Knowledge Management for Process, Organizational and Marketing Innovation: Tools and Methods

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Section 1
Organisational Innovation

Nowadays many European small and medium-sized companies (SMEs) are not ready for significant required international social and economic changes. Some of them have focused on approaches of knowledge management (KM) as an enabler for their innovation capability, but these have failed. One of the most critical but important aspect to be considered when developing Knowledge Management Strategies in companies to support Process, Organizational and/or Marketing Innovation is an evaluation of KM readiness. The next step after conducting KM readiness assessment is to use the results of the KM readiness for the development of KM approaches supporting the innovation. This chapter puts forward a method of determining the readiness of SMEs for KM, discusses how to improve links between KM practices and innovation and gives examples of methods like the Innovation Biographies (IB). Finally, the authors present knowledge intensive Communities of Practice (CoPs) supported through Web 2.0 as suitable environments to foster innovation within SMEs.

The management of knowledge is a multifaceted organizational process that involves three parts. They are (i) a strategy, (ii) the creation of an organizational environment or space for knowledge - known

as the "enabling context" or "Ba" and (iii) an operational/action toolbox consisting of IT tools and managerial practices to effectively put the strategy into action. The main objective of this chapter is to propose a conceptual integrative map for Knowledge Management that was built as the result of a longitudinal programme of research on knowledge management, conducted between the years of 2001 and 2009. As an outcome of this research, knowledge management concepts, motivation, practices, results and implementation processes will be highlighted. The qualitative research strategy used was the study of multiple cases with incorporated units of analysis and three criteria were observed for the judgment of the quality of the research project: validity of the construct, external validity and reliability. Multiple sources of evidence were used and data analysis consisted of three flows of activities: data reduction, data displays and conclusion drawing/verification. The results confirmed the presuppositions and the conclusions suggest that organizational knowledge cannot be managed; it is just promoted or stimulated through the creation of a favorable organizational context, namely "Ba".

Chapter 3

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National economies have rapidly moved from their industrial economic base and shifted towards a knowledge base, in which wealth creation is associated with the ability to develop and manage knowledge resources (KR) (see, among others, MERITUM, 2002; EC, 2006). Several national and international institutions have produced various Intellectual Capital (IC) frameworks and guidelines (e.g. MERITUM, 2002; SKE, 2007; EC, 2006) to guide in the management, measurement and reporting of IC. However, there appear to be few studies of private company practices (Guthrie & Ricceri, 2009). The above informed the following two research questions of this study: (1) In what ways, did the private companies express their strategy and the role of KR within it? (2) What tools, including 'inscription devices', were used for understanding and managing KR within a specific organisation? This chapter answers these questions by providing illustrations of KR and their management in practice in a variety of private companies.

Chapter 4

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Project management can be improved using modern interfaces that more naturally show work situations. Employees have deep real world knowledge that can be exploited, and a sense of common purpose among team members that can be enhanced. But, project efforts are currently guided only with structured charts and diagrams that show participants the state of their team's work activities. These charting tools have become more colorful and visually clear over time to reduce any uncertainty regarding task assignments, interdependencies, and any important schedule delays. However, a three dimensional environment extends the range of vision dramatically. Any team member can see what is

currently being developed, the status of the process, and any pertinent actions needing focus, all in persistent and prominent wall displays. Discussions among remote collaborators are facilitated, focused on common views of pressing circumstances. Knowledge retention and transfer is more robust, and is illustrated in more compelling contexts keyed to current work activities. The immediacy of three dimensional world immersion will allow even forgetful workers to see at a glance the state of their contribution as well as the completion progress of those upon whom they depend.

Chapter 5

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When analysing the transformation of the information society an industrialisation of knowledge work can be observed. The maturity, the quality, the process-orientation and the alignment of knowledge to personal or organisational requirements are industrialisation aspects covered by knowledge work. This chapter focuses on process-orientation, discusses the evolution of process-oriented knowledge management and sees the current industrialisation of knowledge work as a challenge that needs to be tackled not only on social and technical level but also on a conceptual level. Hence the so-called knowledge conveyer belt approach is introduced that is a realisation framework of process-oriented and service based knowledge management. This approach is seen as an answer for the requirements of industrialisation of knowledge work that keeps the "human in the loop" and enables the business and knowledge alignment. The realisation concepts and two implementation show cases are introduced.

Chapter 6

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In today's changing environment, the competitiveness and sustainability of a modern organisation, be they global large scale enterprises (LSE's) or local small to medium scale enterprises (SME's), depends on its ability to innovate. Innovation can be viewed as the combined activity of generating creative ideas and the subsequent successful exploitation of these concepts for benefit. Access to relevant and up to date information provides a critical competitive edge for organisations innovation efforts. Given that social relationships are key to enhancing the ability to gather knowledge and that creation of knowledge is primarily a social process among individuals, organisations' need to optimise the supporting mechanisms by which its people and processes accumulate, structure, and transfer knowledge effectively. Mechanisms such as social networks promote both organisational and collective learning and participation in these social networks are a significant source of knowledge, which subsequently leads to innovation. Consequently, this chapter will outline the innovation process with its knowledge management phases and extrapolate the role of social networks in this process. It will then outline the steps of the social network analysis tool and illustrate how it can be used to enhance knowledge management for innovation efforts.

Chapter 7

Besides being a basic way to understand the world and an appropriate behavior to survival and development of organizations, the knowledge – acquisition, updating, and use – must be managed to increase creativity, and should be taken as a force to drive the human being in the field of competitive innovation. In this chapter the potential contribution of knowledge workers is discussed. Considering an assets approach, these reflections may enable the organization to promote and use the creativity of their knowledge workers, which are seen as a specific set of assets in the organization. This specificity should be considered in the policies of human resources management and also in the formulation of competitive strategies. Some suggestions are made for improving the utilization of knowledge workers to increase the level of productive creativity.

Section 2
Knowledge Management in NPD

Chapter 8

The main purpose of this chapter is to conduct a theoretical analysis of how product innovation is influenced by the process of knowledge management, and to show that it is necessary to complete the entire process in order to develop incremental as well as radical innovations. Other studies have associated different knowledge development processes with different types of product innovation by specifically linking radical innovation with exploration processes, and incremental innovation with exploitation processes. The author of this chapter differ from this point of view, since they consider both processes as being necessary to the development of the two kinds of innovations.

Chapter 9

The aim of this chapter is to investigate if and to what extend the process of New Product Development, today, is based on Knowledge Creation and Technology Education. The value chain and the way it allows the company to achieve and sustain competitive advantage is used, in this chapter, in a way that facilitates the exploration of the relationship between technology and competitive advantage. This is done under the competence-based perspective of the organization, where knowledge is the point of departure and the individual – in this case the industrial employee– the relevant unit of analysis. With knowledge and knowledge creation being the reference point, their influence on new products and on the product life cycle has been investigated. The significance of the technology education background of each individual has also been examined in an effort to determine whether there is a need to strengthen

Technology Education in existing national curricula. Surveys collected from 486 employees, of 51 industrial companies in Spain, were analyzed in order to test the authors' hypothesis. The results of this study support their main hypothesis and allow them to draw conclusions on the significance of the relationship under investigation.

Section 3
Process Innovation

This chapter presents a novel Knowledge Management model - VDF (Variation Mode and Effect Analysis & Design of Experiments & Finite Element Analysis) for process innovation and efficient problem solving in enterprises.

Section 4
Marketing Innovation

Global economy is transforming the sources of the competitive advantages of firms, especially for firms embedded in local manufacturing systems. Based on the theoretical contributions to knowledge management and industrial districts, this chapter describes alternatives firm's strategies and upgrading options by exploring the relationships among innovation, marketing and network technologies. Starting from the analysis of the global competitiveness report and the European Innovation Scoreboard, this chapter focuses on the case of firms specializing in "furniture and textile" industries (fashion, mode, home products) to outline a framework explaining the new competitive opportunities for SMEs. Through a qualitative analysis, this chapter presents two case studies of French firms that promote successful strategies based on a coherent mix of R&D based innovation, experienced marketing and design, by leveraging on ICT.

Personal profiles of the top managers in a corporation help marketers to position and promote large software products. Sales calls are more targeted and cordial, aligned with the needs and communication styles of the prospects. The methods applied in the archetype discovery are complemented by knowledge of corporate structures and influence networks. When the key customer concerns and constraints are clarified, the software vendor can craft informational programs, sales plans, and product improvement projects to outperform their competition. The added persona-model knowledge complements the vendor's existing knowledge of their software products, helping to build compelling marketing programs and to significantly improve software sales.

Chapter 13

This chapter contributes to organizational innovation theory and provides a practical approach to promote companies and create relationships with their customers. This research study investigates the primary visual attention of customers in online flight booking and uses interviews, think-aloud protocols, and eye-tracking tools to collect data. Findings show that the visual structure of the webpage strongly influences the overall effectiveness of the booking process and that participants ignore peripheral information when it does not appear relevant or associated with the main task. It is also found that the effective segmentation of different elements of the webpage helps direct attention and guides participants to the relevant section. Implications from these findings are discussed, and a general framework to help practitioners to manage knowledge collected from their customers is presented.

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Section 5
Maximising Intellectual Assets

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Chapter 14

The objective of this chapter is to develop a framework that depicts the antecedents of intellectual capital in an organization. In gist, the framework specifies three dimensions of intellectual capital, namely, human capital, structural capital and customer capital. Organizational conditions such as opportunities, values, motivation and capability influence human capital; Organizational conditions such as the infrastructure, existing knowledge and the knowledge sharing process influence structural capital; Organizational conditions such as products and services, relationships and brand value influence customer capital; and organizational conditions such as culture and leadership influence all three dimensions of intellectual capital. In addition, individual dimension of intellectual capital mutually influences each other, and in sum, leads to positive organizational outcomes such as branding, reputation, competitiveness and sustainability.

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With the rise of the "new economy", knowledge became a most valuable resource. Accepting knowledge as a resource suggests that knowledge can be acquired, transferred, combined and used, and it may be a potential source of sustainable competitive advantage. In this context, knowing how an organization creates value, based on its potential of knowledge, became a central question in management research. Under a strategic perspective, knowledge that creates value is defined as intellectual capital, the application of which will give organisations sustainable competitive advantage. Therefore, identifying, measuring and managing intellectual capital is crucial for corporate innovation and competitiveness. The purpose of this study is to examine the interrelationships and the effects of interaction between intellectual capital components and organisational performance, and defines how knowledge creates value. The study is developed in the context of Portuguese banks, an industry where differentiation of products and services almost exclusively hinges on the continuous rejuvenation of the underlying knowledge base. Empirical findings from this study support the propositions that intellectual capital is a key driver of organisational performance and that a knowledge-based perspective holds a more holistic model of organisations' value creation.