
Editorial

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Biographical notes: Johan Frishammar works as an Assistant Professor in Industrial management at Luleå University of Technology, where he also earned his PhD. He is currently also the leader of the Promote research group. His current research interests concerns management of the fuzzy front end, open innovation, and information and communication aspects in new product development. In addition to a previous publication in the *International Journal of Technology Intelligence and Planning*, his papers have appeared in journals such as the *International Journal of Innovation Management*, *International Studies of Management and Organization*, *Journal of Product Innovation Management*, and *Technology Analysis and Strategic Management*.

Anders Richtner is Assistant Professor at Stockholm School of Economics and has previously been a visiting fellow at Politecnico di Milano. He holds a PhD in Innovation and Operations Management from the Stockholm School of Economics. His research interests are in the areas of innovation management and operations strategy. He received the best paper award at the *International Product Development Management Conference in 2002*, and the EFMD/Emerald Outstanding Doctoral Award in Operations Management and Supply Chain Management in 2006. He has published in the *International Journal of Innovation Management*, *European Journal of Innovation Management*, and the *European Business Forum*.

1 Introduction

Most if not all companies are managed with the purpose of ‘making a difference’. For their customers. For their owners. And for their employees and other stakeholders. Few succeed. Obviously, there are several reasons for why this is the case. In this special issue we focus on New Product Development (NPD) as a mean to making a difference, and two concepts that have emerged as particularly important to successful NPD: the management of information and knowledge. Effective management of

information and knowledge can make a huge difference to companies involved with NPD. Such management can improve performance of new products, facilitate the development of product concepts, and increase the success and frequency of cross-functional activities among functions and departments, just to mention a few examples.

The management of knowledge has also been pointed out a key resource in pursuing long-term advantages. As knowledge is partly tacit and often unique to a specific firm, it is difficult for competitors to imitate (Nahapiet and Goshal, 1998; von Krogh et al., 2000, p.260). For example, Teece (1998, p.75) argues that the competitive advantage of a company lies in “its ability to create, transfer, assemble, integrate, and exploit knowledge assets”. Besides creating a competitive advantage for the company, the management of knowledge in a company is often cited as an antecedent to innovation (e.g., Leonard, 1995; Nonaka, 1994; Soo et al., 2002). Similar findings have been presented in the area of information and NPD (Frishammar, 2005).

Given the importance of managing information and knowledge in NPD it seems necessary to step back and ask: “can we learn more effective ways of managing information and knowledge?” Our answer, both as guest-editors and as researchers in this field, is a clear ‘yes!’. For that reason we have prepared this special issue on the topic “*Managing information and knowledge in new product development*”. The aim of the special issue is to advance our understanding of how to manage information and knowledge in NPD.

The concepts of information and knowledge are related, but different (Richtnér, 2004), and in association with information and knowledge data is often discussed also. “Data requires minimal human judgment, whereas knowledge requires maximum judgment” (Tsoukas and Vladimirou, 2001, p.976). Between data and knowledge is information. Information is not the same as knowledge, even though there is a link between the two. Information is a flow of messages, while knowledge is created when people act with the information as a point of departure (Nonaka and Takeuchi, 1995, p.58). Thus, information is necessary for the creation of new knowledge.

However, as Frishammar (2005) note, in practice the boundaries between the concepts are all but clear, and the two are indeed ambiguous, and as a consequence also difficult to define and measure accurately. According to Williamson (1999), there are few knowledge-based theories that have been empirically tested, causing the field to look more like a theoretical patchwork than a solid body of theoretical knowledge. Besides, the findings of much of the existing research are scattered and inconclusive as far as policy recommendations goes.

Despite the difficulties of defining the exact meaning of information and knowledge, as well as measuring these concepts, there are clear benefits for companies and organisations that actually manage information and knowledge effectively. Given the fragmented view of the field combined with the claimed positive effects from managing information and knowledge we set out, as guest-editors, to further advance the understanding of managing knowledge and information in the NPD context. We decided early not do exactly define what we meant by information and knowledge, and at which level of analysis papers should be placed. Instead, we opted for diversity in terms of scope, research approaches, theories and methodology, but with the common aim of helping firms and managers to manage information and/or knowledge better in their NPD efforts.

As we prepared the special issue we received papers in two ways. One was through a 'call for papers' published on the website of the *International Journal of Technology Intelligence and Planning*. The other was through direct e-mails to scholars within the field that we felt could contribute to the special issue. All in all, 16 different papers were selected for inclusion in the review process. The outcome is, as can be seen below, six papers of high quality which contribute to our understanding of how information and knowledge can be managed by applying different research approaches, theories and methodologies. A warm welcome to this special issue!

2 The contents of the special issue

All in all, seven papers constitute the base of the special issue. Six of these are original research papers, submitted specifically for inclusion in this special issue. The last paper, written by Fredrik Tell, was invited with the purpose of providing an outlook and future research, as well as reflections upon key issues relevant to the subject of study.

The first of the appended papers, named 'Capturing tacit knowledge in New Product Development: a study of post-project reviews', is written by Keith Goffin and Ursula Koners. Goffin and Koners note that new product development is highly dependent on knowledge, but also generates valuable knowledge, often in tacit form. Although such knowledge is often highly relevant to the developing company, its positive benefits are difficult to realise if companies fail to capture knowledge systematically. As a means to capture tacit knowledge, Goffin and Koners focus on post-project reviews as a means to support learning. The authors draw on five case studies conducted among large German companies in different industries, and data sources include a highly interesting combination of documents, observations, and 60 interviews. Although the paper has several merits, the main result is the construction of a conceptual model of knowledge generation and transfer via post-project reviews. Several important conclusions emerge from the model, where the perhaps most important one is the fact that written post-project review reports neglect the tacit aspects of NPD learning.

The second paper is written by Anders Richtnér and Birgitta Södergren, and is named 'Innovation projects need resilience'. Drawing on complexity theory and the notion of resilience from organisational psychology, the authors show that complexity in innovation projects early phases stems from the fact that they are knowledge intensive, have multiple stakeholders involved, and are exposed to time lags. Similarly to the paper by Goffin and Koners, Richtnér and Södergren combine interviews, field observations and feedback sessions as means of data collection. Their main finding is that actors in an innovation system need to handle constant and conflicting challenges, and therefore need a combination of structural, cognitive, relational and emotional resources supporting them. A combination of these resources into an adequate 'set' allows actors to be resilient, i.e., to respond to events constructively without cracking down under pressure. Hence, an environment that enables resilience is needed in innovation teams.

Our third paper employs a more quantitative approach, and is written by Kristina Risom Jespersen. The paper is titled 'Exploring the connectedness of New Product Development decision-making levels', and employs a simulation approach as a method, drawing on data from 42 NPD practitioners in large Scandinavian companies. The main conclusion of Jespersen's study is that NPD decision-making levels are not connected. Hence, her simulation highlight the fact that strategic NPD decision-making is not

guiding NPD review decisions, and information on NPD activities do not necessarily feed into new-product evaluations. These findings imply that connectedness is a somewhat unrealistic assumption when analysing new-product performance, and that knowledge and competence residing in companies might be far from adequate.

The fourth paper is written by Sven Åke Hörte and colleagues, and is named 'Product development in SMEs: a literature review'. While all other papers in the special issue are empirical, this one is conceptual and represents an ambitious attempt to map the literature on product development in small and medium sized companies. The paper draws on nearly 150 peer reviewed research papers, and identifies key themes in the literature, analytical and methodological approaches employed, as well as the leading journals in this field. First and foremost, however, the paper guides researchers interested in this area to the relevant literature, for example on information aspects of new product development in SMEs.

The next paper reports experiences mainly from Japan, and is written by Florian Kohlbacher. The paper is called 'Knowledge-based New Product Development: fostering innovation through knowledge co-creation', and its purpose is to provide a framework for understanding and analysing knowledge-based processes in NPD. The paper draws on a case study and includes an analysis of documents as well as more than 100 interviews with a variety of respondents, although Kohlbacher uses his cases mainly for illustrative purposes in this paper. The main contribution lies in highlighting how knowledge co-creation in NPD with a particular focus on customers and their involvement can be arranged.

The final 'regular' paper is written by Jason MacVaugh and Stephanie Auty, and was named 'Proactive knowledge management: an independent enabler of New Product Development success?'. The method employed is a survey, and MacVaugh and Auty draw on data from 124 UK-based NPD projects. Their results show that knowledge management activities have an independent influence on NPD project success, whereas the mainstream NPD literature tend to be biased against traditional 'NPD drivers' while leaving knowledge management issues outside the equations. Key findings suggest that managers need to employ certain knowledge management activities to enhance success rates.

Our final essay was included with a purpose different from the other appended papers, and is written by Fredrik Tell. Tell's assignment was to take stance in the other appended papers, to reflect upon these, but also to "try to look around the corner" to see what comes next concerning the central theme of this Special Issue; the management of information and knowledge in NPD projects. His main contributions are the identification of five themes and associated challenges that are worthy of further attention from the research community. These sub-themes are:

- degree of uncertainty faced by NPD
- managing tacit and explicit knowledge and information
- managing knowledge and information 'outside' the firm
- management of complementary knowledge in project-based organisations
- NPD projects – organising for innovation.

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