

Introduction to the special issue on accounting and innovation

Innovation, understood as “the creation and implementation of new products, services and processes which result in significant improvement in outcomes” (Chenhall and Moers, 2015, p. 2), has been pointed out as a critical source of competitive advantage in the current business environment, which is characterized by fierce and global competition (Davila, 2005; Davila and Oyon, 2009; Davila *et al.*, 2009b). Organizations pressured by increasingly uncertain settings need to develop dynamic and adaptive processes of response, the outcome of which is innovation (Chenhall and Moers, 2015; Davila *et al.*, 2009b).

While accounting has traditionally been regarded as a discipline that hinders innovation, today there is general consensus about the role it plays in helping organizations and managerial actors to achieve innovation (Davila, 2005; Davila *et al.*, 2009b; Moll, 2015; Laine *et al.*, 2016a, 2016b). Recent studies seek to fully understand how management accounting and management control systems involving both traditional and new practices support the development of mechanisms and processes by which innovation can be achieved (Chenhall and Moers, 2015; Revellino and Mouritsen, 2009, 2015; Bisbe and Otley, 2004; Davila, 2000, 2005; Davila and Oyon, 2009; Davila *et al.*, 2009a, 2009b; Jørgensen and Messner, 2010).

In many of these studies, special (and sometimes almost exclusive) attention has been given to product and service innovation, even though technologies, organizational structures and enhanced awareness of the business context are also important elements to help achieve innovation (Chenhall and Moers, 2015; Chesbrough, 2006; Hall, 2010). Furthermore, overall there is weak understanding of how management accounting and control are used in services industries, such as banking and healthcare, to drive innovation (*ibid.*). Thus, in spite of important advances in the area, there is still a need to undertake further research into how the management accounting and control practice realized by the managerial actors jointly and individually can contribute and relate to innovation. In other words, further research could address management accounting and control as enablers of innovation by addressing not only the business contexts but also the peculiarities and characteristics of managerial work for innovation, to be supported by accounting and control (Hall, 2010).

The purpose of this special issue is, therefore, to address this gap in the literature by recognizing accounting as a set of calculative practices through which innovation can be achieved (Chenhall and Moers, 2015; Revellino and Mouritsen, 2015). It brings together a collection of papers that investigate the role of accounting as enabler of innovation and, further, how the design and use of traditional and new management accounting and control, cost and performance management practices can be devices that coexist and be reflected upon and used together to drive successful innovation. It therefore gathers several insights into how accounting, cost management and performance measurement systems support innovation in the current competitive business environment.

More particularly, this special issue provides insights into the accounting supporting innovation at multiple levels. The units of analyses chosen in the articles of this special issue range from analyses of the impacts of the external and internal business environment on accounting and innovation to the examinations of the actual investment procedures, accounting practices and even micro structures at the interface of accounting and innovation. The five articles of this special issue are summarized below in terms of these units of analyses, methods and their contributions to the issue at hand.



First, Christensen, Rikhardsson, Rohde and Batt address the topic of innovation by studying the impact of the 2008 financial crisis on the development of management controls in Icelandic banks in comparison with Danish banks. The collapse of the banking system in Iceland triggered by the bankruptcy of the three banks in the country had as direct consequence an increase of regulatory activity and scrutiny of the sector, not to mention the replacement of the executive boards and boards of directors of the banks. To direct employee behaviour and to initiate and embed behavioural changes as a response to the financial crisis, regulatory authorities focussed on administrative control systems, described as those that comprise the organizing of individuals (organization design and structure), the monitoring of behaviour and to whom employees are made accountable for their behaviour (governance) and the process of specifying how tasks or behaviours are to be performed or not performed (policies and procedures) (Malmi and Brown, 2008).

Christensen *et al.* analysed the behavioural impact of the administrative control implemented by the Danish and Icelandic financial supervisory authorities in the six banks studied (three banks in Iceland and three in Denmark) through the lens of institutional theory, adopting the Burns and Scapens (2000) theoretical framework with the enhancements and extensions proposed by ter Bogt and Scapens (2014). Their case study was based mostly on the collection of evidence through semi-structured interviews with members of the banks' executive boards, employees with control responsibilities and heads of internal audit assisting in the identification of respondents. Whereas the Icelandic banks went bankrupt and were re-established, the three Danish banks weathered the financial crisis without specific financial support.

Their case study reveals that the re-establishment of the Icelandic banks was followed by the revolutionary introduction of new values, mainly value statements on homepages and in annual reports, supported by the "tone at the top", together with supporting practices and procedures, resulting in employees' behavioural change. This contrasts with the evolutionary change authors found in Danish banks. Moreover, there were other revolutionary changes in Iceland associated with organizational structure, in particular within the area of risk management. Although identical regulatory requirements govern both countries, they conclude that in Iceland the implementation of large risk-management functions meant revolutionary change, while by comparison, there were no revolutionary changes in Danish banks. This article contributes to the topic of this special issue by addressing how in some contexts, the emergence of disruptive events (e.g. financial crisis) may force the introduction of revolutionary and innovative changes in control systems of banks.

Second, Saukkonen, Laine and Suomala, with their interventionist case study, seek to unveil the rather generic limitations of investment decision-making processes, featuring institutionalized decision-making structures and multiple individuals. Indeed, the authors conclude that an effective management-accounting information utilization requires both contextual fit with the business environment and continuous reflections upon individual managers' roles, responsibilities and preferences. The article takes the case of an energy technology provider and its customer who seeks to invest in new technologies. In this case, the investments in more radical changes do not easily fit into the conventional decision-making procedures and thus challenges emerge. The new technologies may require perspectives (e.g. sustainability targets) that are traditionally excluded from the decision-making procedures and people who do not traditionally take part in the decision-making (e.g. sustainability managers). Thus, the article seeks to combine the perspectives of analytical and actor-based decision-making (Nielsen *et al.*, 2015; see also Nørreklit *et al.*, 2010) and explores the possibilities to enhance accounting and control in supporting investment decisions regarding new technologies.

Saukkonen *et al.* combines the characteristics of analytical and actor-based decision-making and identifies potential avenues for developing accounting and control practices with respect to long-term decision-making and investments. Indeed, Saukkonen *et al.* conclude that the possible limitations in accounting and control supporting decision-making may be linked to the managers' lack of expertise in using accounting tools, managers' insufficient reflections upon the assumptions embedded in the decision-making, mismatch between the demand and supply of accounting information in decision-making and the restrictions stemming from the relatively rigid decision-making procedure. In all, these limitations may exist separately or at the same time, and overcoming these limitations may require acknowledging both the actor-based approach and analytical methods to design and use accounting in a constructive way.

The results presented by Saukkonen *et al.* imply lessons learned for this special issue regarding the wider interface of accounting and innovation. In the decision-making processes that deal with innovation, there are settings where the previously identified perspectives and previously nominated experts do not represent the best fit with the topic of decision-making. Therefore, especially in the innovation context, there is a need for ongoing reflections on the decision-making procedure and the parties involved in it, to enable the support from accounting and control to the innovation at hand.

Third, Aaltola examines management control for non-technological innovations, with the focus on managerial work (Hall, 2010) in the strategic development of these innovations. The topic is highly relevant, because these innovation initiatives may be iterative in nature and they embed learning at different levels among the partners involved.

Aaltola uses an interview study with qualitative content analysis to identify a framework representing the constituents of a successful management-control enactment with respect to non-technological innovation. The framework is built on an extensive analysis of the timely research on management control for innovation and the empirical material gathered on innovation projects. In conclusion, he argues that the innovation under preparation needs to fit with the strategic story of the organization, the innovation projects need to feature experimentation (in contact) with the customers and the innovation projects need to be co-creational across the traditionally understood organizational boundaries. Aaltola's framework benefits from recognizing the Levers of Control model by Simons (1995), especially regarding the dynamics between the beliefs system inspiring innovation and the boundary system ensuring the fit with the strategic context. Also, using the management control interactively is desired to proceed with the innovation projects with multiple stakeholders.

Although the focus on non-technological innovations is a rather unique one, there are also implications for the broader topic of this special issue. The initial framework by Aaltola implies that the innovation projects are always executed in context, and their meaning, therefore, needs to be clarified and elaborated upon as part of a strategic story of the company, as well as continuously reflected upon by the customers and the key internal parties involved. Such reflections may enable management control that actually supports "investing in success", as formulated by Aaltola.

Fourth, Cleary, Healy and Walsh make an interesting contribution to the topic of innovation by analysing the tension between innovativeness, understood as the attitudinal awareness and openness of individuals to new ideas and ways of doing things (Bisbe and Malagueno, 2009, p. 374), and accounting practices. Recognizing two opposing views on the importance of accounting practices to innovation and innovativeness, with researchers on one side claiming that accounting stiffens innovation (the traditional perspective) and researchers on the other arguing that accounting enables and promotes organizational

innovation (the progressive perspective), the authors contribute to the debate on the topic. Furthermore, Cleary *et al.* observe that tensions between innovativeness and accounting have been mainly analysed from the perspective of senior management and that little evidence comes from actors in lower levels of organizations; this fact motivated the authors to focus their investigation on the “synergistic inter-relatedness” of control and creativity based on the views and experiences of three separate functionally specific organizational actors (from the finance, customer support and research areas) of a global high-technology firm.

In this same article, the Levers of Control model (Simons, 1995) is also used to frame analysis, but from a different perspective than that of Aaltola’s study. Indeed, the authors focus on the tensions between interactive control systems (aligned with belief systems) and diagnostic control systems (aligned with boundary systems) to analyse how operational managers balance monitoring and controlling activities with creativity. Despite the considerable amount of earlier work in the area, the study offers a different perspective to research on performance measurement in organizations, given the scarce evidence of how this tension is managed, especially in the perspective of management levels below that of senior ranks.

Drawing on structuration theory (Giddens, 1984; Stones, 2005) and combining interviews, documentation and secondary data sources, the authors looked into the experiences of the individual managers regarding the operation of control systems. They found that the performance measurement system in operation in the firm provides a way to ensure the control of activities while at the same time enabling the necessary innovations for longer-term survival and prosperity. Creative boundaries (predefined “guide rails”) within which innovative solutions must be developed are sought so that tensions at the operational level between innovativeness and performance measurement can be managed. These findings contribute in an especially valuable way to this current issue by enhancing our understanding of how performance measurement systems can be used to support innovation in organizations.

Furthermore, Cleary *et al.* conclude that performance measurement works both diagnostically and interactively in the firm they study. While metrics are used to monitor performance and motivate managers to achieve the firm’s strategic objectives (diagnostic control systems), they are also adopted to foster learning amongst employees and to create opportunities for innovation and problem-solving (interactive control systems). As the authors observe, “constraints are not regarded as a barrier but rather an opportunity for creativity”. Structuration theory (as the theoretical lens of the study) highlights the agency role through which each individual manager constructs priorities and uses structures to legitimize and further his/her concerns in the pursuit of innovativeness. This lens supports the authors’ conclusion that even though using performance metrics requires standardization, it also allows for innovativeness. In fact, as they contend, controls are not constraints but enablers that legitimize a search for creativity.

Fifth, Feeney and Pierce present an in-depth case study on new product development (NPD), to examine the importance of interactions within social and technical structures to enable successful NPD processes. More particularly, they use strong structuration theory (Stones, 2005) to examine the interactions between the managers and use the notion of minimal structures to unveil how formal and informal use of accounting information can help the managers involved in the NPD process. Altogether, the article seeks to understand the structures behind those successful NPD processes that have a fruitful balance between firmness and flexibility.

The authors argue that many technical structures governing the NPD (and innovation) processes may result in firmness of the process execution. At the same time, social structures are needed to find the possibilities for flexibility that is desired for the best possible outcome. They report their remarkable suggestion that acknowledging and emphasizing the social structures in managing NPD processes may lead into easier accepting and taking advantage of the technical structures that lead into the desired balance of firmness and flexibility.

The articles by Feeney and Pierce and Saukkonen *et al.*, combined, provide interesting insights about the supply and demand of accounting information for innovative decision-making. Indeed, the traditional supply of the accounting information (“push”, as described by Feeney and Pierce) is typically formal and undertaken by the financial department, whereas the demand for (and the use of) the accounting information takes place amongst the different managers and may be emergent and relatively informal (“pull”, as described by Feeney and Pierce). Sometimes, as Feeney and Pierce described, the managers do not even recognize that they use “accounting information” when making decisions featuring financial reasoning. Thus, balancing not only the firmness and flexibility in innovation processes but also the supply and demand of accounting information in those processes remain a remarkable challenge for accounting and control practices (Feeney and Pierce, see also Saukkonen *et al.*). This requires acknowledging even the minimal structures and individual managers as intentional actors within the innovation processes.

In all, the articles of this special issue provide, jointly and individually, interesting insights into accounting and control for innovation. Extensive understanding of the particular innovation and business context is desired for successful innovation, and so is acknowledging and examining the operational-level innovation activities featuring multiple stakeholders and individual managerial actors. The results presented in this special issue suggest that digging deeper into the accounting and control practices is required for extending knowledge about successful innovation processes and activities. Social processes of sense-making are required to identify and overcome ambiguities and uncertainties in the innovation contexts (Laine *et al.*, 2016b). At the same time, there is a need for designing and interactively using new technical structures, concrete accounting and control tools that help the organizations’ innovation practices.

To respond to the need for an in-depth understanding of the mechanisms underlying and embedded in the innovations processes and activities, engaged research processes may be suggested (Van de Ven and Johnson, 2006). As suggested by recent interventionist studies, accounting and control research may be able to find the balance between the three intellectual virtues, i.e. “techne”, “episteme” and “phronesis”, and the focus on these perspectives may change during the research processes (Lukka and Suomala, 2014; Lyly-Yrjänäinen *et al.*, 2017). Thus, a research project starting from the technical development related to innovation processes may yield remarkable theoretical and societal implications. Similarly, a research project starting from a theoretical examination of the innovation practices and their structures may result in technical refinements and/or societal-level observations on fostering innovations. Implicitly, numerous perspectives regarding these levels of analyses are present in this special issue, with rather strong empirical examinations on accounting and control for innovation.

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References

- Bisbe, J. and Malagueno, R. (2009), "The choice of interactive control systems under different innovation management mode", *The European Accounting Review*, Vol. 18 No. 2, pp. 371-405.
- Bisbe, J. and Otley, D. (2004), "The effects of the interactive use of management control systems on product innovation", *Accounting, Organizations and Society*, Vol. 29 No. 8, pp. 709-737.
- Burns, J. and Scapens, R.W. (2000), "Conceptualizing management accounting change: an institutional framework", *Management Accounting Research*, Vol. 11 No. 1, pp. 3-25.
- Chenhall, R.H. and Moers, F. (2015), "The role of innovation in the evolution of management accounting and its integration into management control", *Accounting, Organizations and Society*, Vol. 47, pp. 1-13.
- Chesbrough, H. (2006), *Open Innovation: The New Imperative for Creating and Profiting from Technology*, Harvard Business School Press, Cambridge.
- Davila, A. (2000), "An empirical study on the drivers of management control systems' design in new product development", *Accounting, Organizations and Society*, Vol. 25 Nos 4/5, pp. 383-409.
- Davila, A. (2005), "The promise of management control systems for innovation and strategic change", in Chapman, C.S. (Ed.) *Controlling Strategy: Management, Accounting and Performance Measurement*, Oxford University Press, Oxford, pp. 37-61.
- Davila, A., Foster, G. and Li, M. (2009a), "Reason for management control system adoption: insights from product development systems choice by early-stage entrepreneurial companies", *Accounting, Organizations and Society*, Vol. 34 Nos 3/4, pp. 322-347.
- Davila, A., Foster, G. and Oyon, D. (2009b), "Accounting and control, entrepreneurship and innovation: venturing into new research opportunities", *European Accounting Review*, Vol. 18 No. 2, pp. 281-311.
- Davila, A. and Oyon, D. (2009), "Introduction to the special section on accounting, innovation and entrepreneurship", *The European Accounting Review*, Vol. 18 No. 2, pp. 277-280.
- Giddens, A. (1984), *The Constitution of Society*, Polity Press, Cambridge.
- Hall, M. (2010), "Accounting information and managerial work", *Accounting, Organizations and Society*, Vol. 35 No. 3, pp. 301-315.
- Jørgensen, B. and Messner, M. (2010), "Accounting and strategizing: a case study from new product development", *Accounting, Organizations and Society*, Vol. 35 No. 2, pp. 184-204.
- Laine, T., Korhonen, T. and Martinsuo, M. (2016b), "Managing program impacts in new product development: an exploratory case study on overcoming uncertainties", *International Journal of Project Management*, Vol. 34 No. 4, pp. 717-733.
- Laine, T., Korhonen, T., Suomala, P. and Rantamaa, A. (2016a), "Boundary subjects and boundary objects in accounting fact construction and communication", *Qualitative Research in Accounting & Management*, Vol. 13 No. 3, pp. 303-329.
- Lukka, K. and Suomala, P. (2014), "Relevant interventionist research: balancing three intellectual virtues", *Accounting and Business Research*, Vol. 44 No. 2, pp. 204-220.
- Lyly-Yrjänäinen, J., Suomala, P., Laine, T. and Mitchell, F. (2017), *Interventionist Management Accounting Research: Theory Contributions with Societal Impact*, Routledge.
- Malmi, T. and Brown, D.A. (2008), "Management control systems as a package – opportunities, challenges and research directions", *Management Accounting Research*, Vol. 19 No. 4, pp. 287-300.
- Moll, J. (2015), "Editorial: special issue on innovation and product development", *Management Accounting Research*, Vol. 28, pp. 2-11.
- Nielsen, L.B., Mitchell, F. and Nørreklit, H. (2015), "Management accounting and decision making: two case studies of outsourcing", *Accounting Forum*, Vol. 39 No. 1, pp. 64-82.
- Nørreklit, H., Nørreklit, L. and Mitchell, F. (2010), "Towards a paradigmatic foundation for accounting practice", *Accounting, Auditing & Accountability Journal*, Vol. 23 No. 6, pp. 733-758.

Revellino, S. and Mouritsen, J. (2009), "The multiplicity of controls and the making of innovation", *European Accounting Review*, Vol. 18 No. 2, pp. 341-369.

Revellino, S. and Mouritsen, J. (2015), "Accounting as an engine: the performativity of calculation practices and the dynamics of innovation", *Management Accounting Research*, Vol. 28, pp. 31-49.

Simons, R. (1995), *Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal*, Harvard Business School Press, Boston, MA.

Stones, R. (2005), *Structuration Theory*, Palgrave Macmillan, Hampshire.

Ter Bogt, H.J. and Scapens, R.W. (2014), "Institutions, rationality and agency in management accounting: rethinking and extending the Burns and Scapens framework", available at: <https://ssrn.com/abstract=2464980> or <http://dx.doi.org/10.2139/ssrn.2464980>

Van de Ven, A.H. and Johnson, P.E. (2006), "Knowledge for theory and practice", *Academy of Management Review*, Vol. 31 No. 4, pp. 802-821.

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