, 3E</td>
<td>Marketing and Music</td>
<td>5</td>
<td>Hobby</td>
<td>No</td>
<td>None</td>
<td>Yes</td>
<td>1200</td>
<td>Brewery</td>
</tr>
<tr>
<td>F</td>
<td>53</td>
<td>3P 56E</td>
<td>Degree in Music</td>
<td>15</td>
<td>Hobby</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>800</td>
<td>Brew pub</td>
</tr>
<tr>
<td>G</td>
<td>30</td>
<td>3P7.5E</td>
<td>Marketing</td>
<td>2</td>
<td>Hobby</td>
<td>No</td>
<td>None</td>
<td>Yes</td>
<td>4000</td>
<td>Brewery</td>
</tr>
<tr>
<td>H</td>
<td>57</td>
<td>2P 37E</td>
<td>Business Management and Accounting</td>
<td>14</td>
<td>Hobby</td>
<td>No</td>
<td>None</td>
<td>Yes</td>
<td>1300</td>
<td>Brew pub</td>
</tr>
<tr>
<td>I</td>
<td>52</td>
<td>2P43E</td>
<td>Sales</td>
<td>2</td>
<td>Hobby</td>
<td>Yes</td>
<td>None</td>
<td>Yes</td>
<td>5000</td>
<td>Brewery</td>
</tr>
<tr>
<td>J</td>
<td>28</td>
<td>1P</td>
<td>Business</td>
<td>1</td>
<td>Work</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>2000</td>
<td>Brewery</td>
</tr>
<tr>
<td>K</td>
<td>40</td>
<td>2P</td>
<td>Trade School</td>
<td>1</td>
<td>Hobby</td>
<td>No</td>
<td>None</td>
<td>Yes</td>
<td>1500</td>
<td>Brewery</td>
</tr>
<tr>
<td>L</td>
<td>48</td>
<td>2P 56E</td>
<td>Insurance</td>
<td>11</td>
<td>Hobby</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>35000</td>
<td>Brewery</td>
</tr>
<tr>
<td>M</td>
<td>52</td>
<td>1P 3E</td>
<td>Marketing</td>
<td>New</td>
<td>Hobby</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2600</td>
<td>Brewery</td>
</tr>
<tr>
<td>N</td>
<td>46</td>
<td>3P 32E</td>
<td>Restaurant, teacher</td>
<td>7</td>
<td>Hobby</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>800</td>
<td>Brew pub</td>
</tr>
<tr>
<td>O</td>
<td>36</td>
<td>2P</td>
<td>Marketing</td>
<td>3</td>
<td>Business</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>1500</td>
<td>Brewery</td>
</tr>
<tr>
<td>P</td>
<td>41</td>
<td>3P</td>
<td>Engineering</td>
<td>2</td>
<td>Hobby</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>800</td>
<td>Brew pub</td>
</tr>
<tr>
<td>Q</td>
<td>62</td>
<td>9P 17E</td>
<td>Nuclear Scientist</td>
<td>16/7</td>
<td>Business</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>13000</td>
<td>Brewery</td>
</tr>
</tbody>
</table>

Table I: Summary description of participating entrepreneurs
characteristics of the decision maker within the firm, in particular their personality and sociocultural traits (Greve and Salaff, 2003; McClelland, 1987). Although seven of the participant firms have been established for more than three years (Table I), based on their core characteristics such as risk taking (McClelland, 1987; Palmer, 1971; Timmons, 1978), being innovative and creative (Drucker, 1986), and adaptive to change (Drucker, 1986; Naman and Slevin, 1993), the sample can be classified as entrepreneurial. All of the micro-breweries are still managed by their founders who have diverse and interesting backgrounds (see Table I). For the vast majority of the participants, the business stemmed from an initial home-brewing hobby with each entrepreneur progressing their hobby to a business via a formal brewing education. For six, the brewing business was not their first, although only one participant was involved in their second beer related business. Three of the firms are currently selling out-of-state with only one business exporting their beer from the USA.

3.2 Data analysis

Fitting with our definition and the study of entrepreneurial coopetition in interaction, a focal firm perspective is taken with the unit of analysis being the individual actor (entrepreneur) and their interactions in vertical and horizontal relationships within the network environment. In the IMP approach, the focal firm is connected to the focal net consisting of those actors that the entrepreneur perceives as relevant and can include customers, competitors, suppliers, distributors, funding agencies and research institutions which can be useful to bound the case (Håkansson and Johanson, 1993; Möller and Halinen, 1999; Chou and Zolkiewski, 2012). Hence, in line with the wider view of coopetition (Bengtsson and Kock, 2014), the focal net concept includes more than the immediate partners of the company, also containing indirect relations that the company identifies as important for its business. Covering the entire industry facilitated an analysis of the whole picture of coopetition, albeit from the focal firms’ perspectives.

Given that we define entrepreneurial coopetition as the entrepreneurial involvement in coopetitive interactions with business network actors within a relational environment, we use our three defining features as a classification tool: entrepreneurial coopetitive mind-set, entrepreneurial coopetitive interactions and the wider network environment.

The data analysis relied on searching for patterns from observations, interviews and secondary data through constant comparison (Strauss and Corbin, 1990) to stimulate meaning from the data in relation to the entrepreneurs’ coopetitive interactions. The analysis was an abductive, iterative back and forth process between the data and literature to generate consistent themes and patterns across the informants. Once a core theme emerged from the analysis, we classified it using the framework and labelled it as either a cooperation or competition theme as listed in Table II. For example at the entrepreneurial coopetitive mind-set level, a desire for growth and a wider view of the competition comprising macro and out-of-state micro brands seemed to lead to more cooperative interactions whereas an independent mind-set was more in tune with acting in a competitive manner. Positive past experiences in interaction and opportunity generation reinforced cooperation whereas negative experiences led to competition in future interactions. Hence, a change in the entrepreneurial mind-set can lead to a change in norms, which may alter activities and interactions. Cooperative norms varied from routine reordering with the same suppliers to horizontal and vertical information and resource sharing, and a sense of community whereby the micro-brewers regularly helped each other out in securing supplies. However, they were more competitive when dealings with suppliers related to pricing or they felt exchanges were more transactional. Furthermore, the micro-brewers had a more competitive outlook when dealing with distributors. Regarding the network environment, Table II shows that this context influenced coopetition with entrepreneurs cooperating to organise festivals in addition to lobbying and dealing with issues collaboratively at a state and national level.

### Table II Key themes

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Cooperation</th>
<th>Competition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurial coopetitive mind-set</td>
<td>Desire for growth, Brewery as a craft, Create a bigger micro-brewery pie, Suppliers as a source of information and consistency</td>
<td>Desire for independence, Brewery as a business, Suppliers – transactional dealing</td>
</tr>
<tr>
<td>Entrepreneurial coopetitive interactions</td>
<td>Retailer visits, Information, resource sharing and collaboration with other brewers, Distributor as logistics specialist</td>
<td>Lack of retailer plug-in, Keeping an eye on brewers activities, Distributors power as sole customer</td>
</tr>
<tr>
<td>Network environment</td>
<td>Micro-brewery network collaborating to compete with and cope with issues in the network environment, including legal and distributor issues, Ties with local community to overcome religious obstacles</td>
<td></td>
</tr>
</tbody>
</table>

4. Findings and discussion

In an overall sense, our findings suggest that coopetition is a fundamental feature of the collaborative dynamics of entrepreneurial networks. Our conceptualisation, graphically depicted in Figure 1, is fitting, as there seems to be three defining features of entrepreneurial coopetition, which interact and overlap in meaningful ways. The entrepreneurial coopetitive mind-set is important as it indicates the actors’ thinking and preferences in terms of coopetitive actions and interactions. The entrepreneurs considered independence to be
important, yet understood the value of becoming further embedded in their relationships and networks. This clearly had an effect, albeit at times indirect, on their norms in competitive interaction processes within the value chain and with other micro-breweries, which were, in turn, driven by a desire to counteract moves stemming from the network environment. Our findings, detailed and discussed below, are organised around our three defining characteristics, entrepreneurial coopetitive mind-set, entrepreneurial coopetitive interactions and the network environment. Quotations related to these are presented in Tables III-V.

4.1 Entrepreneurial coopetitive mind-set
In our findings, a coopetitive mind-set was evidenced in the way in which entrepreneurs balanced growth ambitions with independence (or the fear of losing it), their passion for craft beer with running a commercially viable businesses, and building overall demand for craft beer with ensuring market share for their own brewery (see quotations, Table III).

It was clear that the entrepreneurs in our sample were driven to grow their enterprises and to do this they recognised the need to cooperate with each other. Unique and important forms of cooperation included collaboration beers, complementary innovation, and information sharing routines. A sense of community prevailed whereby they routinely supported each other when problems arose and at times of raw materials shortage. While growth was fundamental for our respondents and cooperation with each other provided access to some resources to support their growth ambitions, finance represented a critical, yet contentious, resource. This was because respondents had to balance the need for financial resource to support expansion versus their desire to remain independent. Only six of the sample had investors, and of these, two entrepreneurs relied principally on family investors. The remaining eleven respondents stated that they would never

<table>
<thead>
<tr>
<th>Theme</th>
<th>Illustrative data for cooperation</th>
<th>Illustrative data for competition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth versus Independence</td>
<td>“One collaboration is with two brothers, they eventually want to open their own brewpub. They come up with a recipe and we brewed it here. We sell it under both of our names” (ENT C). “They help us out because we don’t have an industrial keg washer. They allow us to take all of our kegs up there once a month and wash all of our kegs and they don’t charge us for that” (ENT P). “We are not happy with our size yet - we are hoping to double production next year” (ENT G). “I would like to grow to 30,000 per year but I will never stop” (ENT J). “Our intention is not to sell outside this State” (ENT E). “You have people looking to get to 15,000 barrels within 3 or 4 years - I’d love to do that but I know it is not easy” (ENT D). “Slow manageable growth as I wanted to make sure that I was confident in what I was doing. I would like to sell enough beer to make a decent living but I wouldn’t like the control to get out of hand” (ENT C)</td>
<td>“We would rather pay for it ourselves and should be able to” (ENT B). “I decided to go small and self-finance. We wanted to make sure when we launched the expansion we were already well-versed and already had a customer base” (ENT C). “We can operate on a low production level and build slowly and organically. If you go out and get investors that want returns you have to grow much quicker” (ENT E). “We select them (investors) based on their willingness to write cheques” (ENT O). “We have no investors” (ENT A; H; K)</td>
</tr>
<tr>
<td>Craft versus business</td>
<td>“It was my dream to open a brew pub” (ENT P). “I fell in love with beer travelling through Europe” (ENT A). “Setting up was a passion. I decided to make my dream a reality” (ENT M). “I’d be happy with a mid-sized micro-brewery, making great beer rather than a giant brewery making ok beer” (ENT C)</td>
<td>“I have brought in 8 friends - so 9 people own over 90% of the business. Everybody that I brought in I brought in because they could do something. They had skills that could advise us. We run the company very efficiently, our dashboard, our statistical analysis of our business is very strong. We know exactly where we are and where we want to go” (ENT Q). “I am both a business man and a craft brewer. We are only open for four months now and we are already breaking even. I would like to grow to 30,000hl per year but I will never stop” (ENT J). “I am not a brewer and am not all that fascinated with making the beer. I am fascinated with marketing and selling the beer. I am business minded. Our capacity will be 15,000hl but we would not be happy to stop at that. We will keep adding” (ENT O)</td>
</tr>
<tr>
<td>Create a bigger pie/Pie division</td>
<td>“We would really like to take some market share from the macro brands” (ENT D). “We tend to take business from larger breweries” (ENT G). “We view each other as allies as we are trying to fight against the macro breweries that have over 90% of the market. More people being exposed to craft beer is the bigger goal” (ENT O). “As more people get into this business the pie is growing so I do not see the other local microbrewers as competitors. People are no longer brand loyal” (ENT A). “We all have a common goal; there is plenty of room for everyone to make money here” (ENT P)</td>
<td>“I would have no problem knocking out a local tap for our beer. I would rather take out Budweiser” (ENT O). “We would be happy to take a tap from any of the other local craft beers” (ENT K). “If a pub was to take out another local beer for ours we would take it but we wouldn’t target them” (ENT E). “We are not going to target other craft beers but if they take our neighbour’s beer out for us that is fine” (ENT D)</td>
</tr>
</tbody>
</table>
Retail

Firms collaborative dynamics
Helen McGrath, Thomas O’Toole and Louise Canning

Table IV Participant quotations at the entrepreneurial coopetitive interactions level

<table>
<thead>
<tr>
<th>Theme</th>
<th>Illustrative data for cooperation</th>
<th>Illustrative data for competition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suppliers</td>
<td>“A combination of relationships and price sensitivity” (ENT O). “We use the same suppliers all the time” (ENT O). “We have no credit with suppliers as we are new. We might get some in the future if we stick with them” (ENT B). “We pretty much use the same ones. The relationship with suppliers is pretty important. If they know you they will work with you” (ENT H). “With all of our other suppliers once we find somebody that we like working with we generally stick with them” (ENT I). “We buy from the same people all of the time, we have never changed. We like them and they are local, so handy to get to but we are very price sensitive” (ENT K). “We are pretty loyal to those suppliers. Most of them tend to be friends - now. This is why I love this business” (ENT L)</td>
<td>“We will always look and research and try to get the best deal” (ENT O). “Our relationship with suppliers is just a transaction really, especially where we get our grain. Mostly because they are real big and also we are small” (ENT D). “Multiple sources, you can price them out - you can get very similar malts and hops from different suppliers” (ENT G). “I am pretty price orientated. I would switch at no cost whatsoever for a cheaper price as long as the quality is still there” (ENT J). “I look at freight price mainly with suppliers” (ENT M)</td>
</tr>
<tr>
<td>Retail customers</td>
<td>“Training the bar staff is so important. We try to bring them all here rather than try to train them at their location” (ENT G). “We visit the customers ourselves. We have 3 sales people who visit pubs, restaurants etc. They work on it full time. They visit people to sell, to educate and to make sure that they are happy” (ENT I). “Anytime you get the retailer plugged in, dedicated or related somehow to your product it will make the difference. It is absolutely worth our while visiting them” (ENT E)</td>
<td>“I don’t pass them (recipes) around. I keep them close to my chest” (ENT B; G). “Recipes are not super-secret like they would be for Coca Cola” (ENT C). “I would tell people what is in our beer but we wouldn’t tell them the process that we go through in making it” (ENT I). “We are not in the business of training” (ENT E). “We would be more guarded in giving information to a new brewery if they were going to set it up in the field over there” (ENT G)</td>
</tr>
<tr>
<td>Other Micro-breweries</td>
<td>“We have borrowed suppliers from others to finish a batch. It is a very neighbouring business. The industry is growing” (ENT P). “Another brewer and I have swapped ingredients in the past” (ENT E). “Collaborations are more about marketing than making money” (ENT O). “We did a collaboration last year - a double IPA. They distributed half of the beer and we sold the other half. That was for the Craft Brewers guild so we didn’t make any money from it but it was a lot of fun” (ENT P). “We usually go a couple of collaborations per year. It’s fun for both parties and we get to have their name on our menu. We make money from it. They are mainly done here using our man hours and our ingredients so we usually make the money from it. If we brew 40 barrels they take 4 and they can sell them or give them to special clients” (ENT P)</td>
<td>“(It’s like) marriage without the possibility of divorce” (ENT A). “It’s funny, we are in the South and we are talking about the equivalent of slavery. It’s bizarre, once you sign you are stuck” (ENT Q). “They are powerful. There is nothing you can do. I would say they were evil. That’s what happens when you have a franchise state!” (ENT A). “The distributors are powerful as they give so much money to state politicians in the form of donations. That is legal and documented. As small businesses we don’t have the resources to write cheques like that” (ENT A). “We are learning the distribution system here still. It might be easier to export than distribute elsewhere” (ENT B). “The distributors have all of the power. They can dictate ultimately what gets distributed and they get paid in cash” (ENT P)</td>
</tr>
</tbody>
</table>

have them, arguing that while their businesses needed time to develop, investors may expect returns in the short term rather than allowing for continued re-investment into the enterprise. There was a clear feeling that relationships with investors would be consumed with conflicting interactions and would go against the very reason which motivated them to set up their business in the first place, i.e. to be their own boss, make all decisions, avoid competition as well as conflict within the workplace. Opening the brewery encapsulated their ambitions and dreams and they feared, with investors, that they would lose the ability to act creatively due to conflicting priorities. Two participants that actively cooperated with investors, viewed them as a means to gain outside skills as well as finance, and felt that they benefited greatly in their day-to-day operations. Others were clearly not looking for expertise or human resources, just financial resources, exhibiting self-reliance as they felt that they had all the experience and expertise that they needed in house.

In setting up their breweries, the entrepreneurs were faced with determining priorities associated with their love of craft beer versus others related to running viable enterprises. For fifteen of the sample, the business commenced as a hobby and a passion for the brewing process and they feared losing their ability to act creatively though investment. Fidelity to the production process, for some, translated into a desire to grow,
Cooperation was in place to enhance overall awareness of the craft sector. Participants exhibited a strong preference for cooperating with other micro-brands to gain more retail space for the craft sector, but a degree of competition was evidenced in dealing with issues closer to customers. Here the survival of the respondents’ own businesses was paramount, such that while efforts favouring other micro-brewers at the expense of large brands were important, if necessary, respondents expressed a willingness to eliminate a competing micro-beer to stay in business.

In examining themes related to mind-set, we found that entrepreneurs habitually interact in a coopetitive manner through experiencing norms formed in interaction. That is, we found that their coopetitive mind-set was more intuitive than considered. Coopetition was naturally in place to create a bigger pie in spite of the three-tier system, which favoured distributors and larger competitors. They still preferred taking business from dominant macro brands, suggesting that they placed emphasis on geography and supporting local businesses.

Growth was evidently an entrepreneurial fundamental (Gartner, 1990) for our respondents, and from an IMP and network perspective the potential benefits of networks to access external resources and capabilities necessary for survival and growth have been well documented (Brass et al., 2004; Hite, 2005; Lechner et al., 2006; McGrath and O’Toole, 2013; O’Donnell, 2014). While this was apparent in the manner in which our respondents supported each other, literature identifies the entrepreneur’s intense desire for control over decision making as a potential barrier. This control, characterised by an independent, internally orientated established means of doing business (Birley and Westhead, 1994; McClelland, 1987; Timmons, 1978; Lee and Tsang, 2001) was in strong evidence amongst our respondents. In addition to favouring independence, the entrepreneurs were self-reliant in the sense that not only did they wish to be the sole decision maker, they also believed in their ability to carry out their vision without external investors (Lee and Tsang, 2001). In this way, the entrepreneurs seemed to possess what Gnyawali and Park’s (2011) term “coopetitive capability” defined as a type of mind-set which makes it easier for actors to accept that they are involved in both cooperative and competitive activities.

The passion versus business dilemma evidenced in our findings resonates with Scott Morton and Podolny (2002) who, in their analysis of the wine industry in California, considered entrepreneurs as driven mainly by money or love. The distinction between a hobbyist and business-based perspective in craft based enterprises has been explored (Kuhn and Galloway, 2013; McGrath and O’Toole, 2013). In fact, our study mirrors extant literature, namely that entrepreneurs driven by money adopted a commercial approach to their venture and were more likely to compete. Contrastingly, those motivated by their love of the craft process and product displayed a greater propensity to cooperate.

With regards the beer market, cooperation was in place to enhance overall awareness of the craft sector and efforts were aligned which favoured other micro-brewers at the expense of large brands. Nevertheless, similar to findings by Bengtsson and Kock (2000), a degree of competition was apparent in dealing with issues closer to customers, with respondents expressing their willingness, if necessary, to eliminate a competing micro-beer to stay in business. Such actions are arguably evidence of the original view of cooperation which recognises that the players need to adopt a new mind-set to jointly discover and create new value and opportunities to achieve synergy benefits which not only create a larger pie, but enable parties to consume a larger slice of that pie (Gnyawali et al., 2008). What is interesting is that while previous literature has suggested that firms need to explicitly consider coopetition as a part of their strategy tool set (Gnyawali and Park, 2009, 2011), we found that entrepreneurs
habitually interact in a coopetitive manner through experiencing norms formed in interaction. That is, we found that their coopetitive mind-set was more intuitive than considered. Coopetition was naturally in place to create a bigger pie in spite of the three-tier system, which favoured distributors and larger competitors.

4.2 Entrepreneurial coopetitive interactions

In this section we consider entrepreneur’s interactions with suppliers, customers, competitors and distributors. Cooperation was habitually practiced with suppliers to gain information, ensure consistency of the product, and, given their relative newness, to attain a line of credit. Some raw materials, such as hops, were in short supply and in all cases, cooperation was important to ensure adequate provision. However, at times, more competitive norms were in place whereby interactions with suppliers were considered mere transactional exchanges based on price. Hence, coopetitive relationships dominated, whereby respondents balanced a relational approach with price sensitivity. This was perhaps inevitable given that availability of this key ingredient was hugely influenced by the weather.

In terms of dealing with business customers, participants strived to build as much cooperation as possible in interactions. This inevitably presented difficulties at times due to the prohibition of direct selling imposed by the three-tier system. The micro-brewers explained that they strove to meet customers whenever possible, highlighting the importance of the retailer knowing the face behind the brand. They also invited loyal customers to their premises to taste their beer and hear their story, but felt that it was difficult to get them to the premises. Educating bar staff and managers on craft beer production was deemed important, but the potential impact of this was compromised due to staff turnover and a lack of interest amongst employees at retailers’ premises. Where there was an interest in craft beer, they noted that it made a massive difference to sales.

In dealings with other micro-breweries, information sharing was prevalent, particularly advice to new businesses on how to work with distributors, retailers, material and equipment suppliers. Such advice, while unplanned, was frequently and willingly given. Besides information, we witnessed cooperation across the micro-brewery community which included the sharing of supplies (hops, malt, liquid yeast) in times of shortage as well as help with production problems (cleaning lines, steam stacks, chillers). To a large extent, such cooperation was driven by the desire to ensure that high quality products were produced in the battle against macro-level competitors. Cooperation included collaborative activities such as joint beer development or product combining. For example, collaboration brews (in which two breweries joined together to make a special beer) were commonplace, either as part of brewers’ marketing activities or to generate funds in support of the brewer’s guild and its lobbying work at the state level. In terms of product combining, micro-brewers joined forces with other local companies to make a wide variety of products including, pretzels, soap, ice cream, bread, jelly and burgers. While such innovations represented a further revenue stream, the principal benefit was enhanced marketing via co-branding.

Alongside collaborative activities, competitive oriented behaviour was evident in the entrepreneurs’ description of their monitoring of each other’s social media sites for ideas and to glean information on, for example, where different micro-breweries sold their beer and what promotions activities were being undertaken. The entrepreneurs also monitor the effectiveness of each other’s social media activities in terms of, for example, the number of followers on Twitter and Facebook. With regards actual beer recipes, findings varied – some respondents being quite guarded in relation to their recipes or processes while others felt that with sufficient brewing expertise it was possible to at least discern some elements. Alongside guardedness around information sharing in relation to their beers, some participants also expressed limits to the support they would make available for new breweries.

Compared to relations between the different micro-breweries, those with distributors were poor because of this party’s immense power resulting from the three-tier and franchise structure in place. Adding to the power held by intermediaries in the franchise structure is the nature of contracts between the micro-brewery and wholesale distributor – once signed, the micro-brewery cannot terminate the relationship. Although their goals are congruent, to sell more beer, in many cases the micro-brewers struggle to compete with other lines that the distributor carries. Where cooperation is present, it is forced to get accounts, and instances where this is not the case tend to be with the individual sales person as opposed to the distributor company as a whole.

Despite such a constraint, advantages in using distributors were noted by all of the participants. The distributors already have accounts with retailers in place, they have a vast infrastructure for product delivery, even if at times the very nature of the structure can slow the movement of product and cut into the margins of the micro-brewers. The participants noted that they have to cooperate to satisfy distributors’ interests, or else risk being put out of business. To this end, some micro-breweries gave cash for new business, while others provided incentives in terms of holidays, free beers and pizza at their premises. Each of the breweries tried to visit retailers independently of the distributor, while some undertook visits to retailers with distributors’ sales representatives. However, the participants felt frustrated that they could not further develop relationships with retailers themselves or, at times, sell directly to them. They felt that the laws were more relaxed in other states, while in the South, the power held by the distributor ensures that their selection is the most important decision that the micro-brewers make in relation to their business. Some opt for small distributors so that the survival of both parties is interdependent. Others select large firms due to the number of accounts that they already have and the potential to reach every retailer in the State. Distributor feedback is rare, and where provided, is due to the personal relationship between the sales representative and the brewer.

Consistent with recent literature taking a wide lens in defining coopetition (Bengtsson and Kock, 2014), our findings suggest that entrepreneurs profit from both horizontal and vertical coopetitive interactions with suppliers, customers and competitors. They collaborate with suppliers to ensure supply continuity and credit status. They also collaborate with other micro-brewers to achieve common goals, for example, striving...
to make the whole craft industry more competitive against intense national competition (Rusko, 2011; Rita etc., 2014). Entrepreneurial coopetitive interactions provide a clear route way for information and knowledge sharing in addition to joint new product development and co-marketing (Gnyawali and Madhavan, 2001; Gnyawali and Park, 2009), interactions which continually develop and reinforce the coopetitive mindset. Regarding distributors, power imbalance and opportunism represent the competitive or dark side of cooperative buyer-seller relationship (Grandinetti, 2017). Yet, the situation enhanced the cooperative side of relationships between the micro-breweries in lobbying for changes in industry structure. Viewed in this way, in line with the literature, our findings suggest that using an ambidextrous, coopetitive strategy does not damage relationship quality (Kim et al., 2013). We diverge from current thought in that coopetition enhanced competitor relationships.

The difficulties inherent for competitors to cooperate, to strike the optimum balance between sharing information and resources while preserving competitive advantage has been documented (Tidström, 2009). Conversely, in this case, coopetition is intuitive; the entrepreneurs have no difficulty managing relationships that make sense. Therefore, although the entrepreneurs do not strategically plan for coopetitive relationships, they seem to innately understand the boundaries, the potential and limits in coopetition and know the rules of the game. They are adept at using and managing coopetition. This is akin to what is described in previous literature as an emergent or unintentional coopetitive strategy (Kylänen and Rusko, 2011; Mariani, 2007; O’Toole and McGrath, 2018; Rusko, 2011, 2014).

Coopetition studies have favoured separation of roles whereby different actors or organisational units would act in accordance with one of the two logics of interaction (Bengtsson and Kock, 2000; Fernandez et al., 2014). For the entrepreneurial venture, this separation of roles is not possible where the entrepreneur, as agent of the firm, has to play both roles, and in our case, did so successfully.

### 4.3 Network environment

The brewers cooperated to form a State-level Brewers’ Guild in a bid to lobby government, both at a State and National level. Laws in relation to the production and distribution of beer were deemed fascinating, complex and out-of-date by the participants and they actively work together to amend them where possible. Whilst change is afoot, for example, allowing brewpubs to increase their production from 1,000 to 10,000 barrels (with a requirement that half of production be consumed on site), it was noted that in legal terms the South remains behind the rest of the country in the craft beer sector. It was the only area in the USA where alcohol could not be sold off trade on Sundays, or beer surpass 6 per cent in volume until 2012. Even within the State, legal rules and regulations differed, for instance relating to the sale of beer onsite via tasting tours. To amend this law, our findings highlighted that three brewers were working together in a bid to pass a tasting ordinance to allow the public to take an educational tour of their facility and taste the product. This was already permissible for the other firms in our sample, but the rationale to cooperate with local competitor breweries was to reduce the legal fees for the firms involved. Additionally, although the craft breweries paid less tax than their larger counterparts, a further motivation of the lobby group was to further lower their tax status.

The participants actively lobby to allow for small amounts of their product to be sold on site, and appeal to the consumers to sign petitions arguing, in part, that their businesses could have a positive effect on tourism and as a means to increase employment due to the labour intensive production process. The distributors are fighting against this change, making it difficult for the brewers because, even as a collective, they cannot compete with the generous donations provided by the large distributors to individual politicians and their parties.

The brewers also cooperate to engage with the local community, organising joint charity events and encouraging each other to support local suppliers. The South, as part of the Bible belt, limits them to a degree and some are required to attend various community meetings to talk to the local people before they can open a business that is alcohol related. The age limit for purchasing and consuming alcohol was also on the agenda, although at a country versus State level.

Whilst the motivation for forming the lobby group centred on network environment issues, it was clear that participation facilitates access to industry knowledge and experience. This is important given the low entry barriers to the sector evidenced through new players consistently entering the market and the lack of regulation relating to the beer production process, equipment used and the product itself.

At the network level, the findings support the idea that firms will collaborate to achieve a common objective, and, similar to the IMP network approach, that network actors will develop long-term relationships to secure information and resources external to the firm. One common objective centred on engaging with the local community to overcome the negative association with alcohol due to strong religious beliefs in the area. Similar to previous studies, this coopetition was greatly facilitated by their geographic proximity as they all resided in the same State (Kylänen and Rusko, 2011; Mariani, 2007; Rusko, 2011, 2014).

The three-tier structure imposed by government which places a clear divide in activities between the producer, retailer and distributor, also places a clear divide in coopetition practices between the three groups. This industry structure shapes the coopetitive landscape and greatly facilitates our understanding of coopetition as it places a natural divide between cooperation and competition activities in practice. That is, although the distributors and producers share an overarching common objective, to sell more beer, different self-interests lead to strong competitive tendencies due to constant conflict and power struggles set out by the industry rules imposed by the government. The distributors exhibit an unwillingness and fear in relinquishing a portion of their power, fighting to ensure that the government continues to enforce their rule against self-distribution (even at minimal levels). In response to this, the entrepreneurs cooperate as a network to lobby for changes in that structure, essentially trying to change the rules of the game. This network versus network level of coopetition is interesting, yet remains under researched in the current literature.

It is clear from our findings that coopetition studies, even at a focal firm level, need to recognise that a firm’s interactions are
guided by, and hence cannot be examined in isolation of, the network environment in which they are embedded. Either directly or indirectly, government bodies can play a crucial role in coopetition practices (Luo, 2004; Mariani, 2007; Rusko, 2011). In our case the government played an indirect role as a policy maker and did not own the infrastructure as was the case for Rusko (2011) or provide direct incentives as was the case with the Italian opera houses (Mariani, 2007). In this way, the coopetitive network of microbreweries formed in response to Government, as opposed to coopetition being induced by or imposed by the government, as was the case in Mariani (2007). As noted, the policy makers did, however, play a significant role in deciding the rules governing the industry structure, which led to coopetitive behaviours between the micro-breweries and other major players within the value net. This further supports the importance of casting a wide net when examining coopetition in practice as factors at play at a network level have a clear impact at an individual and relational level and vice versa.

5. Conclusion

We open the black box of entrepreneurial coopetition by exploring the way in which coopetition appears as a fundamental feature of the collaborative dynamics in entrepreneurial ventures. Whilst there is currently no consensus regarding how to define coopetition (Leite et al., 2018), we contribute to the literature by putting forward and empirically examining a conceptual definition of entrepreneurial coopetition which accommodates the ingrained and unique characteristics of entrepreneurial ventures. We define coopetition as; “entrepreneurial involvement in simultaneous cooperative and competitive interactions with business network actors within a relational environment”. Using the three defining levels as an analysis tool facilitated our understanding of the individual mind-set, dyadic and network forces that drive simultaneous entrepreneurial cooperation and competition. Furthermore, it allowed us to isolate the industry specific structural conditions and the network environment, which affected the asymmetry between the actors.

Recent research has argued that there is a need for more studies on coopetition from a multilevel perspective (Bengtsson and Kock, 2014; Tidström and Rajala, 2016; Tidström et al., 2018) incorporating the individual actors and their activities in coopetition (Bengtsson et al., 2016). Our findings add to the available insights into coopetition at different levels of analysis allowing us to bridge the gap between micro and macro explanations for coopetition providing a richer and more holistic view of coopetition at multiple levels, albeit from the perspective of the focal firm. As noted, although separated for analysis purposes, the three levels, (entrepreneurial coopetitive mind-set, entrepreneurial coopetitive interactions and the wider network environment) overlap and impact each other in important and significant ways. In our case, the entrepreneurial coopetitive mind-set influences coopetitive interactions. The repeated cycle of action and interaction involving those actors leads to norms and relational structures, which, through experience, alter the entrepreneurial mind-set. Dynamics within the network environment set the scene for entrepreneurial coopetitive actions and interactions at a dyadic and network level. Taking a multi-level industrial network perspective adds to the limited business network research in an entrepreneurial context, reasoned to be in its embryonic phase (La Rocca et al., 2013; Ciabuschi et al., 2012; McGrath et al., 2018).

A further contribution of this research is that it is one of the first to empirically examine coopetition in an entrepreneurial context. In doing so we extend understanding beyond the motives for coopetition and instead describe how they play out from a process perspective. This has significant implications for practice as our findings illustrate that entrepreneurs tend to operate intuitively in coopetitive relationships. We argue that more benefits in coopetition could be reaped if the entrepreneur were more cognitively aware of, and strategically planned for the coopetitive processes in which they are (or could be) engaged. Marketing in an entrepreneurial context is resource constrained. This study clearly shows that one major potential source for the creation of marketing resources is through purposeful relationships and networks based on both cooperation and competition. Being time constrained makes it difficult to adopt a more deliberate approach to coopetitive relationship and network development, yet our study confirms that the entrepreneurs are engaged in major coopetitive activity and show a willingness to both commit and share resources in such relationships.

This study highlights the potential that can result from firms collaborating to compete i.e. collaborating as a network of micro-breweries to compete against the macro-level brands and restrictions resulting from network level structures. This network versus network levels of coopetition is very interesting and exhibits a more planned approach to entrepreneurial network engagement and coopetition. If micro-brewers were to afford greater priority and strategic thought to collaborating with other relational ties, then they might be more able to identify and realise relationship as well as network opportunities through a coopetitive strategy.

As with all studies, this investigation has certain limitations. One of these being that the study is centred on the micro-brewery sector. The distinction between a hobbyist and business-based perspective in similar craft based enterprises is not new (Kuhn and Galloway, 2013; McGrath and O’Toole, 2013). Scott Morton and Podolny (2002) regarded entrepreneurs as driven primarily by “love” of the product or production process or by “money,” in seeking to maximise profit which may influence coopetition. Hence, a broader investigation including entrepreneurs from other sectors, using a qualitative methodology, may bring to light other coopetitive scenarios. It would be interesting to conduct a similar study in a different State in the USA or different country to reveal the impact of factors such as geography or culture which may reveal other coopetition themes. Taking a temporal view of coopetition, a sectoral analysis at another time point could show the evolution of coopetitive practices resulting from experience acquired by actors and from changes in the network environment.

Our finding suggest that, like all capabilities, the ability of the entrepreneur to strategically engage in and manage coopetitive relationships and networks is not purposeful or inherent (Teece et al., 1997). Gnyawali and Park (2011) term this ability a coopetitive capability, the participating firms’ capability to
manage coopetition to generate higher common benefits. Capabilities are strategic and take time to build (Larson and Starr, 1993; Hite, 2005). In a relational context, capability development requires the entrepreneur to learn over time how to purposefully leverage its experience in interacting in the totality of its relationships (Chen and Tan, 2009; Dyer and Singh, 1998; Zahra et al., 2006). Given the value of cooperative relationships for the entrepreneurial firm, understanding the coopetitive capability developmental process is important and could represent a fruitful avenue for future research.

References


For instructions on how to order reprints of this article, please visit our website: www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com
Series of successive B2B contracts: impact on contract length and rental rate

Shanfei Feng
Department of Marketing, Monash Business School, Monash University, Caulfield East, VIC, Australia, and

Trichy V. Krishnan
Department of Marketing, NUS Business School, National University of Singapore, Singapore

Abstract
Purpose – Companies in the B2B service sector often sign a series of successive contracts instead of one long contract with their vendors. Economic researchers have shown how the lengths of stand-alone contracts are influenced by economic factors such as asset specificity and economic volatility, but have not researched into contracts that are part of a continuous series. The purpose of this study was to explore if being a part of a series of contracts influences the length of the focal contract and the rental rate.

Design/methodology/approach – The authors use data collected from the oil drilling industry to empirically test their hypotheses. The data set consists of 2,621 contracts involving jack-up rig hiring in the Gulf of Mexico region.

Findings – The authors empirically show that the series duration affects both the length and rental rate of each constituent contract, even after considering all other plausible economic factors. Specifically, the duration of a series has a positive effect on the length and a negative effect on the rental rate of the constituent contract.

Originality/value – Although contract length is as vital as the rent in B2B service transactions, it is rather unfortunate that marketing scholars have not researched much into this topic. The findings offer a new insight into the forces that shape the B2B service contracts and thus help the B2B managers make a better decision in service contracts.

Keywords B2B, Contract length, Day rate, Oil drilling industry, Project duration

Paper type Research paper

1. Introduction

Many B2B contracts involve the delivery of services over a period of time. Examples include the provision of lifting services by a crane company to a construction company and the provision of oil well drilling services by a rig company to an oil company. The service contracts in these cases would typically state, among other terms and conditions, two key items: contract length, which is the period through which the service contract remains valid with all its terms and conditions; and rental price.

Although contract length is as vital as the rent in B2B service transactions, it is rather unfortunate that marketing scholars have not researched much into this topic. They have addressed only related issues such as how the business relationship between a supplier firm and a customer firm affects their long-term performance and inter-governance issues (Bolton, 1998; Cannon et al., 2000). Economists have, however, researched into contract length per se. Using the work of Williamson (1979) on transaction cost economics, researchers such as Joskow (1987) and Crocker and Masten (1988) identified two key factors that influenced contract length: asset specificity and future volatility.

These economic factors pertain largely to stand-alone contracts. There are, however, many B2B services where the contracting firms sign into a “series of successive contracts,” and not just one stand-alone contract. Consider, for example, the following. In 2000-2001, the oil company BP hired Diamond Offshore, a rig firm, to drill multiple oil wells in the Gulf of Mexico and signed three contracts in succession. The first contract had a length of two months (November 10, 2000-January 9, 2001), the second contract had a length of roughly a month (January 10-February 5, 2001) and the third and final contract had a length of roughly eight months (February 6-October 1, 2001). The three contracts signed between the two firms ran in quick succession with different lengths of time and without any break between any two of them[1].

A possible reason for the existence of such “series of successive contracts” is that the contracts are meant to collectively serve a purpose for some particular project. In the above example, BP had started a project to develop a particular oil tract leased from the US Government, and as part of that project, they signed three successive drilling contracts; the start- and end-dates of the project were probably common knowledge for BP and Diamond Offshore. Such situations involving a series (of successive contracts) are quite common in B2B service markets, especially in the oil drilling industry. For
example, the data on oil drilling contracts signed in the Gulf of Mexico region alone shows that there were 349 series of two successive contracts, 108 series of three successive contracts and one series of 14 successive contracts in the Gulf of Mexico region within the period 2000-2006. (See Table I for full details.) There are many other oil- and gas-producing regions in the world, both offshore and on land.

When a series of successive contracts is involved, it is natural to expect that the companies negotiating the (contract length, rent) pair pertaining to any particular contract in that series would carefully consider the fact that the focal contract is part of a series. Hence, one could say that the observed lengths of the contracts in a series of successive contracts will be a function of not just the established economic factors (i.e. asset specificity and future volatility) but also how long the series is going to last, which is a proxy for the duration of the corresponding project. Literature in B2B research has considered contract designs in repeated relationship and shown how the anticipation of future interactions influences the contract terms (Ryall and Sampson, 2009). We extend this research to explore how consecutively repeated contracting between two firms affect contract length and rental rate, two principal terms in a B2B service contract.

In our research, our objective is to explore if the (contract length, rent) of a contract are affected by the duration of the series that it is a part of. Our findings offer a new insight into the forces that shape the B2B service contracts and thus help the B2B managers make a better decision in service contracts.

The rest of the paper is arranged as follows. In Section 2, we give a brief description of the oil drilling industry to familiarize readers with the industry. In Section 3, we discuss current research findings pertaining to contract length of stand-alone contracts. In Section 4, we develop the hypotheses and conjectures characterizing the impact of series duration and economic factors on contract length and rental rate. In Section 5, we use data from the oil well drilling industry and conduct an empirical test to clearly establish that the length of a contract and rental rate are indeed influenced by the duration of the series the contract is a part of. In Section 6, we conclude the paper, detailing the managerial implications and giving directions for future research in this area.

Note that we use the oil-drilling industry as an example to elucidate our findings regarding contract length. There are other B2B service markets, such as the construction industry, business process outsourcing (BPO) and "integrated logistics," where overarching projects would influence the length of the contracts signed for the services. Our findings will apply to these industries as well. However, we are not covering all B2B services; for example, we do not address after-sales-service contracts maintained between suppliers of elevators or hi-tech hardware companies with their respective customers.

### 2. Oil well drilling industry

Oil companies such as ExxonMobil and BP lease oil tracts from governments for a fixed period of time and conduct an initial exploration-drilling to estimate the amount of oil available in

---

**Table I** Series of successive B2B contracts: descriptive analysis

<table>
<thead>
<tr>
<th>No. of successive contracts in a series</th>
<th>Count of series</th>
<th>Observed variable</th>
<th>Mean (day)</th>
<th>SD (day)</th>
<th>Minimum (day)</th>
<th>Maximum (day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>916</td>
<td>Contract duration</td>
<td>86</td>
<td>141</td>
<td>1</td>
<td>1,452</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series duration</td>
<td>86</td>
<td>141</td>
<td>1</td>
<td>1,452</td>
</tr>
<tr>
<td>2</td>
<td>349</td>
<td>Contract duration</td>
<td>96</td>
<td>139</td>
<td>7</td>
<td>859</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series duration</td>
<td>193</td>
<td>278</td>
<td>14</td>
<td>1,719</td>
</tr>
<tr>
<td>3</td>
<td>108</td>
<td>Contract duration</td>
<td>88</td>
<td>94</td>
<td>14</td>
<td>635</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series duration</td>
<td>266</td>
<td>283</td>
<td>42</td>
<td>1,906</td>
</tr>
<tr>
<td>4</td>
<td>46</td>
<td>Contract duration</td>
<td>87</td>
<td>55</td>
<td>26</td>
<td>304</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series duration</td>
<td>352</td>
<td>219</td>
<td>105</td>
<td>1,218</td>
</tr>
<tr>
<td>5</td>
<td>29</td>
<td>Contract duration</td>
<td>90</td>
<td>42</td>
<td>30</td>
<td>236</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series duration</td>
<td>450</td>
<td>209</td>
<td>148</td>
<td>1,180</td>
</tr>
<tr>
<td>6</td>
<td>19</td>
<td>Contract duration</td>
<td>72</td>
<td>29</td>
<td>41</td>
<td>156</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series duration</td>
<td>435</td>
<td>177</td>
<td>249</td>
<td>937</td>
</tr>
<tr>
<td>7</td>
<td>15</td>
<td>Contract duration</td>
<td>88</td>
<td>34</td>
<td>144</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series duration</td>
<td>617</td>
<td>240</td>
<td>308</td>
<td>1,008</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td>Contract duration</td>
<td>70</td>
<td>30</td>
<td>37</td>
<td>112</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series duration</td>
<td>549</td>
<td>245</td>
<td>295</td>
<td>893</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>Contract duration</td>
<td>57</td>
<td>10</td>
<td>48</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series duration</td>
<td>513</td>
<td>89</td>
<td>434</td>
<td>609</td>
</tr>
<tr>
<td>10</td>
<td>2</td>
<td>Contract duration</td>
<td>64</td>
<td>40</td>
<td>36</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series duration</td>
<td>636</td>
<td>395</td>
<td>356</td>
<td>915</td>
</tr>
<tr>
<td>11</td>
<td>2</td>
<td>Contract duration</td>
<td>49</td>
<td>2</td>
<td>47</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series duration</td>
<td>535</td>
<td>25</td>
<td>517</td>
<td>553</td>
</tr>
<tr>
<td>14</td>
<td>1</td>
<td>Contract duration</td>
<td>67</td>
<td>67</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series duration</td>
<td>936</td>
<td></td>
<td>936</td>
<td></td>
</tr>
<tr>
<td>Sum</td>
<td>1,497</td>
<td>Contract duration</td>
<td>91</td>
<td>137</td>
<td>1</td>
<td>1,452</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series duration</td>
<td>156</td>
<td>228</td>
<td>1</td>
<td>1,906</td>
</tr>
</tbody>
</table>
that oil tract, the depth at which the oil is available, and the rock/soil formation. These specifications are then shared with drilling rig firms such as Transocean and Noble. Rig firms provide oil well drilling services to oil companies; they hire out their rigs on a contract basis, mostly on a fixed-term contract, and charge the oil companies a day rate – this is the rental rate in oil and gas industry terminology – that is commensurate with the prevailing market rate and the technical specification of the rig. Once the oil is proven to exist in sufficient amount during exploration, oil companies would again hire rigs and start drilling “production oil wells” in that oil tract. Before the actual drilling starts, the oil companies would build infrastructure and set up the logistics (pipeline, trucks, tankers, etc.) to transport the oil to refineries. After an oil well is drilled, the rig will be removed from the well and the oil company will start pumping oil immediately or cap the well for later production. The rig will then proceed to the next designated point to drill another well in the oil tract. Because oil well drilling poses many technical challenges, oil companies usually send their engineers to work closely with the rig firms on a rig.

There are different types of rigs specializing in different oil tract conditions. For example, the rigs we focus on in this paper are called “jack-up” rigs, which suit offshore drilling tasks in shallow water conditions, typically in the 150-400 ft of water. Deep-water rigs such as submersibles or semi-submersibles could drill in seas up to 10,000 ft of water. The oil-drilling market is wide and huge. Oil wells are drilled on land in many parts of the world, such as the Middle East, Russia, the USA and the offshore fields of the Gulf of Mexico, North Sea, Mediterranean Sea and Persian Gulf. To provide an idea of the market size, we note that in the US market alone, around US$34m worth of business transactions involving rig hiring take place every day. Considering this on a worldwide scale, this market has a turnover of US$120m daily. Global drilling and well services expenditure over 2018-2022 is estimated to reach $1.3tn.

Business decisions in oil drilling industry have attracted academic interests, especially in economics and law. Scholars have studied issues such as negotiation, preparation and content (Anderson, 1989) of contracts, the choice between contract types (Corts and Singh, 2004) and how uncertainty affects investment decisions (Kellogg, 2014), etc. In our research we consider oil-drilling industry but only as an example because we have the data to test our hypotheses. Our model could be applied to other B2B services such as the construction industry, BPO and “integrated logistics,” where overarching projects would influence the length of the contracts signed for the services.

3. Literature survey

In the extant marketing literature, we are unable to find any research analyzing the issue of contract length per se. In particular, there are no research articles explaining what factors affect the length of a contract or how companies determine the length of a contract. Instead, marketing researchers focus on exploring how contract enforcement in the supply chain affects the overall performance and profitability of a company (Mooi and Gilliland, 2013; Griffith and Zhao, 2015). Another stream of marketing/management research study the relationship between formal contracts and relational governance, finding that the two act as complements rather than substitutes (Poppo and Zenger, 2002; Ryall and Sampson, 2009). The topic has gained attention in industrial marketing research and has been examined conceptually and empirically in contexts such as manufacturer–distributor collaboration (Vázquez-Casilles et al., 2013; Yang et al., 2017; Petersen and Østergaard, 2018). While this relationship within contracts may be thought of as giving rise to the incidences of “successive contracts” that we discuss in our research, the extant literature doesn’t talk about the influence of such relationship on specific contractual terms such as contract duration, which is the focus of our research. From this perspective, we could claim we are bringing more insights into the broader area of relationship within contracts. In economics, there is a large amount of literature that analyzes the factors affecting contract duration in B2B transactions. However, the focus is on stand-alone contracts. The key takeaway of the extant research is that a contract will be of a longer duration if the contracting companies make investments specific to the project, or if the economic conditions pertaining to the project are not volatile. For example, Joskow (1987) analyzed various contracts signed between coal suppliers and electric utilities in the 1970s and 1980s, and showed that a contract was of a longer duration if the customer-specific investments were higher. Focusing on the impact of uncertain economic conditions, Crocker and Masten (1988) analyzed natural gas contracts in the 1970s and 1980s and found that distortions in performance incentives caused by price regulation increased the hazards of long term contracting, resulting in contracts of shorter duration. They also found that uncertainty caused by the oil crisis in the early 1970s resulted in shorter contracts. In terms of long-term contract, researchers have found that firms used various ways to handle price changes happening during the contract duration, and, sometimes firms would go for renegotiation even when the expected market volatility would have been accounted for Crocker and Masten (1991).

In our research, we want to take these findings further and determine how contract length and rental rate would be affected if the contract is part of a series of successive contracts, which is commonly observed in the oil well drilling industry. While economic factors would still play a role, the contracting companies would also have the series, i.e. the overarching project, to worry about. Research articles in managerial economics examine contract decisions in the case where the two contracting parties anticipate future interactions. For example, Fudenberg et al. (1994) analyzed how anticipation of future interactions ensures cooperation between two players. Ryall and Sampson (2009) studied the details of contracts in telecommunication and microelectronics industries and found that both prior and future interactions have impacts on the level of details signed in contracts. Focusing specifically on contract length and rental rate, we investigate how these two contractual terms are affected by successively repeated contracts serving probably an overarching project. We believe that our findings would be a significant addition to the literature in B2B Service area and spur further research.

4. Developing hypotheses and model specification

We examine two decision variables of a contract: contract length and day-rate. The main focus of the analysis is to
consider a series of successive contracts and see if the series duration affects the two decision variables in a constituent contract. We are also interested to know if key economic factors such as economic volatility and asset specificity discussed in literature still have an impact when a contract is being signed as part of a longer series. Furthermore, we consider control variables such as “firm size” and “prior interactions between two contracting firms,” which would be normally expected to affect contract-length and day-rate decisions. We first focus on contract length, before switching over to day rate in our analysis.

4.1 Hypotheses on contract length
4.1.1 Duration of the series
As mentioned earlier, a series of successive contracts usually pertains to some overarching project. Companies taking up a big project would look for stability of operations, opportunities to save time and ways to avoid any uncertainty regarding the cost involved in the project. All of these can be achieved if the oil company simply signs one long contract with a drilling rig firm for the whole project because multiple contracts mean more negotiations (i.e. for each contract), more time spent, more uncertainty regarding the day rate, more uncertainty on whether to change partners and less control on the process. At the same time, other economic factors might come into play and force the companies to split the long engagement into multiple, successive contracts. In a bid to find an optimal solution, the oil company would settle for multiple contracts but ensure that each constituent contract is for a duration that is as long as possible and all the contracts run consecutively one after another without breaks in between. Ryall and Sampson (2009) found that while the prior interaction between two parties led to more detailed contracts, the anticipation of future interactions reduced the probability of signing detailed contracts, which imply that the firms are comfortable with each other. Said otherwise, the firms in this condition would not hesitate to sign longer contracts. In line with this reasoning, we put forward the following hypothesis:

\[ H1. \text{ Contracts that are part of larger projects (i.e. series of longer duration) would be signed for longer lengths of time.} \]

4.1.2 Economic volatility
One of the major shortcomings of signing a contract is the inability of the firms to adjust the contract terms when the market conditions change during the life of the contract (Crocker and Masten, 1988). This shortcoming becomes a serious issue if the contract periods are very long. However, firms would prefer to stay with a known partner in times of uncertainty. A key question, then, is: Would the firms facing a volatile economy avoid getting locked into a long contract (and thus prefer a shorter contract), or stay with the current “known” partner and ride over the volatility by signing a long contract? The economics literature has given mixed results. Crocker and Masten (1988) found that while times of crisis force firms to sign shorter contracts than usual, volatility in real oil prices did not have any impact on the lengths of natural gas contracts between producers and customers. In another piece of research, Colombo and Merzoni (2008) suggest that firms, which seek to build their reputations, would prefer to commit to a longer relationship (i.e. sign a longer contract with the current partner) when faced with the likelihood of uncertain times.

The measure of volatility varies in literature. For example, in the two abovementioned works of research, Crocker and Masten (1988) measured the volatility of oil price by taking the standard error of the oil price preceding the contracting date, while Colombo and Merzoni (2008) regarded volatility as the probability of the occurrence of a shock. For our research, the economic condition for most part of the 2001-2006 period was stable throughout the world, following the dotcom bust in the 1999-2001 period. Hence, the firms in the oil and gas industry would be more worried about the day-rate changes. As such, for our purpose, we use the volatility in the day rate as the proxy for economic volatility. To capture this volatility, we follow the traditional financial modeling technique and focus on two factors: $\mu$ and $\sigma^2$, which respectively signify the rate of trend and rate of variation predicted in the day-rate movement[2].

If the market shows that the day rate has an upward trend (i.e. a positive $\mu$), it means that demand for drilling services is higher. In this situation, rig firms would prefer to sign only shorter contracts to avoid committing themselves to the current rate for extended periods of time. However, that would not be ideal for the oil companies, who might wish to do the opposite. The net impact would likely favor the rig firms because the upward trend shows that oil companies need the rigs. Hence, we propose:

\[ H2a. \text{ Contracts signed during uptrend movement in day rate would be of shorter duration.} \]

If the rate of variation is high (i.e. large $\sigma^2$), the market day rate is expected to change and remain volatile in the near future. As discussed earlier, conclusions on the impact of this factor are not consistent in literature. As we are focusing on contracts that are part of overarching projects, we hypothesize that contracting firms will try to send signals to prolong the relationship and build reputation (Colombo and Merzoni, 2008). Hence, for contracts signed as part of a series, companies would choose to show their commitment to the project by signing longer contracts if there is high uncertainty in the market. Accordingly, we have:

\[ H2b. \text{ Contracts signed during times of highly varying day rate would be of a longer duration.} \]

4.1.3 Asset specificity
Contracts involving jobs that call for unique technical skill can be specified as “asset specific” contracts because such unique skills cannot be used in any other job. In our data set, jack-up drilling in deeper waters requires highly sophisticated knowledge and skill set, and thus the rigs used in those waters were of a special type. Drilling in waters 350 ft or deeper is considered technically challenging (for jack-up drilling), so for our data set the rigs operating in those waters can be considered highly sophisticated rigs that are specific to those waters. Because asset specificity leads to longer contracts as espoused by economists (Joskow, 1987), we have the following hypothesis:
H3. Contracts pertaining to drilling in more technically specific conditions (waters deeper than 350 ft) would be of a longer duration.

4.1.4 History of prior interaction
Another frequently discussed factor in contract decision is the prior interaction between the two contracting parties, both in sociology (Gulati, 1995; Vanneste and Puranam, 2010) and economics literature (Banerjee and Duflo, 2000). When companies repeatedly do business with each other, trust will emerge from the resulting familiarity, which means they believe their partner will behave more responsibly and be less likely to behave in an opportunistic way (Gulati, 1995; Morgan and Hunt, 1994). Hence as a result, companies with more interactions in history, who are more familiar with each other, will rely less on contracts (Gulati, 1995), or focus on technical rather than legal details (Vanneste and Puranam, 2010). In the oil and drilling industry, when oil companies hire drilling rigs, many technical hurdles tend to surface during oil drilling operations and engineers from both firms are usually required to work together to solve these issues. This in turn implies that the two firms need to have a good understanding between them when they sign a contract for a drilling project. Hence, more interactions in history between two firms (i.e. a given pair of oil company and rig firm) would lead to familiarity, and one would expect this familiarity to be an influencing factor of the length of the contracts that may be signed in future. As two firms become familiar with each other, they will not worry that the other party would prematurely leave this partnership and hence they don’t need a long contract to lock them in. Moreover, the subsequent negotiation process becomes smoother, and this reduces the cost of contracting, which in turn implies that the firms will find it more economic to sign multiple contracts, each of shorter duration (than otherwise), mainly to ensure that the contractual terms catch up with market realities as often as possible. Accordingly, we expect that:

H4. Contracts signed between two parties with a history of a larger number of interactions would be of a shorter duration.

4.1.5 Market volatility and history of interaction
As mentioned in H2b, when the market rate varies heavily, we expect the contracts signed to be of longer durations, which not only show the firms’ commitment to the project but also help the firms ride together over the turbulent period. But the firms may not indulge in this commitment unless they are familiar with each other. Hence, history of prior interaction, as an antecedent, could result in the firms’ willingness to be together in periods of uncertainty. We therefore expect there’s an interaction effect between market volatility and prior history. However, we do not have a hypothesis on the specific direction of that interaction, and so we will let the data reveal that.

4.1.6 Control variables: firm size
Last, we consider the size of each contracting firm as a control variable. Size of firms have been discussed in the extant literature as influencers of contracting decisions (Rindfleisch et al., 2010).

Bigger firms tend to look for stability and, from a rig hiring decision view this means that big oil companies and rig firms would tend to sign contracts of longer duration. Corts and Singh (2004) found that larger rig firms are more likely to adopt turnkey contracts, as in these cases the risk is shifted to the rig firms, while the size of the oil company only has a marginal impact on the choice of contract format. In other empirical contexts such as franchising contracts, researchers found that firm size had little impact on contract length decision (Vázquez, 2007). Given the mixed results reported in the literature, we will let the empirical data to reveal the impact of firm size on contract length.

4.2 Conjectures on day-rate influencers
As mentioned in the Introduction, not much research has been done on how hiring rates are affected by economic factors such as asset specificity and volatility. Hence, we make logical arguments and form conjectures. In general, compared to oil companies, rig firms are always at a disadvantage in the sense that their main assets, i.e. rigs, are more or less “stuck” in the area that they are operating in. This points directly to “asset specificity.” Although no research is available in the literature to explain how asset specificity would affect rental price (i.e. day rate), it is intuitive to see that it leads to a lower day rate because the rigs cannot be shifted to another offshore drilling area quickly without incurring huge expenses. Hence, rig firms would be happy to make a compromise on the day rate to keep their rigs hired in the area that they are operating in. With this in mind, we make the following four conjectures.

4.2.1 Duration of the series
When the rig services to be provided are for an overarching project that spans over a long period of time, the rig firms would choose to lower the day rate to increase the probability of getting the contract. Hence, bigger projects (i.e. longer series of successive contracts) involve lower day rates.

C1. Contracts that are part of a series with longer duration have a lower day rate.

4.2.2 Economic volatility
As discussed in Section 4.1.2, we capture volatility by evaluating two factors – μ and σ² – which signify the rate of trend and rate of variation predicted in the day-rate movement. When day rate is predicted to have an upward trend (i.e. a positive μ), it means that the demand for drilling services is higher, and in such a situation, rig firms can demand a higher day rate in the contracts. If the future day rate portends higher variation (larger σ²), rig firms would reduce the day rate to help compensate for securing a contract in the vastly uncertain situation:

C2a. Contracts signed during an uptrend movement in day rate have a higher day rate.

C2b. Contracts signed during a time of highly varying day rate have a lower day rate.

4.2.3 Technology (asset specificity)
When a rig is designed to work on a technically challenging job such as drilling in deep waters (e.g. deeper than 350 ft), its services become indispensable to the oil company, and a higher day rate would be commensurate with the technical expertise
required for the challenging assignment, such as equipment and crew.

C3. Contracts pertaining to drilling in more technically specific conditions (waters deeper than 350 ft) have a higher day rate.

4.2.4 Interaction in history
When a rig firm is more familiar with an oil company, it would send its best crew and rig to the service of the oil company, and in turn seek a higher day rate. One can also argue that working with a known partner results in lower negotiation cost and hence a lower day rate. Because the net impact is not clear, we avoid stating any conjecture but rely on the data to reveal the direction of the impact of prior interaction on the day rate.

4.2.5 Control variables: firm size
When big oil companies hire rigs, they seek stability and hence would not mind signing longer contracts (Section 4.1.3). However, they would negotiate with the rig firms for a reduced day rate in view of the longer contracts. At the same time, firms with a large number of rigs in an area would feel more pressured to maintain the utilization rate, and would hence bid for contracts using a reduced day rate as a competitive advantage. We expect that contracts signed by bigger companies (oil companies or rig firms) have a lower day rate.

In Table II, we give a summary of the hypotheses and conjectures discussed above.

4.3 Model specification
We next put forward the empirical model that we used to test the hypotheses and conjectures. Series $i$ is identified as a series of successive contracts concerning a particular rig signed by an oil company or rig firm. Within each series, we denote each contract $j$ according to a time sequence[4]. For each contract, the simultaneous decisions on contract length and day rate are depicted by equations (1) and (2):

\[ CL_{ij} = \beta_0 + \beta_1 SL_{ij} + \beta_2 Trd_{ij} + \beta_3 Var_{ij} + \beta_4 WD_{ij} + \beta_5 His_{ij} + \beta_6 (Var_{ij} \cdot His_{ij}) + \beta_7 Oil_{ij} + \beta_8 Rig_{ij} + \beta_9 DR_{ij} + \theta_{ij}^{CL} + \epsilon_{ij}^{CL} \]

\[ DR_{ij} = \rho_0 + \rho_1 SL_{ij} + \rho_2 Trd_{ij} + \rho_3 Var_{ij} + \rho_4 WD_{ij} + \rho_5 His_{ij} + \rho_6 (Var_{ij} \cdot His_{ij}) + \rho_7 Oil_{ij} + \rho_8 Rig_{ij} + \rho_9 CL_{ij} + \theta_{ij}^{DR} + \epsilon_{ij}^{DR} \]

Table II Summary of hypotheses/conjectures

<table>
<thead>
<tr>
<th>Influencers</th>
<th>Hypotheses regarding contract length</th>
<th>Conjectures regarding day rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Longer series duration</td>
<td>+</td>
<td>–</td>
</tr>
<tr>
<td>2a. Upward day-rate trend</td>
<td>–</td>
<td>+</td>
</tr>
<tr>
<td>2b. Vastly changing day rate</td>
<td>+</td>
<td>–</td>
</tr>
<tr>
<td>3. Asset specificity (deeper waters)</td>
<td>+</td>
<td>–</td>
</tr>
<tr>
<td>4. Interaction in history</td>
<td>–</td>
<td>Not predicted</td>
</tr>
</tbody>
</table>

Here, $CL$ is contract length; $DR$ is day rate; $SL$ stands for series duration; $Trd$ is the rate of trend of the market day rate; $Var$ is the rate of variance of the market day rate; $WD$ is the water depth dummy for 350 ft; $His$ is the history of prior interactions between the two firms; $(Var \cdot His)$ shows the interaction between market volatility and working history; $Oil$ and $Rig$ are the sizes of the oil company and rig firm respectively. $\theta$ denotes the between-series error and $\epsilon$ represents the within-series error. The details of all the variables and their measures are listed in Table III.

Furthermore, note that decisions on contract length and day rate are made simultaneously in every contract. This implies that there could be some sort of correlation between the two. This has to be tested only empirically, and hence we include the mutual impact of contract length and day rate on each other in the models.

5. Empirical analysis
First, we briefly explain the data that we have used in the empirical analysis, as well as how we extracted some measures from the data. Then we discuss the estimation procedures and results obtained.

5.1 Data
We used data collected from the US oil drilling industry. The data set consists of 2,621 contracts involving jack-up rig hiring in the Gulf of Mexico region, between oil companies and rig firms. Of these, 916 contracts are stand-alone contracts (i.e. there is no successive contract following), and the rest are part of a series of successive contracts. There are 349 series that have two contracts signed continuously, and 108 series with three contracts, etc. The most number of contracts in a series we observed is 14, which was signed in a series lasting 936 days in total (about 2.5 years), with an average contract duration of 67 days. (For details, see Table I) The contracts are from January 2000 to November 2006[5]. For each contract, we have information on the day rate, starting and ending dates of the contract, the names of the rig firm and oil company.
involved, and the technical specifications of the rig, among other details. We observe 15 rig firms who collectively own more than 200 rigs in this area. Large rig firms such as Pride, ENSCO, Rowan, Transocean and R&B Falcon own more than 20 rigs operating in the GOM region. ENSCO and Rowan each signed close to 500 contracts in the observation period. There are 190 oil companies with existing drilling projects during the data period. Only a fraction of them, less than a third, signed more than ten contracts across the years. Among them are big oil firms such as BP, Chevron Texaco, ADTI, and Apache, with more than 100 signed contracts each. The day rate for individual contracts ranges from $14,500 to $195,000 per day.

We measure the duration of a series by adding the durations of all the constituent contracts. In a series, a successive contract would start immediately the day after the last day of the previous contract. The contracts in a given series would be signed between two firms and concerning a specific rig. It is common for two firms to sign contracts for different rigs at the same time, but as each rig has varied technical specifications and handles different types of work, we regard them as different series or projects.

We identify large oil companies by the number of contract days that they have been actively hiring in the Gulf of Mexico during the considered period in the data. We identify large rig firms by the number of rigs that they have in operation in the Gulf of Mexico during the period of interest. The prior interactions are measured by the number of contracts signed between the two contracting parties before the constituent contract, which was one of the proxies used by Ryall and Sampson (2009).

Note that in our data set, all of the covariates mentioned in Table III have observable data points except the rate of trend and rate of variation in the market day rate. We now explain how we extracted these two variables from the available data. For every month in the observation period, we calculated the average day rate of all contracts signed in that month. We then computed the mean ($\overline{U}$) and variation ($S^2$) of the day rate in a six-month moving average window. We used the Geometric Brownian Motion model $\ln([R_t + \Delta t]/R_t) \sim N(\mu \Delta t, \sigma^2 \Delta t)$, where $\Delta t$ is the observation interval of one month, and evaluated the rate of trend (drift coefficient $\mu$) and the rate of variation (variance coefficient $\sigma$) using the formulae:

$$\mu = \frac{\overline{U} + S^2 / 2}{\Delta t}, \quad \sigma = \frac{S}{\sqrt{\Delta t}}.$$  

What do these mean? Suppose the evaluated $\mu$ and $\sigma$ are 0.0012 and 0.0165 respectively (which are the median values of the two), it can be worked out that the probability of the market rate increasing by 10 per cent in another month (30 days) is 31 per cent.

5.2 Estimation procedure

We take each series (of successive contracts) as an individual entity and account for unobserved (i.e. by a researcher) cross-sectional heterogeneity in our estimation using the panel structure. Our focus is to test the effects of the covariates, some of which are series-specific. Hence, we estimate random effects models by assuming the unobserved series heterogeneity is random and uncorrelated with other covariates.

We made two adjustments to the data for better interpretation of the empirical results. First, we noted that the data set contained standalone contracts, in which only one contract was signed with no immediate follow-on contracts for the said rig between the two focal firms. These contracts should not be impacted by series duration but by other covariates. Hence, we defined series duration as zero for stand-alone contracts.

Second, we standardized all of the variables because we found that they had vastly different magnitudes. For instance, the median value of the day rate was $40,000 while the median value of the contract length was only 71 days. The largest rig firm owned 25 rigs and the most active oil firm had a total of 35,429 days of contracts in the Gulf of Mexico region.

Another issue we need to address is the possible mutual endogeneity between contract length and day rate. Said differently, there is a possibility that the decision on contract length might be influenced by the consideration of day-rate and vice versa. Through a two-stage iterative procedure, we explicitly estimated this phenomenon and thus addressed the part of the error caused by mutual endogeneity between contract length and day rate. We estimated equation (1), took the error term as the instrument variable, and derived the forecasts of contract length. Thus the forecasted contract length has taken all information from day rate and hence would not be further affected by day rate. We then let the forecasted contract length enter equation (2). Because the two variables have mutual impact, we ran the procedure iteratively. The detailed steps are discussed below:

- **Step 1**: We estimated the contract length model [equation (1)] using the observed day rate and obtained parameter estimates, which we used to evaluate “predicted contract length.”
- **Step 2**: We estimated the day rate model [equation (2)] using the “predicted contract length” as the proxy for the contract length variable. This gave us a set of parameter estimates, which we used to evaluate “predicted day rate.”
- **Step 3**: We re-estimated the contract length model [equation (1)] using the “predicted day rate” as a proxy for the actual day-rate variable. Using the estimates obtained, we re-evaluated the “predicted contract length.”
- **Step 4**: The process is repeated from Step 2.

We ran the iterative, alternating the estimation procedures within Proc Panel procedure, until we obtained stable parameter estimates for all of the covariates. We got stable estimates in four rounds.

5.3 Results and interpretation

(See Table IV for results.)

Note that all estimates are highly significant. We will see if the empirical results support the corresponding hypotheses (or conjectures) developed, and discuss in detail if the finding is contrary to what we hypothesized.

5.3.1 Result 1: impact of series duration

As hypothesized, both the contract length and day rate are affected significantly by the duration of the series that the focal contact is a part of. In other words, both $H1$ and $C1$ are supported. This is the main objective of our research. We have gained new insight by showing the significant impact of series duration in the presence of all other plausible variables, including volatility and asset specificity, the two factors that are most widely discussed in the economics literature. The fact that B2B firms should look into the project in hand, in addition to traditional economic factors, is a new finding in the literature. This implies that immediate business considerations are as important as the economic considerations in B2B service transactions.
5.3.2 Result 2: impact of volatility

We find that volatility, as measured by day-rate trend and fluctuation, affects both contract length and day-rate decision. The empirical results show that an upward day-rate trend results in a shorter contract length as hypothesized (H2a) and a higher day rate as conjectured (C2a). The result pertaining to contract length is a new finding for B2B marketing literature, as it reveals that rig firms are able to dictate the terms when the day rate shows an uptrend, potentially driven by demand for their rigs.

The predicted day-rate fluctuation goes to increase the contract length (H2b) and reduce the day rate as conjectured (C2b). It is interesting to observe that when the day rate is expected to be volatile, the contracting firms are signing longer contracts, probably to show their commitment to the project, instead of signing short contracts to obtain a frequent update of the day rate. Meanwhile, by committing to a longer contract, the firms could negotiate for a lower day rate.

5.3.3 Result 3: impact of asset specificity

It is surprising to see that the contracts involving unique technology, as measured by "drilling in deeper waters," actually have shorter lengths, contrary to what we hypothesized (H3 is not supported), although these contracts entail a higher day rate as conjectured (Conjecture 3 is supported). We checked with industry experts who opined that uncertainty associated with the projects in deeper waters would force companies to sign multiple shorter contracts although the day rate would be commensurate with the technical specifications. More research needs to be undertaken to find out the mechanism that has led to the observed result.

5.3.4 Result 4: impact of history of prior interaction

As two firms successfully establish more contracts in history, they build familiarity, which in turn results in a higher tendency for them to sign contracts of shorter length so as to keep up with market changes as often as possible. This was supported by the estimates. However, recall that we could not form a conjecture about the impact of prior interactions on the day rate. The estimation result shows that a higher number of interactions in the history between the two parties increases the day rate of a future contract. One rationale for this finding is that the involvement of a known partner motivates the vendor to bring in the best tools and human resources for the job, which results in the higher price, and the customer firm is more receptive to the higher price because of the good relationship with the vendor.

We tested the interaction effect between “market volatility” (i.e. variance of rig hiring rate) and “history of prior interaction.” Interestingly, we got a positive and significant interaction effect on contract duration. The results indicate that volatility results in long contracts in general but even longer contracts when they have longer working history. Meanwhile, firms having a long working history tend to sign into shorter contracts in general but reduce that tendency in times of high volatility. We got a negative and significant interaction effect on day rate. It shows that although partners with longer history tend to contract for higher day rate, under high volatility both parties would like to go for a lower day rate.

5.3.5 Result 5: impact of control variables (firm size)

Larger rig firms were found to sign contracts of longer duration and lower day rates. The results suggest that rig firms of larger size tend to look for stability in a project work and hence sign longer contracts. For this purpose, they may negotiate for a lower day rate. Bigger oil companies did not show a significant tendency in the preference of contract duration or day rate. The result is consistent with the findings by Corts and Singh (2004) that large rig firms have preference on contract formats with different risk levels but not big oil companies.

5.3.6 Result 6: mutual impact of contract length and day rate

Finally, we examine if the decisions on contract length and day rate influence each other. The estimation shows that the two decisions are highly correlated, and in a positive way. Hence, longer contracts typically involve a higher day rate. This indicates that in the oil drilling industry, contract length and day rate are not treated as complementary tools[6]. This is also a new finding for B2B service transactions literature. Further research is needed to explore the in-depth reasons.
6. Conclusions and directions for future research

We focused on contracts signed in the B2B services sector and looked at the factors that influenced contract length and hiring rate (referred to as day rate in our research). We found that while economists had investigated how economic factors such as asset specificity and economic volatility affected the length of stand-alone contracts, they fall short with respect to contracts that are signed as a part of a bigger series of successive contracts. Firms in B2B industries sign such series of successive contracts with their vendors rather often. Examples include the signing of oil drilling contracts between oil companies and rig firms. We produced evidence of the wide prevalence of such series of contracts in the oil drilling industry.

Our objective was to explore if being a part of a series of contracts influences the length of the focal contract and the rental rate. Clearly, the parties negotiating on a current contract would keep the duration of the overarching series (which is likely to be a proxy for the project it is meant to serve) in mind when deciding on the length and day rate of the focal contract. We found strong empirical evidence of this, in the presence of all other plausible economic factors. Using extensive data from the oil drilling industry, our results showed that the duration of a series has a positive effect on the length and a negative effect on the day rate of the constituent contract.

In the process, we also obtained other insights that are new to B2B marketing literature. First, we found that when day rate shows an upward trend, the rig firms seem to have an upper hand not only in asking for a higher day rate but also signing shorter contracts, which enables them to enter another contract negotiation quickly and reap the benefits of the higher day rate. Second, we found that firms in the oil industry sign longer contracts to tide over volatile periods, a finding that contrasts to earlier economic findings. We suspect that this is because the parties want to show their commitment to the project, and hence signing a longer contract enables them to give each other more confidence during volatile periods. A third interesting finding is that bigger rig firms tend to sign longer contracts at lower rental rates, perhaps because they prioritize rig utilization over anything else. This points to asset specificity, espoused by economists.

Our findings are directly relevant for managers of B2B companies because they establish clearly the significant influence of long-term thinking (i.e. that underlies any series of successive contracts) on the decision of an individual contract in that series. Economic wisdom says that a longer contract is likely to vary from one contract to the next within the same series. Economic wisdom also says that if the project is meant to serve) in mind when deciding on the length and day rate of the focal contract. We found that this is because the parties want to show their commitment to the project, and hence signing a longer contract enables them to give each other more confidence during volatile periods. A third interesting finding is that bigger rig firms tend to sign longer contracts at lower rental rates, perhaps because they prioritize rig utilization over anything else. This points to asset specificity, espoused by economists.

Our objective was to explore if being a part of a series of contracts influences the length of the focal contract and the rental rate. Clearly, the parties negotiating on a current contract would keep the duration of the overarching series (which is likely to be a proxy for the project it is meant to serve) in mind when deciding on the length and day rate of the focal contract. We found strong empirical evidence of this, in the presence of all other plausible economic factors. Using extensive data from the oil drilling industry, our results showed that the duration of a series has a positive effect on the length and a negative effect on the day rate of the constituent contract.

In the process, we also obtained other insights that are new to B2B marketing literature. First, we found that when day rate shows an upward trend, the rig firms seem to have an upper hand not only in asking for a higher day rate but also signing shorter contracts, which enables them to enter another contract negotiation quickly and reap the benefits of the higher day rate. Second, we found that firms in the oil industry sign longer contracts to tide over volatile periods, a finding that contrasts to earlier economic findings. We suspect that this is because the parties want to show their commitment to the project, and hence signing a longer contract enables them to give each other more confidence during volatile periods. A third interesting finding is that bigger rig firms tend to sign longer contracts at lower rental rates, perhaps because they prioritize rig utilization over anything else. This points to asset specificity, espoused by economists.

Our findings are directly relevant for managers of B2B companies because they establish clearly the significant influence of long-term thinking (i.e. that underlies any series of successive contracts) on the decision of an individual contract in that series. Economic wisdom says that a longer contract is likely to vary from one contract to the next within the same series. Economic wisdom also says that if the project is meant to serve) in mind when deciding on the length and day rate of the focal contract. We found that this is because the parties want to show their commitment to the project, and hence signing a longer contract enables them to give each other more confidence during volatile periods. A third interesting finding is that bigger rig firms tend to sign longer contracts at lower rental rates, perhaps because they prioritize rig utilization over anything else. This points to asset specificity, espoused by economists.

While we are certain that managers do have some gut feel on how to accommodate the impact of such long-term thinking on short-term contractual engagements, the research has brought that impact out in a more systematic manner and confirmed it with real data. Note that although we use oil drilling industry in empirical analysis, the situation is applicable to many B2B industries. For instance, relationship strategies and uncertainties during economic cycles were analyzed on other industries as well, such as paper industry (Alajoutsijärvi et al., 2001). This conceptual work concluded that firms should change relationship strategies during different phases of boom and bust cycles, i.e. to be more flexible and cooperative or to be more competitive and dominant. Our study gives managers a more practical framework to interpret cooperative or dominant behavior in terms of the decision on contracts.

Although we have achieved some interesting results, instead of the linear regression we have used here, a structural model could be built and applied to the empirical data to more clearly demonstrate the underlying mechanism of the impact that each variable has on the dependent variables, i.e. contract length and day rate. A few of our results are contrary to findings in the extant literature, and more research is needed to determine the reasons for this. For instance, we did not explore the business relationship between the two parties as commonly discussed in sociology literature. Whether project in this context is a proxy of business relationship, trust or commitment, is beyond the scope of this research. Qualitative research could be conducted to explore whether an oil company and a rig firm involving in a longer project has stronger relationship or, vice versa. Furthermore, economic shocks such as what happened in 2007-2008 impact oil and gas sector rather strongly. It will be interesting to study how these shocks affect the oil drilling contracts. Finally, the main goal of this research, i.e. “duration of a series influences each constituent contract,” could be further used to help companies design better contracts.

Notes

1. Note that this series of successive contracts differs from the regular contracts that are signed for a fixed calendar period (annual or monthly) and renewed for the same length every time. For example, GE may sign an annual contract with Amazon to use Amazon’s cloud services and keep renewing it every year. The contracts that we focus on in our research are not annual contracts. The length of a given contract is based on how much time the project needs and the prevailing economic factors and, hence, is likely to vary from one contract to the next within the same series.

2. The model that is widely used to forecast variables like day rate is the geometric Brownian motion. If $R_t$ is the day rate at time = 0 and $R_t$ is the forecast day rate at time $t$, then $R_t$ evolves according to the geometric Brownian motion: $R_t = R_0 e^{\mu t}$, where $Y_t \sim N(\mu t, \sigma^2 t)$ is a Brownian motion with trend coefficient $\mu$ and variance parameter $\sigma^2$.

3. Rig firms generally take a long-term strategic view if they have to move their rigs from one area to another.

4. We removed all contracts shorter than 30 days in the estimation. Short contracts are regarded as temporary or transitional in this industry and may hence serve different objectives.

5. This is an active period when a lot of drilling activities were going on and many rigs were moved to this area seeking contracts. However, after the great recession in 2007-2008, the number of available and contracted rigs kept dropping because of low global oil demand. We hence chose to focus on data between 2000 and 2006, the period in which the oil and gas industry did not face any major external shock.
6 One may wonder if this result is similar to what is commonly encountered in many B2C exchanges such as gym membership and cell phone services, where contracts of longer duration charge less monthly fees compared to contracts of shorter duration. Not really. What we analyze in our research is entirely different. We do not ask if a longer contract entails a smaller rent. We ask: if a person, instead of signing one long duration (say one year) contract, signs repeatedly multiple contracts that collectively run for a year (i.e. with no pre-commitment), how would that affect the length of each constituent contract and the fees?

References

Further reading

Corresponding author
Shanfei Feng can be contacted at: shanfei.feng@monash.edu
Tackling service quality in the telecommunication B2B market

Aysegul Tas and Elif Akagin Ergin
Cankaya Universitesi, Ankara, Turkey

Feride Bahar Kurtulmusoglu
Baskent Universitesi, Ankara, Turkey, and

Omer Faruk Sahin
Cankaya Universitesi, Ankara, Turkey

Abstract
Purpose – This study will attempt to focus on how vendors serve operators, as operator service quality starts with vendor’s technology infrastructure and service quality. The purpose of this study is to exhibit the most important vendor service quality items and dimensions for the operators in the telecommunications industry.

Design/methodology/approach – A total of 268 employees from various age groups, cities, job levels and departments participated in the survey.

Findings – Expected service quality results indicated that operators need high service quality. When telecommunication needs of subscribers are taken into account, it is normal for operators to expect high service quality from vendors. Results also reveal that being dependable and providing continuous support are critical for the telecommunications industry. Perceived service quality results demonstrate that customer expectations failed to be satisfied. In this study conducted in the telecommunications market, the expectations of operator employees regarding vendors is shaped under two dimensions. These dimensions are employee and service center features and provider timeliness and accuracy. When Topsis method was used to determine the most important vendor characteristics, timeliness and trust were identified as the top two criteria.

Originality/value – To the best of the authors’ knowledge, this study is the first to put forth the most important vendor service quality items and dimensions for the operators in the telecommunications industry.

Keywords SERVQUAL, Service quality, Telecommunications industry, Vendor, Operator, TOPSIS method

Paper type Research paper

1. Introduction
In service-based industries, service quality is the most important element that leads to the sustainability of the competitive advantage and overall success of the industry (Ishaq, 2011; Coetzee et al., 2013; Thaichon et al., 2014; Wang et al., 2004; Gokten and Gokten, 2017). Cultivating long-term and productive relationships with customers as well as satisfying their expectations are the most significant objectives in business-to-business (B2B) markets (Krishnan et al., 2013). Perceived service quality and the resulting satisfaction is interpreted as the basic premise for making repeat purchases, establishing trust and loyalty and a long-term relationship (Athanassopoulos et al., 2001; Coetzee et al., 2013; Gounaris and Venetis, 2002). “The positive relationship between perceived service quality and organizational performance is supported through the challenge of being emulated, a fundamental component of competitive advantage” (Athanassopoulos et al., 2001; Amiri Aghdaie and Faghani, 2012; Coetzee et al., 2013; Thaichon et al., 2014). Amiri Aghdaie and Faghani (2012) express that service quality is the key variable throughout the layout of the marketing programs.

During the market segmentation process, a major component of marketing strategy, customers may be examined in two basic dimensions as B2B or business-to-customer (B2C) depending on the consumers’ purchasing objectives (Hutt and Speh, 2012). Woo and Ennew (2005) point out that Nordic and American schools of thought handle the matter of service quality from the viewpoint of consumer markets, rarely mentioning B2B markets. Segmenting industrial markets on the basis of service quality expectations creates a major strategic advantage for managers (Pitt et al., 1996). However, B2B services involve critical discrepancies between customers and service providers, compared to B2C services, because of information asymmetry, intense intangibility and customization of services, low capital investment, information intensity and skilled labor, high customer switching cost and specific marketing channels (Huang et al., 2017; Greenwood et al., 2005; Nordenflycht, 2007). Evaluating service quality in B2B markets is a complex task because of the nature of the relationship between buyers and sellers as well as the more specialized, technology-oriented and co-dependent structure of the current issue and full text archive of this journal is available on Emerald Insight at: www.emeraldinsight.com/0885-8624.htm
B2B services (Krishnan et al., 2013; Vickery et al., 2004). However, it is not a routine task to pursue relations, to elect, evaluate and decide on these B2B service providers (Jackson and Schuler, 1995; Sharma and Sheth, 1997).

Even though service quality possesses significant importance for B2B markets, there is a limited number of academic research studies focusing on determining the quality of B2B services (Molinari et al., 2008; Krishnan et al., 2013). In most of the existing studies, the service quality in B2B markets is analyzed with quite standard norms (Homburg and Rudolph, 2001; Rossmome, 2003; Huang et al., 2017; Krishnan et al., 2013). Some studies appraise the perspective of interaction and relationship approach in the market (Rauyruen and Miller, 2007), but generally the tangible and intangible core offerings that make up service quality are not investigated together (Zolkiewski et al., 2007; Huang et al., 2017; Raychaudhuri and Farooqi, 2013).

Telecommunication market together by complex networks, telephones, mobile phones and internet-linked PCs, the global system touches nearly everyone. Mobile and wireless technologies have become more prevalent since the beginning of the millennium. The market is expected to continue to gain space in the telecommunication services industry, as the number of mobile connections worldwide is predicted to reach nine billion by 2020. The immense potential and tough oligopolistic competition along with the complex nature of customer satisfaction in telecommunications industries in developed as well as developing countries lead to a great effort to determine and conceptualize service quality (Ishaq, 2011; Huang et al., 2017; Raychaudhuri and Farooqi, 2013). Telecommunication market makes it crucial to conduct studies regarding service quality because of a number of major reasons. There are serious market entry barriers, high expenditure rates of IT products, the rapid, complex and unpredictable advance of the telecommunications market itself as well as consumers’ distinct needs and demands (Chen and Hitt, 2002; Lee et al., 2011). The service quality that vendors provide to their operators is the focal point of the service quality of the operators and it is strongly related to vendors’ technological infrastructure (Kang, 2010).

In the light of these considerations, the purpose of this study is to exhibit the most important vendor service quality items and dimensions for the operators in the telecommunications industry. This purpose will be realized through a discussion of the expectations and perceptions of operators’ employees regarding the service quality of vendors. To the best of the authors’ knowledge, this study is the first to put forth the most important vendor service quality items and dimensions for the operators in the telecommunications industry. An extensive review of relevant literature displayed that most of the previous research efforts centered on how operators serve final consumers. This particular research, on the other hand, attempted to analyze the issue of service quality from the viewpoint of operators and vendors. To this end, the paper is organized as follows. The second section of this paper introduces the conceptual framework and research motivation along with research hypotheses. The third section, namely, methodology, focuses on research framework including the measurement scales, survey instrument and the sample of the research. The fourth section exhibits the results and discussions along with data collected through completed questionnaires which are used in statistical analysis and the results presented and discussed. The final section presents conclusion, theoretical and managerial implications with limitations and future research opportunities.

2. Theoretical background

2.1. Service quality literature in business-to-business markets

There is a great deal of interest among various industries regarding service quality (Mentzer et al., 2001). Service quality in B2B markets is of major importance, as it has a direct impact on the services provided to the customers (Gounaris, 2005). In B2B markets, studies regarding the quality of service have often used the SERVQUAL scale developed by Parasuraman et al. (1985). SERVQUAL measures service quality by comparing the perception and expectation of customers’ evaluation results. However, the results of the studies where SERVQUAL scale has been implemented in B2B markets are not consistent (Pitt et al., 1996). The distinct differences between B2C and B2B markets pose serious difference of opinion regarding SERVQUAL’s suitability for B2B markets (Krishnan et al., 2013). Besides, it is deemed more acceptable to use industry-specific service quality scales (Babakus and Boller, 1992).

Another scale that is used to evaluate service quality in B2B markets is the one developed by Grönroos (1984) where he defines the concept of quality for industrial consumers as technical and functional quality. Technical quality is about the core operation related parts of the service, whereas functional quality is concerned with the interaction between individuals from the two organizations. Bienstock et al. (1997) developed a three-dimensional scale (PDSQ) for the measurement of service quality. Morgan (1991) classified service quality for industrial consumers as the outcome elements customers receive from the service provider and process elements that depict how the service is delivered with regard to the interaction between the staff from the two companies. Edwardson et al. (1990) expressed integrative quality as the provider’s ability to ensure that all the sub-systems that are required to deliver the service are actually coordinated well enough. Szmigin (1993) referred to output quality as the customer’s expected output quality. Szmigin (1993) opted to use the terms “hard” and “soft” quality instead of “technical” and “functional” quality. Halinen (1994) associated output quality dimension as immediate outcome and final outcome. Immediate outcome is related to the success of the provider to cater to the customer with a solution to its problem, whereas final outcome is concerned with the effect of the service offered to the customer. Gounaris and Venetis (2002) classified B2B service quality dimensions under five headings which include potential quality, hard process quality, soft process quality, immediate outcome quality and final outcome quality. In a separate 2005 study, Gounaris set forth B2B service quality as potential quality, hard quality, outcome quality and soft quality. Woo and Ennew (2005) developed a six-dimensional and Duff (2004) produced a nine-dimensional AUDITQUAL scale. Basically, with B2B services, there appears to be a focus on hard to soft service quality; however, with B2C services, there is a tendency to soft to hard quality (Stan et al., 2007).
SERVQUAL dimensions have developed through traditional service delivery; yet today, the vast increase in the utilization rates for IT services has changed the nature of services (Zhu et al., 2002).

2.2 Telecommunication market service quality context
The telecommunications industry is viewed as the foundation of economic growth and plays a significant role in the economies of countries and forms the index of social prosperity (Ruhle et al., 2011; Agyapong, 2011). Additionally, this industry enables exchange of information, improves the relationships between individuals and businesses and assists in the decision-making process (Ishaq, 2011). When viewed in the context of telecommunication, Van der Wal et al. (2002) used SERVQUAL scale in South Africa, and Johnson and Sirikit (2002) used it to measure the service quality in Thai telecommunications industry. The relationship between service quality and customer satisfaction in the telecommunications industry has been proven in various studies (Kim et al., 2004; Lee et al., 2001; Lim et al., 2006). In technology-intensive markets such as the telecommunications industry, the core offering and value creation criteria of the service is of great significance (Grönroos, 2000a, 2000b). The value creation dimension in particular, with its regular interactions, customized solutions and always being readily available, responds to the purpose of creating trust and credibility (Chumpitaz and Paparoidamis, 2004; Rossonme, 2003).

It is not easy for telecommunication operators to meet the demand for high speed internet bandwidth and high service quality. They need to continually renew, swap, upgrade or innovate their infrastructure. They need to follow the latest technology and infrastructure with passive or active devices and adapt them to their network. They need to invest in their network and spend money for this. Operators need to collaborate with vendors to provide better service to their consumers. Operators do not only buy networks, but also services from vendors. Vendors make their best efforts to deliver high-quality devices to operators to get more market share. Mostly, operators buy these devices with end-to-end services such as surveys, installations, commissioning, warranties, post warranties, remote support, on-site support, bug fixing, troubleshooting, babysitting services, etc. High quality, state-of-the-art technology equipment is important for operators to select the vendor but after sales services are also a very important decision keystone for operators when selecting a vendor. With the globalization and standardization of protocols, equipment quality and the latest technology do not make a difference between vendors. This makes service more important for vendors to be selected by operators. Operators can select multiple vendors to purchase the latest technologies and services; but mostly, vendors will have different market shares. Operators are racing with each other to get more subscribers, but they need to have enough quantity and quality of technological infrastructure to effectively serve their customers.

3. Methodology
3.1 Research design
Based on all of the above discussions, four hypotheses have been developed to evaluate the most important vendor service quality items and dimensions for the operators in the telecommunications market:

H1. There is a context-dependent service quality dimensions framework for telecommunication market.

H2. There is a statistically significant difference between expected service quality and perceived service quality.

H3. There is a statistically significant difference between expected service quality and perceived service quality according to different operators’ results.

H4. There is a statistically significant difference between expected service quality and perceived service quality according to different vendors’ results.

3.2 Research context – Turkey’s telecommunications industry
The past two decades have seen significant changes for Turkey’s telecommunications industry. The market holds much potential given the size of its population, which is characterized as young and increasingly urbanized as well as technically literate. The biggest markets for telecom services are the Asia/Pacific region, Europe and North America. Turkey happens to be one of these major markets. Turkey’s mobile sector continues to move forward with 4G LTE networks launched in April 2016 and interest beginning to arise in 5G development. Total broadband subscribers reached to 66.4 million in Turkey at the end of the second quarter of 2017. DSL is the main fixed broadband technology in the country with 8.1 million subscribers as of second quarter of 2017. Compared to OECD average of 30.1 per cent fixed broadband population penetration rate, Turkey has an important growth potential with its 13.9 per cent penetration rate. On the mobile broadband side, the total number of users was around 55.3 million corresponding to 69.3 per cent population penetration rate at the end of the second quarter of 2017. Compared to OECD average of 99.3 per cent mobile broadband penetration rate, Turkey has an important growth potential in terms of mobile broadband penetration.

There are three big telecommunications operators in Turkey, called in this research as Operators 1, 2 and 3. They endeavor to get more market share and continue to increase customer loyalty. Additionally, they try to meet their consumers’ requirements and increase customer satisfaction with their high-quality services. In this paper, we will conduct our research on the three major operators in Turkey and evaluate their four biggest suppliers. All operators provide services both for mobile and fixed telecommunication services. Operator 1 has more than 100 years of history and has power in the fixed segment. Operator 1 has around 38 million subscribers. Of Operator 1’s shares, 15 per cent have been traded on the BIST as of May, 2008. GSM telecommunication started with Operator 2 in 1994. Operator 2 has around 35 million subscribers and is powerful in the mobile segment. Of Operator 2’s shares, 35.88 per cent are traded on the BIST and NYSE. Operator 2 is the only company quoted on the NYSE. Operator 3 is the second largest mobile operator in Turkey with around
Tackling service quality

Aysegul Tas et al.

Journal of Business & Industrial Marketing

Volume 34 · Number 7 · 2019 · 1580–1594

Table I Service quality weighted criteria scores

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weighted score</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ5</td>
<td>5.0</td>
</tr>
<tr>
<td>SQ6</td>
<td>5.0</td>
</tr>
<tr>
<td>SQ7</td>
<td>5.0</td>
</tr>
<tr>
<td>SQ13</td>
<td>5.0</td>
</tr>
<tr>
<td>SQ8</td>
<td>4.8</td>
</tr>
<tr>
<td>SQ16</td>
<td>4.8</td>
</tr>
<tr>
<td>SQ15</td>
<td>4.7</td>
</tr>
<tr>
<td>SQ12</td>
<td>4.5</td>
</tr>
<tr>
<td>SQ11</td>
<td>4.3</td>
</tr>
<tr>
<td>SQ14</td>
<td>4.3</td>
</tr>
<tr>
<td>SQ9</td>
<td>4.2</td>
</tr>
<tr>
<td>SQ10</td>
<td>4.2</td>
</tr>
<tr>
<td>SQ19</td>
<td>4.2</td>
</tr>
<tr>
<td>SQ2</td>
<td>4.0</td>
</tr>
<tr>
<td>SQ4</td>
<td>4.0</td>
</tr>
<tr>
<td>SQ18</td>
<td>3.8</td>
</tr>
<tr>
<td>SQ1</td>
<td>3.7</td>
</tr>
<tr>
<td>SQ20</td>
<td>3.7</td>
</tr>
<tr>
<td>SQ17</td>
<td>3.5</td>
</tr>
<tr>
<td>SQ3</td>
<td>3.2</td>
</tr>
</tbody>
</table>

The final survey was constructed by researchers based on a five-point Likert scale using a SERVQUAL two-part structure with 20 items, along with six demographic questions such as gender, age, education level, job position and so forth. The first part included questions measuring operator employees’ needs and expectations, while the second part contained perception questions. Next, a pilot study was performed on 30 operator employees to establish if the formulated questionnaire was correct and understandable. Ten of the participants were female, and 20 of the participants were aged 30–45. Following the pilot survey, some changes were made to the survey form, and the content validity of the survey was deemed adequate.

22 million subscribers. Operator 3 has been serving as an operator worldwide and started to serve in Turkey in 2005.

Vendor 1 was a global France-based company serving more than 130 countries all over the world and is now a part of a Finland-based multinational telecommunications Provider Company. Vendor 1’s history goes back to early 1900s and 35 per cent of its shares are traded on the BIST. Vendor 2 is a Sweden-based multinational telecommunications Provider Company and was founded in 1876. Vendor 2 provides its services in around 180 countries. Vendor 3 was founded in 1987 and has its headquarter in China. Vendor 3 provides service in more than 140 countries all over the world with around 170,000 employees. Vendor 4 was founded in 1985 with headquarters in China. Vendor 4 has been traded on both SZSE and SEHK and has around 69,000 employees all over the world.

3.3 Focus group

Focus groups are mainly used to obtain important point of views regarding the experiences, opinions and observations of group members (Massey, 2011). The appropriateness of the participants of focus group, the purpose and scale of the research and reaching the saturation point are mainly the most important decision criteria for focus group studies (Cameron, 2005). With this in mind, in this study, one focus group using six telecommunications industry professionals is developed. During the focus group study, the professionals, in conjunction with a trained moderator, are asked to define their most important expectations relating to a vendor and the preferred vendor service features in their own words. The focus group session lasted 90 minutes and was recorded to be transcribed later. An observer was present to take additional notes on the sessions. The professionals also completed a demographic questionnaire. Of the six professionals, two were female, and the average age was 46 years.

SERVQUAL measures service quality by comparing the perception and expectation of customers’ evaluation results with five dimensions. These are tangibility, reliability, responsibility, security and empathy. In this particular study, content validity is ensured by using a scale derived from SERVQUAL scale. Following up on Goss and Leinbach’s (1996) proposal, a focus group was constituted for the study, and these dimensions along with the significance levels of their items were evaluated for the telecommunications industry. As SERVQUAL variables are mostly standard for service quality and can be applied to different industries, the results cannot be analyzed unless the importance of the criteria for telecommunication industry is well understood. Hence, before starting the survey with operators, it was decided to weigh the criteria and find the importance of each criterion. By this way, we compare the service quality results and their weight for each criterion. It shows us whether the telecommunication industry service quality results match the weighted criteria results. The focus group’s discussion was then analyzed by the researchers, and the final scale and the related weights for the items were determined. Modifications have been made according to telecommunication industry requirements and items have been reduced to 20 for expected service quality and 20 for perceived service quality (Table I).
3.4 Survey: sampling and data collection

The population of the survey is operator employees. Unfortunately, it is hard to find the real universe for target group and reach all operators and their employees for completing the survey. The snowball method will be one of the limitations to reaching the employees. Many methods will be used to reach operator employees:

- High-level managers were reached and sent the survey link and purpose to some groups via e-mail.
- Phone calls were used to request them to fill out the survey online.
- Professional social media platform was used to reach operator employees and request them to fill out the survey.

The survey method was used as an application. Because of the logistical challenges of reaching out to different cities and different operator employees, an online survey was used. The target group was informed about the survey link, after which they filled out the survey online. With this method, we were able to reach employees from 34 cities. The surveys were applied during a two-week period in December 2017. Respondents were selected on a voluntary basis. The goals of the research were explained to the operators’ employees. All of the participants were informed that the research was an academic study targeting to improve the service quality of vendors.

Cochran’s quantitative sampling formula is used for the sample representativeness, as it is mentioned in research methods in social sciences (Gürbüz and Şahin, 2015):

\[ n = \frac{n_0}{1 + n_0/N} \]

\[ n_0 = \frac{t^2 \times s^2}{d^2} \]

where:

- \( N \) = Universe Amount;
- \( N \) = Sampling Amount;
- \( t \) = z value (for 95 per cent reliability 1.96);
- \( s \) = standard deviation; and
- \( d \) = acceptable deviation tolerance.

Difficulty for the formula, the acceptable deviation tolerance and standard deviation cannot be well-known. Hence, we will use 6 per cent as deviation tolerance and 0.5 for the standard deviation. If we put the values in the formula, then we can calculate our sampling amount as 260.

\[ n_0 = \frac{1.96^2 \times 0.5^2}{0.06^2} = 266,77778 \]

\[ n = \frac{266.77778}{1 + 266.77778/10000} = 259,845673 \]

The demographic profile of the respondents is summarized in Table II. The actual response rate was 80 per cent, and the survey was answered by 268 respondents. In terms of demographics, 41.4 per cent of the sample were between the ages of 30 and 39; 91.4 per cent were male; and 49.6 per cent had an undergraduate degree. A total of 268 employees from various age groups, cities, job levels and departments participated in the survey. It was observed that the telecommunications industry in general and the operators in particular were dominated by male employees with 91 per cent. Considering that most jobs in the telecommunications services industry are technical, most employees are engineers or technicians. Therefore, this particular result is not very surprising.

To evaluate the homogeneity of the survey, the reliability is calculated using Cronbach’s a coefficient. The result is a 0.860, showing that the survey is highly reliable.

3.5 Techniques of data processing

SERVQUAL items were assessed by vendor executives to pinpoint the crucial matters for the telecommunications industry. Of 22 SERVQUAL variables, 20 variables were selected to be included in the survey instrument. Vendor executives from the telecommunication industry weighted the significance of each of these variables. The weighted scores were assessed via the TOPSIS model. It was fundamental to
understand the importance of each SERVQUAL variable in the telecommunications industry. These weighted results were then compared to operators' expectations later in the study, following the completion of the surveys. Most of the results were observed to be similar to executives' weighted results, making it possible to put forward stronger claims about service quality.

To categorize participants' needs and expectations, Factor Analysis (FA) was performed on the expectation items. FA is a statistical technique applied to a single set of variables to form coherent subsets that are relatively independent of one another be a reduction of a large number of observed variables to a smaller number of factors (Tabachnick and Fidell, 2001). FA was performed to categorize important and statistically significant customer needs and expectations. Exploratory FA was done with quartimax rotation through Principal Components Analysis (PCA) on 20 items. Kaiser–Meyer–Olkin score was 0.869. As seen in Table III, it was found two main factors namely employee and service center features (17 items), Provider timeliness and accuracy (3 items). Factor loads and internal consistency coefficients are given in Table III.

In the confirmatory factor analysis measurement model, $\chi^2/df$ 2.76 (<3), RMSEA value 0.080, NFI value 0.98, NNFI value 0.99, CFI value 0.99, GFI value 0.87 and AGFI 0.82 are within acceptable fit limits (Figure 1).

Table III  Fit indices for measurement model

<table>
<thead>
<tr>
<th>Overall Fit Measure</th>
<th>$x^2$ Value</th>
<th>df</th>
<th>RMSEA</th>
<th>SRMR</th>
<th>NFI</th>
<th>NNFI</th>
<th>CFI</th>
<th>GFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>425.39</td>
<td>154</td>
<td>0.080</td>
<td>0.026</td>
<td>0.98</td>
<td>0.99</td>
<td>0.99</td>
<td>0.87</td>
<td>0.82</td>
</tr>
</tbody>
</table>

Convergent validity is tested by the correlation between the statements, average variance explained (AVE) and combination reliability (CR) in this study. Average variance explained refers to the variance explained by the variables regarding the factors, whereas combination reliability shows internal consistency (Doğruel and Yağcı, 2015). Average variance explained is accepted to be above 0.5, and 0.4 value is considered to be sufficient for convergent validity (Huang et al., 2013). According to Lin and Huang (2013), if AVE value is below 0.5, but CR value is above 0.6, then convergent validity of the construct is sufficient. Obtained results imply that the construct has convergent validity. The average variance explained values of two factors are over 0.5. This implies that the scale has discriminant validity (Fornell and Larcker, 1981).

When the researchers check the overall results, it shows that service quality expectation has a high average. And when variables are checked one by one, Variables 2 and 6 got the highest scores with 4.6 (Table IV). Expected service quality and perceived service quality gap analysis show whether expectations were satisfied with perceived scores or not. Results show us that the SERVQUAL overall score does not meet the expectation. There is a gap of −0.5 points between average perceived and average expectation results. Of all SERVQUAL variables, 19 variables are dissatisfied (Table V).

The SERVQUAL GAP model was used to outline the service quality results by comparing perceived and expected service quality. The findings of the study demonstrated that all of the hypotheses were accepted (Table VI).

4. Results and discussion

4.1 Hypothesis results

Gap analysis indicated that vendors failed to meet customer expectations. Of the 20 service quality variables, only one
(Variable #3) was satisfied and that variable had to do with provider’s employees being clean shaven and well-dressed. This particular variable can be deemed less significant in terms of impact for service considerations in the telecommunications industry. Being well-dressed and well-groomed may be very important in the food and restaurant industry. However, in the telecommunications industry, wearing personal protective equipment, especially for onsite engineers, is more important than being well-groomed. Considering that most of the daily support is provided remotely, even the customers cannot see who they get the service from. In the telecommunications industry, when a customer wants to get service, it is more important to deliver the service than pay individual attention to customer. If service is delivered, then the customer will very likely be satisfied, whereas it is hard to satisfy your customer with individual attention without delivering the service.

Expected service quality results indicated that operators need high service quality. When telecommunications needs of subscribers are considered, it is normal for operators to expect high service quality from vendors. Results also reveal that being dependable and providing continuous support are critical for the telecommunications industry. Perceived service quality results demonstrate that customer expectations failed to be satisfied. Overall, results exhibited that operators were not satisfied with the current service quality. Overall, as perceived service quality < expected service quality, it can be stated that the result for the telecommunications industry from an operators’ point of view is low quality. This finding may be because of intense competition between operators and vendors. On a daily basis, operators and vendors try to decrease their OPEX costs, which are directly related to service costs. This cost mostly affects the quality of provided services. As most of the variables could not be satisfied, it can be argued that vendors do not have enough knowledge about their customers’ expectations.

Two of the highest gaps are observed for Variables 8 and 9, and these variables are concerned with provider giving information about planned services and keeping accurate service records. Both of these variables can have a major effect on service quality. The gap here indicates that vendors need to understand and serve the service employees in a more efficient capacity. After all, service employees have a considerable effect on their customers’ perceptions. The tangibility dimension (Variables 1 through 4) is about the appearance of the given service parameters. Expectations of customers for tangibility dimension have failed to be met by vendors. Services are intangible by nature; however, the issue under focus here is the tangible components of a service that customers can see such as physical installations of equipment, service handbooks, etc. The reliability dimension (Variables 5 through 8) is about being trustworthy. It can be noted as the most critical and trivial dimension from the viewpoint of customers. Unfortunately, results indicate the biggest gap between expectations and perceptions for this dimension. Vendors must place a greater emphasis on reliability in the quest for increasing their service quality. The responsibility dimension has four variables as well (Variables 9 through 12) and it is concerned with availability and timely support. Analysis results reveal that vendors are unable to provide fast service and they fail to set up their support centers in the optimal way customers need. Variables 13 through 16 are linked with the security dimension. While it may not be a realistic notion to assume all service employees to have extra competent service skills, they should be trained by vendors to have at least the basic skills regarding customer security, communication and contact issues. This would have a major impact on increasing perceived service quality. Empathy dimension centers on understanding customers’ needs and

<table>
<thead>
<tr>
<th>No.</th>
<th>Hypothesis</th>
<th>Result</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>There is a context dependent service quality dimensions for telecommunication market</td>
<td>Accepted</td>
<td>Two dimensions; see Tables III and IV</td>
</tr>
<tr>
<td>H2</td>
<td>There is statistically significant difference between expected service quality and perceived service quality</td>
<td>Accepted</td>
<td>GAP 1 shows −0.5 points gap between average perceived and average expectation results</td>
</tr>
<tr>
<td>H3</td>
<td>There is statically significant difference between expected service quality and perceived service quality according to different operators’ results</td>
<td>Accepted</td>
<td>GAP 3 shows that gaps are, for Operator 1: −0.5, for Operator 2: −0.6, for Operator 3: −0.4</td>
</tr>
<tr>
<td>H4</td>
<td>There is statically significant difference between expected service quality and perceived service quality according to different vendors’ results</td>
<td>Accepted</td>
<td>GAP 4 shows that gaps are, for Vendor 1: −0.3, for Vendor 2: −0.9, for Vendor 3: −0.5, for Vendor 4: −0.6</td>
</tr>
</tbody>
</table>

Table V SERVQUAL gap analysis for items based

<table>
<thead>
<tr>
<th>Expectation/Perceived variables</th>
<th>Average expectation results</th>
<th>Average perceived results</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>44</td>
<td>3.9</td>
<td>−0.5</td>
</tr>
<tr>
<td>Item 1</td>
<td>4.4</td>
<td>3.9</td>
<td>−0.5</td>
</tr>
<tr>
<td>Item 2</td>
<td>4.6</td>
<td>4.0</td>
<td>−0.6</td>
</tr>
<tr>
<td>Item 3</td>
<td>3.9</td>
<td>3.9</td>
<td>0.0</td>
</tr>
<tr>
<td>Item 4</td>
<td>4.4</td>
<td>3.8</td>
<td>−0.6</td>
</tr>
<tr>
<td>Item 5</td>
<td>4.5</td>
<td>4.0</td>
<td>−0.5</td>
</tr>
<tr>
<td>Item 6</td>
<td>4.6</td>
<td>4.0</td>
<td>−0.6</td>
</tr>
<tr>
<td>Item 7</td>
<td>4.5</td>
<td>3.9</td>
<td>−0.6</td>
</tr>
<tr>
<td>Item 8</td>
<td>4.5</td>
<td>3.8</td>
<td>−0.7</td>
</tr>
<tr>
<td>Item 9</td>
<td>4.5</td>
<td>3.8</td>
<td>−0.7</td>
</tr>
<tr>
<td>Item 10</td>
<td>4.4</td>
<td>3.9</td>
<td>−0.5</td>
</tr>
<tr>
<td>Item 11</td>
<td>4.4</td>
<td>3.9</td>
<td>−0.5</td>
</tr>
<tr>
<td>Item 12</td>
<td>4.3</td>
<td>3.8</td>
<td>−0.5</td>
</tr>
<tr>
<td>Item 13</td>
<td>4.5</td>
<td>3.9</td>
<td>−0.6</td>
</tr>
<tr>
<td>Item 14</td>
<td>4.4</td>
<td>3.9</td>
<td>−0.5</td>
</tr>
<tr>
<td>Item 15</td>
<td>4.4</td>
<td>4.2</td>
<td>−0.2</td>
</tr>
<tr>
<td>Item 16</td>
<td>4.5</td>
<td>4.0</td>
<td>−0.5</td>
</tr>
<tr>
<td>Item 17</td>
<td>3.9</td>
<td>3.8</td>
<td>−0.1</td>
</tr>
<tr>
<td>Item 18</td>
<td>4.2</td>
<td>3.9</td>
<td>−0.3</td>
</tr>
<tr>
<td>Item 19</td>
<td>4.3</td>
<td>3.9</td>
<td>−0.4</td>
</tr>
<tr>
<td>Item 20</td>
<td>4.4</td>
<td>3.9</td>
<td>−0.5</td>
</tr>
</tbody>
</table>

Table VI Hypothesis conclusion
requirements. Of all of the five dimensions, this particular one has the lowest gap but still fails to meet customers’ expectations. Even within the same industry, different operators may have different service quality expectations and perceptions. Average results suggest that three different operators have nearly the same scores both for expectations and perceptions. This particular finding could make the vendors’ job easier in the sense that they can set their quality standards according to the average industry expectations and thereby satisfy a majority of the operators. However, the results exhibit that the expectations of all three operators remained unmet. The analysis disclosed that there is indeed a significant difference among the perceived service quality levels of different vendors. This finding pointed out that some of the vendors have the ability to determine the telecommunication industry’s expectations and tailor their services accordingly, whereas some other vendors need to improve their standards for better quality.

In this research study conducted in the telecommunications market, the expectations of operator employees regarding vendors is shaped under two dimensions. These dimensions are employee and service center features and provider timeliness and accuracy. This situation indicates that traditional SERVQUAL dimensions does not embrace service quality dimensions for all industries. There may be a need for context-dependent service quality dimensions for each particular industry.

When Topsis method was used to determine the most important vendor characteristics, timeliness and trust were identified as the top two criteria. Timeliness for each operation is very important to avoid subscribers pulling out of the service. These criteria may be linked with hard process quality B2B dimension discussed by Szmigin (1993), Gounaris (2005) and Gounaris and Venetis (2002) in the relevant literature as well as Grönroos (1984) discussions of technical quality dimension. Because of various security and confidentiality regulations in the telecommunications industry, dependency is highly important. Also, trust, care and attention of the employee during their interaction is presented as a significant finding. These criteria bear a striking resemblance to soft process quality (Szmigin, 1993; Gounaris and Venetis, 2002; Gounaris, 2005) and functional quality (Grönroos, 1984; Lehtinen and Lehtinen, 1991) and process elements (Morgan, 1991) dimension items.

4.2 Discussion
As a result of this study, the characteristics and abilities of vendors in the telecommunications industry have been identified as prominent elements with an impact on service quality. As Frese and Fay (2001) and Parker et al. (2006) have pointed out, it is very important for employees to be proactive and to take initiative while serving their customers. However, Gallup’s (2013) study depicts similar results to this particular research, indicating that employees are not able to meet customers’ expectations. This situation proves the significance of training and internal marketing efforts (Flint et al., 2002; Gale, 1994; Hamel and Prahalad, 1994; Woodruff and Gardial, 1996). The interaction between service-provider employees and their customers is a key component in high-contact service industries such as telecommunications (Hartline and Ferrell, 1996; Vroman and Luchsinger, 1994; Parasuraman et al., 1991). In some studies, managing service quality was interpreted as a function of service employees (Goldstein, 2003).

The expected service quality that is emphasized in this study is a major component of employee and customer interaction in high-contact service industries (Kellogg and Chase, 1995). The information quality is appraised as a significant motivation factor, as it assists customers’ evaluation of data exchange performance (Chen and Kao, 2010; Hui et al., 2004). The customer can keep track of every step of the service process. Information quality can be a distinguishing element among vendors, thus can be considered as a major vendor selection criterion for operators (Collier and Bienstock, 2006; Lee et al., 2009).

Provider timeliness and accuracy can be classified as a service outcome factor and it can be identified among hygiene factors, as it is approved as a regular performance standard (Herzberg, 1968). This particular factor is a mandatory need rather than a distinct element among vendor services because it produces the core of the service (Chowdhary and Prakash, 2005). The service literature examines process factors as motivators and service outcome factors as hygiene factors (Hui et al., 2004). Employee and service center features, which can be classified as process factors, are core elements that motivate customers and assist their vendor selection process. However, these particular factors do not always result in the change of service providers by customers (Hui et al., 2004).

The two dimensions regarding the service quality in the telecommunications industry have been observed as compatible with service outcome and process factor framework. Previous literature relevant to this topic in B2B market centers on the motivator/hygiene classifications (Mentzer et al., 1997). This situation stresses delivering value added services in highly competitive markets can be a source of competitive advantage. For example, information quality, a prominent factor of this research, can be interpreted within this context.

5. Conclusion
The rapid acceleration rate of the telecommunications market along with the intense competition make it crucial to measure and prioritize service quality. Turkey has great potential for growth in telecommunications and the internet sector given its young population and high technology adoption rates. This research aimed to provide a deeper understanding of the service quality of Turkey’s telecommunications industry from the operators’ point of view by analyzing the expectations and perceptions of operators regarding service vendors.

5.1 Theoretical implications
Theoretically, this study supports the assumption that service quality dimensions are industry-specific while revealing the most important service quality dimensions in the B2B market. Additionally, the study puts forward findings that guide vendors with regards to operators’ service quality expectations and perceptions. As a result of the study, it is determined that operators has a consistency about the service quality level of the vendors. This finding indicates that there are common criteria
for responding to the expectations of the entire market about service quality. Thus, it can be concluded that there is no need to develop customized strategies for each of the operators regarding service quality. On the other hand, it has been revealed that special attention must be paid to service process elements. Considering the level of competition in the telecommunication market, it is clear that positioning with value-added services is essential.

5.2 Managerial implications
This study contributes to telecommunication operators, telecommunication service providers as well as future telecommunication service quality studies. This study was modelled for the three largest operators and the four largest vendors in Turkey and abroad.

As most service quality variables are directly related to service employees, vendors should also make sure that their employees are familiar with these quality variables and train them to satisfy customers’ expectations. It is highly probable that many service employees merely solve the problems but do not have enough knowledge about service quality variables or the significance of customer satisfactions. Service jobs should be driven by customer expectations, and vendors should set customer expectations as their main service quality criteria. Vendors should not only carry out descriptive research regularly about service quality, but also put in place essential action plans. Vendors must make sure to coordinate and control the results of these action plans with routine research efforts to check for improvements and/or shortcomings. Internal marketing is an effective activity for creating satisfied and motivated employees (Wieseke et al., 2009). For this reason, it can be recommended to managers as a significant strategy to increase the quality of service provided to operators by vendors. Providing service quality training to vendors to develop their knowledge, skills and abilities will not only improve the services offered but also prevent service errors (Boshoff and Allen, 2000). Along similar lines, the complex and rapidly changing environmental variables in high-contact services necessitates the empowerment of service employees (Bell and Menguc, 2002; Ueno, 2014). Therefore, the vendors serving in the telecommunications industry must apply internal marketing as well as employee empowerment strategies.

5.3 Limitations and further research
The current study entails certain limitations. First, even though the data collection process is reliable and has yielded valid results, future studies may use probabilistic sampling method for generalizability purposes. Second, the study encompasses a national context. Nonetheless, various studies have determined that perceived service quality is culture-specific (Cronin and Taylor, 1992). One of the greatest challenges encountered during this research was the ability to have access to operators’ employees. Company intranets and other online social networks were used to reach out to these employees. As a result, 268 employees took part in the survey. For future research studies along this stream, this model can be enlarged to include more operators and other service providers in various regions of Turkey. Finally, it must be noted that the results of this study need to be constantly revisited as soon as newer data are available.

Future studies could employ a longitudinal design to test for reciprocal impact for operators expected service quality from vendors. Furthermore, this study could be extended to different cultures with distinct market structures. The sample of this study was predominantly male because of the nature of the work force. This is another limitation that should be taken into consideration for similar studies in the future.

References


**Further reading**

Edvardsson, B., Gustavsson, B. and Riddle, J. (1990), “An expanded model of the service encounter with emphasis on cultural context, research report 890:4”, CTF Services Research Centre, University of Karlstad, Karlstad.


**Corresponding author**

Feride Bahar Kurtulmuşoğlu can be contacted at: bahar@baskent.edu.tr

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com
The role of customer orientation in key account managers’ performance: a client network perspective

Yi Liu
Antai College of Economics and Management, Shanghai Jiao Tong University, Shanghai, China
Xue Li
Antai College of Economics and Management, Shanghai Jiao Tong University, Shanghai, China and Guotai Junan Securities Co Ltd, Shanghai, China

Maggie Chuoyan Dong
Department of Marketing, City University of Hong Kong, Kowloon, Hong Kong and School of Marketing, University of New South Wales, Sydney, Australia

Abstract
Purpose – The purpose of this study is to investigate how does key accounts managers’ (KAMs’) customer orientation affect customers’ repurchase intention and how do tie strength and structural holes in KAMs’ client networks moderate these linkages.

Design/methodology/approach – Paired data of 208 dyadic relationships between KAMs and customers in several Chinese industries are subjected to multiple linear regression analyses.

Findings – KAMs’ functional customer orientation can directly increase customers’ repurchase intention, whereas relational customer orientation cannot do that. With strong ties in client networks, KAMs’ relational customer orientation could promote customers’ repurchase intention, whereas when there are many structural holes in a client network, relational customer orientation would constrain customers’ repurchase intention. In addition, structural holes can enhance the effectiveness of functional customer orientation in facilitating customers’ repurchase intention, but tie strength has no impact on this.

Originality/value – This study pays attention to the emerging topic of KAMs’ customer orientation and introduces KAMs’ client networks as a new contextual factor. The findings not only address the outcomes of KAM’s customer orientation but also indicate the vital role client networks play in determining the effectiveness of KAMs’ customer orientation.

Keywords Repurchase intention, Customer orientation, Client network, Key account manager

1. Introduction
Key account managers (KAMs) are specialized personnel responsible for direct contact with strategically important customers (Davies and Ryals, 2013). They play the roles of coordinators (Homburg et al., 2002), boundary spanners (Hutt and Walker, 2006) and even entrepreneurs (Wilson and Holt, 2014) facing the clients that are most strategically valuable to firms. Thus, KAMs should be customer oriented and work to ensure customers’ long-term interest and satisfaction (Guenzi et al., 2007; Wilson and Holt, 2014). Key customers often have more special and complex requirements than ordinary customers (Workman et al., 2003; Guenzi et al., 2009; Gounaris and Tzempelikos, 2014). Therefore, KAMs face more difficulties than ordinary salespeople when uncovering each key account’s latent needs and adapting products and services to best satisfy them (Homburg et al., 2011b). These difficulties may cause uncertainty about whether KAMs could effectively implement the customer orientation to make their key clients willing to repurchase, which finally determines KAMs’ sales performance.

Previous research on customer orientation has mainly explored the factors varying the effectiveness of their customer orientation in driving positive outcomes from three aspects, namely, salespeople (Stock and Hoyer, 2005; Singh and Das, 2013; Wachner et al., 2009), customer (Homburg et al., 2011a) and dyadic aspects (Guenzi et al., 2016). Moving beyond these three aspects, we pay attention to the social network context...
that may also vary the effectiveness of customer orientation, which is especially relevant to KAM but under-researched. Through accumulated work experience, a KAM generally builds his or her own client network (Hutt and Walker, 2006; Lacoste, 2016; Ivens et al., 2016), which is constituted of the focal KAM, his or her key accounts, and the social ties connecting them. According to social network theory, the attributes of the connections (e.g. tie strength) that the KAM has with other network members and the position that the KAM occupies within the client network (e.g. structural holes) can serve as unique resources. For example, through frequent and constant business interactions and communication with their network members, KAMs could gain access to explicit and tacit customer knowledge (Yang et al., 2011) and social experience (Borgatti and Halgin, 2011). In addition, through gaining an advantageous position in the network, KAMs could acquire nonredundant information and influential power in exchanges (Burt, 2009; Naudé et al., 2014). With these network benefits, KAMs can be more effective in addressing customer needs.

In particular, this study attempts to answer the following two research questions:

**RQ1.** Does a KAM’s customer orientation positively affect key account customers’ repurchase intention, which is a key indicator of a KAM’s performance?

**RQ2.** How is the effectiveness of a KAM’s customer orientation contingent upon his or her client networks?

On the basis of the literature of customer orientation and social network theory, this study introduces the concept of a KAM’s client network and proposes an integrated framework that connects KAMs’ customer orientation, their client networks and key customers’ repurchase intention. Through multivariate regression analysis on a sample of 208 paired KAMs and key account customers from several industries such as general equipment, electrical and electronic equipment, transportation equipment and medical and pharmaceutical products, this study results in several meaningful findings. The results reveal that KAMs’ functional customer orientation can increase customers’ repurchase intention. Such positive effects are stimulated by structural holes in a KAM’s client network. In addition, with strong ties in a client network, a KAM’s relational customer orientation can promote customers’ repurchase intention, whereas with rich structural holes in a client network, relational customer orientation can constrain the customers’ repurchase intention.

This study extends the literature in several meaningful ways. First, this study contributes to the research on customer orientation by offering a new contextual variable. Studies have considered the contingent roles from three aspects: the characteristics of salespeople (Stock and Hoyer, 2005; Wachner et al., 2009), the characteristics of customers (Homburg et al., 2011a) and dyadic aspects (Guenzi et al., 2016); yet they have paid little attention to the roles of networks. This study delineates how the effectiveness of KAMs’ customer orientation is influenced by their client networks, a critical form of network that has been underemphasized in empirical studies. The findings broaden our understanding of the contextual influences of embedded client networks on customer orientation roles and enrich the literature on the effects of KAMs’ social networks.

Second, this study enriches the literature on KAMs by delineating the role of customer orientation in enhancing key customers’ repurchase intention. Although a rich stream of research (Homburg et al., 2011a; Terho et al., 2015) has shown that salespeople’s customer orientation can significantly improve customer attitudes and intention to buy (or re-buy), the effects of KAMs’ customer orientation on key account customers’ purchase or repurchase intentions have not been empirically verified. We extend prior insights to the KAM realm. Moreover, research has considered KAMs’ customer orientation as a holistic concept (Guenzi et al., 2009; Lai and Yang, 2017), whereas we distinguish customer orientation into two dimensions, functional and relational, to investigate their distinct effects on KAMs’ performance. Although the functional and relational dimensions have a similar effect on customer repurchases, their underlying mechanisms differ, leading to differential interaction effects with KAMs’ client network conditions.

Third, this study uses paired data on KAMs and their key account customers to more accurately depict their interactions. Most studies of KAMs have focused on the relationships between behavior and individual or team performance without considering how key account customers react to customer orientation behaviors (Guenzi et al., 2007; Lai and Yang, 2017). This study adopts a dyadic perspective on KAMs’ interactions with customers. Paired data are used to test customers’ response to KAMs’ customer orientation, thereby eliminating the issue of common-method bias and making it less problematic than the research that uses only one-sided data. In this sense, the study also contributes to the literature by expanding our understanding of customer outcomes in relation to KAM behavior.

### 2. Theoretical background and hypotheses

We make predictions about

- how KAMs’ functional and relational customer orientations increase their key account customers’ repurchase intention; and
- how KAMs’ tie strength and structural holes in their client networks moderate the effectiveness of customer orientation.

Figure 1 summarizes our hypotheses.

#### 2.1 Key account managers’ customer orientation

KAMs hold specialized positions in key account management programs introduced by firms to maintain long-term relationships with powerful and strategically important customers (Sengupta et al., 2000). Instead of maximizing the immediate sales volume from key accounts, their most important goal is to maintain stable customer relationships through long-term and high-level customer satisfaction (Guenzi et al., 2007). Therefore, key account customers’ repurchase intention is a key indicator for evaluating KAMs’ job outcomes (Sharma and Evanschitzky, 2016).

KAMs’ customer orientation is considered as a set of behavior types that indicate great concern for key accounts’ interests and needs, and for ensuring long-term customer...
satisfaction (Saxe and Weitz, 1982). As their work emphasizes both customer satisfaction and relationship quality, KAMs must adopt a customer orientation that is both functional and relational. According to Homburg et al. (2011a), KAMs’ functional customer orientation is considered as a set of behaviors aiming to help key account customers make satisfactory purchase decisions. It involves behaviors such as collecting information to identify customers’ individual, often unique, needs; making an effort to tailor offerings to meet these needs; and quickly responding to customers’ urgent demands (Homburg et al., 2011b). In comparison, KAMs’ relational customer orientation focuses on establishing personal relationships with key account customers. It involves behaviors such as giving customers presents on special occasions, showing concern for their personal issues and even inviting them to participate in family activities (Bateman and Valentine, 2015; Ojasalo, 2001).

2.2 The link between a key account manager’s’ customer orientation and the key account customer’s repurchase intention

Prior research illustrates that salespeople develop both functional and relational customer orientations (Bateman and Valentine, 2015; Homburg et al., 2011a). This study introduces this distinction into the KAM context and tests the effects of these two dimensions on key account customers’ repurchasing intentions.

KAMs’ functional customer orientation may influence customers’ repurchase intention through delivering additional value to key accounts. In the context of key account purchases, customers usually have complex individual demands. To guarantee that key clients’ needs are satisfied, a KAM’s functional customer-oriented behavior covers activities including carefully analyzing customer organizations’ strategies to uncover their current and future needs; paying additional attention to tailoring products (or services) to the customer; offering customers’ information relevant to understanding and evaluating the products (or services); and eventually arriving at true solutions for customer problems (Guenzi et al., 2007; Guenzi et al., 2009). This set of customer-oriented behavior types contributes to satisfying a key client’s needs, reducing its cost structure and improving efficiency (Cannon and Homburg, 2001). Particularly when its future needs are accurately anticipated and met, a key account customer will be able to quickly respond to changes in the market, which helps maintain its competitive advantage (Blocker et al., 2011). These benefits for key clients, derived from a KAM’s functional customer orientation, are likely to be perceived as added value provided by the KAM, which will encourage the key customer to repurchase (Olaru et al., 2008). Thus, we hypothesize:

**H1.** A KAM’s functional customer orientation is positively associated with his/her key account customer’s repurchase intention.

In contrast, a KAM’s relational customer orientation represents the KAM’s goodwill to the key account customer (Croppanzano and Mitchell, 2005). When the KAM and the customer reciprocally exchange kind gestures and favors, they are likely to establish a trustworthy, committed interpersonal relationship (Abosag and Naudé, 2014). In this case, the account customer would have faith in the KAM’s consideration of his/her benefits and interests, and believe that the KAM’s solution will truly solve his/her problems (Barnes et al., 2015; Bateman and Valentine, 2015). As such, the customer would gain confidence in continuing to purchase from this KAM. In addition, a closely committed interpersonal relationship between the KAM and the key account customer could buffer negative influences from the KAM’s slight misbehavior. For example, when the key customer observes some mild failures from the KAM, such as missing documents, delivery delay or not following specific customer rules or etiquettes, they are
likely to read such misbehavior as unintentional and would not change their original purchasing plan (Ganesan et al., 2010). Thus, a KAM’s relational customer orientation behavior contributes to establishing a close interpersonal relationship, which boosts the key account customer’s willingness to purchase on an ongoing basis. Therefore, we hypothesize:

**H2.** A KAM’s relational customer orientation is positively associated with his/her key account customer’s repurchase intention.

### 2.3 Key account managers’ client networks

Research has illustrated the diversity of KAMs’ networks. For example, Ahearne et al. (2013) examined KAMs’ networks with selling team members and explored their role in collecting and processing competitive intelligence. Gonzalez et al. (2014) focused on KAMs’ networks with coworkers from other units in their firms and explored how such networks could aid with cooperation among different units. Beyond these networks, KAMs would also make great effort to build wide networks of customers (Davies and Ryals, 2013; Ivens et al., 2016) for the acquisition and exploitation of deep knowledge about customers and opportunities for key account development (Hutt and Walker, 2006; Lacoste, 2016). In this study, client networks describe the relationships between KAMs and their key account customers who may or may not be connected with one another, for example, as members of the same industry, share similar suppliers, or they have not come from the same industry, do not share similar suppliers, but they are involved in supplier–buyer relationships through the same supply chains (Pressey et al., 2014; Aarikka-Stenroos and Sakari Makkonen, 2014).

Social networks are often considered a source of diverse resources for network members (Coleman and Coleman, 1994), and they shape network members’ behavior through network norms (Krackhardt and Kilduff, 2002). Both access to resources and behavior shaping are related to a network member’s connections with other members and the structure of the network. From the perspective of a connectionist (Coleman and Coleman, 1994), social network ties play the role of conduits through which a network member can access or exchange resources held by other members (e.g. financial capital, information and affective support); at the same time, social network ties are conduits through which network members diffuse thoughts and ideas to form shared attitudes and values, which may cause the phenomenon of contagion within a local network (Shalizi and Thomas, 2011). The stronger and closer the social ties are, the more likely and faster the resources and attitudes flow within networks (Rindfleisch and Moorman, 2001). On the other hand, according to structuralists (Burt, 2009), an actor who has a sparse network can gain access to heterogeneous members holding different resources (e.g. nonredundant information). Bridging many unconnected members, the actor is able to control resource flow within the network, and therefore gains power resources, such as influence over other network members (Burt, 2009). However, if they have a few third parties in common, other network members may be suspicious of the focal actor’s opportunistic behavior (Seevers et al., 2007).

From a social network perspective, an embedded client network provides a KAM with access to diverse resources and opportunities. Resources such as information, knowledge and experience acquired from the client network will boost the KAM’s capability to service his or her key customers and therefore improve the efficiency of his or her customer orientation. Meanwhile, the KAM could leverage his or her client network to diffuse thoughts and values to other network members, which may eventually shape customers’ attitudes toward the KAM’s customer-oriented behavior. Therefore, client networks may be an important context that influences the effectiveness of a KAM’s customer orientation.

From both the connectionist (Coleman and Coleman, 1994) and structuralist (Burt, 2009) perspectives, client networks can be measured by the closeness of ties (i.e. tie strength) between network members and their network structure (e.g. structural holes, density and centrality). Tie strength and structural holes, in other words, reflect both relational and structural dimensions of the client network characteristics and have been widely recognized as two of the most important variables in social network research (Borgatti and Foster, 2003; Gonzalez et al., 2014; Rindfleisch and Moorman, 2001). In this study, we address the contextual role of tie strength and structural holes in linkages between a KAM’s customer orientation and customers’ repurchasing intentions.

### 2.4 The moderating role of key account managers’ tie strength

A KAM’s tie strength in a client network represents the intensity and closeness of relations between the KAM and other network members (Rindfleisch and Moorman, 2001). Strong ties usually provide a KAM with in-depth customer knowledge (Yang et al., 2011), interpersonal skills (Borgatti and Halgin, 2011) and environment, which contribute to shared attitudes toward reciprocal interpersonal relationships (Krackhardt and Kilduff, 2002) and thus facilitate the effectiveness of both functional and relational customer orientations.

When the KAM has stronger ties in the client network, he or she interacts with all key account customers more frequently and thus has more chances to communicate detailed and complex knowledge of the customers’ products, processes and businesses. Researchers have found that such tacit knowledge can only be effectively transferred through frequent and close exchanges characterized by strong ties (Rindfleisch and Moorman, 2001). Such customer knowledge contributes to the development of an in-depth understanding of the demands and requirements of each key account customer (Salojärvi et al., 2013). Therefore, in terms of functional customer orientation, a KAM with stronger ties can better uncover and identify a key account customer’s complicated individual needs or problems (Madhavaram and Hunt, 2017). As the first step in functional customer orientation (Homburg et al., 2011b), better identification with the customer can guide the KAM’s subsequent customer-oriented behavior to arrive at more adaptive products or services (Agnihotri et al., 2014), through which more value is delivered to the customer (Salojärvi et al., 2013; Schepker et al., 2016). Moreover, a comprehensive understanding of the customer, beyond mere technical aspects (e.g. understanding the customer’s competitive strategy and
business goals), enables the KAM to uncover latent customer needs, which are important but difficult for the customer to articulate. Scholars have found that more customer value is delivered when latent customer needs are satisfied than when expressed needs are satisfied (Blocker et al., 2011).

When knowledge of customers is gained through strong ties, both expressed and latent customer needs can be identified, and additional customer value is delivered through functional customer orientation. Therefore, we hypothesize:

**H3a.** A KAM’s tie strength in his or her client network enhances the positive effect of functional customer orientation on the key account customer’s repurchase intention.

Similarly, a KAM’s tie strength can enhance the effectiveness of relational customer orientation in lifting the customer’s repurchase intention for the following two reasons. First, strong ties with client network members increase the KAM’s capability to use suitable interpersonal behaviors in customer relationship management. Having stronger ties with network members, the KAM will have more opportunities to accumulate social experience and improve their interpersonal skills, such as understanding nonverbal communication or emotions and creating a comfortable social environment (Plouffe et al., 2009). Strong ties make it easier for a customer-oriented KAM to use interpersonal behavior to cater to the customer (e.g. pointing out common interests), which mobilizes the customer’s interest in becoming close to the KAM personally, resulting in efficient utilization of relational customer orientation.

Second, strong ties between KAMs and their network members contribute to the formation of shared attitudes that shape the customer’s acceptance of the KAM’s relational customer orientation. In a social network, ties are conduits along which thoughts and influence flow (Shalizi and Thomas, 2011). An actor with stronger ties has more opportunities to diffuse their thoughts and values (Scherer and Cho, 2003), and therefore exerts more influence in the formation of shared attitudes and norms within the network. When a relational-oriented KAM holds strong ties, his/her network is likely to gradually establish a shared norm that values close interpersonal relationships between network members. In this case, a key account customer would accept and even appreciate the manager’s attempts to build interpersonal relationships and respond reciprocally (Homburg et al., 2011a). Therefore, we hypothesize:

**H3b.** A KAM’s tie strength in his or her client network enhances the positive effect of relational customer orientation on the key account customer’s repurchase intention.

**2.5 The moderating role of key account managers’ structural holes**

When a focal actor in a network is connected to actors who are unconnected to each other, there is a structural hole in the network (Burt, 2009). According to the structural hole theory, ties are redundant to the degree that they lead to the same actors. A structural hole indicates that the actors on either side of the hole have access to different flows of information (Ahuja, 2000). A client network with many structural holes implies a KAM’s access to mutually unconnected customers and can provide a large array of nonredundant information that facilitates the effective utilization of functional customer orientation. However, too many structural holes in a client network might cause customers to feel insecure about the KAM’s relational customer orientation and therefore constrain its effectiveness.

Structural holes in a KAM’s network can strengthen the positive effect of functional customer orientation on key customers’ repurchase intention. First, through bridging diverse customers, the KAM can acquire broad competitive intelligence (Burt, 2009), including technical information and new ideas (e.g. innovative technology or material, or a new product mix). Such information enables the KAM to re-interpret or rethink key aspects of a challenging issue or problem and facilitates the use of more varied strategies to satisfy customer needs and the creation of more innovative solutions to customer problems (Hughes et al., 2013). The reduced redundancy in client networks thus enhances the effectiveness of KAMs’ functional customer orientation.

Second, access to a variety of dynamic information about the market, industry and policy that comes from bridging more diverse information pools enables the KAM to better anticipate and prepare for changes in customer needs (Ostendorf et al., 2014). By connecting to unconnected network members from diverse information pool, a KAM can gain earlier access to new information and thus be aware of and even anticipate market trends (McEvily and Zaheer, 1999). In this scenario, the KAM will be prepared to adapt their offerings to meet customer needs as they evolve with trends in the market, industry and policies (Luo et al., 2008), and to avoid being stuck with outdated thoughts about customer needs that limit the effectiveness of functional customer orientation. Therefore, we hypothesize:

**H4a.** The structural holes in a KAM’s client network enhance the positive effect of functional customer orientation on the key account customer’s repurchase intention.

The effectiveness of relational customer orientation may be constrained when the KAM’s client network has many structural holes. As social network theory proposes, the more structural holes in a focal network, the more control and power the focal actor gains over the information flow within the network (Burt, 2009). In this case, the unconnected network members located in disadvantageous positions suffer from information asymmetry and may suspect the focal actor of opportunistic behavior (Seevers et al., 2007). For example, Swaminathan and Moorman (2009) found that when network members are less connected, they are more suspicious of others’ opportunism and invest more in monitoring. In this case, with a few connections to other network members, a customer might suspect a KAM of opportunistically using their interpersonal relationship for improper purposes (Homburg et al., 2011a), such as covering up product defects or persuading the customer to make larger orders. Given this suspicion, the customer is likely to perceive such close interpersonal relationships as insecure and may stay at arm’s
length from a manager whose client network has more structural holes. Therefore, even when the KAM attempts to use relational customer orientation to establish a personal relationship with the key account customer, the customer is still likely to respond with indifferent or even negative reactions to the manager’s efforts, which would highly constrain the effectiveness of relational customer orientation. Therefore, we hypothesize:

H4b. The structural holes in a KAM’s client network suppress the positive effect of relational customer orientation on the key account customer’s repurchase intention.

3. Method

3.1 Sample and data collection
In this study, we focus on the dyadic relationship between a KAM and a key customer of this KAM, and this dyadic relationship is embedded in the network consisting of the KAM, this customer, and the other existing or potential customers of this KAM. Accordingly, to test our hypotheses on a broad empirical basis, we designed a survey of the pairs of the KAM (examining the KAM and client network parts of the constructs) and the corresponding key account customer.

The English version of the questionnaire was developed first and then translated into Chinese and back-translated into English. The back-translated English version was checked against the original English version. Some questions were reworded to improve the accuracy of the translation. We conducted a pilot test with 20 randomly selected manufacturers and their designated downstream buyers using semi-structured in-depth interviews and then reviewed the completed questionnaires. We then sent out a research team to go through every question with the participants to ensure that they had understood them correctly. Some final refinement of the questionnaire was made based on their feedback.

In the dyadic data-collection process, we choose our sample of KAMs from global manufacturers who have branches in China. This is because key account management was first introduced and formally implemented in global manufacturers, and the Chinese manufacturing industry is one of the most prosperous global industries, making it an ideal context in which to test our model (Luo et al., 2008). We then selected four representative industries that typically adopted key account management strategies for customer management (Gonzalez et al., 2014; Guenzi, et al., 2007; Homburg et al., 2002): general equipment, electrical and electronic equipment, transportation equipment and medical and pharmaceutical products.

First, we compiled a national sample of 1,226 companies, which were randomly selected from the Chinese Manufacturing Business Directory, and contacted each company’s marketing or sales department via phone. Of these, 658 agreed to participate in our survey and provided the name and mailing address of one of their KAMs. We then mailed coded questionnaires to these 658 KAMs. To increase the response rate, we reminded nonrespondents by phone and email several times, and even visited KAMs in person when necessary. After four weeks of collection, we finally obtained 384 completed questionnaires (a response rate of 58.4 per cent).

In the second step, we asked each respondent to identify a purchasing manager or decision-maker from his or her second or third largest key account customer. KAMs with only one customer were removed from the sample. With the same follow-up and reminder measures, we obtained 253 questionnaires within four weeks from key account customers (a response rate of 66.2 per cent). After excluding uncompleted questionnaires (mainly from the respondents who could not depict their client networks), we finally had a sample of 208 paired KAMs and their corresponding key accounts (a total response rate of 31.6 per cent).

We note that in checking descriptive comparisons, nonrespondents did not statistically differ from respondents in their demographic characteristics (e.g. gender and age) or in the basic features of their firms (e.g. firm size and industry). In addition, no significant difference in the constructs we measured was found between early and late respondents. Among our sample of KAMs, 64.5 per cent were male, and they had an average of 4.91 years’ worth of experience working as a KAM. KAM ages were distributed as follows: 3.8 per cent were younger than 25, 57.2 per cent were between 25 and 35 years old, 30.8 per cent were between 35 and 45 years old and 8.2 per cent were older than 45. The sample of key account customers was 56.3 per cent male and had worked in their current positions for an average of 4.71 years. The ages of key account customers were distributed as follows: 4.8 per cent were younger than 25, 56.7 per cent were between 25 and 35 years old, 33.2 per cent were between 35 and 45 years old and 5.3 per cent were older than 45.

3.2 Measurement

3.2.1 Independent, dependent and control variables
All of the measures of the following variables were adapted from previous research, with some fine-tuned to suit this study’s context. A seven-point Likert scale with end points of “strongly disagree” and “strongly agree” was used to measure the items (except for firm size). Please see Table I for the origins of the scales and where the data came from in the dyads.

We followed the research stream of the self-evaluation of customer orientation (Saxe and Weitz, 1982; Donavan et al., 2004) and used KAM data to measure both functional and relational dimensions. We determined functional customer orientation through six items and relational customer orientation using four items adapted from Homburg et al. (2011a). Particularly, we asked each KAM to disclose his or her customer-oriented behavior toward the paired customer in the focal dyadic relationship.

To precisely evaluate a key account customer’s repurchase intention, we obtained data from the corresponding key accounts after three months. By separating the dependent measure from others, we established temporal precedence, permitting us to make causal inferences regarding the results (Bolander et al., 2015). Consistent with the definition by Zeithaml et al. (1996), our measure has three facets – customer intention to re-buy, customer intention to increase spend, and customer intention to buy new products or service – and we measured each facet using one item.
Owing to the heterogeneous nature of the cross-industry sample, we included a number of control variables in our model to account for potential structural differences in customers’ repurchase intention. In particular, we controlled for the potential effects of quality of offerings, switching cost and supplying firm size. We used three items that directly asked respondents for an evaluation of the supplier’s product, service and process quality, respectively. Similar items have been used by Homburg and Stock (2004). For switching cost, we used measures reflecting various aspects of this construct, including time, money, effort and risk associated with changes in technology. These measures are adapted from Lam et al. (2004). The final control variable, supplying firm size, measures the logarithm of the number of employees in supplying firms.

3.2.2 Moderating variables
All of the client network data were obtained from KAMs. To depict the networks, we asked each KAM to identify customers that they have business contacts with and to fill out a matrix that described connections between each two network members. This instrument is widely used to measure social networks in a business context (Morrison, 2002; Naudé et al., 2014). Considering the importance of key accounts, KAMs are usually responsible for a limited number of customers. In the pilot test, we found that KAMs usually have four to six key accounts. Therefore, we asked them to identify their five most important key accounts (including the one that answered our questionnaire). The use of five network members has been well proved to depict networks in a number of studies (McEvily and Zaheer, 1999; Nicolau and Birley, 2003). The respondents who identified four or fewer key accounts were removed from the sample.

Given that “the more frequently persons interact with one another, the stronger their sentiments of friendship for one another are apt to be” (Horns, 1950, p. 133), many studies use “frequency of interaction” as an indicator of tie strength (McEvily and Zaheer, 1999; Morrison, 2002). Especially in business networks, the correlation between the frequency of interaction and emotional closeness is usually high enough to represent the same underlying construct (Hansen, 1999). We thus adopted “interaction frequency” as a proxy for tie strength. We asked the KAM to report the extent (1 = never or less than once a year, 2 = several times a year, 3 = several times a
Role of customer orientation

Yi Liu, Xue Li and Maggie Chuoyan Dong

quarter, 4 = several times a month, and 5 = several times a week) of his or her contact with these customers, and measured tie strength by the mean extent of contacts that the KAM had with these five customers.

We then asked the KAMs to assess the frequency of communication and interaction between these customers (1 = never or less than once a year, 2 = several times a year, 3 = several times a quarter, 4 = several times a month and 5 = several times a week) to measure structural holes in the client networks. In our pilot test, we found that KAMs usually pay additional attention to their key account customers’ backgrounds, and they are generally aware of such information. Quite a few customers would proactively ask for the KAM’s other customers’ information and disclose whether they know each other. Therefore, it is reasonable to rely on KAMs’ judgments on the connections among their network members. Additionally, to further ensure the validity of the measurement, respondents who could not depict their client networks were excluded from the sample.

Structural holes were measured using the following function (Ahuja, 2000):

$$\sum_{j} \left(1 - \sum_{q} p_{iq} m_{iq}\right) / c_{i}$$

where $p_{iq}$ is the proportion of $i$’s relations invested in the connection with contact $q$, $m_{iq}$ is the marginal strength of the relationship between contact $j$ and contact $q$, and $C_{i}$ is the total number of contacts for $i$. Higher values in this index reflect KAMs whose networks are rich in structural holes.

3.3 Construct validity
To assess construct reliability and validity, we developed a confirmatory factor analysis model. The model fits the data acceptably ($\chi^2/df = 2.04, p < 0.001$; CFI = 0.922, IFI = 0.921, TLI = 0.912, SRMR = 0.058, RMSEA = 0.070), and all factor loadings are significant ($p < 0.001$). As shown in Table I, all composite reliabilities are well above the recommended threshold of 0.7, and values for Cronbach’s index of internal consistency are also well above 0.7. The average variance extracted of each construct was above 0.5 and exceeded the squared correlation between construct pairs (Table II), demonstrating discriminant validity between the latent variables.

Table II Correlations and measurements

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>$\alpha$</th>
<th>CR</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Functional customer orientation</td>
<td>5.75</td>
<td>0.94</td>
<td>0.90</td>
<td>0.90</td>
<td>0.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Relational customer orientation</td>
<td>4.78</td>
<td>1.27</td>
<td>0.79</td>
<td>0.80</td>
<td>0.30*</td>
<td>0.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Tie strength</td>
<td>2.43</td>
<td>0.77</td>
<td>–</td>
<td>–</td>
<td>0.08</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Structural holes</td>
<td>0.49</td>
<td>0.18</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Repurchase intention</td>
<td>5.21</td>
<td>1.13</td>
<td>0.86</td>
<td>0.88</td>
<td>0.20*</td>
<td>0.08</td>
<td>0.06</td>
<td>0.10</td>
<td>0.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Quality of offerings</td>
<td>5.07</td>
<td>1.29</td>
<td>0.88</td>
<td>0.89</td>
<td>0.12</td>
<td>0.10</td>
<td>0.00</td>
<td>0.15*</td>
<td>0.44*</td>
<td>0.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Switching cost</td>
<td>4.50</td>
<td>1.28</td>
<td>0.90</td>
<td>0.90</td>
<td>–</td>
<td>–</td>
<td>0.05</td>
<td>0.06</td>
<td>0.05</td>
<td>0.08</td>
<td>0.20*</td>
<td>0.18*</td>
</tr>
<tr>
<td>8. Supplying firm size</td>
<td>2.34</td>
<td>0.59</td>
<td>–</td>
<td>–</td>
<td>0.07</td>
<td>–</td>
<td>0.01</td>
<td>0.12</td>
<td>0.02</td>
<td>0.05</td>
<td>–</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Notes: *Log transformed; $\alpha$ = Cronbach’s index of internal consistency reliability; CR = Composite reliability index. Figures on the diagonal represent the square root of the average variance extracted (AVE); *Correlation is significant at the 0.05 level (two-tailed).

4. Results

4.1 Regression analyses
We applied a multiple linear regression using SPSS software (Version 22.0). To test our hypotheses, we performed a moderated regression with customer’s repurchase intention as our dependent variable. The control variables were entered first, followed by the main effects, and then the interaction terms. All of the interacting predictors were centered, and the interaction terms were created by multiplying the centered predictors. The results of our regression analyses are displayed in Table III.

Model 1 provided a baseline in which only control variables were included ($R^2 = 0.219$, $p < 0.001$). We then added both functional and relational customer orientations into the regression to test the main effects ($H1$ and $H2$). The results indicated that only functional customer orientation has a positive effect on a customer’s repurchase intention ($b = 0.183$, $p < 0.01$). The relationship between relational customer orientation and repurchase intention was positive but not significant ($b = 0.006$, $p > 0.05$). Therefore, $H1$ is supported by our results, but $H2$ is not.

In Model 3, two-way interactions are added, and the results partially support the moderator hypotheses. With regard to the influence of a KAM’s tie strength, no significant interaction effect exists between tie strength and functional customer orientation ($b = -0.185$, $p > 0.05$). Thus, $H3a$ is not supported by our results. However, $H3b$ is supported, because the interaction effect between relational customer orientation and tie strength is significant and positive ($b = 0.177$, $p < 0.05$). With regard to the influence of a KAM’s network’s structural holes, moderating effects on both functional and relational orientations are found. Specifically, structural holes and functional customer orientation have a positive interaction effect on a customer’s repurchase intention ($b = 1.051$, $p < 0.05$). Meanwhile, structural holes and relational customer orientation have a negative interaction effect on a customer’s repurchase intention ($b = -0.813$, $p < 0.05$). Thus, we found empirical support for both $H4a$ and $H4b$.

4.2 Robustness test
To further verify the results of this study, we tested the models using the method of maximum likelihood estimation in Mplus 7. As shown in Table IV, the results of the robustness test were
consistent with the original results, which confirmed the robustness of this study’s findings.

4.3 Graphical analyses

To further interpret the results of the regression analyses, this study followed the procedure recommended by Dawson (2014) and presents the following figures. As shown in Figure 2, the effect of functional customer orientation is more explicit when tie strength is low, although the difference is extremely small and not significant in the regression analysis. Figure 3 illustrates that customer repurchase intention is higher when low relational customer orientation is associated with high tie strength or when high relational customer orientation is associated with low tie strength. This finding is consistent with H3b, which states that tie strength positively moderates the effect of relational customer orientation. However, the figure also shows that KAMs who have weak ties with members in client networks are better off not adopting a high level of relational customer orientation.

As shown in Figure 4, a high level of functional customer orientation leads to higher repurchase intention only when it is accompanied by a high number of structural holes. KAMs with a few structural holes in client networks do not seem to benefit from adopting functional customer orientation. In contrast, high relational customer orientation is associated with high purchase intention when the number of structural holes is low (Figure 5). However, when the number of structural holes becomes high, the effect of relational orientation on purchase intention is reversed.

5. Discussion and implications

KAMs – a newly established role, concurrent with the introduction of key account management – are a new topic in
the literature of customer orientation. This study pays attention to the effects of KAMs’ customer orientation on customers’ repurchase intention and introduces a social networks perspective to investigate the contingency effects of the client network in which KAMs are embedded on the effectiveness of KAMs’ customer orientation.

The results of this study reveal that KAMs’ functional customer orientation can increase customers’ repurchase intention. Such positive effects are stimulated by structural holes in a KAM’s client network. In addition, with strong ties in a client network, a KAM’s relational customer orientation can promote customers’ repurchase intention, whereas with rich structural holes in a client network, relational customer orientation can constrain the customers’ repurchase intention. These findings not only contribute to customer orientation research by demonstrating a new contingency factor – client networks – and enlarge the network literature, but provide the practical suggestion that KAMs strategically exploit their client networks to maximize the effectiveness of customer orientation.

5.1 Theoretical implications
This study extends the literature in the following ways. First, it is one of the first studies to explore how social networks influence the effectiveness of customer orientation. Research has investigated the contingency effects on the linkage between customer orientation and performance outcomes from the perspectives of the customer (Homburg et al., 2011a, 2011b), salespeople (Stock and Hoyer, 2005; Wachner et al., 2009; Singh and Das, 2013), and customer-salesperson dyads (Guenzi et al., 2016). By introducing client networks in which both KAMs and clients are embedded, this study extends our understanding of customer orientation effects from dyadic relationships to the network context. The study also contributes to the literature on KAMs’ networks by investigating a new form of networks – KAMs’ customer networks – which are understood to benefit KAMs through external resources that were previously underemphasized. While studies have analyzed within-firm networks (e.g. managers’ peer networks, interunit networks) and their role in the acquisition of information within firms (Ahearn et al., 2013; Gonzalez et al., 2014; Bolander et al., 2015), this study examines external networks that link key account managers to information, and therefore provides new insights into how social networks influence job performance. In addition, by delineating the moderating effects of tie strength and structural holes, this study offers a more complete understanding of KAMs’ social networks.

Second, we develop a multidimensional perspective for researching KAMs’ customer orientation and observe each dimension’s impacts on key account customers’ repurchasing intentions. Studies have explored the effects of KAMs’ customer orientation on team and role performance (i.e. individual effectiveness in solving customer problems, developing strategic plans, or enhancing outcomes), but have not distinguished KAMs’ relational customer-oriented behaviors from functional ones or linked these with customers’ repurchasing intentions (Guenzi et al., 2009; Lai and Yang, 2017). Given KAMs’ emphasis on close and stable relationships with customers, relational customer-oriented behaviors are common and significant (Guenzi et al., 2007; Davies and Ryals, 2013). As such, it is worth examining how customers perceive and react to such behaviors and whether the outcome differs from functional-oriented behaviors. Our results show that the functional orientation is positively related to key account customers’ repurchasing intentions, while the relational customer orientation had no significant effect without considering contextual factors. This study is among the first to provide a holistic investigation of the multiple dimensions of customer orientation and thus contributes to our understanding of how KAMs’ interactions with customers affect outcomes.

Third, this study adopts a dyadic perspective to explore how key account customers respond to KAMs’ customer orientation. This extends our understanding of KAMs’ customer orientation and its effect on purchasing outcomes. Most studies have adopted a unilateral perspective to investigate how firms’ key account management capabilities or practices improve firm performance (Gounaris and Tzempelikos, 2014; Guesalaga et al., 2018; Ivens et al., 2018; Tzempelikos and Gounaris, 2015), while others have focused on the linkages between KAMs’ behaviors and their individual or team performance. No study has been able to consider how key account customers actually react to KAMs’ customer orientation behaviors (Guenzi et al., 2007; Lai and Yang, 2017). This study analyzes KAM–customer interactions from the perspectives of both KAMs and their key account customers to capture how KAMs’ customer orientation influences repurchasing intentions. With paired data, this study largely eliminates common-method bias that would be problematic in research using one-sided data and as such is one of the first studies to accurately depict interactions between KAMs and their key account customers.

5.2 Managerial implications
The findings provide some insights for KAMs. They call attention to the role of strategic exploitation of client networks when developing customer orientation approaches. First, our results indicate that functional customer orientation is more useful than relational customer orientation in influencing key account customers’ repurchasing intentions. This finding echoes recent feedback from managers that customers have shifted their focus from relationships to functional performance (Gonzalez, 2008). The implications to KAMs are that they should focus more on the functional dimensions of customer orientation and regard satisfying customer needs as their first
Role of customer orientation
Yi Liu, Xue Li and Maggie Chuoyan Dong

Second, we chose tie strength and structural holes to respectively reflect the network characteristics of connection and structure and to demonstrate their moderating influences. However, other network attributes (e.g. centrality or density) may also influence the effectiveness of customer orientation. Moreover, KAMs’ other social networks (e.g. informal networks and coworker networks) may interact with client networks and exert influences due to the different resources available (Gonzalez et al., 2014). We hope future research will address these issues by introducing diverse network variables from different forms of network into one framework.

6. Limitations and future research

Despite the contributions that this study makes to the literature on key account management, customer orientation and social networks, it has several limitations, and we look forward to future research addressing them.

First, although this study reveals the effects of customer orientation on repurchase intention, its effects on other outcomes like KAMs’ financial performance are not addressed. Given the unclear relationships between customer orientation and objective performance in prior studies, we assume that there might be additional costs (e.g. the opportunity costs of dealing with other customers) associated with KAMs’ orientation to key accounts (Homburg et al., 2011b). Given the complicated and unique demands of key accounts, the negative effects of these costs could be quite important. Thus, we wish to see future research considering the effects on KAMs’ financial performance from the perspective of the benefits and costs of customer orientation.

Second, our findings indicate that KAMs may be able to enhance the effectiveness of functional customer orientation by constructing structural importance in their client networks. By occupying a key position that links the most unconnected members in the network, KAMs can leverage certain benefits, such as collecting diverse information and then using those informational resources to better identify, understand and satisfy key account customers’ needs. This suggests that KAMs should court diverse customers from across and geographic areas to gain an advantageous position in client networks.

Third, we find that as KAMs’ ties with client network members become stronger, their relational customer orientation is useful for driving key clients’ repurchases. This finding should guide KAMs to strategically implement relational customer orientation to maintain loyalty. KAMs’ intense and close connections with client network members could work as a foundation for effective implementation of relational customer orientation approaches. Hence, we suggest that when employing relational approaches tailored to specific key account customers, KAMs first ensure that they have established strong ties with client network members, as these increase clients’ repurchasing intentions. In contrast, if KAMs occupy advantageous positions in the network, and client network members are barely interconnected, then KAMs should not adopt a relational customer orientation approach. With sufficient structural holes in client networks, KAMs can take advantage of other members through opportunistic behaviors. In this case, if KAMs use relational approaches, key account customers may worry that KAMs are misusing their interpersonal relationships and therefore reduce their repurchases.

References


<table>
<thead>
<tr>
<th>Role of customer orientation</th>
<th>Journal of Business &amp; Industrial Marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yi Liu, Xue Li and Maggie Chuanyan Dong</td>
<td>Volume 34 · Number 7 · 2019 · 1592–1605</td>
</tr>
</tbody>
</table>


About the authors

**Yi Liu** is a Professor in Antai College of Economics & Management at Shanghai Jiao Tong University. Her research interests include marketing strategy and innovation, channel and supply chain relationship management, service outsourcing, key account management, and omni-channel management. She has published in *Journal of Operations Management, Journal of Management, Journal of Management*
Role of customer orientation

Yi Liu, Xue Li and Maggie Chuoyan Dong

*Studies, Journal of the Academy of Marketing Science,* among others.

Xue Li is an Analyst at Guotai Junan Securities. She received her PhD at Antai College of Economics & Management, Shanghai Jiao Tong University. Her research interests include customer relationship management, and key account management. Xue Li can be contacted at: lix1207@sjtu.edu.cn

Maggie Chuoyan Dong is an Associate Professor in the Department of Marketing at City University of Hong Kong. Her current research mainly focuses on channel governance, interfirm relationships, and network analysis. She has published in *Journal of Marketing Research, Production and Operations Management, Journal of Operations Management, Information Systems Research, Journal of the Academy of Marketing Science,* among others.
Strategic marketing approaches for the diffusion of innovation in highly regulated industrial markets: the value of market access

Francesco Schiavone
Universita degli Studi di Napoli Parthenope, Napoli, Italy and Paris School of Business, Paris, France, and
Michele Simoni
Universita degli Studi di Napoli Parthenope, Napoli, Italy

Abstract
Purpose – In industrial markets, different players concur to diffuse the new products and services. However, in high-regulated industries, firms might find substantial limitations to their usual strategies. This paper aims to analyze the strategic marketing approaches adopted by firms to overcome these limitations.

Design/methodology/approach – The authors used a case study approach to explore the strategies adopted by two multinational health-care companies to promote their new products in the Italian health-care market.

Findings – The two firms adopted three specific strategic marketing approaches: educational activities for all the different players of the market with the involvement of highly reputed partners (e.g. opinion makers, scientific societies and patients’ associations); simulation of the innovation’s impact on the entire system realized; and creation of an ad hoc organizational unit, called market access unit, to deal with the specific issues of this highly regulated market.

Originality/value – The study contributes to the literature on marketing strategies aimed at promoting the diffusion of new products in highly regulated industrial markets by illustrating the strategic approaches that innovative firms can adopt to both achieve regulatory compliance and promote the diffusion of their new products.

Keywords Health care, Diffusion of innovation, Market access, Regulated industrial markets, Strategic marketing approaches

Paper type Research paper

1. Introduction

Diffusion of innovation is “a social process in which subjectively perceived information about a new idea is communicated” (Rogers, 2010, p. 17). The extent of diffusion in business-to-business (B2B) markets depends on the engagement of opinion leaders and change agents for the innovation, the activities and evaluation of the buying unit inside the adopter company, and the set of direct and indirect influences that the adopter receives by its industrial network of suppliers (Makkonen and Johnston, 2014). Innovators in industrial markets must:

- create superior value for their customers; and
- establish effective collaboration with their industrial network partners to launch successful new products on the market (Biemans, 2018).

For instance, industrial manufacturers can improve the network externalities of their innovations (Parry and Kawakami, 2017; Greve and Seidel, 2015), hire opinion leaders (Desmarchelier and Fang, 2016; Dearing, 2015), or implement trade-marketing strategies (Humphreys, 2010) to convince the adopter companies about the quality and value of their new products.

Within the stream of literature about the adoption and diffusion of new products in industrial markets (Day and Herbig, 1990; Biemans, 2018), very few scholars have paid attention to the specific marketing actions needed to spread new products in highly regulated industrial markets (Oster and Quigley, 1977; Beise and Rennings, 2005). In these markets, government rules, need of compliance to sectorial standards and approval protocols pose limitations and caveats to the usual innovation diffusion marketing strategies (Hazen et al., 2012) (as reported in detail at the end of Section 2.2), thereby affecting the adaptive behavior that usually actors of the B2B market adopt when launching an innovation (Bourreau and Doğan, 2001). Some studies have reported that regulations
can speed up the introduction of new products and technology in an industry (Sangwan and Pau, 2005; Zailani et al., 2015). Other studies have shown that regulatory pressures can also generate critical challenges for industrial marketers engaged in the diffusion of innovation (Grewal and Dharwadkar, 2002; Bossle et al., 2016). For instance, when different types of regulatory pressures come from more sources (e.g. local, regional and international levels); at the same time, firms are obliged to design and implement domestic marketing strategies and tactics fitting properly with all these impositions to avoid expensive lacks of compliance (Blind, 2016; Bossle et al., 2016).

The present study contributes to this body of knowledge by exploring the key strategic marketing actions by which firms in industrial markets achieve regulatory compliance and diffuse innovation. Thus, the research question of this article is as follows:

RQ1. How does an intense market regulation frame the industrial marketing approaches for the diffusion of innovation?

The article uses an exploratory case study approach to analyze the industrial marketing strategies adopted by two multinational healthcare companies to promote their new products to their national B2B partners. The rest of this article is organized as follows: Section 2 reviews the main theoretical concepts of the study and offers some theoretical speculations. Section 3 describes the research design and method. Section 4 reports the case study and the main findings. Section 5 discusses the results of the study. The conclusions and limitations of this study are reported in Section 6.

2. Literature review and theoretical speculations

2.1 Diffusion of new products in industrial markets

The diffusion of new industrial products has been a central topic in innovation and marketing studies since a long time (Kennedy, 1983; Biemans, 2018). Scholars of this subject explore the phenomenon of innovation adoption at the macro-level by focusing on the interlinked adoption choices of the industry players that, all together, generate diffusion (Makkonen and Johnston, 2014). The diffusion of industrial innovations and new consumer products are very different processes, for instance, in relation to the role of opinion leaders, the spread of information and the diffusion rate (Day and Herbig, 1990).

Many scholars (Kennedy, 1983; Frambach, 1993; Woodside and Biemans, 2005; Makkonen and Johnston, 2014) have offered extensive literature reviews summarizing the main set of variables affecting the adoption and diffusion of innovation in B2B markets. Frambach (1993) outlined eight main domains influencing these processes: adopter characteristics, innovation characteristics and development, network participation, information characteristics and information-process characteristics, competitive environment and marketing strategy. In addition to these elements, other important variables supporting (or hampering) the organizational adoption of innovation are the personal characteristics of the individual (e.g. psychological and demographic characteristics and personal innovativeness) within the company that will determine the final decision (Kennedy, 1983; Woodside and Biemans, 2005). Diffusion in B2B markets is, thus, not only a multidimensional but also a multi-level process. As illustrated in Figure 1, its success depends on both the intra-firm organizational buying/adoptive processes and the general relational setting inside the entire industrial network of the adopting firm (Makkonen and Johnston, 2014).

Effective marketing strategies and efforts of the innovator are other important elements that influence organizational adoption and promote diffusion in B2B markets. Bellas and Nentl (2007), in their analysis of the adoption of environmental innovation by US power plants, remarked the need for crafting very specific marketing strategies (e.g. price penetration) to stimulate certain market segments that can act as early adopters and promote diffusion. Therefore, sellers should follow some specific guidelines in designing effective marketing strategies for boosting the market acceptance and diffusion of innovation (Woodside and Biemans, 2005): obtain commitment from business partners, provide information to external influencers, target the person in charge of deciding to adopt or not the innovation, stimulate intra-firm diffusion and stimulate communication between customer firms.

These suggestions outline two key drivers of actions for B2B marketers selling innovation: communication and business networking. With respect to the first dimension, opinion leaders and change agents can greatly maximize the influence of such marketing suggestions by providing positive and effective innovation-related communication to buying firms (Makkonen and Johnston, 2014). The active role of facilitators, intermediaries and adopters leads to the successful diffusion of new products in industrial networks (Huhtala et al., 2014). However, opinion leaders in these contexts are generally considered less important than in consumer markets (Day and Herbig, 1990). Information sharing is the key mechanism of any effective innovation-related communication. Despite the fact that the spread of information is considered to take longer in industrial markets than in consumer markets (Day and Herbig, 1990), early adopters can greatly support diffusion by disseminating information about the new product and facilitating the imitation of adoption by other companies (Frattini et al., 2014). With respect to business networking, prior research has acknowledged that the intensity of interactions between the supplier firm and the buyer firm positively affects the speed and the rate of adoption and diffusion of industrial innovation (Frambach, 1993). The diffusion of B2B innovation is more likely to occur if the suppliers and the buyers of innovation have already collaborated in the development phase (Frambach, 1993) and if the seller implements its own technological innovation (Kim and Srivastava, 1998). Institutionalized services ecosystems are an innovative way to tie together buyers and suppliers via the co-creation of new and shared value propositions promoting the adoption and diffusion of technological innovation (Vargo et al., 2015). In sum, these evidences about business networking for the diffusion of innovation remark the great criticality of effectively managing the encounter processes between suppliers and customers for achieving the co-creation of value (Payne et al., 2008).
2.2 Diffusion of innovation in highly regulated industrial markets

According to the Cambridge dictionary, a regulated industry is “a type of business that is controlled by government rules.” The regulatory elements refer to “the demands of governments and regulatory bodies to comply with laws and other requirements” (Bello et al., 60, 2004). Various bodies at the global, continental, and national levels can impose industry standards, norms and practices at the same time (Bossle et al., 2016). Regulations can affect several corporate activities (Baldwin et al., 2010; Kolsarici and Vakratsas, 2010): competition mechanisms (e.g. anti-competitive behaviors by firms), corporate profits (e.g. economic rents), marketing strategies (e.g. prices), communication flows (e.g. information inadequacies), service characteristics (e.g. continuity and availability) and advertising and communication. In general, the impositions and inducements established by the government can generate both opportunities and limitations for the industrial marketing of innovation, for instance in relation to its distribution and pricing policies (Grewal and Dharwadkar, 2002).

Industrial markets are an important domain of government regulation. Several sectors listed in the 2014 “McLaughlin–Sherouse list,” which ranks the most highly regulated industries in the USA[2], are characterized by very dynamic and large B2B markets, such as petroleum and coal products manufacturing, electric power generation, transmission and distribution, water transportation, oil and gas extraction, pharmaceutical and medicine manufacturing and health-care devices. The need of compliance to industry regulations considerably affects B2B relationships. For instance, in the aviation industry, companies not able to provide the traceability of airplanes components cannot become suppliers of the main industry players, such as Boeing (Klueber and O’Keefe, 2013). In this light, regulatory compliance can largely contribute to the creation of shared value between manufacturers, suppliers and the society (Porter and Kramer, 2011). This concept refers to “policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates” (Porter and Kramer, p. 6, 2011).

Prior literature has paid considerable attention on the effects of regulations on innovation within industrial markets. Regulations can sometimes radically affect the long-standing processes of the purchasing of innovation (Polley and Shanklin, 1993). In general, Blind (2016), who distinguished between economic, social and institutional regulations, reported that except for a few circumstances (e.g. environmental protections), regulations usually have an ambivalent effect on innovation. With specific reference to diffusion, the existing literature offers contrasting evidences. On the one hand, some authors have reported that industry regulations positively affect diffusion. For instance, the re-engineering of the domestic market regulations has been one of the main drivers of the diffusion of the mobile terminals technology in China over the past two decades (Sangwan and Pau, 2005). Empirical research on environmental regulations has shown that the obligation to be compliant to green standards, along with the marketing demand and a firm’s resources, greatly supports the adoption of product and process innovation in industries (Qi et al., 2010; Zailani et al., 2015). On the other hand, some scholars have found that stringent market regulations impede the implementation and the diffusion of industrial process innovation (Meyers et al., 1999). Institutional regulations about intellectual property rights reduce the diffusion of new technology and products (Blind, 2012).

Such contrasting findings stress that the marketing of industrial innovation within regulated markets is, in the best case, a complex challenge. In these B2B contexts, thus, firms are often obliged to find contingent and innovative tactics and approaches to diffuse innovation. For instance, network-oriented firms can try to develop specific relationships with national institutions and agencies to influence, to some extent, industry regulations and norms (Möller and Halinen, 1999).
the 1970s, Cummins, an American manufacturer of diesel engines, has applied such a networking strategy to introduce into the market more powerful products. Indeed, the company started to collaborate with the US Environmental Protection Agency (EPA) to set air pollution standards and form a business-government research center to monitor diesel emissions (Post et al., 2002). Industrial innovators are also required to structure very strategically the marketing channels to sell new products (Bello et al., 2004). A recent example is from pharmaceutical companies, which started to use strategic account managers to achieve the adoption of innovation, value co-creation, and long-term sales relationships with hospitals (Pilon and Hadjielias, 2017).

In sum, the heterogeneity of regulatory pressures, in terms of sources (Bossle et al., 2016), types (Blind, 2016) and domains of corporate activity (Baldwin et al., 2010), makes the marketing approaches for the diffusion of industrial innovation very context-specific and poses at least two key challenges for firms. The first challenge is planning and implementing marketing actions, integrating as best as possible all these various regulatory pressures. Companies related to the air transportation in Europe, for instance, follow very strict social regulations (product and consumer safety) about the quality and safety of new aircrafts. Nevertheless, they are obliged to also consider national economic regulations (e.g. about competition and market entry) when they design their marketing strategies. A second key challenge is to implement marketing actions, strengthening the innovator relationships in business networks that, due to regulations, could rapidly change. For instance, if regulators decrease the barriers to market entry in the financial sector, an incumbent credit intermediation company, to maximize the diffusion of its industrial innovation, will have to identify quickly who could be potential new partners for its business networks. Such a condition definitely increases the strategic relevance of specific marketing actions for stakeholders’ monitoring and management.

2.3 Theoretical speculations

Drawing on these last considerations, at least three theoretical speculations about the research question of the present study (How does an intense market regulation frame the industrial marketing approaches for the diffusion of innovation?) can be developed. First, regulations can outline new and (sometimes) unpredictable avenues of value co-creation and collaboration between the seller of innovation and its industry stakeholders, which are important drivers of the diffusion of innovation (Frambach, 1993). For instance, in the past few years, European regulations about energy saving and disposal in the home appliance sector pushed many European sellers and buyers of electric motors to form strategic alliances and collaborations for the development of eco-friendly motors, with a negative impact on their convenience of working with global suppliers (Golini et al., 2016). This evidence suggests that an innovator in highly regulated markets should, proactively, try to implement extensive marketing actions (e.g. communication and CSR) for the creation of shared value (Porter and Kramer, 2011) for all the industry stakeholders, even for the actors that are not yet members of its supply-chain. This approach would support the innovator in creating positive preconditions for future collaborations with potential suppliers and R&D partners that the regulations might promote in the forthcoming years.

The second speculation complements with the first argument. The diffusion of innovation is a process based on information sharing (Rogers, 2010). The effect of this key assumption for industrial marketers is twofold. On the one hand, the successful diffusion of innovation in a regulated B2B market is likely to occur only if the seller builds and provides reliable and compliant information to its stakeholders (Grewal and Dharwadkar, 2002). On the other hand, diffusion takes place if the innovator can establish effective dynamics of market learning with its stakeholders. Market learning is a well-established concept in industrial marketing literature (Day, 2002). This concept refers to the “reciprocal processes of higher-level learning, involving several market actors, where the learning outcomes are changes in market-level properties” (Storbacka and Nenonen, 2015) and occurred, for instance, to Wärtsilä Power Plants when it entered the Indian electricity market. Market learning pushes the innovator to implement ad-hoc industrial marketing actions aimed at producing and communicating persuasive information supporting the learning of buying firms and institutions about the adherence of innovation to government rules. The hiring of opinion leaders and change agents could extremely support such reciprocal learning (Woodside and Biemans, 2005).

Third, channel managers and salespeople are crucial individual actors for diffusing industrial innovation because they can establish value co-creation between the buyer and the seller and the diffusion of innovation (Pilon and Hadjielias, 2017). Nevertheless, regulations as market entry make the channel management and structure more complex because of additional risks and transaction costs (Watson et al., 2015). The industrial marketing department of the seller, thus, should require additional tasks and competencies in (some of its) channel managers and/or to push them to collaborate closely with the firm’s regulatory affairs department. These individuals, thus, should not just act as strategic account managers (Pilon and Hadjielias, 2017), but they should also perfectly understand and be aware of the regulatory pressures and impositions to set up effective co-creation practices with the various social and political stakeholders of the firm. This approach, moreover, would increase the human capital of the firm and, thus, improve the performance and agility of its supply-chain (Mandal, 2018).

3. Research method

In line with Yin (2017), a case study qualitative approach was adopted to answer the research question considered in this paper. The study was located in the Italian health-care industry, which, as also in other European countries, is regulated by a set of norms about the new products’ access to this particular industrial market. Moreover, the Italian healthcare system is largely public. Therefore, public authorities not only regulate the market access but also participate in the industry value chain by acquiring new devices or drugs for the healthcare public structures.

Several different actors play a role in the process that spans from the initial application for the acceptance of a firm’s new
medical device or drug to the commercialization of the product and its usage by doctors and patients: national health-care authorities, regional health-care authorities, local health-care organizations (the so-called ASL, acronym of “Azienda Sanitaria Locale”, usually managing one or more hospitals), hospitals, specialized operating units within hospitals, doctors and patients. All of these players are involved in the complex decisional process of adopting a new device or drug and can have a relevant impact on the success or failure of new products that are the outcome of years of R&D investment and efforts. If the new device or drug is admitted for being provided at no cost to patients also outside public health-care structures, then the role of some of these actors is even more stringent (the so-called “third-party payer”).

The health-care value chain is both sequential and partially hierarchical, in that actors intervene according to the sequence from national health-care authorities to the patient, but their influence on each other is limited. Indeed, each player must take into account the decision of the preceding actor in the value chain but can then decide according to a large autonomy dictated by its own specific goals and contextual conditions. For example, regional authorities may differ in terms of the efficiency reached by their regional health-care systems or in terms of the financial resources available to fund their local structures. Accordingly, they can apply the decisions adopted at the national level in very different ways.

A diverse-case approach was adopted to select the firms for an empirical analysis (Seawright and Gerring, 2008). Accordingly, two firms operating in this industry were identified on the basis of some shared characteristics and one main difference:

- Both firms are recognized in their industry as leading innovators, thereby sharing the need for promoting their new products in the health-care market.
- Both firms are multinational organizations that leverage a huge amount of resources to promote their new products.
- Both firms operate in the Italian market and thus face the same constraints and rules imposed by the Italian health-care system on the healthcare market.
- Both firms have recently launched in the Italian market some breakthrough innovations.

Firm 1 focuses on medical devices and Firm 2 on medicines. Thus, these firms belong to the two sub-segments of the health-care industry that provide the most important tools that doctors use to take care of their patients: diagnostic and therapeutic apparels and drugs, respectively.

The key characteristics of these two firms are reported in Table I.

A grounded theory approach was followed to analyze the two selected cases. Accordingly, the empirical research was divided into four main phases (Strauss and Corbin, 1990).

The first phase was data collection. To triangulate data, three main sources of information were used (Eisenhardt, 1989):

1. official data provided by corporate websites (e.g. firms annual reports, corporate brochures and product descriptions);
2. other media sources (e.g. newspaper articles and interviews released by managers); and
3. in-depth interviews with the managers in charge of promoting new products to the Italian health-care market players.

The in-depth interview was based on an open-ended questionnaire covering four main topics:

1. the characteristics of the last relevant innovative product launched by the firm in the Italian market;
2. the barriers encountered by the firm in promoting the diffusion of the innovation;
3. the strategic marketing approaches adopted to overcome the barriers; and
4. the organizational implications of the adopted strategic marketing approaches.

The questionnaire was administered for 90 min in personal interviews with managers from both the companies. The respondents were the two managers in charge of the market access organizational unit for the Italian market. The interviews were recorded and later transcribed. The second phase was data initial coding (Charmaz and Belgrave, 2007). Accordingly, all the data gathered were archived and managed using the NVivo software (version 11), assigning tags/anchors to every chunk of information emerging from the different data sources. In particular, the analysis was focused on the two macro themes related to the paper’s research question. First, the adoption barriers created by the regulations of the health-care market were identified. In particular, interview chunks were coded on the basis of different tags derived from the adoption of innovation literature: features of the innovation, impact of the innovation on the health-care system, actors involved in the adoption process, decision criteria used to evaluate each innovation and the timing of the decisions. Second, the main marketing choices adopted to overcome the barriers were analyzed. Different tags, derived from the marketing literature, were used to code interviews: communication, market learning, customer education, organizational function and organizational structure. All the coding activities were performed by authors who checked the

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Key characteristics of the analysed firms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Firm</strong></td>
<td><strong>Size</strong></td>
</tr>
<tr>
<td>Firm 1</td>
<td>Revenue: $27.4 B</td>
</tr>
<tr>
<td>Employees: 99,000</td>
<td></td>
</tr>
<tr>
<td>Firm 2</td>
<td>Revenue: $3.4 B</td>
</tr>
<tr>
<td>Employees: 8,600</td>
<td></td>
</tr>
</tbody>
</table>

Source: Corporate websites
consistency of their respective assessments through different rounds of cross evaluation.

Official data and other media sources were used consistently with the coding of interviews to frame the context and to better interpret and when possible to confirm the information stemming from the interviews. This activity was also performed by the authors.

The third phase was the identification of the main theoretical constructs emerging from the information initial coding. Following an abductive approach, a recursive process (i.e. from the coded information to a possible construct back to the coded information) was adopted to group the coded information into categories and to verify the internal validity of the emerging constructs (Alvesson and Kärreman, 2007; Nersessian, 2010; Yin, 2017). Based on this activity, the key barriers affecting the innovation adoption in a highly regulated market and the emerging strategic marketing approaches, adopted by the two firms to overcome the barriers, were identified.

The last phase was, on the one hand, the formalization of key findings into a model highlighting the logical relationships among the key constructs and, on the other hand, the evaluation of the theoretical external validity of this model (Yin, 2017).

4. Case study analysis

The case study analyzed two macro-themes:

1. the barriers that the regulation of the Italian health-care industry creates to the adoption of an innovation; and
2. the specific strategic marketing approaches adopted by firms to overcome the rule-based barriers.

4.1 Innovation adoption barriers in the Italian health-care market

The analysis of the innovation adoption barriers highlights three specific critical aspects: the heterogeneity of the actors involved in the adoption process and of the evaluation criteria they use to assess an innovation; the limited capacity of these actors to analyze the impact of an innovation on the entire health-care value chain; and the time uncertainty about the decision to adopt an innovation.

4.1.1 Heterogeneity of actors and evaluation criteria

The first barrier, highlighted by the managers of both firms, is the presence of a large number of actors, playing different regulated roles and with whom the company must interact to promote its new product. As noted by the market access manager of Firm 1:

Our interlocutors are the region authority officials, who issue the guidelines about the application of the norms and the rules that deal with pharmaceuticals (adoption) […] These people, however, also refer to other interlocutors to make their decisions. Therefore, it is important that there is an alignment of the different “voices.” Important interlocutors are also the doctors and other medical staff. [Also important are] the opinion leaders that are involved by the regional authority for technical opinions. Other important interlocutors are patient associations and, finally, the councilor for health and the entire political component.

4.1.2 The manager of Firm 2 also remarked the same aspect

Our interlocutors are the director of the policies of the drug, the offices of competence, some surveyors, some regional commissions, doctors (limited to some special projects) […] there is not a single answer because each region has its own structure […] there is a huge heterogeneity.

4.1.3 Limited capacity to analyze the effect of an innovation on the entire health-care value chain

The second barrier pointed out by the managers of the two corporations considered in the study is related to the difficulties of appropriately conveying the real effect of the new product on the entire value chain. As observed by the market access manager of Firm 1:

Almost all the barriers (to adoption) fall into the field of uncertainty about the therapeutic and economic benefits of the new technology.

Indeed, a new product can affect the healthcare value chain both at a specific level and at a system level. The new products introduced by Firm 1 and Firm 2 in the Italian market have a broad systemic effect. As described by the managers of Firm 1, their new device, besides being helpful for better therapy, improves the patients’ lives in several ways:

For the patient, the first advantage of the device is comfort. The patient should no longer prick his fingers five to six times a day (normally before and after meals) […] while maintaining greater discretion. The second advantage is that patient is able to gather a quantity of data absolutely superior to that obtainable through traditional blood glucose monitoring and to consult and share data (with his/her diabetologist) via simple on-line devices.

The new drug, launched by Firm 2, also has a broad system-level effect. Indeed, as observed by the managers of this firm:

Our drug has a great cardiovascular tolerance […] Therefore, the spending projections linked to the pathology must take into account both the treatment of the pathology in the strict sense and the comorbidities (authors’ note: cardiac side effects of the drug that produce costs for the healthcare system) […] We expect (from the adoption of the drug) an economic benefit that reverberates in many different areas.
The system-level positive effects of the new device and of the new drug are clear advantages of these products that should facilitate their adoption. However, both firms highlighted that these system-level advantages are difficult to understand by the actors of the value chain who, being constrained by their defined and regulated roles, show a limited capacity for understating effects that span outside the scope of their field of activity.

We thus advance the following proposition:

**P2.** In highly regulated markets, the regulated role of actors involved in the adoption of an innovation limits their capacity to appropriately evaluate the effect of this innovation on the entire healthcare value chain.

### 4.1.4 Time uncertainty about adoption decisions

The last barrier recognized by the managers of the two firms is a lack of timely response, by the actors in the value chain, to the companies’ efforts for spreading their innovations. In a non-regulated industrial market, the time of response is a direct function of both the effort put in promoting the innovation and the specific contingencies of the adopting organization. In a highly regulated industrial market, the market behavior is also constrained and regulated by the rules. However, such rules, rather than reducing complexity and creating homogeneity, seem to exacerbate the unpredictability of the adopters’ responses about their adoption time.

As noted by the market access manager of Firm 1:

> Despite the fact that in some regions our new product has been immediately evaluated as cost saving and the diabetic committee approved its adoption, there is still a climate of decision uncertainty.

These issues about the time of adoption hamper the ability of the firm to plan in the short-term its promotional efforts for the new product, to measure the results of its actions, and to allocate resources for new diffusion activities. As observed by the manager of Firm 1:

> (In this context) […] the action, in order to work well, must follow logics that are not necessarily short-term but can also go in the medium-long term […] for example to create engagement with the region or to create partnerships that can be useful […] perhaps at detriment of short-term Key Performance Indicators […]

Accordingly, we propose the following proposition:

**P3.** In highly regulated markets, the rules exacerbate the time uncertainty about the decision to adopt an innovation.

### 4.2 Strategic marketing approaches to overcome the rule-based adoption barriers

The managers of the two firms considered in this study mentioned three marketing approaches to address the above-mentioned adoption barriers: education of the value chain’s actors, simulation of the innovation’s effects and creation of a market access unit.

#### 4.2.1 Education of the value chain

The first strategic marketing approach consists of conveying the appropriate information to all the actors of the market. Indeed, to avoid the excessive heterogeneity among their interlocutors, both firms highlighted the need to organize educational activities on the most relevant topics related to their new products: medical data on the therapeutic application of the new device or drug, economic advantages of the new product, positive effect of the adoption of the innovation for hospitals and other healthcare structures and better quality of life for patients. As noted by the managers in charge of these activities, these educational efforts are aimed at increasing the homogeneity of actors regarding their knowledge about both the new products’ features and the criteria to correctly evaluate them. As noted by the managers of Firm 1:

> In daily practice, we find that our strategies work well when we find alignment between at least these four types of interlocutors: regional officials, policy makers, opinion leaders, doctors and patients.

To increase the relevance and reliability of the information provided to all the actors, the educational activities are organized through partnership with other well-reputed organizations and institutions. As pointed out by both firms, these activities involved opinion makers, scientific societies, patients’ associations, highly reputed doctors, universities, publishers specialized in the field and experts and were targeted at different people working in the various organizations of the health-care industrial market. The educational activities were complemented by the production of learning materials about the main issues related to the adoption of the new product.

Thus, we formulate the following propositions:

**P4a.** In highly regulated markets, firms should provide training activities to all the actors involved in the adoption of their innovation, to educate them about a correct evaluation of this innovation.

**P4b.** In highly regulated markets, firms should turn to highly reputed partners, to increase the relevance and the reliability of the training activities provided to all the actors involved in the adoption of their innovation.

#### 4.2.2 Simulation of the innovation’s effects

The second strategic marketing approach, described by the mangers of the two firms, is related to the need for highlighting the direct and indirect benefits stemming from the introduction of the new product. Both firms concurred on the relevance of developing appropriate studies, validated by experts and/or highly reputed institutions, on the effects of their new device or drug on the entire health-care system. In particular, these studies are aimed at showing, from different perspectives, the benefits of the new product: therapeutic perspective, quality of life perspective and economic perspective. As noted by the manager of Firm 1:

> The discussion with regional officials is mainly in terms of economic sustainability. Usually, we carry out experimentations, or start by providing the product only to some selected (by the region authority) categories of patients. This whole system of simulations and experiments is aimed at evaluating the effectiveness of the device. For the clinical aspects, we have realized some tests of use. Moreover, we have produced a budget impact model and a cost-benefit analysis for regional decision makers. The problem is that in Italy each region would like to have simulations based on local data […] that, for example, for clinical data is not always possible.

The selection of the most appropriate simulation tools depends on the specific contingencies. As pointed out by the market access manager of Firm 2:

> (The type of tools) […] depends on the opportunities. I can decide, according to the specificity of each region, to invest in the realization of a
workshop rather than in a study of pharmacoeconomics, rather than in a budget impact analysis.

By providing simulations on the different types of the effects of their new products, the firms aimed to reduce the limited capacity of the players for the evaluation of the innovations’ system-level effects and to reduce the heterogeneity among the actors’ decision criteria.

We thus suggest the following propositions:

**P5a.** In highly regulated markets, firms should develop simulation studies aimed at clarifying the effect of their innovation on the entire value chain, in terms of greater efficiency and efficacy.

**P5b.** In highly regulated markets, firms should work with independent experts to increase the validity of the simulated effects of their innovation.

### 4.2.3 Creation of a market access unit

The third marketing approach described by the managers of the two firms deals with the importance of creating in the firm a specific marketing unit (called market access unit) to follow and monitor the progresses of innovation adoption by different market actors of the regulated market. Therefore, on the one hand, market access is aimed at accomplishing all the tasks required to get a formal approval of the innovation; on the other hand, it is devoted to all the other activities that are required to facilitate interactions among the actors in the value chain and to remove the adoption barriers related to the rules and norms that regulate the market. As observed by the market access manager of Firm 2:

“We are often the link between two subjects who talk to each other, losing a lot of time, or do not speak at all.”

To act as a facilitator in a given value chain, the market access unit has accordingly an area-based organization. As highlighted by the managers of both firms:

- (Firm 1) The market access director for Italy, together with the marketing and sales director, reports to the general manager for the health-care Italian market. Five market access managers, each with responsibilities for several Italian regions, report to the Italian market access director.
- (Firm 2) The organizational structure is made by the director of the market access for Italy and by a series of regional access area manager that can be responsible for territories of various extension.

According to these evidences, we advance the following propositions:

**P6a.** In highly regulated markets, firms should create a market access organizational unit that addresses the compliance of the firm’s innovation to rules and facilitates the relationships among all the actors involved in the adoption of the innovation.

**P6b.** In highly regulated markets, firms should organize the market access organizational unit on an area basis, to address the entire value chain operating in a certain area.

### 4.3 Summary of the study results

This study highlights three main criticalities that firms acting in a highly regulated industrial market must face:

- heterogeneity in the application of the rule-based evaluation criteria;
- limited capacity of the actors in assessing innovation advantages at a system level; and
- time uncertainty of the adoption decisions by different actors.

The study also identifies three main strategic marketing activities that the firms adopted to deal with these criticalities:

1. Systematic action for educating simultaneously all the actors at the different stages of the industry’s value chain about the value added by the new product. These activities are developed through partnerships with highly reputed players that act as agents of change or as opinion leaders.

2. Simulation tools to illustrate the win–win effect of the new products. In particular, two types of simulators emerged as relevant:
   - an economic simulator, aimed at showing the cost savings directly and indirectly related to the new product; and
   - a patient value chain simulator, aimed at showing the reorganization of the activities along the value chain related to the use of the new products.

3. Creation of an organizational unit called the market access unit. This unit is aimed at fully leveraging the innovation potential, by remaining consistent with the strict normative rules of the industry. Table II presents the main results of the study.

### 5. Discussion

#### 5.1 Theoretical implications of the study

The results of this study complement and contribute to the existing literature in four ways. First, our study contributes to the literature on the adoption and diffusion of innovation, showing that, as compared to typical industrial markets, in highly regulated markets, the focus of the marketing approach shifts:

- in terms of innovation adoption, from adoption processes within the adopting organization to the actors playing a formal role in the regulated value chain;
- in terms of innovation diffusion, from innovation-related communication to strengthening the knowledge of actors in the value chain; and
- in terms of the industrial network, from the relational setting and interaction between actors to the interdependent decision-making processes of the actors (Figure 2).

Second, our study provides new evidences about the set of suitable marketing and co-creation actions (Day and Herbig, 1990; Dearing, 2015; Desmarchelier and Fang, 2016; Huhtala et al., 2014; Woodside and Biemans, 2005) and the value of partnering for the promotion of innovation in regulated industries. Our paper shows that the potential buyers of the innovation do not concur with the promotion of the new product, even if they have positively evaluated and eventually even adopted it. This evidence, in practice, highlights the lack
of external support by other actors for the diffusion of innovation, as usually happens in non-regulated markets where buyers may actively and freely promote the new product (e.g. via word-of-mouth). In regulated B2B contexts, instead, the innovator must realize by itself most of the promotional and marketing activities required for the adoption of its products. In theoretical terms, this evidence partially resizes, or at least makes it important to rethink, to some extent, the value and relevance of collaboration with suppliers to develop and implement ad-hoc marketing and co-creation actions specifically supporting the diffusion of innovation within these markets.

Third, this study provides new insights for the emerging literature about market learning in B2B (Storbacka and Nenonen, 2015). Previous studies have shown the relevance of reciprocal learning and shared information among all the players. This information plays the dual role of allowing the formal approval/compliance declaration for the new product and of convincing actors of the value chain to adopt it (Klueber and O’Keefe, 2013). The results of our study show that market learning can be implemented effectively not only for revising an existing regulation (or solving an industry problem) but also for spreading innovation. Our case shows that the “origination” phase of the market learning model by Storbacka and Nenonen (2015) could be the right moment for providing such shared information. Sharing ex ante simulations, information and evidences about the overall positive impacts and outcomes of the new product on the general architecture and performance of the regulated value chain (as shown by this study) may result in a very effective action to spread the innovation among all the players.

Finally, the article contributes to the theory of channel management in regulated industries (Pilon and Hadjielias, 2017; Watson et al., 2015) by showing the key and enlarged role of the so-called market access unit to establish a stable and win–win relationship, over time, with all the key players of the value chain (Biemans, 2018; Woodside and Biemans, 2005). Prior literature has stressed that the role of this unit was mainly to get and illustrate the compliance of the innovation with the rules and standards established for the market. Our findings

### Table II

<table>
<thead>
<tr>
<th>Critical issues of the regulated supply chain</th>
<th>Strategic marketing approach</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heterogeneity of actors and of evaluation criteria</td>
<td>Education of the whole industry value chain</td>
<td>Educational activities provided simultaneously to all actors at different stages of the supply chain. Involvement of highly reputed partners to improve education credibility and relevance.</td>
</tr>
<tr>
<td>Limited absorptive capacity</td>
<td>Simulation of the impact on economic and patient value chain</td>
<td>Simulation of the win-win impact of the new product in economic and organizational terms. Involvement of highly reputed partners to improve simulations’ reliability.</td>
</tr>
<tr>
<td>Time uncertainty of adoption decisions</td>
<td>Creation of the market access unit</td>
<td>Creation of an organization unit to sustain the value chain actors’ decision processes.</td>
</tr>
</tbody>
</table>

---

**Figure 2** Diffusion of innovation in regulated health value chains
show that the stable relationship established by the market access unit is not only crucial for the regulatory approval of innovation or for co-creating innovation (Pilon and Hadjielias, 2017). Long-term relationships nurtured by the market access unit are also crucial for monitoring and managing the uncertain time of adoption and diffusion of the new product among all the different actors of the industry value chain. The effective working of such an organizational unit requires, thus, the employment of accountants and managers holding a diversified set of both professional and personal skills and competencies.

5.2 Managerial implications of the study
The results of this study have several managerial implications that can be valuable for innovators in the healthcare industry and can prove useful in other highly regulated industries where previous studies show findings in line with our research.

The first managerial implication is related to the peculiar role that managers in highly regulated industries should assign to promotional activities. Indeed, previous studies in most disparate regulated markets – for example, information security technologies, e-government technologies, safety technologies (in key sectors such as aerospace, railway, electronic and machinery equipment and defense), and green and sustainable technologies – have shown that shared technical norms facilitate the diffusion of innovation, if the norms are appropriately absorbed (Barlette and Fomin, 2010; Blind and Mangelldorf, 2016; Ebrahim and Irani, 2005; Nair et al., 2015; Wu and Pagell, 2011) and operationalized by all the key actors of the value chain (Finch et al., 2017; Ortmann, 2010). In our article, we point out that innovators can actively sustain this process of absorption and operationalization by delivering multiple and simultaneous educational activities that both reduce the heterogeneity in the interpretation and application of technical norms and legitimize and promote an appropriate assessment of the new products’ value.

The second managerial implication is related to the tools that managers, in highly regulated industries, can use to implement market learning (Storbacka and Nenonen, 2015). As highlighted by previous studies – for example, in the OEM industry or in Total Care Product – a clear understanding of the effect of an innovation (Alonso-Rasgado and Thompson, 2006; Sethi et al., 2017) simplifies the relationships among different value chain actors, during the phase of both a new technological development and its subsequent adoption (Dodgson et al., 2002). Our study suggests that, in highly regulated markets, firms can use specific tools (namely simulations of innovation) as boundary objects (Leigh Star, 2010) that allows all value chain players to rapidly agree on the real effect of the innovation and to accelerate its adoption.

The third and last managerial implication is related to channel management in highly regulated industries. Prior studies – see for example, the multi-industry studies of Sullivan et al. (2012) and of Davies and Ryals (2014) – have shown that in industrial markets, channel management requires the creation of strategic account management units aimed at removing, for the main customers, the typical adoption barriers: new technology cost and credibility, lack of capacity of adopters and structural and organization limits (Ramirez et al., 2014). These units are supposed to establish long-lasting relationships with the potential adopters and follow them along the entire adoption process (Bradford et al., 2012; Ojasalo, 2001; Philippe Gosselin and André Bauwen, 2006; Storbacka, 2012). Our study suggests that, in highly regulated industries, firms should improve the account management organization by creating a market access unit aimed at removing the specific barriers that stem from industry norms and rules and particularly at overseeing the timely adoption of the innovation along the entire value chain. Rather than being responsible for single relevant customers, the market access unit should be responsible for the entire value chain in a given geographic area.

6. Conclusions
This study analyzed how firms, operating in highly regulated markets, try to reduce complexity and manage the relationships with market actors, to promote and diffuse their new products. In particular, the article showed that specific adoption barriers stem from the norms that define how an innovation must be developed and diffused:

- heterogeneity in the application of the technical rules and in the assessment of the new products value;
- lack of the capacity needed to understand the effect of the innovation on the architecture and performance of the entire regulated value chain; and
- uncertainty related to the different time frames in the adoption of the innovation.

The resulting rigidity in the behavior of the different value chain players requires marketing approaches that complement the usual strategies used in the B2B promotion of an innovation.

The study highlighted three different approaches consisting of the following:

1. educational activities simultaneously delivered to the key value chain players involved in the innovation adoption process and conducted via well-reputed partners;
2. use of simulation tools to show ex ante the effect of new products on the architecture and the performance of the entire regulated value chain; and
3. creation of specific organizational units devoted to facilitating the market access of the innovation by following the adoption activities of the entire value chain.

These findings are in line with those of studies conducted in other highly regulated industries. Therefore, the main implications, reported in the previous section, can be useful not solely for scholars and practitioners in the health-care sector but also for those that study the diffusion of innovation in other highly regulated industrial markets.

A key limit of the study is that it focuses on an industry whose purchasing processes are based on a very specific, almost unique, payment method (i.e. “third-party payer”). This crucial specificity of the health sector might undermine the abovementioned theoretical consistency (and generalizability) of our results with the findings of other studies based on different regulated industries. Future research may be required to verify whether this and other key differences among health-care systems or among different highly regulated industries; this limits the external validity of this study’s findings. Accordingly, future research could extend this study by considering either a larger number of cases selected in different national health-care
systems or cases selected in other highly regulated markets. Alternatively, future studies may turn to quantitative approaches, to derive, from this study, formal hypotheses to be tested on a large sample of actors operating in highly regulated industrial markets.

Notes
1 The authors presented a previous version of this article at the “R&D Management” Conference 2018.

References
Approaches for the diffusion of innovation

Francesco Schiavone and Michele Simoni


**Further reading**

**Corresponding author**
Francesco Schiavone can be contacted at: franz.schiavone@gmail.com
Environmental turmoil and firms’ core structure dynamism: the moderating role of strategic alliances

Rui Xue
Bond Business School, Bond University, Gold Coast, Australia
Gongming Qian
Faculty of Economics and Business Administration, Southern University of Science and Technology, Shenzhen, China
Zhengming Qian
Department of Mathematics, Guizhou Normal University, Guiyang, China, and
Lee Li
School of Administrative Studies, York University, Toronto, Canada

Abstract

Purpose – Much of the extant evidence in the marketing literature posits that firms use strategic alliances to share resources, costs and risks as paths to performance improvements. Drawing from the organizational ecology theory, this study aims to propose a different rationale, namely, that strategic alliances protect a firm’s core structure – its stated goals, authority structure, core technologies and marketing strategies – by mitigating the need for hazardous changes in hostile environments.

Design/methodology/approach – This study collected quantitative data using market survey and analyzed the data with the regression method.

Findings – Using Chinese firms in three technology industries as the research setting, this research finds a positive and significant relationship between environmental hostility and core structure dynamism. Although strategic alliances themselves have no direct bearing on core structure dynamism, they are found to moderate this relationship negatively, that is, strategic alliances attenuate the relationship between environmental hostility and structural changes.

Research limitations/implications – This paper argues that strategic alliances have significant moderating effects on firm performance, that is, firms use strategic alliances to outsource competence to partners and, thus, avoid internal turmoil. However, the moderating effect alone cannot explain the complexity of strategic alliances. There could exist other effects that remain unknown. In addition, individual-level factors could have significant impacts on strategic alliance management. Future studies should look into these issues to advance the authors’ knowledge on strategic alliances.

Practical implications – The findings of this study show that managers should outsource competence to partners when they experience turmoil in markets. Adapting to market turmoil internally could lead to market failure.

Originality/value – This study provides a new rationale for strategic alliances, that is, firms use strategic alliances to reduce market uncertainty. This rationale has not been reported in the existing literature.

Keywords Strategic alliances, Core structure dynamism, Environmental turmoil

Paper type Research paper

Introduction

There has been a general consensus in marketing literature that many firms create strategic alliances when markets grow dynamic (Wang and Fang, 2012). Strategic alliances refer to voluntary arrangements between firms involving exchange, sharing or co-development of products, technologies or services (Panico, 2017). The mainstream business literature takes strategic alliances as the conduits for facilitating the flow of otherwise unavailable resources and capabilities between collaborating firms and suggests that firms use strategic alliances mainly to share resources, costs and risks (Agarwal et al., 2010; Lin et al., 2009). However, the samples through which much of the evidence supporting this view of main alliance motives were collected involved firms that were competing in relatively stable environments (Li et al., 2013). In recent years, some empirical studies show that sharing resources, costs and risks does not make much strategic sense in hostile environments because it incurs high transaction costs, such as high opportunism and low resource complementarities between partners (Luo, 2007; Yen and Hung, 2017). The
contradiction raises an important question: why do firms need strategic alliances in hostile environments if they do not intend to share resources, costs and risks?

Answering the question is important because it challenges the traditional belief of the strategic intent of alliances in hostile environments. We envision hostile environments to be ones in which changes in demand, competition and technology are so rapid and discontinuous that information is often inaccurate, unavailable or obsolete (Shang et al., 2016). The resulting information deficit makes it difficult for firms to identify and understand the cause-and-effect relationships (Cui et al., 2015). A lack of confidence in the causal relationships, such as those concerned with strategic alliances and performance outcomes, increases the difficulty decision makers encounter when making commitments to partnerships (Armbruster and Delage, 2015). Thus, hostile environments are associated with significant competitive-, market- and product-related uncertainties, which make it difficult for firms to specify, monitor and control contract contingencies (Cui et al., 2011). Moreover, environmental hostility frequently leads to dramatic market jolts that render the resource complementarities of partners temporary (Goerzen, 2007). With high transaction costs and short-lived resource complementarity, it does not make much sense for partners to share resources, costs and risks. Indeed, these conditions suggest that strategic alliances may be used in such environments for purposes other than sharing resources, costs and risks. An important question emerges: why do firms have strategic alliances when environments change?

This study is designed to answer the aforementioned question in an international setting. Building on and extending the theory of organizational ecology, we propose in this study that firms in hostile environments choose to use strategic alliances mainly to protect their existing core structure. This objective is accomplished when strategic alliances are used to outsource new functions and new processes for the purpose of coping with dramatic and disruptive environmental changes. Deciding to use alliances for this purpose is important, in that scholars of organizational ecology indicate that firms have difficulty in adapting effectively to disruptive environmental changes because established procedures, roles and structures make them inert (Barnett and Carroll, 1995). Externally, the institutions or the contexts, such as inter-firm interactions and social norms, restrict the options for the firms to adapt to the environments (Li et al., 2010). Although scholars of organizational ecology do not directly address the issue of strategic alliances, their argument that firms cannot easily maintain pace with shifting environmental conditions by adapting their core structure – their goals, authority structure, technologies and strategies – provides a useful impetus to explore the function of strategic alliances in hostile settings. As adaptation and restructuring are difficult to achieve in such environments, firms have the option of using strategic alliances to outsource newly required organizational functions to external sources. Strategic alliances, thus, may allow organizations to avoid changes while simultaneously performing new functions that address disruptive environmental changes.

This study makes significant contributions to the existing alliance literature on two fronts. First, it proposes and tests a new rationale for strategic alliances, that is, alliances are used in hostile environments to help firms get away with inertia, rather than sharing resources, costs and risks. Second, the findings of this study fill a missing link in the organizational ecology theory. The mainstream management literature argues that firms have to adapt to the external changes when business environments change (Eisenhardt and Tabrizi, 1995; Stieglitz et al., 2016). Organizational ecology claims that firms can hardly adapt their internal routines and structures to fit the changed environments due to their internal inertia (Hannan and Freeman, 1984, 1989). However, the organizational ecology theory does not provide a solution for firms to solve the adaptation problem. The evidence collected in this study demonstrates how firms manage these challenges when they adapt to environmental changes.

Environmental turmoil, core structure adaptation and strategic alliances

The organizational ecology theory posits that individual firms are inert: they cannot change easily or quickly (Li et al., 2013; Mens et al., 2015; Peli et al., 1994). Such organizational inertia results from various sources, including routines, defined as the repeatable patterns of interdependent behaviors, established roles and formal organizational rules (Bresman, 2013; Liang and Mei, 2018). These factors comprise firms’ internal structure and are difficult to alter quickly (Yi et al., 2016). The organizational inertia has significant implications for firms in dynamic environments; when environments change, firms can hardly change simultaneously to adapt to environmental changes (Stieglitz et al., 2016).

The organizational ecology theory suggests that a firm is built on four pillars of the firm’s core structure, including stated goals, core technologies, authority structure and marketing strategies (Hannan and Freeman, 1984). Changing a firm’s core structure may lead to declines in the firm’s performance (Gilbert, 2005). The risks of performance declines are manifested in several ways. First, changing a firm’s core structure erodes its reliability and accountability (Hannan and Freeman, 1989). Firms exist because they are able to perform reliably and account for their actions. They require particular capabilities to produce collective products of a given quality repeatedly and must be able to document the sequence and outcome of their organizational decisions, rules and actions. Reliability and accountability are high when a firm’s goals are institutionalized and its patterns of activity are routinized. In a world of uncertainty, external entities such as investors and customers value a firm’s reliability and accountability more than its efficiency (Hannan and Freeman, 1989; Merigo et al., 2016). Reorganization may alter such institutionalization and routinization and, thus, erode reliability and accountability (Hannan and Freeman, 1984).

Second, a firm’s core structure produces and reproduces the routines that define its knowledge and competence (Amburgey et al., 1993; Yi et al., 2016). Routines are the source of continuity in a firm’s behavioral patterns (Nelson and Winter, 1982). If a firm attempts to reorganize its core structure, it may destroy routine reproducibility and disrupt continuity, which in turn, may lead to high uncertainties and even business failure (Hannan and Freeman, 1984). Moreover, routines typically encompass interaction with the external environment (Yi et al., 2016). A change in such routines may engender corrosive modifications of ties or linkages between the firm and its environment (Mens et al., 2015).
Third, changing a firm’s core structure involves extensive resources and demands that some types of organizational learning start anew (Peli et al., 1994; Yi et al., 2016). Learning is time-dependent as it involves feedback (Hannan et al., 2003). Moreover, learning requires resources. When a firm replaces its core technologies, it has to invest heavily in R&D (Sirmon et al., 2007). Similarly, when a firm changes its marketing strategies, it has to spend heavily on re-positioning (Johnston et al., 2018). Not all firms have sufficient resources to complete such learning. On the other hand, learning implies departure from existing routines, and such changes invite resistance (Bresman, 2013). Certain organizational members are inclined to resist changes as their political and economic interests are associated with existing orders or structures (Hannan et al., 2003).

Given the conditions described above, firms face a critical dilemma when they encounter disruptive environmental changes. On the one hand, they must evolve to adapt to industry-specific changes. On the other hand, they must try to preserve as much as possible their internal core structure and, simultaneously, maintain their fit with institutional frameworks and resource endowments to manage institutional pressures and constraints (Stieglitz et al., 2016). The dilemma can be more outstanding in hostile environments. Many industries, such as technology ones, frequently experience rapid market changes (Cui et al., 2011). Some of these changes can be unfavorable for firms and result in environmental hostility (Davis et al., 2009). For example, frequent innovations result in high spending on R&D, fast depreciation of fixed capital and high bankruptcy rates (Zahra and Garvis, 2000). Moreover, because a firm is embedded in different layers of contexts, it is difficult for the firm to adapt to industry-specific changes, such as the emergence of new technologies and, simultaneously, matching formal and informal institutions, such as business network and interactions between firms (Meyer et al., 2011).

Strategic alliances provide an alternative and rapid solution to resolve the dilemma. When partners work together, they can take advantage of each other’s core structure to adapt to environmental hostilities without changing their respective existing core structure. Through strategic alliances, a firm can gain access to new routines without disrupting existing ones (Li et al., 2013). As new goals, technologies and marketing strategies are implemented by partners, the focal firm’s existing routines may remain essentially intact, as may its reliability and accountability. As such, strategic alliances provide an optimal mechanism for firms seeking to adapt to industry-specific changes and maintain fit with formal and informal institutions. Through strategic alliances, firms can make use of external and different technologies and marketing strategies to explore new opportunities and, simultaneously, keep and refine internal core structure to exploit existing opportunities. In addition, strategic alliances quickly provide external core structure, requiring minimal organizational learning to do so.

Hypotheses development
Environmental hostility, dynamism of stated goals and strategic alliances
Firms are vehicles for collective action. Those actions are guided by stated goals that channel behavior and motivate, legitimize and evaluate an organization (Scott, 1992). Stated goals, manifested in the form of direction-setting statements such as those developed to specify a vision and a mission, determine a firm’s businesses, products, set of competitors and customers it wishes to serve (Jack and Powers, 2015). However, a firm’s stated goals may not be stable in hostile environments. Because of the pressure of changing demand conditions and the introduction of radical innovations into competitive areas, hostile environments are frequently characterized by radical industry changes, intense regulatory burdens on an industry and fierce rivalry among competitors (Zahra and Garvis, 2000). The main consequence of these challenges is the destabilization or sharp fluctuation of an industry’s sales, profits and growth (Luo, 2007). On the other hand, environmental hostility may push firms to innovate and innovations may erode or even ruin the existing knowledge and market demands (Cui et al., 2011). Environmental hostility and the consequent innovations have an important implication – a firm’s stated goals may easily lose fit with environmental conditions and demands.

However, frequently changing stated goals to adapt to changed environments may reduce or even destroy a firm’s reliability and accountability, particularly when those goals institutionalize and routinize a firm’s activities (Gilbert, 2005). Firms must be able to account rationally for their actions and must possess the capacity to continuously provide reliable products that meet customers’ needs (Hannan and Freeman, 1989). Changes to stated goals may disrupt such supply and, thus, reduce a firm’s trustworthiness, enhancing chances of failure as a result (Amburgey et al., 1993).

Strategic alliances may help firms change stated goals without significantly disrupting their existing routines and rules. By working with external partners whose stated goals fit changed environments, focal firms can shift to new goals without making much internal adaptation. On the other hand, the partners provide products or services at the quality the focal firms’ brands have promised so that focal firms’ engagement with unknown searches, experimentation and risk-taking behaviors does not challenge their existing relationships with customers and suppliers. Such a shift can happen quickly because partners have new goals ready and have appropriate knowledge and routines to achieve the goals (Yang et al., 2019). The high speed is critical in hostile environments where opportunities are at best temporary (Cui et al., 2011). As the new goals are implemented outside a focal firm’s boundary, the firm’s current stated goals are preserved so that the firm can devote its resources and competencies to new goals and, thus, increase the success rates of the new goals. Hence, we hypothesize the following:

H1. Strategic alliances weaken the positive relationship between environmental hostility and a focal firm’s stated goal dynamism.

Environmental hostility, dynamism of core technologies and strategic alliances
Technology refers to the combined physical, intellectual and knowledge processes by which materials are transformed into outputs (Scott, 1992). A firm’s core technology represents the arrangements it develops to perform its central tasks, as well as the skills of personnel employed to carry out those tasks.
(Scott, 1992). In environments characterized by rapid and dramatic changes, core technologies are uncertain, with new technologies constantly emerging to replace the old, thereby rendering the latter obsolete (Asare et al., 2016; Salehi et al., 2018).

Changes to core technologies can have several adverse effects on firms. First, they can be costly, as firms have to invest frequently and substantially to replace existing equipment, retrain employees to use new technologies and redesign strategies to fit new technologies. Second, technology replacement may cause confusion within firms, thus making their operation less effective. Technology changes challenge existing routines, established roles and organizational rules (Bresman, 2013). Moreover, a firm’s previous investments and its repertoire of routines, roles and rules may well constrain the adoption of new behavior (Nelson and Winter, 1982). Third, core technology changes are intrinsically social and collective, as they require common codes of communication and coordinated procedures throughout the firm. Finally, the legal framework and its enforcement, property rights, information systems and regulatory regimes, as well as firms’ business networks all constrain the development of new technologies. Given these realities, radical innovations are often introduced into an industry by new entrants, rather than by incumbents (Teece et al., 1997).

Clearly, as environmental hostility increases, firms face an increasingly challenging adaptive task. When profoundly new technologies emerge unexpectedly, organizations may be required to adopt them and quickly learn how to benefit from their use (Situmeang et al., 2017). However, replacing core technologies can be costly and destructive, especially when those new technologies change quickly and differ substantially from existing technologies (Jay, 2013).

A less damaging alternative might be for firms to use strategic alliances to take advantage of new technologies. Strategic alliances may enable a firm to shift quickly and effectively to new technologies but do not, at least in the short term, affect its existing core technologies. A firm can draw on the new skills and competencies of its partner to engage in technology development (Lin et al., 2009). As these are located outside of the firm’s boundaries, they will not conflict with existing technologies. Furthermore, as production, R&D and output tasks related to the new technologies are implemented by the partner, existing routines, roles and rules are preserved (Agarwal et al., 2010). This gives a firm time to modify and gradually adapt its internal structures to the new technological environment (Panico, 2017). Through strategic alliances, a firm can also transfer, transform and integrate different but complementary forms of knowledge and skills across firm boundaries and, thus, perhaps, develop new core technologies while keeping its existing boundaries intact (Salehi et al., 2018). This potential may explain in part why in recent years networks are viewed as a possible replacement for hierarchies, social relations may serve as a formal means of coordination and firms may choose to organize themselves around processes and capabilities rather than functions, products and regions (Siggelkow and Rivkin, 2005). The evidence and the possibilities flowing from it suggest the following hypothesis:

H2. Strategic alliances weaken the positive relationship between environmental hostility and a focal firm’s core technology dynamism.

Environmental hostility, dynamism of authority structure and strategic alliances

An authority structure is a structure of legitimate power that is manifested in a set of power relations between superiors and their subordinates (Scott, 1992). Such power relations specify the roles, norms and relationships of each position within a firm, independent of the personal characteristics of those involved. Through these relations, a firm can exercise control to direct its energies toward the accomplishment of its stated goals (Lee et al., 2015; Mens et al., 2015). However, as the level of environmental hostility increases via rapid technological change, deregulation and competitive globalization, the pressure for firms to adopt new ways of organizing to accomplish their stated goals and to match new patterns of task interdependence increases (Siggelkow and Rivkin, 2005).

Technological innovations may significantly change the components of a value chain, forcing firms to modify their authority structure to fit the new structure of the value chain. When the rapid recombination and relocation of materials involve different countries or regions, firms are required to make frequent and significant adjustments to the controlling hierarchies and coordinating mechanisms of their authority structure (Mens et al., 2015). In the automotive and electronics industries, for example, most final products are assembled from parts that are manufactured in different countries and the location keeps changing in the firms’ search for lower costs. Consequently, manufacturers must constantly adjust their organizational authority structure to match such changes.

Changes to the authority structure can be hazardous and inefficient because they involve vying interests and interest-group politics (Hannan et al., 2003). The influence of certain managers may be threatened, thereby triggering conflict (Hannan and Freeman, 1984). Those who benefit from the existing authority structure will seek to protect it against replacement. Moreover, changing the authority structure alters the pattern of internal interaction or communication, thus delaying the firm’s response to external changes. Frequent changes in the authority structure also increase the complexity of the interdependence of the tasks within the firm. In today’s world, many firms comprise a variety of subsidiaries located in different countries (Qian et al., 2013). Changes in the authority structure disrupt the existing embeddedness and affect the transaction and coordination costs of production and innovations undertaken by subsidiaries located in different countries (Rugman et al., 2011).

Strategic alliances enable firms, especially those operating across different locations, to maintain their existing authority structure intact when they face industry-specific changes. Operation through differentiated but interdependent subsidiaries or units across different locations provide firms with different sets of resources that are distributed geographically (Qian et al., 2013). To increase the competitive advantage of the value chain, individual subsidiaries often specialize in narrow competences or functions (Rugman et al., 2011). To integrate location-specific advantages with firm-specific advantages at low risks and costs,
firms often use joint ventures to set up specialized subsidiaries, especially in unstable markets (Li et al., 2014; Yang et al., 2019). Such specialization of subsidiary competence makes it difficult for firms to change the authority structure of subsidiaries because the changes may disrupt the whole value chain. Those firms can either concentrate their administrative functions to control the operation across different locations or decentralize the functions to allow locational responsiveness (Rugman et al., 2011). Decentralization systems can be more common in hostile environments to respond swiftly to unpredicted industry changes (Qian et al., 2013). Strategic alliances provide an effective means to achieve decentralization (Qian and Li, 2003). With alliances, focal firms do not have complete control over the network but enjoy high levels of responsiveness and flexibility, which are critical when markets grow dynamic and hostile. These subsidiaries are embedded in both their local contexts and also parents’ contexts (Meyer et al., 2011). The double embeddedness helps stabilize subsidiaries’ authority structure. Therefore, we hypothesize the following:

**H3.** Strategic alliances weaken the positive relationship between environmental hostility and a focal firm’s authority structure dynamism.

### Environmental hostility, dynamism of marketing strategies and strategic alliances

Marketing strategies include the determination of a firm’s long-range marketing objectives, the adoption of related courses of action and the allocation of resources that are necessary to achieve these objectives (Capron and Hulland, 1999). Marketing strategies are manifested in products, prices, distribution channels and promotions (Varadarajan, 2010). In hostile environments, short product and technology lifecycles lead firms to change their marketing strategies frequently to match new market needs and the fast-moving actions of competitors (Akaka et al., 2013). However, frequent changes to marketing strategies can be hazardous. First, changes in the product strategy may disrupt the existing R&D and production routines that define the firm’s experiences, knowledge and competence. Furthermore, when a firm shifts to new products, its organizational learning must start anew (Peli et al., 1994). Second, sharp price fluctuations reduce the firm’s reliability and accountability, because customers may lose confidence in the product quality or the stability of supply when prices fluctuate substantially. Third, radical changes in a firm’s distribution strategies may create chaos in its existing distribution channel networks and undermine its relationships with distributors. Moreover, a firm’s distribution networks and its relationships with distributors tend to develop over a long period and have been tailored to accommodate the firm’s particular products and customers (Akaka et al., 2013). Such increasing complexity in the distribution function indicates that strategic alternatives are not likely to be immediately available. Finally, frequent changes in promotion strategies may alter a firm’s reputation or positioning. A firm’s market image is based on its historic investment in promotions, which generate consumer awareness of the firm’s brands (Guo, 2013). The unique nature of this historic investment suggests that any attempt to change the firm’s market image may cause consumer confusion (Porter, 1985).

Strategic alliances make it possible for firms in hostile environments to limit the uncertainties involved in changing their marketing strategies. Different types of strategic alliances are available for firms to address various marketing uncertainties, such as R&D or distribution alliances (Lin et al., 2009). Through these alliances, firms can retain their existing marketing strategies by leaving changes in products, prices, distribution or promotion to be implemented by the partner. More importantly, strategic alliances may allow a firm to retain its positioning. In rapidly changing environments, short product and technology lifecycles require frequent repositioning, which may confuse customers, and on many occasions, lead to positioning failure (Porter, 1985). Through strategic alliances, a firm can maintain its existing position by specializing in a particular range of products (e.g. high-end products) and leaving other ranges (e.g. low-end products) to its partner. More importantly, legal frameworks vary significantly with countries, and strategic alliances help firms take advantage of different legal frameworks to implement marketing strategies. A Chinese firm may, for example, face high risks of dumping charges if it competes in prices in the USA. The risk is much lower if it works with a local partner and uses the latter’s brands. We, therefore, hypothesize the following:

**H4.** Strategic alliances weaken the positive relationship between environmental hostility and a focal firm’s marketing strategy dynamism.

### Methodology

#### Setting, sample and data

Our sample was Chinese firms that had equity-based alliances, non-equity-based alliances or both with foreign partners in technology industries. Recent evidence suggests that the environment of technology industries is dynamic and hostile, as well as characterized by changes in its competitive conditions, such as shifts in technology and customer tastes and much intense global competition (Bicen and Hunt, 2012; Chou, 2016; Li et al., 2015). Environmental changes in overseas markets are more frequent and more difficult to manage than those in domestic markets (Qian et al., 2013). International firms must cope with rapid and abrupt changes across countries, such as shifts in exchange rates, customer needs and government policies. Emerging markets add to the environmental dynamism and hostility (Xue et al., 2018; Yang et al., 2019). Our sample firms had joint ventures (JVs), joint R&D projects, joint distribution contracts, joint promotion contracts or joint financing contracts with foreign partners. Because it was relatively easy to identify JVs in Chinese government publications, 72 per cent of our sample firms had JVs with foreign partners. A sample firm could have more than one alliance entity or contract with foreign partners. The technology industries that we selected include biotechnology, software and telecommunications. We targeted the sample firms located in two Eastern coastal provinces (Guangdong and Jiangsu) and two municipalities (Beijing and Shanghai).

Our initial theory-driven framework was tested through field studies that were completed in two locations: Beijing and Shanghai. Specifically, two firms that had JVs in each location were selected as pilot case studies. An entry interview, using a semi-structured format, was conducted with the top executives...
regarding the firm’s history, major changes in environments and core structure, how the firm addressed these changes, rationales to form a JV and the effect of a JV on current operations. Variables were derived based on the JV rationale, core structure changes and environmental challenges that were mentioned in the interviews. Further refinements of the scales were conducted after the interviews through consultation with academic experts and consultants.

The data on the key variables were collected through the questionnaires in June 2014. The names of sample firms were obtained from local economic and trade councils or departments. To be included in our sample, a firm had to meet the following criteria. First, it had to be at least five years old. With high failure rates in technology industries (Qian and Li, 2003), this was to ensure that firms had survived liabilities of newness. Second, it had to employ at least ten people to differentiate it from “mom-and-pop” enterprises. Based on these criteria, we selected 773 firms that had JVs or had signed alliance contracts with foreign partners. Two waves of questionnaires were mailed to top executives (CEOs or highest-ranking managers) of the sample firms. All questions in the questionnaires were presented as a seven-point Likert-type scale (ranging from 1 = strongly disagree to 7 = strongly agree). We used top executives as our information source because they were most knowledgeable about their firms’ overall operation.

To assess the stability of responses, we collected data twice. In the first round of data collection, two waves of questionnaires were mailed to top executives of each firm. Completed responses were received from 181 companies, with a response rate of 23 per cent. The second round of data collection was conducted about 18 months later from the 181 firms that had responded to our first survey. Similarly, two waves of questionnaires were mailed to top executives of each firm. In total, 156 firms continued their participation, with a response rate of 86 per cent[1].

Variable measurement

Dynamism of stated goals was measured using a composite index of four items: radical changes in the firm’s mission statements, radical changes in the firm’s major businesses, radical changes in the firm’s market segments and radical changes in the firm’s competitive strategies. The organizational ecology literature suggests that a firm’s stated goals manifest in those items (Hannan and Freeman, 1984, 1989; Mens et al., 2015). In this study, the calculation of composite index is based on the equal-weighted index. Dynamism of core technologies was measured using a composite index of four items: radical changes in the sophistication of machinery and equipment used by the firm, radical changes in the inputs utilized by the firm, radical changes in the firm’s outputs and radical changes in the state of knowledge that underlies the firm’s operation. Scott (1992, 1995) uses these items to describe a firm’s core technologies. Dynamism of authority structure was measured using a composite index of four items: substantial changes in the job description of junior and senior managers, number of senior manager replacements, the addition or deletion of manager positions and substantial changes in the firm’s control and coordinating system. Studies on organizations often use these items to examine a firm’s authority structure (Scott, 1992, 1995). Dynamism of marketing strategies was measured using a composite index of four items: dramatic changes in product strategies, dramatic changes in price strategies, dramatic changes in promotion strategies and dramatic changes in distribution channel strategies. Existing marketing strategy literature largely uses those four items to measure marketing strategies (Capron and Hulland, 1999; Slater and Olson, 2001).

Environmental hostility measures that were developed and validated by Zahra and Covin (1995) and Zahra and Garvis (2000) were combined and used in this study. The participating executives were asked to evaluate the rate of product obsolesce, the rate of bankruptcy among companies in the industry, the rate and unpredictability of fluctuations in the industry’s growth rate and the industry’s net profit margin.

Strategic alliances were measured in terms of the number, turnover, duration and importance of JVs or alliance contracts relative to competitors in the same industry (Goerzen, 2007). Accordingly, there was a composite index of four items: more alliance agreements than competitors in the same industry, higher turnover of alliance agreements than competitors in the same industry, longer lifespan of alliance agreements than competitors in the same industry and greater (perceived) effects of alliance agreements on a firm’s operations than competitors in the same industry. JVs and alliance contracts were broken down into categories of manufacturing, R&D, distribution, promotion, finance and “others”. Individual JVs or contracts could perform multiple functions. We used dummy variables to represent these categories and demonstrated the correlation of total alliances with each type of alliances[2].

Control variables. Following previous studies (Goerzen, 2007; Koka and Prescott, 2008), we control for a number of variables that may also affect the core structure of the firm, including firm size, age, leverage, R&D intensity, advertising intensity, industry effect and regional effect. Firm size is measured by the log of sales revenues, and firm age by the log of firm age. R&D intensity is measured as annual R&D expenditures divided by the total sales revenue. Advertising intensity is measured using the firm’s annual expenditures on advertising and divided by the total sales. Firm leverage is calculated as long-term debt divided by total capital. Industry dummies, which represent each primary two-digit industry, are used to control for industry effects. For econometric reasons, we excluded one industry (software) so that the estimated coefficients should be interpreted as the difference in the dependent variable by the industry in question from the omitted group (Qian et al., 2013). Lastly, we also control for regional effects by taking into account the home region in which foreign partners are located. We grouped countries into four global market areas: the triad regions (Asia, Europe and North America) plus the rest of the world (Qian et al., 2010). Again, we omitted one region (the rest of world).

Measurement model assessment

To assess the adequacy of the measurement model with the six constructs, we first tested all of the hypothesized relationships simultaneously. Using AMOS18 computer software, we performed confirmatory factor analysis of the survey item data. The goodness-of-fit statistics suggest that our six-factor measurement model fit the observed data well. In particular, we formed a one-, two-, three- and four-factor model to examine
core structure dynamism. Then, we examined the model fit of each and tested $\chi^2$ differences to determine which model provided better fit to the data. The results showed that the four-factor model (representing each dimension of core structure dynamism) fits the data best. The $\chi^2$ differences between the four- and three-factor model is, for example, statistically significant at the 1 per cent level ($\chi^2 = 7.168$).

Specifically, the $\chi^2$ statistic was significant ($\chi^2/df = 2.127$), and the absolute fit indices (goodness of fit index (GFI) = 0.928, adjusted GFI (AGFI) = 0.894, root mean-square residual (RMR) = 0.031, root mean-square error of approximation (RMSEA) = 0.042) and incremental fit indices (comparative fit index (CFI) = 0.943, normed fit index (NFI) = 0.919, non-NFI (NNFI) = 0.938, DELTA2 = 0.913) all met the recommended threshold levels (Hu and Bentler, 1999). These statistics indicate that the model has an acceptable goodness of fit—a good fit of hypothesized relationships to the data. Overall, the GFI coefficients and factor loading estimates were stable, indicating the robustness of the parameter estimation.

Reliability and validity assessment

Construct reliability was assessed using the internal consistency method. There is a reasonable estimate of internal consistency as shown in Cronbach’s $\alpha$. The values, which ranged from 0.71 to 0.83, all surpass the recommended value of 0.70 (see Table I). These statistics provide a clear indication that the scale items measuring a construct are reliable (Nunnally, 1978). Meanwhile, the reliability coefficients of these variables all are above 0.6, suggesting that these variables are reliable measures of the constructs.

Convergent validity was evaluated by examining both the individual item loadings and average variance extracted for the constructs. Table I shows that all individual items have both strong (well above the recommended 0.50 limit (Anderson and Gerbing, 1988)) and significant ($t$-value $> 2.0$) loadings on their hypothesized constructs. In addition, values of the average variance extracted all met or exceeded the 0.50 threshold (Fornell and Larcker, 1981), which suggests that the amount of variance explained by the constructs was larger than the variance explained by measurement error. There is clear evidence of the adequate convergent validity of the constructs. Therefore, these items reflect important dimensions of their respective constructs, and we have good reason to keep them as indicators.

Discriminant validity is demonstrated by the following: the square root of the average variance extracted for each construct is higher than the correlation coefficients between it and all other constructs (Fornell and Larcker, 1981). If the condition is met, then discriminant validity is supported. All of the square roots of the average variance extracted, AVE were larger than the interconstruct correlation coefficients (off diagonals), indicating that each construct differed sufficiently from other constructs. In particular, we are concerned with the discriminant validity of the four dimensions (constructs) of dynamism. The square root of the AVE for each construct was 0.761, 0.818, 0.754 and 0.721, larger than each coefficient under diagonal, indicating that all constructs satisfy the discriminant validity (see Appendix I).

Results

The Shapiro–Wilk test is used to examine whether the data came from a normally distributed population. The results show that all of the $p$ values are greater than the 5 per cent level with the lowest statistic being 0.9618 ($p = 0.2816$). There is evidence that the data tested are normally distributed.

The descriptive statistics for the sample are presented in Appendix 2. There are generally low correlation coefficients among the independent variables, suggesting that multicollinearity is not a concern in the hypotheses testing. Moreover, we computed variance-inflating factor (VIF), and the results (the highest value of VIF is 1.12) further confirm that there is no significant problem of multicollinearity. We also used the Durbin–Watson (DW) to test for significant autocorrelation in the residuals. All of the DW statistics, which ranged from 1.95 to 2.18, are significant, indicating the data are random, that is, each residual value is different from the adjacent residual.

Meanwhile, we used two approaches to examine the closeness and preciseness of each construct from the two rounds of surveys. First, Spearman tests show that the average correlation was 0.912 (ranging from 0.873 to 0.941). Second, both weighted kappa and $z$-statistics indicate that the data of the two surveys were highly similar, and no significant changes were detected on those constructs in two surveys[3]. Taken together, each construct in the two surveys had a very high degree of correlation and precision.

To test the proposed hypotheses, our empirical study consists of two parts. In Part 1, we focused on a single alliance variable (“total” alliances) to investigate whether being involved with an alliance helps the firm to mitigate the negative effects brought about by environmental hostility. In Part 2, we investigated five categories of alliances based on the additional data collected in the survey. For each variable of core structure dynamism (the dependent variables of Tables II to IV), we compared two models to test each hypothesis: a base model incorporating control variables and the main effect variables for hostility and alliances, and the full model which adds an interaction term for the product of hostility and alliances—the focal term of all our hypotheses. To reduce multicollinearity in the full models, we standardized the main effect variables before computing interactions.

Total alliances and protection in hostile environments

Table II reports the empirical work which examines “total” alliances. The results for the four base models indicate that the control variables of firm age and the industry dummy variables are positively related to the four dimensions of core structure dynamism, and that R&D intensity and advertising intensity are negatively related to these dimensions. Firm size, firm leverage and regional effects are non-significant. Among the main effect variables, environmental hostility is positively and significantly correlated with each component of core structure dynamism (all at the 0.05 and 0.01 levels). In contrast, alliances do not relate significantly to any aspect of core structure dynamism. Thus, although hostility correlates with changes in core structures, alliances do not.
The F-values for the four models’ fit are significant at the 0.05 and 0.01 levels.

The results in the four full models that test $H1$ through $H4$ show that the interaction between alliances and hostility are, as predicted, negative and highly significant (at the 0.01 and 0.001 levels). Moreover, adding the interaction term to the base models increased explanatory power as reflected by change in the F-value (all are significant at the 0.01 and 0.001 levels). These results fully support $H1$ through $H4$. In short, although strategic alliances by themselves do not relate to changes in core structures, these strategic alliances do increasingly reduce the propensity to change core structures as the environment hostility increases. In other words, in hostile settings where change is especially pressing and hazardous, strategic alliances are more apt to be used to reduce the need for firms to change their core structure.

**Alliance categories and their interactions with hostile environments**

Table III presents the empirical work which examines five specific categories of alliances. Alliance category dummies were entered into the base models together with control variables and environmental hostility. We multiplied each alliance category with environmental hostility and assessed the contributions from adding these interaction terms to the base models.

The results for both the control variables and the main variables of the base models are comparable to those of
<table>
<thead>
<tr>
<th>Variables</th>
<th>Dynamism of stated goals</th>
<th>Dynamism of core technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base model</td>
<td>Full model</td>
</tr>
<tr>
<td></td>
<td>Coefficient</td>
<td>t Significance</td>
</tr>
<tr>
<td><strong>Industry group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biotechnology</td>
<td>0.0822****</td>
<td>1.787</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>0.1232*</td>
<td>2.287</td>
</tr>
<tr>
<td><strong>Regional group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia</td>
<td>0.0609</td>
<td>1.417</td>
</tr>
<tr>
<td>Europe</td>
<td>0.0557</td>
<td>1.353</td>
</tr>
<tr>
<td>North America</td>
<td>0.0663</td>
<td>1.491</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.1027****</td>
<td>1.923</td>
</tr>
<tr>
<td>Firm age</td>
<td>0.0638</td>
<td>1.442</td>
</tr>
<tr>
<td>Firm leverage</td>
<td>0.0405</td>
<td>1.183</td>
</tr>
<tr>
<td>R&amp;D intensity</td>
<td>-0.0949****</td>
<td>-1.872</td>
</tr>
<tr>
<td>Advertising intensity</td>
<td>-0.0869</td>
<td>-1.805</td>
</tr>
<tr>
<td>Environmental hostility</td>
<td>0.1337*</td>
<td>2.469</td>
</tr>
<tr>
<td>Total alliances</td>
<td>-0.0659</td>
<td>-1.478</td>
</tr>
<tr>
<td>Environmental hostility × Total alliances</td>
<td>-0.1218*</td>
<td>-2.282</td>
</tr>
<tr>
<td>R²</td>
<td>0.142</td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.086</td>
<td></td>
</tr>
<tr>
<td>F-value change</td>
<td>2.344**</td>
<td></td>
</tr>
<tr>
<td>Sig. F change</td>
<td>0.0083</td>
<td></td>
</tr>
</tbody>
</table>

(continued)
Table II

<table>
<thead>
<tr>
<th>Variables</th>
<th>Dynamism of stated goals</th>
<th>Dynamism of core technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base model</td>
<td>Full model</td>
</tr>
<tr>
<td></td>
<td>Coefficient</td>
<td>Significance</td>
</tr>
<tr>
<td>Industry group&lt;sup&gt;d&lt;/sup&gt;</td>
<td>Biotechnology</td>
<td>0.0861****</td>
</tr>
<tr>
<td></td>
<td>Telecommunications</td>
<td>0.1233*</td>
</tr>
<tr>
<td>Regional group&lt;sup&gt;e&lt;/sup&gt;</td>
<td>Asia</td>
<td>0.0441</td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td>0.0573</td>
</tr>
<tr>
<td></td>
<td>North America</td>
<td>0.0591</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.0983****</td>
<td>1.904</td>
</tr>
<tr>
<td>Firm age</td>
<td>0.0601</td>
<td>1.399</td>
</tr>
<tr>
<td>Firm leverage</td>
<td>0.0393</td>
<td>1.097</td>
</tr>
<tr>
<td>R&amp;D intensity</td>
<td>–0.0908****</td>
<td>–1.841</td>
</tr>
<tr>
<td>Advertising intensity</td>
<td>–0.0829****</td>
<td>–1.778</td>
</tr>
<tr>
<td>Environmental hostility</td>
<td>0.1279*</td>
<td>2.328</td>
</tr>
<tr>
<td>Total alliances&lt;sup&gt;a&lt;/sup&gt;</td>
<td>–0.0632</td>
<td>–1.456</td>
</tr>
<tr>
<td>Environmental hostility × Total alliances</td>
<td>–0.1204*</td>
<td>–2.269</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.138</td>
<td>0.150</td>
</tr>
<tr>
<td>F-value change</td>
<td>2.267*</td>
<td>2.466**</td>
</tr>
<tr>
<td>Sig. F change</td>
<td>0.0109</td>
<td>0.0043</td>
</tr>
</tbody>
</table>

Notes: *The base model is the change from the intercept-only model. The intercept is zero when it is standardized (β); **Both t and significance are used for ordinary unstandardized coefficients; ***The regression coefficients for the industry group show each group’s impact on core structure dynamism relative to that of the excluded industry (software); ****The regression coefficients for the region group show each region’s impact on core structure dynamism relative to that of the excluded region (the rest of world); ****p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001
### Table III: Regression of core structure dynamism on alliance categories, hostility and their interaction

<table>
<thead>
<tr>
<th>Variables</th>
<th>Base model</th>
<th>Dynamism of stated goals</th>
<th>Full model</th>
<th>Dynamism of core technologies</th>
<th>Base model</th>
<th>Full model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>t</td>
<td>Significance</td>
<td>Coefficient</td>
<td>t</td>
<td>Significance</td>
</tr>
<tr>
<td><strong>Industry group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biotechnology</td>
<td>0.0926***</td>
<td>1.847</td>
<td>0.0665</td>
<td>0.0910***</td>
<td>1.842</td>
<td>0.0673</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>0.1293*</td>
<td>2.331</td>
<td>0.0209</td>
<td>0.1277***</td>
<td>2.324</td>
<td>0.0214</td>
</tr>
<tr>
<td><strong>Regional group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia</td>
<td>0.0567</td>
<td>1.351</td>
<td>0.1785</td>
<td>0.0554</td>
<td>1.338</td>
<td>0.1828</td>
</tr>
<tr>
<td>Europe</td>
<td>0.0437</td>
<td>1.124</td>
<td>0.2626</td>
<td>0.0421</td>
<td>1.116</td>
<td>0.2661</td>
</tr>
<tr>
<td>North America</td>
<td>0.0615</td>
<td>1.421</td>
<td>0.1572</td>
<td>0.0594</td>
<td>1.393</td>
<td>0.1655</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.0945***</td>
<td>1.969</td>
<td>0.0634</td>
<td>0.0922***</td>
<td>1.857</td>
<td>0.0651</td>
</tr>
<tr>
<td>Firm age</td>
<td>0.0677</td>
<td>1.488</td>
<td>0.1386</td>
<td>0.0659</td>
<td>1.480</td>
<td>0.1408</td>
</tr>
<tr>
<td>Firm leverage</td>
<td>0.0465</td>
<td>1.147</td>
<td>0.2530</td>
<td>0.0452</td>
<td>1.128</td>
<td>0.2609</td>
</tr>
<tr>
<td>R&amp;D intensity</td>
<td>-0.1024***</td>
<td>-1.926</td>
<td>0.0558</td>
<td>-0.1007***</td>
<td>-1.907</td>
<td>0.0583</td>
</tr>
<tr>
<td>Advertising intensity</td>
<td>-0.0893***</td>
<td>-1.831</td>
<td>0.0689</td>
<td>-0.0879***</td>
<td>-1.818</td>
<td>0.0709</td>
</tr>
<tr>
<td>Environmental hostility</td>
<td>0.1340***</td>
<td>2.419</td>
<td>0.0126</td>
<td>0.1291*</td>
<td>2.402</td>
<td>0.0174</td>
</tr>
<tr>
<td><strong>Alliance categories</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing alliances</td>
<td>-0.0517</td>
<td>-1.319</td>
<td>0.1889</td>
<td>-0.0504</td>
<td>-1.305</td>
<td>0.1938</td>
</tr>
<tr>
<td>R&amp;D alliances</td>
<td>-0.0496</td>
<td>-1.283</td>
<td>0.2013</td>
<td>-0.0479</td>
<td>-1.266</td>
<td>0.2073</td>
</tr>
<tr>
<td>Distribution alliances</td>
<td>-0.0626</td>
<td>-1.439</td>
<td>0.1520</td>
<td>-0.0613</td>
<td>-1.429</td>
<td>0.1549</td>
</tr>
<tr>
<td>Marketing alliances</td>
<td>-0.0548</td>
<td>-1.356</td>
<td>0.1769</td>
<td>-0.0533</td>
<td>-1.338</td>
<td>0.1828</td>
</tr>
<tr>
<td>Finance alliances</td>
<td>-0.0435</td>
<td>-1.202</td>
<td>0.2311</td>
<td>-0.0420</td>
<td>-1.189</td>
<td>0.2862</td>
</tr>
<tr>
<td>Interaction effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental hostility x Manufacturing alliances</td>
<td>-0.1329*</td>
<td>-2.453</td>
<td>0.0152</td>
<td>-0.1308*</td>
<td>-2.439</td>
<td>0.0158</td>
</tr>
<tr>
<td>Environmental hostility x R&amp;D alliances</td>
<td>-0.0677</td>
<td>-1.496</td>
<td>0.1366</td>
<td>-0.0697</td>
<td>-1.518</td>
<td>0.1402</td>
</tr>
<tr>
<td>Environmental hostility x Distribution alliances</td>
<td>-0.1695***</td>
<td>-3.108</td>
<td>0.0002</td>
<td>-0.1649***</td>
<td>-3.092</td>
<td>0.0023</td>
</tr>
<tr>
<td>Environmental hostility x Marketing alliances</td>
<td>-0.1543**</td>
<td>-2.894</td>
<td>0.0043</td>
<td>-0.1517**</td>
<td>-2.873</td>
<td>0.0046</td>
</tr>
<tr>
<td>Environmental hostility x Finance alliances</td>
<td>-0.0592</td>
<td>-1.401</td>
<td>0.1631</td>
<td>-0.0571</td>
<td>-1.377</td>
<td>0.1704</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.138</td>
<td>0.192</td>
<td>0.141</td>
<td>0.195</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.061</td>
<td>0.092</td>
<td>0.063</td>
<td>0.096</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-value change</td>
<td>1.661***</td>
<td>2.152**</td>
<td>1.703***</td>
<td>2.160**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Sig. F change | 0.059 | 0.0041 | 0.051 | 0.04 | (continued)
<table>
<thead>
<tr>
<th>Variables</th>
<th>Dynamic of stated goals</th>
<th>Base model</th>
<th>Dynmism of authority structure</th>
<th>Full model</th>
<th>Significance</th>
<th>Coefficient</th>
<th>t</th>
<th>Significance</th>
<th>Coefficient</th>
<th>t</th>
<th>Significance</th>
<th>Coefficient</th>
<th>t</th>
<th>Significance</th>
<th>Coefficient</th>
<th>t</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry group a</td>
<td>Base model</td>
<td>0.0674****</td>
<td>1.099</td>
<td>0.0723</td>
<td>0.0859****</td>
<td>1.796</td>
<td>0.0743</td>
<td>0.0991****</td>
<td>1.923</td>
<td>0.0562</td>
<td>0.0975****</td>
<td>1.891</td>
<td>0.0604</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biotechnology</td>
<td>Base model</td>
<td>0.1165*</td>
<td>2.2237</td>
<td>0.0275</td>
<td>0.1142*</td>
<td>2.216</td>
<td>0.0281</td>
<td>0.1265*</td>
<td>2.306</td>
<td>0.0223</td>
<td>0.1248*</td>
<td>2.294</td>
<td>0.0231</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telecomunications</td>
<td>Base model</td>
<td>0.1165*</td>
<td>2.2237</td>
<td>0.0275</td>
<td>0.1142*</td>
<td>2.216</td>
<td>0.0281</td>
<td>0.1265*</td>
<td>2.306</td>
<td>0.0223</td>
<td>0.1248*</td>
<td>2.294</td>
<td>0.0231</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional group b</td>
<td>Asia</td>
<td>0.0595</td>
<td>1.385</td>
<td>0.1679</td>
<td>0.0592</td>
<td>1.368</td>
<td>0.1732</td>
<td>0.0677</td>
<td>1.473</td>
<td>0.1426</td>
<td>0.0664</td>
<td>1.456</td>
<td>0.1473</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td>0.0492</td>
<td>1.281</td>
<td>0.2019</td>
<td>0.0475</td>
<td>1.261</td>
<td>0.2091</td>
<td>0.0569</td>
<td>1.368</td>
<td>0.1732</td>
<td>0.0553</td>
<td>1.352</td>
<td>0.1783</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>North America</td>
<td>0.0641</td>
<td>1.454</td>
<td>0.1478</td>
<td>0.0626</td>
<td>1.429</td>
<td>0.1549</td>
<td>0.0729</td>
<td>1.553</td>
<td>0.1223</td>
<td>0.0712</td>
<td>1.524</td>
<td>0.1295</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Firm size</td>
<td>0.1019****</td>
<td>1.908</td>
<td>0.0581</td>
<td>0.1003*</td>
<td>1.896</td>
<td>0.0598</td>
<td>0.1147*</td>
<td>2.226</td>
<td>0.0274</td>
<td>0.1128*</td>
<td>2.215</td>
<td>0.0282</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Firm age</td>
<td>0.0587</td>
<td>1.369</td>
<td>0.1728</td>
<td>0.0562</td>
<td>1.353</td>
<td>0.1779</td>
<td>0.0609</td>
<td>1.408</td>
<td>0.1610</td>
<td>0.0593</td>
<td>1.392</td>
<td>0.1658</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Firm leverage</td>
<td>0.0296</td>
<td>1.104</td>
<td>0.2712</td>
<td>0.0382</td>
<td>1.077</td>
<td>0.2831</td>
<td>0.0439</td>
<td>1.213</td>
<td>0.2269</td>
<td>0.0423</td>
<td>1.194</td>
<td>0.2342</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R&amp;D intensity</td>
<td>-0.0921****</td>
<td>-1.862</td>
<td>0.0644</td>
<td>-0.0904*</td>
<td>-1.848</td>
<td>0.0666</td>
<td>-0.1119*</td>
<td>-2.175</td>
<td>0.0310</td>
<td>-0.1102*</td>
<td>-2.161</td>
<td>0.0322</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advertising intensity</td>
<td>-0.0823****</td>
<td>-1.761</td>
<td>0.0801</td>
<td>-0.0809****</td>
<td>-1.750</td>
<td>0.0820</td>
<td>-0.0848****</td>
<td>-1.787</td>
<td>0.0758</td>
<td>-0.0833****</td>
<td>-1.771</td>
<td>0.0785</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental hostility</td>
<td>0.1229*</td>
<td>2.301</td>
<td>0.0226</td>
<td>0.1212*</td>
<td>2.289</td>
<td>0.0234</td>
<td>0.1411**</td>
<td>2.672</td>
<td>0.0082</td>
<td>0.1395**</td>
<td>2.658</td>
<td>0.0086</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alliance categories</td>
<td>Manufacturing alliances</td>
<td>-0.0477</td>
<td>-1.246</td>
<td>0.2145</td>
<td>-0.0459</td>
<td>-1.229</td>
<td>0.2209</td>
<td>-0.0535</td>
<td>-1.336</td>
<td>0.1834</td>
<td>-0.0520</td>
<td>-1.323</td>
<td>0.1877</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R&amp;D alliances</td>
<td>-0.0462</td>
<td>-1.149</td>
<td>0.2522</td>
<td>-0.0484</td>
<td>-1.218</td>
<td>0.2520</td>
<td>-0.0492</td>
<td>-1.287</td>
<td>0.1999</td>
<td>-0.0478</td>
<td>-1.251</td>
<td>0.2127</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Distribution alliances</td>
<td>-0.0602</td>
<td>-1.413</td>
<td>0.1595</td>
<td>-0.0589</td>
<td>-1.407</td>
<td>0.1614</td>
<td>-0.0647</td>
<td>-1.451</td>
<td>0.1487</td>
<td>-0.0635</td>
<td>-1.442</td>
<td>0.1512</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Marketing alliances</td>
<td>-0.0519</td>
<td>-1.323</td>
<td>0.1877</td>
<td>-0.0505</td>
<td>-1.308</td>
<td>0.1927</td>
<td>-0.0629</td>
<td>-1.438</td>
<td>0.1523</td>
<td>-0.0616</td>
<td>-1.425</td>
<td>0.1561</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Finance alliances</td>
<td>-0.0408</td>
<td>-1.189</td>
<td>0.2361</td>
<td>-0.0597</td>
<td>-1.108</td>
<td>0.2695</td>
<td>-0.0435</td>
<td>-1.203</td>
<td>0.2307</td>
<td>-0.0421</td>
<td>-1.197</td>
<td>0.2351</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Interaction effects**

| Industry group x Manufacturing alliances | -0.1251* | -2.303 | 0.0226 | -1.1279* | -2.327 | 0.0212 |
| Industry group x R&D alliances           | -0.0621 | -1.442 | 0.1152 | -0.0649 | -1.463 | 0.1454 |
| Industry group x Distribution alliances  | -0.1585* | -2.943 | 0.0037 | -0.1613* | -3.026 | 0.0029 |
| Industry group x Marketing alliances     | -0.1497* | -2.838 | 0.0051 | -0.1518* | -2.901 | 0.0042 |
| Industry group x Finance alliances       | -0.0558 | -1.342 | 0.1815 | -0.0557 | -1.363 | 0.1748 |

| R²                 | 0.136  | 0.190  | 0.140  | 0.194  |
| Adjusted R²        | 0.059  | 0.090  | 0.063  | 0.094  |
| F-value change      | 1.633*** | 2.146** | 1.688*** | 2.157** |
| Sig. F change       | 0.07   | 0.042  | 0.053  | 0.039  |

Notes: 
- The base model is the change from the intercept-only model. The intercept is zero when it is standardized (β); 
- & Both t and Sig are used for ordinary unstandardized coefficients; 
- The regression coefficients for the industry group show each group’s impact on core structure dynamism relative to that of the excluded industry (software); 
- The regression coefficients for the region group show each region’s impact on core structure dynamism relative to that of the excluded region (the rest of world); 
- The regression coefficients for the JV dummies show each type’s impact on profitability relative to that of the excluded category (other JVs or DM6); 
- **p < 0.10; * p < 0.05; ** p < 0.01
| Group 1 | Base Model 1b | 0.139 | 0.083 | 2.287* | 0.0101 | 0.144 | 0.089 | 2.383** | 0.0072 |
| Group 1 | Base Model 1 + (Manufacturing alliances × Environmental hostility) | 0.152 | 0.092 | 2.591** | 0.0027 | 0.157 | 0.097 | 2.667** | 0.002 |
| Group 2 | Base Model 2c | 0.135 | 0.079 | 2.211* | 0.013 | 0.140 | 0.084 | 2.306** | 0.009 |
| Group 2 | Base Model 2 + (R&D alliances × Environmental hostility) | 0.142 | 0.081 | 1.379 | 0.174 | 0.147 | 0.086 | 1.427 | 0.15 |
| Group 3 | Base Model 3d | 0.147 | 0.092 | 2.411** | 0.01 | 0.149 | 0.094 | 2.480** | 0.005 |
| Group 3 | Base Model 3 + (Distribution alliances × Environmental hostility) | 0.163 | 0.103 | 3.231*** | 0.0002 | 0.164 | 0.104 | 3.094*** | 0.0004 |
| Group 4 | Base Model 4e | 0.148 | 0.093 | 2.461** | 0.01 | 0.151 | 0.096 | 2.519** | 0.0045 |
| Group 4 | Base Model 4 + (Marketing alliances × Environmental hostility) | 0.166 | 0.107 | 3.647*** | 0.0000 | 0.168 | 0.109 | 3.473*** | 0.0000 |
| Group 5 | Base Model 5f | 0.134 | 0.078 | 2.192* | 0.0141 | 0.137 | 0.081 | 2.248* | 0.0116 |
| Group 5 | Base Model 5 + (Finance alliances × Environmental hostility) | 0.140 | 0.079 | 1.179 | 0.2985 | 0.143 | 0.082 | 1.222 | 0.2674 |

Notes: *p < 0.05; **p < 0.01; ***p < 0.001
Table II. Again, hostile environments exhibit positive and significant relationships with core structural change, whereas all of the alliance categories are negative but non-significant. These results further confirm the previous findings that environmental hostility increases the likelihood of core structural changes, but none of the alliance categories has a direct effect on core structure dynamism.

When the alliance categories are made to interact with environmental hostility, as shown in the full models, we find that three pairs of interaction effects (specifically, those incorporating manufacturing, distribution and marketing) have statistically significant coefficients. In particular, two categories of alliances (distribution and marketing) are most highly significant when they interact with hostility (at the 0.01 levels). Moreover, changes in the F-value indicate the superior explanatory power of the full models over the base models (at the 0.01 levels). Clearly, most, but not all, categories of alliances show significant moderating effects in buffering core structures from environmental hostility.

The incremental explanatory power of the individual interaction terms is presented in Table IV, where the number of base and full models is five each. The results indicate that, among those interaction terms in the full models, three are significant. The addition of the interaction terms significantly increases the explanatory power of the full models over the base ones. In particular, two alliances categories (distribution and marketing) are most highly significant. By contrast, both R&D and finance alliance categories are rather weak. Taken together, the results confirm those we obtained in Table III. Moreover, they suggest that not all of the interaction effects are significant – some categories of strategic alliances do not moderate the relationships between environmental hostility and core structural changes.

Robustness test
We conducted robustness tests using archival measures of the key variables. The archival data on background information of top executives were collected from annual report disclosures contained in the Wind database[4]. We also used public announcements/news reports issued by the business and economic media in China, such as WiseNews (covering ten key national newspapers in finance, economics and securities).

Based on previous studies (Roth and Ricks, 1994), we used the following specific items to measure firms’ stated goals: sales growth, market share, net profit, new product ratio, return on investment, stock price appreciation, growth of earnings and dividend payout to shareholders. Following Roth and Ricks (1994), we classified each firm’s eight goals into three goal categories (major, minor and not a goal) based on their declarations in company missions, CEO reports in annual board meetings, company announcements, news reports and CEO interviews by media. We then used the goal configuration index designed by Roth and Ricks (1994) to capture a firm’s goal configuration through the combination of major and minor goals. The index gives additional weight to emphasizing major compared to minor goals and provides a deflation factor based on the total number of goals emphasized as a percentage of the total possible. The index was defined as follows: goal configuration index = \[2 \times \frac{\text{number of major goals} + \text{number of minor goals}}{\text{total number of goals}}\].

We measured a firm’s core technologies using both the number of patents and the distance between the patents, which is represented by an index (for details, see Argyres, 1996). We divided technical fields into 15 groups, which correspond to two-digit SIC categories. The index is given by \[c = \sum p_i \sum d_{ij} p_{ij}\], where \(p_i\) = the proportion of patent applications in technical field \(i\); \(p_{ij}\) = the proportion of patent applications in technical field \(j\), and \(d_{ij} = 1\) if \(i\) and \(j\) are in the same group, and 2 if \(i\) and \(j\) are in different groups. The index ranges from 0 to 2 and increases in diversity. Patents assigned to more than one technical field were treated as different applications, to capture firm-level technical diversity. We used Dowell and Shackell’s (2011) measurements for a firm’s authority structure, which include the proportion of independent directors, the size of the board and CEO power. Independent director proportion is measured as the number of directors who are not and have never been employees of the firm, are not related to any employee of the firm and do not work for a company with significant business relationships with the firm, divided by the total number of directors. Board size is the count of members of the board of directors. CEO power is measured using three indicators: duality, founder status and shares owned as a percent of total shares outstanding (for details, see Dowell and Shackell, 2011). Marketing strategy is related to decisions on segmentation, targeting, positioning and is based on product, pricing and promotion strategy (Slater and Olson, 2001).

We used the archival index to measure sales instability to characterize environmental hostility (Sutcliffe, 1994). To compute the index, we regressed sales for a period of three years prior to the survey on a variable representing the time period and divided the standard errors of the regression by the mean level of the dependent variable (Schilke, 2014). Following previous studies (Hitt et al., 1997; Schilke, 2014), we measured alliance (portfolio) size using the firm’s total number of alliances formed three years prior to the survey. We logarithmized this measure to reduce skewness (Schilke, 2014).

Before conducting regression analyses, we performed a Spearman test to determine the correlation between alternative (secondary) and original (subjective) measures of the key variables. They were highly correlated, with correlation coefficients ranging from 0.868 to 0.927.

Our results show that the estimated regression coefficients for environmental hostility had the expected negative signs for each dimension of core structure change, and they were significant at the 0.05 and 0.01 levels, respectively[5]. Hence, it is evident that environmental hostility is associated negatively with core structure change. The estimated regression coefficients for the interaction term of strategic alliances and environmental hostility had the expected positive signs, and they were significant at conventional significance levels. Particularly, the two interaction effects, the effect on authority structure change (\(\beta = 0.1136\)), and the effect on marketing strategy change (\(\beta = 0.1089\)), were most highly significant.
firms to survive the crises. Our findings fill in the gaps, indicating that old firm can survive the environmental hostility with strategic alliances because alliances outsource external routines, processes and norms to adapt the focal firms to the changed environments and, thus, protect the focal firms’ internal core structure. Our findings show that a firm’s core structure dynamism varies with its age: that is, the older a firm, the less flexible is its core structure and the greater the adaptations it must make to survive hostility. When a firm’s cultures, processes, rules, norms and routines become entrenched, their fit with the environment will erode in a dynamic setting. Strategic alliances provide an effective buffer for mature firms to survive disruptive environmental changes without changing their internal core structure. Firms are embedded in contexts and, thus, are subject to formal and informal institutional pressures (Aral and Walker, 2014). The evidence collected in this study demonstrates that firms do not have to alter such embeddedness when they adapt to industry-specific changes. They can take advantage of a third party to make such adaptation. As such, our findings extend the organization ecology theory and organizational environmental literature.

Furthermore, our study differentiates strategic alliances in terms of their moderating effect on the relationships between environmental turmoil and firms’ core structure dynamism. When firms experience hostile environmental changes, manufacturing, R&D, distribution and promotion alliances help protect a firm’s core structure, while alliances in finance and costs/risk-sharing may not have such a tendency. In particular, manufacturing and R&D alliances show the strongest moderating tendency. We believe manufacturing, R&D, distribution and promotion alliances provide external routines, functions and processes, which help protect a firm’s core structure, while finance and cost-risk-sharing alliances provide relief which may not be necessarily based on routines, functions and processes. The differentiation among strategic alliances in terms of their moderation effect advances our knowledge on strategic alliances.

Practical implications
The findings of this study provide important managerial implications. Evidence collected in this study provides managerial guidelines on the following three issues. First, environmental hostility makes a firm’s core structure unfit the changed environments. Managers should be aware that environmental changes could be fatal because their core structure does not fit the changed environments any more. The core structure includes stated goals, core technologies, authority structure and marketing strategies. Second, internal changes to restore the “fit” between the firm’s core structure and the changed environment will hurt the firm. Many managers tend to believe that they could update their core structure to achieve new “fit” with the changed environment. They should put on high alert that changing core structure could be a slow and difficult process, and firms may not have sufficient time to complete the process before environments change again. Third, firms can use strategic alliances to restore swiftly the “fit” between firms and the changed environments. Take innovations as an example. Firms often increase their R&D spending and intend to use new products to fit changed

Discussion
Following the organizational ecology theory’s claim that environmental hostility affects the four dimensions of core structure changes, this study examines how strategic alliances help firms to mitigate such changes. The results based on primary and secondary data are consistent with the proposed hypotheses. Our study contributes to the existing literature on two fronts. First, it identifies an undiscovered effect of alliances, namely, that alliances may enable a firm to outsource external routines and processes, thereby enabling it to survive disruptive environmental changes that might otherwise threaten one or more parts of its core structure. Altering a firm’s internal core structure to fit environmental changes can be a slow, difficult and even destructive process, whereas outsourcing new structure through alliances to overcome environmental hostility may be faster, easier and more effective. In short, strategic alliances may help stabilize and, thus, protect a firm’s core structure by weakening the effects of environmental hostility. However, it should be noted that strategic alliances and changes in a firm’s core structure are not directly related – it is only as hostility increases that the tendency for strategic alliances to reduce structural change comes into play. Second, this study indicates that only some types of strategic alliances (manufacturing, R&D, distribution and promotion) demonstrate such moderating effects on environmental hostility. Other types of strategic alliances do not have such effects.

The results on the four dimensions of core structure suggest that they are related but different concepts. Specifically, they individually depict the core structure of a firm from different angles. We will lose the complete picture of the firm’s core structure if one of the four dimensions is missing. Take core technologies and marketing strategies for example. They represent the different dimensions of firm-specific advantages. However, they are related to each other, as they strengthen or weaken each other’s roles in building the firm’s competitiveness. Because changes in the core technologies alter the firm’s product lines, the firm has to modify its product, pricing and distribution/promotion strategies quickly to fit the altered product lines. Outsourcing external functions and processes reduces the needs for the alternations and modifications.

Theoretical implications
The organizational environment literature suggests that environmental hostility and a firm’s core structure dynamism are positively related because the firm has to adapt its core structure to fit environmental changes (Stieglitz et al., 2016; Zahra and Garvis, 2000). The organizational ecology theory argues that such adaptation is difficult because of the firm’s structural inertia (Mens et al., 2015). Consequently, the theory predicts that new firms emerge and old firms die when disruptive environmental changes occur (Peli et al., 1994). Interestingly, the theory does not provide a solution for the old
market when markets experience unexpected shifts. New products may fit the new market needs, but may not fit the firm’s existing structure, including production capacity, distribution channel structure and promotion resources. Managers should know these problems associated with the new products and use strategic alliances to minimize the “unfit”. That is, they could outsource manufacturing, R&D, distributing and promoting functions or processes to a trustworthy partner when launching the new products. Clearly, managers should control the strategic alliances if the former outsource important functions, processes and routines to the latter. Last but not least, managers should be aware that they can use manufacturing, R&D, distribution and promotion alliances only to achieve the new “fit” with the changed environments. Strategic alliances of other types, such as financing alliances, do not help focal firms achieve the strategic intent.

Limitations and future research

This study sheds light on a new moderation effect of strategic alliances and, thus, advances our knowledge on strategic alliances. However, there are a few limitations associated with this study. First, this study shows that firms use strategic alliances in hostile environments not only to share resources, costs and risks. More importantly, firms often use strategic alliances to fit the changed markets without changing their internal structure. However, an important issue remains unclear, that is, do strategic alliances have other unknown effects in uncertain markets? For example, research shows that many international alliances failed in the markets (Cui et al., 2011). Are these failures intentional or firms simply do not want to keep these alliances long-lasting in the markets? Our knowledge on strategic alliances remains limited, and more research work should be conducted in the future. Second, senior managers’ personality traits’ influence on strategic alliance management remains unclear. Existing studies show that personality traits of top executives, such as risk-taking attitudes, needs for achievement, can influence how these firms manage their strategic alliances (Powell et al., 2011). Future studies should explore the individual-level factors’ impacts on strategic alliance. Finally, this study did not control for sociocultural factors that might affect the relationship between environmental hostility and our dependent variables. Would some regulatory or cultural settings affect the degree of effectiveness associated with using different types of alliances? To control these factors needs substantial financial resources to collect both quantitative and qualitative data. However, controlling these factors will improve the accuracy of measuring the relationship between independent and dependent variables investigated in this study.

Notes

1 Existing studies suggest that a respondent may change his/her views toward a given matter of concern from time to time (Li et al., 2014). Accordingly, we conducted surveys twice among the same respondents and checked whether they had the same or different answers toward the same survey questions at different periods of time. We used weighted Kappas and z-statistics to measure how close the two surveys’ results were on each construct. Both Kappa and z-statistics indicate that no significant changes were detected on those constructs between the two surveys. Our empirical study was based on the first survey, and the results of the second survey were used for robustness test only.

2 The correlation of total alliances with each (type) of alliances was 0.1029, 0.1134, 0.1207, 0.1173 and 0.1088.

3 Through reliability checks, we can avoid possibly the single respondent and, thus, the spurious relationships between independent variables and dependent variables.

4 The Wind database contains Chinese stock market data, the financial statements of Chinese-listed firms and information about corporate governance and shareholder research. We found 106 sample firms in the Wind database, and we performed robustness test using the sample firms.

5 Because of space limit, we did not include the table that shows the results on the effects of the main and control variables. They are obtainable upon request.

References


Strategic alliances

Rui Xue, Gongming Qian, Zhengming Qian and Lee Li


Further reading


Corresponding author

Rui Xue can be contacted at: rxue@bond.edu.au
### Appendix 1

Table AI  Mean, SDs and correlations for quantitative variables*

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Environmental hostility</td>
<td>0.8000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Total alliances</td>
<td>0.1092</td>
<td>0.7141</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Dynamism of stated goals</td>
<td>0.1551</td>
<td>−0.0922</td>
<td>0.7615</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Dynamism of core technologies</td>
<td>0.1944</td>
<td>−0.0896</td>
<td>0.1025</td>
<td>0.8185</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Dynamism of authority structure</td>
<td>0.1481</td>
<td>−0.0847</td>
<td>0.0909</td>
<td>0.0885</td>
<td>0.7549</td>
<td></td>
</tr>
<tr>
<td>6. Dynamism of marketing strategies</td>
<td>0.1923</td>
<td>−0.0863</td>
<td>0.0974</td>
<td>0.0938</td>
<td>0.1013</td>
<td>0.7211</td>
</tr>
</tbody>
</table>

**Note:** *The square root of the AVE for each construct is listed on the diagonal*
Table AII  Mean, SDs and correlations for quantitative variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Weighted Kappa</th>
<th>Z-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Firm size (log)</td>
<td>1.87</td>
<td>0.29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.85</td>
<td>36.73</td>
</tr>
<tr>
<td>2. Firm age</td>
<td>12.07</td>
<td>4.63</td>
<td>0.1067</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.83</td>
<td>32.29</td>
</tr>
<tr>
<td>3. Firm leverage</td>
<td>0.46</td>
<td>0.19</td>
<td>0.0775</td>
<td>0.0744</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.80</td>
<td>30.03</td>
</tr>
<tr>
<td>4. R&amp;D intensity</td>
<td>12.36</td>
<td>3.43</td>
<td>0.1031</td>
<td>0.0908</td>
<td>0.0652</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.77</td>
<td>25.38</td>
</tr>
<tr>
<td>5. Advertising intensity</td>
<td>4.83</td>
<td>2.05</td>
<td>0.0986</td>
<td>0.0891</td>
<td>0.0517</td>
<td>0.0561</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.84</td>
<td>33.69</td>
</tr>
<tr>
<td>6. Environmental hostility</td>
<td>6.03</td>
<td>0.71</td>
<td>0.0909</td>
<td>0.0558</td>
<td>0.0473</td>
<td>0.0727</td>
<td>0.0661</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.81</td>
<td>31.47</td>
</tr>
<tr>
<td>7. Total alliances</td>
<td>5.59</td>
<td>0.47</td>
<td>0.0525</td>
<td>-0.0492</td>
<td>0.0419</td>
<td>-0.0461</td>
<td>-0.0393</td>
<td>0.1092</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.79</td>
<td>29.15</td>
</tr>
<tr>
<td>8. Dynamism of stated goals</td>
<td>5.94</td>
<td>0.73</td>
<td>0.1281</td>
<td>0.1238</td>
<td>0.0691</td>
<td>-0.1251</td>
<td>-0.1252</td>
<td>0.1551</td>
<td>-0.0922</td>
<td></td>
<td></td>
<td></td>
<td>0.89</td>
<td>39.24</td>
</tr>
<tr>
<td>9. Dynamism of core technologies</td>
<td>6.08</td>
<td>0.81</td>
<td>0.1563</td>
<td>0.0901</td>
<td>0.0843</td>
<td>-0.1494</td>
<td>-0.1309</td>
<td>0.1944</td>
<td>-0.0896</td>
<td>0.1025</td>
<td></td>
<td></td>
<td>0.88</td>
<td>37.59</td>
</tr>
<tr>
<td>10. Dynamism of authority structure</td>
<td>5.49</td>
<td>0.58</td>
<td>0.1236</td>
<td>0.0859</td>
<td>0.0775</td>
<td>-0.1275</td>
<td>-0.1236</td>
<td>0.1481</td>
<td>-0.0847</td>
<td>0.0909</td>
<td>0.0885</td>
<td></td>
<td>0.91</td>
<td>42.13</td>
</tr>
<tr>
<td>11. Dynamism of marketing strategies</td>
<td>5.77</td>
<td>0.64</td>
<td>0.1502</td>
<td>0.0919</td>
<td>0.0708</td>
<td>-0.1523</td>
<td>-0.1281</td>
<td>0.1923</td>
<td>-0.0863</td>
<td>0.0974</td>
<td>0.0938</td>
<td>0.1013</td>
<td>0.78</td>
<td>28.37</td>
</tr>
</tbody>
</table>

Notes: N = 181; Correlations with absolute value greater than 0.122 are significant at the 10 per cent level; Correlations with value greater than 0.146 are significant at the 5 per cent level; Correlations with value greater than 0.191 are significant at the 1 per cent level.
Backfiles Collections

Preserving over 100 years of management research online

A lifetime investment for your institution, Emerald Backfiles will significantly enhance your library’s offering by providing access to over 125,000 articles from more than 260 journals dating back to 1898.

Visit emeraldinsight.com

Get Backfiles Collections for your library

Recommend Backfiles to your librarian today.
Find out more: emeraldpublishing.com/backfilescollections
eBook Collections

Research at your fingertips

Bringing together over 1,600 eBooks, the Emerald eBook collections are a cost-effective way of instantly expanding library holdings and increasing usage through an award winning platform alongside journals.

Visit emeraldinsight.com

Get eBook Collections for your library

Recommend eBooks to your librarian today. Find out more: emeraldpublishing.com/ebookcollections
EMERGING TECHNOLOGIES IN BUSINESS AND INDUSTRIAL MARKETING

1401 Guest editorial

1403 Enticing the IT crowd: employer branding in the information economy
Amir Dabirian, Pierre Berthon and Jan Kietzmann

1410 Artificial intelligence (AI) and its implications for market knowledge in B2B marketing
Jeannette Paschen, Jan Kietzmann and Tim Christian Kietzmann

1420 How social media usage influences B2B customer loyalty: roles of trust and purchase risk
Chu-Bing Zhang and Yi-Na Li

1434 Knowledge co-creation in Open Innovation Digital Platforms: processes, tools and services
Tindara Abbate, Anna Paola Codini and Barbara Aquilani

1448 The narrative strategies of B2B technology brands
Gaël Bonnin and Mauricio Rodríguez Alfonso

1459 What makes the difference? Employee social media brand engagement
Sherese Y. Duncan, Raeesah Chohan and João José Ferreira

1468 Blurring the borders between B2B and B2C: a model of antecedents behind usage of social media for travel planning
Atanu Nath, Parmita Saha and Esmaeil Salehi-Sangari

1479 Are marketing strategies correlated with financial outputs? A longitudinal study
Erika Sydney-Hilton and Natalia Vila-Lopez

1482 Conceptual blending of meanings in business marketing relationships
Sid Lowe, Astrid Kainzbauer and Piya Ngamcharoenmongkol

1497 Coopetition: a fundamental feature of entrepreneurial firms’ collaborative dynamics
Helen McGrath, Thomas O’Toole and Louise Canning

REGULAR PAPERS

1506 Gender effects on buyer perceptions of male and female sales representatives in China
Stephen J. Newell, Duke Leingspibul, Bob Wu and Yang Jiang

1521 Towards a better understanding of organizational buying behavior across cultures: empirical evidence from the Arabian Gulf
Alexandre Anatolievich Bachkirov

1533 Are marketing strategies correlated with financial outputs? A longitudinal study
Erika Sydney-Hilton and Natalia Vila-Lopez

1547 Conceptual blending of meanings in business marketing relationships
Sid Lowe, Astrid Kainzbauer and Piya Ngamcharoenmongkol

1555 Coopetition: a fundamental feature of entrepreneurial firms’ collaborative dynamics
Helen McGrath, Thomas O’Toole and Louise Canning

1569 Successive B2B contracts: impact on contract length and rental rate
Shanlei Feng and Trichy V. Krishnan

1580 Tackling service quality in the telecommunication B2B market
Aysegul Tas, Elif Akagun Ergin, Feride Bahar Kurtulmusoglu and Omer Faruk Sahin

1592 The role of customer orientation in key account managers’ performance: a client network perspective
Yi Liu, Yue Li and Maggie Chuoyan Dong

1608 Strategic marketing approaches for the diffusion of innovation in highly regulated industrial markets: the value of market access
Francesco Schiavone and Michele Simon

1619 Environmental turmoil and firms’ core structure dynamism: the moderating role of strategic alliances
Rui Xue, Gongming Qian, Zhengming Qian and Lee Li

www.emeraldinsight.com/loi/jbim