

Preface

INTRODUCTION

In the last few years, Knowledge Management (KM) practices have evolved in organizations. Due to the introduction of Web 2.0 technologies, new usages of information and knowledge sharing have emerged (Enterprise 2.0). The new generation of employees (Generation Y or Millennials) has new habits at work. They use everyday Web 2.0 technologies (Blogs, Wikis, RSS, Folksonomy, social networking platforms, Mashups, Podcasting, etc.) in the private arena, and therefore, consider that such technologies for e-collaboration and self-organizing are the best means/methods to work. They are eager to simply and quickly find good information/knowledge, anytime and anywhere, and are not intimidated by knowledge complexity and organizational hierarchy.

Thus, the concept of KM has been impacted and has evolved towards more human interactions management and interpersonal networking, in addition to traditional information and knowledge processing. Organizations are currently developing a new type of KM which is social-based and may be called KM 2.0. They become knowledge-centric organizations because they focus more on KM and social collaboration, rather than on hierarchy and control. In this new era, all employees can equally participate in creating, using, and sharing information and knowledge. Knowledge is no longer a matter for experts. Every individual (or knowledge worker) plays a central role in this case. Knowledge generated by employees is not only used for designing value-added products or services, but also for inventing new work modes based on people empowerment, user emergent participation and collaboration. Business models, organizational management, work modes, knowledge worker's skills and behavior, and so forth are intended to be transformed, reviewed, and even sometimes to be rethought.

The book aims to give an overview on theoretical and empirical research that investigates the next Knowledge Management (KM) generation (McElroy, 2002) in the Web 2.0 age, which would be called KM 2.0 (Dudezert & Boughzala, 2008). It highlights evolutions of the KM area with a global focus and an international dimension of studies. The objective is also to compare different approaches and practices developed in different countries and cultures.

TRADITIONAL KNOWLEDGE MANAGEMENT

The interest in KM dates back to the early 90s when companies realized the strategic value of knowledge as a competitive resource and a factor of stability for their survival (Spender, 1996). There is more than one definition of KM. Mentzas (2004 p.116) defines KM as the “discipline of enabling individuals, teams

and entire organizations to collectively and systematically create, share and apply knowledge, to better achieve the business objectives”. “KM efforts can help individuals and groups to share valuable organizational insights, to reduce redundant work, to avoid reinventing the wheel per se, to reduce training time for new employees, to retain intellectual capital as employees turnover in an organization, and to adapt to changing environments and markets” (McAdam & McCreedy, 2000) (as cited in Wikipedia). KM is also defined by Dieng et al. (1999) as a range of practices, methods, and techniques used in an organization to identify, analyze, organize, create, memorize, and share knowledge.

According to Ikyjiro Nonaka (1994), *Knowledge Creation* is a spiraling and continuous process of interactions between explicit and tacit knowledge. Explicit knowledge which is codified and transmitted as information in formal and systematic language (e.g. rules, procedures) and tacit knowledge which is personal and deeply internalized, embodied in practice and action and so hard to be formalized and communicated (e.g. talent, hand-turn) (Polanyi, 1966). Spender (1996) has qualified a part of this tacit knowledge as implicit which is the only part that could be codified. The interactions between the explicit and tacit knowledge lead to the creation of new knowledge. The combination of the two categories makes it possible to conceptualize four conversion patterns: *Socialization, Externalization, Combination and Internalization* (Nonaka, 1994). Socialization enables the conversion of tacit knowledge through direct interaction between individuals through joint activities by observation, imitation, practice, and linkage (Polanyi, 1966; Nonaka, 1994; Spender, 1996).

The Japanese culture inspired Ikyjiro Nonaka and Noburo Konno to introduce the concept of Ba in 1996 to represent a shared space for emerging relationships that serves as a foundation for Knowledge Creation (Nonaka, 1998). This space can be physical (e.g. office, dispersed business space), mental (e.g. shared experiences, perceptions, ideas and ideals), or any combination of them. This concept, which is difficult to be translated in Western languages, could be defined as the pooling context in which knowledge is shared, created, and used through interaction.

Since its emergence, KM focused more on knowledge as such with its space of socialization (Ba) and individuals (knowledge workers) who are holders of knowledge in their behavior, interactions, and relationships. This discipline has for long time emphasized capturing, accumulating, and disseminating knowledge through Knowledge Management Systems (KMS). KMS refer to IT-based systems developed to support and enhance the organizational processes of knowledge creation, storage/retrieval, transfer, and application (Alavi & Leidner, 2001). Yet for many organizations KMS became enormous repositories whose use was hindered by the sheer volume of data and the associated difficulties of keeping the knowledge accurate and up-to-date (Alavi et al., 2005-6). Thus in traditional KM era, KM refers more on knowledge control than on knowledge creation and transfer.

We argue that with the arrival of Web 2.0, Knowledge Management has found a new youth, and its study and scope should be redesigned. KM is in the forefront in this evolutionary organizational context as we are moving from the only information processing to human interactions management and interpersonal networking. With the advent of the Web 2.0, the concept of KM has been impacted and has evolved towards a vision based more on people participation and emergence and less on knowledge per say. This implies a new conception of KM that we propose to call “KM 2.0”.

KNOWLEDGE MANAGEMENT 2.0

According to Stowe Boyd (Gandih, 2008), one of the prominent consultants and bloggers in the Web 2.0 industry, there are three types of knowledge:

- Impersonal knowledge which consists of ideas and information made explicit in documents and files (explicit knowledge).
- Personal knowledge which is tacit and stored in the brains (tacit knowledge).
- Interpersonal knowledge which is communicated implicitly in the conversations and connections of people (implicit knowledge)

In traditional KM, we focus mainly on the two first types of knowledge. The study of Interpersonal Knowledge related to relationships and interactions of people (Social Capital, Nahapiet & Ghoshal, 1998) is specific to KM 2.0. In the context of collaborative work, it is part of what is called Collaboration Knowledge which includes work process and relational knowledge (Boughzala, 2007; 2010). Socialization is the most important mode of Knowledge Creation in the KM 2.0.

With the development of the concept of social organization, a human centered organization based on e-collaboration, social networks and communities with an intensive use of Web 2.0 technologies, it has involved a new concept of KM, the KM 2.0. It describes the changing trends in managing knowledge in the knowledge-based society and economy built on the collective intelligence and social capital, mainly related to the interpersonal knowledge. We adopt Shimazu and Koike's definition of KM 2.0 as "a model that places collective intelligence at its core and promotes its use by accelerating the distribution of information" (Shimazu and Koike, 2007 p.52).

This new generation of KM, KM 2.0 aims to allow incorporated and pervasive management of knowledge for social and virtual organizations (teams, communities, and enterprises). With the introduction of Web 2.0 - social and collaboration technologies, the bases of KM have been updated and in some ways metamorphosed. The Web 2.0 adoption in connecting people (social networks and virtual communities) and online collaborating will succeed where previous approaches of traditional KM had failed in term of socialization.

KM 2.0 affects Enterprise Business Models, organizational management, and knowledge worker's skills and behavior, and may be visible at different dimensions: social, managerial, technical, economic, legal, ecological, et cetera. Compared to the traditional KM, evolution is related to the KM scope, the nature of knowledge, the place of the individual, leadership, the KM governance, and the KM process and technology (Boughzala & Limayem, 2010; Dudezert, 2009).

- **KM Scope:** Traditional KM focuses mainly on knowledge (Knowledge capital: Impersonal and personal knowledge). KM 2.0 on the other hand focuses not only on knowledge but also on its space of socialization and holders (Social capital: Interpersonal knowledge) through electronic open collaboration, social linking/networking and content sharing (thanks to Web 2.0 technologies) with a new culture of awareness (especially with both mixed and virtual reality) and innovation. At the level of the organization, while traditional KM focuses on intra organizational knowledge, KM 2.0 also covers inter organizational KM (IKM) such as in SCM and e-business where many exchanges and sharing of knowledge are done between partners. These exchanges usually take place between experts of the same field or around the same value chain or network.

- **Nature of knowledge:** In the traditional KM, knowledge comes mostly from experts (Individual Intelligence). In the context of KM 2.0, knowledge originating from any individual could be interesting. Customer reviews on amazon.com, for example, could be decisive in the purchase of a product. In the traditional KM, knowledge is mainly related to products (outcomes). In KM 2.0 however, knowledge is related to both products and processes. For example, in the case of a team working on the design of a new product, expertise around both the outcomes (individual domain knowledge and skills) and the work processes (collaboration knowledge, capabilities of members to work together and innovate) are important.
- **Place of the individual:** In the traditional KM, knowledge workers are mostly users of knowledge. In KM 2.0, people play a more central role by consciously and unconsciously generating knowledge. The connection, interaction, and collaboration of individuals and the nature of their relationships are a source of knowledge (Collective Intelligence), and play a major role in KM 2.0. Consequently, performance and recognition of individuals is done according to their collaborative capabilities to get in touch (connect), to federate others, and to work collaboratively. KM 2.0 is best suited to the new generation of individuals (Gen Y) who are looking continuously for new technology and become Knowledge Contractors, i.e. people who are aware knowledge is crucial to work in new knowledge-centric organizations and choose to develop and promote it (Dudezert et al., 2008; Dudezert, 2009).
- **Leadership:** In modern Western countries bureaucratic organizations are edifices built on ideas of rationality and control (Weberian myth) (Feldman & March, 1981). Leadership and hierarchical structure are based on this myth. In KM 2.0 era, knowledge is mainly personal and interpersonal. Thereby this crucial resource cannot be controlled and rationally managed by middle- and top-managers. Thus KM 2.0 questions the rationality and control myth in bureaucratic organizations and makes business organizations reinventing managerial practices able to consider new foundations of authority. Google for instance developed a peer-assessment for collaborators rather than a hierarchical control of tasks. In this company leadership is based on legitimacy related to expertise and knowledge rather than on rationality and control.
- **KM governance:** In traditional KM, knowledge was stored by organizations in order to maintain their competitive advantage. Organizations had a defensive attitude concerning knowledge. In KM 2.0 era, Collective Intelligence is now used to transform stakeholders' relationships and to improve competitive advantage. Thus, Walmart by developing KM 2.0 practices (Binot & Dudezert, 2008) improved its competitive advantage and developed a new business unit (GAZELEY) specialized in Logistics and Operations Management, which is its core knowledge.
- **KM Process:** KM is a structured process involving creating, storing, refining, and sharing knowledge (Knowledge Push). KM 2.0 is less structured, more transparent to the user in all its behavior and interactions and evolves gradually over time ("on the fly"), using technologies to observe and to keep track such as Log files, RFID, GSM/UMTS, or GPS, tagging and profiling (Knowledge Pull). Similarly, traditional KM is a Top-Down approach based on a corporate and normative strategy (centralization), KM 2.0 is a Bottom-Up approach based on individual initiatives and emergence (distribution).
- **KM Technology:** Compared to Web 2.0 technologies of today which are user centered, the traditional KMS - task oriented, seems incredibly primitive in terms of interpersonal knowledge. These offer only limited and formal information on experts and explicit knowledge in terms of collaboration. They suffer from their lack of tools of expression, social interaction, and visualization of

relationships. Traditional KM technologies are often passive with a static content and are generated by professionals. Web 2.0 technologies are participatory and personalized with a dynamic content and are generated by users themselves. Traditional KM technologies are overly complex and rigid. Web 2.0 technologies are flexible and easy to use and to install.

ABOUT THE BOOK

The material presented in this book is a collective contribution to the knowledge management area. The book is written for those who want to improve their understanding of challenges associated with KM evolutions due to the emergence of Web 2.0 technologies. It is, in particular, discussing impacts of KM 2.0 practices on:

- Business models
- Enterprise governance and strategies
- Organizational structures and models
- Business work practices
- Human resources
- IT design, implementation, and appropriation in organizations

This book is meant for those connected with the fields of Management Science, Information Systems, Design Engineering, or anyone interested in the KM paradigms changing through Web 2.0 usages (Enterprise 2.0). It intends to serve as a valuable asset for academics (graduate students, researchers, and professors) in their research and teaching, as well as managers and practitioners in their KM strategy reformulation and Web 2.0 technologies implementation.

The book is divided in two sections. The first section of this book analyses how Web 2.0 technologies contribute to KM 2.0 implementation according to the new organization transformation.

Chapter 1, “*Collaboration 2.0 through the New Organization (2.0) Transformation*,” by Imed Boughzala introduces a new holistic organization transformation (i.e. Organization 2.0) caused by changes in the act of collaboration (i.e. mass collaboration or collaboration 2.0) due to the emergence of Web 2.0 technologies and their use by a new generation of people called Gen Y. Organization 2.0 is based on Collective Intelligence and Social Capital. This chapter tries to sort out confusion that may exist between different concepts like Web 2.0, Enterprise 2.0, Collaboration 2.0, Management 2.0, KM 2.0, Organization 2.0, et cetera.

Chapter 2, “*Exploring the Impact of Web 2.0 on Knowledge Management*,” by Thomas Bebensee, Remko Helms, and Marco Spruit, examines the suitability and impact of Web 2.0 applications on KM in organizations. With case studies in two German nonprofit organizations, the authors demonstrate that unbounded collaboration and user-generated content functionalities used in Web 2.0 applications have a strong impact on knowledge capture/creation and knowledge sharing within organizations. Thereby they show that Web 2.0 applications effectively impact the efficiency, quality, and commitment of KM in organizations. Following chapters complete this analysis by focusing on specific Web 2.0 technologies.

Chapter 3, “*Moving Wikis Behind the Firewall: Intrapedias and Work-Wikis*,” by Lynne P. Cooper and Mark B. Robber deals with Wikis and their use for KM in the new KM 2.0 era. This chapter shows that the use of wikis in corporations presents significant opportunities as well as challenges for improv-

ing knowledge capture and work processes. It identified fundamental characteristics of wikis and how these change between public and corporate wikis, and between wikis intended for knowledge capture (intrapedias) versus supporting work processes. A case study describing two organizational wikis illustrated the power of the individual in instigating knowledge capture and the ability of wiki technology to rapidly and easily support individuals in their work efforts.

Chapter 4, Chapter 5 and Chapter 6 examine the use of Social Networks technologies for KM in organizations.

Chapter 4, *“Social Networks and Knowledge Management: An Explorative Study in Library Systems,”* by Panorea Gaitanou and Sarah Yasin, explores the impact of Social Networks technologies on KM in the context of Library Organizations. It shows that Social Networks tools can provide a useful compliment to existing central knowledge repositories. They open wide opportunities for collaboration and interaction and thereby contribute to create Collective Intelligence.

Chapter 5, *“Web 2.0 Social Networking Technologies and Strategies for Knowledge Management,”* by Edward T. Chen, explores how Social Networks technologies can be used for KM in business organizations and propose strategies of use for Knowledge Management 2.0 implementation.

Chapter 6, *“Competence Management over Social Networks through Dynamic Taxonomies,”* by G. Berio, A. Di Leva, M. Harzallah, and G.M. Sacco, examines how social networks information can be used to improve competence management in business organizations. It suggests social networks information can contribute to better value and control knowledge that is shared in organization and thus can contribute to build a more controlled Collective Intelligence.

The second section presents the business implications of KM 2.0 transformation. It explores how companies become KM 2.0 organizations and how they used KM 2.0 to achieve their business objectives.

Chapter 7, *“Knowledge Sharing in the Age of the Web 2.0: A Social Capital Perspective,”* by Caroline Saris-Roussel, François Deltour, and Loïc Ple, discusses the main challenges of the “social-turn” of knowledge management. In fact, in the KM 2.0 era, management of relationships based on trust is the core process of knowledge management. Based on social capital theory and on a case study by Schlumberger, this chapter analyzes how this social-turn renewed practices of Knowledge Management in business organizations.

Chapter 8, *“Strategic Knowledge Management System Framework for Supply Chain at an Intra-Organizational Level,”* by Cécile Gaumand, Alain Chapdaniel, and Aurélie Dudezert, emphasizes also the role of interactions and relationships in KM 2.0. Based on an Action-Research in an Italian SME, they show implications of the implementation of a Knowledge Management System (KMS) in a transversal intra-organizational function (Supply Chain). They highlight KM 2.0 implementation which requires business organizations change their managerial practices and to develop a culture of agility based on knowledge sharing, collaboration, and empowerment.

Chapter 9, *“Web 2.0 and Project Management: Reviewing the Change Path and Discussing a Few Cases,”* by Antonio Carlos de Oliveira Barroso, Rita Izabel Ricciardi, and Jair Anunciação de Azevedo, focuses on the synergy of Web 2.0 applications and services, and project management needs. They exam the Brazilian situation of current project management practices and discuss few cases for showing how Web 2.0 can impact project management.

Chapter 10, *“The Evolution of KM Practices: The Case of the Renault-Nissan International Strategic Alliance,”* by Nabyla Daidj, analyzes the transformation of an international company from traditional KM to KM 2.0. More especially, it focuses on the impact of the KM 2.0 impact on the strategic alliance built

by Renault and Nissan. Thus, this chapter discusses how KM 2.0 can be used to develop a competitive advantage in an industrial context.

Chapter 11, “*KMS for Fostering Behavior Change: a Case Study on Microsoft Hohm*,” by Magda David Hercheui, ends this section and the book with a more critical analysis on KM 2.0. Based on an empirical example (Microsoft Hohm), this chapter analyzes how KMS can be used to foster behavior change. Thus it questions the role of KMS in manipulating people in business organizations. It considers the use of KM 2.0 practices by specific groups of actors to maintain or develop social domination in organizations.

CONCLUSION

The chapters in this book discuss different aspects of Knowledge Management and Web 2.0 environment. Each offers a unique contribution to advance our theoretical or practical understanding of the new Knowledge Management (KM) practices in the Web 2.0 environment within and between organizations and individuals. We commend them to your reading, and hope they will inspire your research and practice.

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REFERENCES

- Alavi, M., Kayworth, T., & Leidner, D. (2005-2006). An empirical examination of the influence of organizational culture on knowledge management practices. *Journal of Management Information Systems*, 22(3), 191–224. doi:10.2753/MIS0742-1222220307
- Alavi, M., & Leidner, D. (2001). Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MISQ*, 25(1), 107–136. doi:10.2307/3250961
- Boughzala, I. (2007). *Ingénierie de la collaboration: Théories, technologies et pratiques*. Paris, France: Hermès.
- Boughzala, I. (2010). *Mise en perspective de l'e-collaboration comme outil de transformation de l'organisation. HDR report in management science*. University of Nantes.
- Boughzala, I., & Limayem, M. (2010). The new generation of knowledge management for the Web 2.0 age: KM 2.0. In Lee, I. (Ed.), *Encyclopedia of e-business development and management in the digital economy* (pp. 1211–1220). Hershey, PA: IGI Global. doi:10.4018/978-1-61520-611-7.ch122
- Dieng, R., Corby, O., Giboin, A., & Ribière, M. (1999). Methods and tools for corporate knowledge management. *International Journal of Human-Computer Studies*, 51, 567–598. doi:10.1006/ijhc.1999.0281

- Dudezert, A. (2009). *Vers l'entreprise centrée connaissance ou les conditions d'efficacité de ces nouvelles formes organisationnelles. HDR report in management science*. University of Nancy II.
- Dudezert, A., & Boughzala, I. (Eds.). (2008). *Vers le KM 2.0: Quel Management des Connaissances imaginer pour faire face aux défis futurs?* Collection Entreprendre Informatique, Vuibert, March 2008.
- Dudezert, A., Boughzala, I., & Mounoud, E. (2008, October 17). *Comment intégrer la génération Millennials à l'entreprise?* Etats généraux du management workshop, Sénat/Paris, France.
- Galbreath, J. (2002). Success in the relationship age: Building quality relationship assets for market value creation. *The TQM Magazine*, 14(1), 8–24. doi:10.1108/09544780210413219
- Gandih, A. (2008). L'entreprise sociale: Utiliser les applications Entreprise 2.0 pour déculper la productivité des travailleurs du savoir. *Oracle White Paper*, CA, USA.
- McAdam, R., & McCreedy, S. (2000). A critique of knowledge management: Using a social constructionist model. *New Technology, Work and Employment*, 15(2). doi:10.1111/1468-005X.00071
- McAfee, A. P. (2006). Enterprise 2.0: The dawn of emergent collaboration. *Sloan Management Review*, 47(3), 21–28.
- McElroy, M. E. (2002). *The new knowledge management: Complexity, learning, and sustainable innovation*. Butterworth-Heinemann.
- Mentzas, G. (2004). A strategic management framework for leveraging knowledge asset. *International Journal of Innovation and Learning*, 1(2), 115–142. doi:10.1504/IJIL.2004.003715
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242–266.
- Nonaka, I. (1994). Dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14–37. doi:10.1287/orsc.5.1.14
- Nonaka, I. (1998). The concept of Ba: Building a foundation for knowledge creation. *California Management Review*, 40(3).
- Polanyi, M. (1966). *The tacit dimension*. London, UK: Routledge & Kegan Paul Ltd.
- Shimazu, H., & Koike, S. (2007). KM2.0: Business knowledge sharing in the Web 2.0 age. *NEC Technical Journal*, 2(2), 50–54. Retrieved March 8, 2009, from <http://www.nec.co.jp/techrep/en/journal/g07/n02/t070213.pdf>
- Spender, J. C. (1996). Competitive advantage from tacit knowledge? In Moingeon, B., & Edmonson, A. (Eds.), *Organizational learning and competitive advantage* (pp. 56–73). London, UK: Sage.