
Advancing Networking-Based Business Management in Construction Markets

Advancing
Networking-
Based
Business

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Abstract

Purpose – This study aims to advance networking-based, construction-related business management (BM) knowledge, concepts and practices. The focus is on the supply side and therein networking between three or more companies on an equal, legal, managerial and organisational basis.

Design/Methodology/Approach – The literature reviewing process has resulted in the identification of 79 construction-related BM concepts published between the years 1990 and 2017. In this paper, the focused review reveals the degrees to which the authors have designed their BM concepts along the networking dimension.

Findings – Indeed, 33 (42 per cent) construction-related BM concepts have been designed along the networking dimension. There are 7 (9 per cent) high-degree, 11 (14 per cent) medium-degree and 15 (19 per cent) low-degree BM concepts. The high-degree ones include [Bennett's \(2000\)](#) tapestry, [Hobday's \(2000\)](#) project-based organisation, [Cheng and Li's \(2002\)](#) partnering model, [Love et al.'s \(2002\)](#) long-term alliance, [Kiiras and Huovinen's \(2004\)](#) virtual PM company, [Helander and Möller's \(2007\)](#) network resources as well as [Wikström et al.'s \(2010\)](#) business networks.

Research Limitations/Implications – Aligning with [Penrose \(1995\)](#), networking-based BM may imply a paradigm shift *vis-à-vis* managing in construction markets, i.e. it is envisioned that many researchers replace a firm with a business network as a unit of theorising.

Practical Implications – It seems that the seven high-degree BM concepts enable firms to manage businesses with similar contexts embedded within construction markets in networking-based, viable ways.

Originality/Value – There is very little applied theoretical knowledge about networking as part of construction-related BM. This exploratory, focused review may trigger future BM research along the networking dimension.

Keywords Business management, Concept design, Construction, Literature review, Networking, Real estate, School of thought

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1. Introduction

This paper is part of the since-1999-on-going reviewing of research on construction-related business management (BM) concepts (Huovinen, 2003; 2017). Corporate management concepts and project-level management concepts are outside the scope of the reviewing. The purpose of this paper is to advance networking-based, construction-related BM knowledge, concepts and practices. It is assumed that networking-based advancements can be designed and realised based on the revelation of the current states of affairs among existing construction-related BM concepts. Thus, the primary nature of this paper is that of reporting on the conduct and findings of an exploratory, focused review of the articles that have been published via the scientific journals between the years 1990 and 2017, and which contain the networking-based BM concepts with contexts embedded within construction markets.

2. Networking as part of business management

In general, a network is defined as “an interconnected group or chain of businesses or other organisations. Most organisations seek to build long-term relationships with [stakeholders] and rapidly become part of a stable network” (OED, 2018).

By the mid-1990s, Penrose (1995) acknowledged that the network concept originally appeared as industrial clusters consisting of geographically concentrated groups of small- and medium-sized firms operating together and depending on each other. Interfirm networking had been stimulated by global businesses. A business network refers to formal contractual arrangements or alliances among a limited number of firms bound together in an interrelated managerial framework sometimes even referred to as a quasi or virtual firm. Co-operative operations may not be based so much on controls as a consensus emerging from shared goals and dependence. Business networks were likely to spread and continue to engage in a competition very different from that analysed between firms in so-called free markets.

In turn, the network approach in industrial marketing and purchasing (IMP) has directed attention to social connections that firms use to influence business environment. Holmqvist and Diaz Ruiz (2017) recall that the business networks approach has evolved based on the following five assumptions: (i) long-lasting relationships are more important than transactions, (ii) actors are interconnected and need each other to survive, (iii) participants benefit from networking, (iv) some relationships are more important than others and, thus, firms prioritise actors with considerable influence and (v) power depends on the centrality of actors within networks. Firms exert influence and bargaining power from positions within current networks and enlist allies including competitors (see Ford and Håkansson, 2006; Håkansson and Snehota, 2006).

3. Pioneering reviewing of construction-related BM concepts published between the years 1990 and 2017

So far, this author has carried out the six review rounds in the years 1999-2003, 2006, 2010-2012, 2014, 2017 and July 2018. Cooper's (1998) limitations have been re-adopted to protect the validity. The coherent nature has been maintained by focusing on research on firms that are based in the OECD countries. Exceptionally, references originating from Singapore and Hong Kong have been included because of these authors' British Commonwealth heritage and interests in international construction. Hart's (1998) guidelines have been relied upon. The method for the reviewing of conceptual research, i.e. ways of searching, browsing, in-/excluding, retrieving, coding, describing, analysing and interfering have been reported upon in Huovinen (2003, 2006, 2017). The search for BM concepts has been conducted comprehensively within the volumes of 28 journals related to management in construction

published between the years 1990 and 2017 and those of 47 journals in business administration published between the years 1990 and 2013. Concerning the other channels, the degrees of the search have varied markedly. This author submits the coverage of the channels including the lists of the journals by request.

Overall, 79 authorships have designed their concepts for managing businesses with contexts embedded within construction markets between the years 1990 and 2017. By publishing channel, the frequencies are 42 (53 per cent) BM concepts via construction-related management journals, 14 (18 per cent) BM concepts via construction-related conference proceedings, 9 (11 per cent) BM concepts via construction-related books and reports, 9 (11 per cent) BM concepts via other management journals, 3 (4 per cent) BM concepts via chapters in edited, construction-related books and reports, 1 (1 per cent) BM concept via a management book as well as 1 (1 per cent) BM concept via a chapter in an edited management report.

Discipline-wise, 37 (47 per cent) BM concepts belong to construction management, 16 (20 per cent) BM concepts belong to industrial/international management and marketing, 15 (19 per cent) BM concepts belong to project management and 14 (15 per cent) BM concepts belong to real estate ownership and management.

Business-wise, 25 (32 per cent) BM concepts address project-based business, contracting, complex product systems or engineering, purchasing and construction (EPC) projects, 26 (33 per cent) construction or building, 14 (18 per cent) real-estate ownership, management and services, 6 (8 per cent) design and consulting services, 5 (6 per cent) capital investments-based businesses and 3 (4 per cent) building products supply.

Context-wise, 81 geographically bound contexts have been specified: 26 (32 per cent) worldwide, 16 (20 per cent) UK, 13 (16 per cent) US, 7 (9 per cent) Finnish, 5 (6 per cent) Swedish, 3 (4 per cent) generic, 3 (4 per cent) Swiss, 2 (2 per cent) Australian, 2 (2 per cent) Dutch, 1 (1 per cent) Austrian, 1 (1 per cent) German, 1 (1 per cent) Irish and 1 (1 per cent) Hong Kong-based context.

Practice-wise, the degrees of the applicability are fairly low, on average. Only 35 (44 per cent) BM concepts are supported with the case-based evidence on a possible positive causal relationship between the adoption of the focal BM concepts and the highly successful managing of the case companies' businesses with the targeted contexts, respectively.

4. Focused review of networking-based, construction-related BM concepts

4.1. Focused review method

Networking involves, herein, the setting and attaining of unified, joint and causally related business-level goals by pre-planned, respective actions. Networkers belong only to the supply side. For the assessment, the four degrees of networking-based BM are specified as follows. An author(ship) has designed a BM concept by coupling the networking (or using the other term, e.g. alliancing, collaboration, co-operation, joint-venturing or partnering) dimension or elements with the other dimension(s) of concept design to

- a high degree, i.e. the networking is adopted as one of the key dimensions and/or elements of BM such as business ideation, goal-setting, competitive advantages, strategizing, business processes, organising, project portfolios and competitiveness development
- a medium degree, i.e. the networking is specified as one of the supportive dimensions and/or elements of BM
- a low degree, i.e. networking is only mentioned in the reference
- no degree, i.e. no single 'thing' is written along the networking dimension

The degree assessment is based on the quotations of the original terms from within 76 references. This reviewer submits 79 concept-specific assessments combined into 7 school-specific tables and a list of 76 references by request. This focused review reveals that 33 (42 per cent) construction-related BM concepts include networking elements. There are 7 (9 per cent) high-degree, 6 (8 per cent) medium-degree and 15 (19 per cent) low-degree BM concepts.

The assessment validity has been protected against the three biases as follows. Concept inclusion bias is related to a fact that this author has (co-)designed one high-degree, five medium-degree and three low-degree BM concepts along the networking dimension. This bias was minimised by assessing each reference in the same way, quoting only the minimum relevant parts and reporting the same in the tables. Future reviewers can test the inter-concept consistency, repeat 33 yes-degree assessments, compare the degrees, detect possible differences and reveal reasons for them.

Concept exclusion bias is related to 46 no-degree assessments. Again, future reviewers can test these exclusions through the analytical reading of these references.

Degree assessment bias is related to the reliance on the four degrees instead of one of more rigorous, quantitative scales. This author could match each BM concept with one of the four degrees, without any doubt. Future reviewers may specify degrees differently.

4.2. Seven highly networking-based, construction-related BM concepts

It seems that the seven authorships have designed their high-degree BM concepts for advancing networking as the key dimension and/or elements of construction-related BM, respectively.

[Bennett's \(2000\)](#) partnering concept is based on the new paradigm, i.e. construction is seen as a tapestry of interconnected networks. Competing communities of firms are seeking survival. The pillars include a strategy (to become competent), a membership (for joint performance), equity (to treat members fairly), an integration (of procedures, systems and cultures), project processes (as long-term activities), benchmarks and feedback (about effects on environments).

[Hobday's \(2000\)](#) pure project-based organisation (PBO) implies that the organisation is dedicated to one or many complex, high-value products, systems, networks, capital goods and constructs (CoPS) and that business processes are coordinated within projects. The pure PBO is best suited for large innovative, risk-intensive projects and single project firms. Resources are combined and shared with other project firms. Processes are re-organised around each product and client.

[Cheng and Li's \(2002\)](#) model consists of formation, application and completion (project partnering) or reactivation (strategic partnering). Among 15 success factors, top management support, trust, communication and coordination affect in each stage. A partnering relationship is reactivated on the basis of the partners' two-way communication channels, coordination, partnering experience, continuous improvement, learning climate and long-term commitment.

[Love et al.'s \(2002\)](#) model for learning alliances is founded on total quality management (TQM) and a supply chain, including systems thinking, learning culture, knowledge and communication, mental models, joint learning processes/structures and open relationships. Alliances can gain advantages through a customer-supplier focus. A joint climate is supported by setting rewards and incentives for individual and organisational learning, transforming information and encouraging shared learning.

[Kiras and Huovinen's \(2004\)](#) model of a virtual project management (PM) company is based on the virtualisation of a traditional contractor into the one with the top management running a

flat and virtual organisation, acquiring solutions from partnered design firms, buying project and site managers from an outsourced pool and procuring buildings as many sub-systems from a competitive network of suppliers. All this is enabled by advanced IT systems.

Helander and Möller's (2007) model for a system supplier's customer strategy involves (i) each customer choosing from among an independence of supplier, a shared expertise with supplier or a reliance on a supplier's expertise, depending on a customer's capabilities, (ii) a system supplier's compatible roles as an equipment/material supplier, a solution provider or a performance provider and (iii) the joint and separate use of the third parties' network resources.

Wikström *et al.*'s (2010) project business models include (i) single projects, (ii) project networks with functionality and operational expenditure and (iii) business networks with mutual, balanced value creation and profitable growth. Each of the categories (i-iii) is characterised by (a) value and flexibility, (b) organisation, (c) innovation and growth, (d) competence and assets and (e) relationships and collaborations.

5. Networking-based BM advancement *vis-à-vis* construction markets

Theoretically, networking-based BM with contexts embedded within construction markets is, herein, advanced along the dual dimension of network development and design. The seven high-degree, construction-related BM concepts are used as the state-of-the-art blocks as follows.

Along the network development dimension, Nidumolu *et al.*'s (2009) 5-stage process of generic business development has been adopted for this advancement task. The quest for networking is transforming competitive landscape and serving as innovation's new frontier. Business networks can be developed and managed through the five stages of rethinking about opportunities, value chains, offerings, business models and platforms. Consequently, the seven high-degree BM concepts are mapped onto these five stages as follows. (1) Networking is viewed as opportunity within all the concepts. (2) Value chains can be networked by insourcing multiple firms' resources into one pure PBO (Hobday, 2000), managing alliances (Love *et al.*, 2002) or using external resources (Helander and Möller, 2007). (3) Instead, the re-design of offerings is outside all the concepts. (4) Business models can be re-developed by partnering strategically (Cheng and Li, 2002) or managing project networks and business networks (Wikström *et al.*, 2010). (5) Next-practice platforms can be re-created as a tapestry of full networks (Bennett, 2000) or a virtual contractor with fully networked subcontractors (Kiiras and Huovinen, 2004). In the future, novel fully networked BM concepts could be developed through this five-stage process in the future.

Along the network design dimension, Gulati *et al.*'s (2012) meta-organisation has been adopted for this advancement task. Each meta-organisation comprises a network of members, i.e. legally autonomous organisations (and individuals). Its two dimensions involve the degree to which boundaries are open or closed and the degree of its internal stratification in decision-making, roles and tiers among members. The four designs are differentiated as a 2×2 matrix, i.e. (i) closed membership with high stratification/hierarchical decision-making (that resembles traditional extended enterprise models), (ii) closed membership with low stratification/heterarchical decision-making (that resembles closed community models), (iii) open membership with low stratification (that resembles open community or public forum models) and (iv) open membership with high stratification (that resembles managed ecosystem models). The seven high-degree BM concepts are, herein, mapped onto the four meta-organisational designs as follows. Only Bennett (2000) is re-seeing the construction industry as both open and closed networks. The six other BM concepts have been designed with the closed boundaries to enable one or more focal firms to

choose other networkers. In the future, meta-organisations with open memberships could be explored and designed as novel networking-based, construction-related BM concepts.

6. Conclusions

This author posits that without the reading of accumulated conceptual BM research, it would be difficult for anyone to perceive the state-of-the-art of such applied BM knowledge and to come up with highly useful construction-related BM concepts, not to talk about designing the novel networking-based ones. In turn, this focused review reveals that there is very little applied theoretical knowledge about networking as part of construction-related BM. Hopefully, this revelation will trigger BM research, development and innovation along the networking dimension. Aligning with Penrose (1995), networking-based BM may imply a paradigm shift *vis-à-vis* managing in construction markets, i.e. it is envisioned that many researchers replace a firm with a business network as a unit of conceptualisation.

Concerning researchers, it is suggested that they incorporate networking into their existing and next construction-related BM concepts, respectively. Barriers to networking-based BM can be revealed via longitudinal studies. Future research may be focusing on value-adding experiences and conditions for the evolution of networked relationships. Moreover, the integration of delivery systems (e.g. alliance contracting) could be advanced up to the business level. Instead, project partnering and other project-level approaches should be left outside the scope of future research on networking-based, construction-related BM.

Concerning early moving business managers, it seems that many of the seven high-degree BM concepts enable effective managing with similar focal contexts in construction markets, respectively. It is recommended that managers rebuild business units along the networking dimension in terms of (i) envisioning the preferred states and ways of networking on equal bases as part of BM, (ii) embedding networking into the setting of business goals, (iii) adopting networking as a decision-making dimension and (iv) adding networking onto agendas for business performance enhancement and competitiveness development.

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