Aligning Knowledge Management Processes And Innovation Management Capability in A Global Business

A. Bechina Arnzten, College University i Buskerud, Kongsberg, Norway, aurillaa@hihm.no
L. Voransachai , Bangkok University, Bangkok, Thailand, lugkana.w@bu.ac.th

Abstract

Today, it is well recognized that sustainability and competitiveness of global organizations can be insured only if they concentrate on managing knowledge processes in an effective way. It is as well, commonly agreed that the most innovative companies are the one being able to take care of their intellectual assets. These organizations usually provide the right technological and social infrastructure that on one hand leverage the corporate knowledge and on the other hand allow turning ideas into innovative products and services. The paper intends to draws a link between knowledge management processes and Innovation management capability. A model of innovative capabilities based on Knowledge management initiative is presented.
Keywords: Innovation management, knowledge management processes, KM methods, Indicators.

1. Introduction

The past decades, the global business environment has experienced an influx of change and has become more dynamic. As more and more businesses enter their respective markets, the existing competition also increases and puts pressure on most organizations to combine their resources in a way that is most effective and efficient in other to gain a sharp competitive edge over its rivals [1]. Thus, it is recognised that companies need to take care of their most important assets which is the organisational knowledge. For example, it is commonly agreed that continous knowledge creation/generation will foster innovation that is the most competitive advantage of today's organizations [2, 3][4].

There is a plethora of research works highlighting the link between Knowlegde and Inovvation [5-9]; but still there is the need to understand better "how the Knowledge Management does influence the innovation capability in a company?".

Obviously, there is no simple and categorical answer to this question, since both knowledge and innovation deal with human reasoning and personal subjectivity. Nevertheless, our study aims to bring a new light to this complex and challenging subject.
To fulfil this purpose, we need to clarify the conceptual notions of "Knowledge Management" (KM) and "Innovation Management" (IM) and then investigate how they could possibly relate to each other.
The second part of this paper outlines the basic concepts of Knowledge and Knowledge Management. A definition of innovation capability is as well described. The section three, though a general framework highlights the alignment of knowledge management outputs with the innovation enablers.

2. Background about Knowledge Management and Innovation Management

Knowledge and Knowledge Management

Until the end of the 19th century, companies used to manage their tangible capital in order to increase their market value and to foster their growth. However, factors such as globalization, internationalization of the competition, higher requirements of clients and suppliers and technological fast pace evolution have led to redefine the knowledge as the strategic growth for companies to be competitive. Consequently, most of the companies have turned into the so-called knowledge-based organisation [10].

Literature in the field of knowledge management has proliferated in recent years as organisations attempting to address the shift from a production based economy to "the practice of harnessing and exploiting intellectual capital to gain competitive advantage"[11] .

In the literature, there are several definitions of the knowledge. For example, [12] defines the knowledge as "a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information". Hunter (1999) focuses more on actionable knowledge and suggests rather "Knowledge is information in the mind, in a context which allows it to be transformed into action"[13].

Bassi [14] defines the Knowledge Management (KM) as the process of creating, capturing and using knowledge to enhance organisational performance, while Parlby [15] delineates it as the discipline of capturing knowledge based competencies, storing and disseminating them for the benefit of the organisation as a whole. In the context of this paper, we will adopt the following definition "Knowledge Management is an organised and systematic approach encompassing the knowledge processes such as use, transform, transfer, store and retrieve knowledge in order to improve business performances".

Knowledge Management outcomes

According to the business objectives, the implementation of different Knowledge Management initiatives such as building knowledge repositories, knowledge café, etc…will lead to different outcomes. There is a plethora of expected KM results described by either practitioners or researchers [16-19].

In a previous research work , we have defined 14 possible outcomes [20-22].
With the idea to find the interaction between KM and Innovation and to understand how an organisation can concretely leverage its innovation capability through its KM initiatives, a general framework have been delineated
However, this suggested framework needs to be adapted to the specificity and the business strategy of the organisation.
The table below presents the expected KM results and a list of some possible initiatives for achieving the outcomes.

Table 1: Generic framework of possible KM outcomes influencing the innovation capability

KM outputs	Meaning	Initiatives
Knowledge Capitalization	Store, diffuse & reuse knowledge acquired during team projects	Build knowledge repositories Easy access to KW repositories
Use Knowledge	Make Knowledge (KW) actionable Integrate KW into daily tasks & Process	Manage cultural changes System of incentives and rewards Involve mentoring-apprenticeship
		Use the experience of former projects as starting point for new projects
Create knowledge	Generate new knowledge from previous ones	Master key of conversion of knowledge Training – Seminars-network-SECI model
Actualization of Knowledge	Update the knowledge according external environment	Benchmarking-internal & competitors Absorption of external knowledge: Seminars-publications-meetings-training- Systematic diffusion des of new information
Best Practices absorption	Understand & integrate successful practices from competitors or others	Guideline of the internal Best Practices Guideline of external BP (benchmarking)
Business Routines creation	Define & implement corporate repetitive tasks	guideline of Business procedures Integrate individuals knowledge in the corporate knowledge
Productivity	Increase employee productivity by	Use of appropriated ICT (web-repositories, communication tools, …) Provide socio-environmental framework for employees (satisfaction, motivation, office, …)
Share knowledge & learned lessons	Diffuse knowledge among all employees to increase its value	Informal and formal network s- Culture change management-Trust-motivation-Communications

		-Rewards system Use of ICT
Identify and localize knowledge	Specify what the company knows and know where to find people & expertises	Relationship and communication map Competences yellow pages / Knowledge map Employee Expertise Database
Knowledge acquisition	Integration of external knowledge	Training – seminars - CoP-
KW and KM measurement	Assess the impact of KM on business processes	Metrics & measurement methods selection Choose the right indicators
Use the right infrastructure	Implement the appropriated ICT	User requirements specification Align KM with business goals Set up the KM technological framework (email-intranet-lotus notes, repositories,..)
People Satisfaction& Motivation	Obtain employee's memberships to collective objectives	Competences management Create a good working environment – reward systems
Background knowledge	Create a background favourable to the achievement of goals	Manage change of culture Storytelling

For each KM outcome corresponds some initiatives ranging from simple implementation such for example email service to some more complex strategies such as competence management systems and so forth.

Analysis of the KM outcomes, highlights that are some of them are closely related to each others and therefore and it is challenging to draw a clear cut between them and their related implemented initiatives. However, the analysis of both the KM outcomes and the enablers of Innovation capability contributed to delineate clearly the impacts of some KM Results in fostering the Innovation process of organisation.

Innovation enablers

The global changing business landscape involves stringent needs for organisations to be competitive [5]. The quest for competitiveness and sustainability has led to recognition of innovation as a vital ingredient for survival and profitability in the knowledge-based economy. Innovating organisations usually have higher global market share, higher growth rates, higher profitability and higher market valuations [23].
There is no commonly agreed definition of Innovation [3]; however common to all definitions, innovation is perceived as something new. Definition differs according to the academic or business perspective. In a business point of view, innovation is defined as a new process or new product development contributing to the company performance [24]. In academic perspective, innovation definition is related to the innovation dimensions such the types of innovation, the stages of innovation, and the level of analysis [25, 6].
To better grasp the innovation concepts and processes, several classifications have been established. [26, 27], stated that innovation can be related to new product, new process, new service and new method or organisation, while Abernathy and Clark [28] classified the innovation through their impacts on the commercial return and their leverage on the required firm competences. Furthermore, some representations of the innovative processes have led to the specification of two different models: the linear one and the interactive one.
The variety of Innovation definitions implies that there are as several Innovation capability enablers. Furthers details and explanation can be found in [29, 21, 22]; they are summarised by the following picture describing five dimensions enabling Innovation capability.

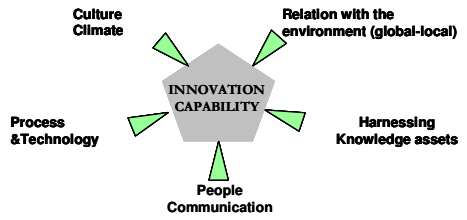

Fig. 1: Enablers for innovation capability

3 Linking Knowledge management and Innovation capability

Our previous studies outline that Innovation emerges if five dimensions are considered (see figure 1). In the context of this paper, we intend to draw a correlation between Knowledge

Management and the emergence of Innovation as pictured below.

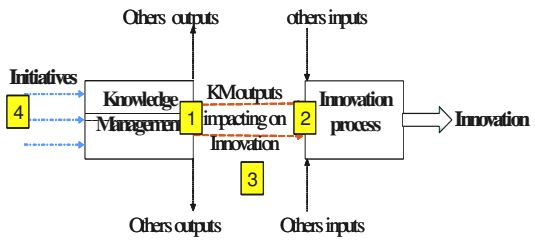

Fig. 2: Relationship between KM outputs and Innovation inputs

Analysis of both the KM outcomes and Innovation inputs (enablers) has led to the delineation of a general framework identifying the KM outcomes that will impacts on the innovation capability. The framework encompassed the mapping between the KM outcomes and the innovation inputs.

Table2: innovation Input and their corresponding KM outputs

Inputs- enablers	Input descriptions	Corresponding KM outputs as defined in table 1
Culture	Motivation System of incitement of knowledge's sharing Rewards and incentives to innovate Organisations structure Culture of the knowledge sharing Culture of innovation Atmosphere of trust No censorship or auto-censorship overcome the psychological barriers	Knowledge sharing Background knowledge
Relations with the external environment	Supervision of competition Absorption of external knowledge within and outside of the company's field Actualisation of knowledge Acquisition of knowledge (seminars, colloquium, publications)	knowledge acquisition knowledge actualization
Harnessing Knowledge assets	Unofficial experimentation Integration of innovation in the strategy Understand of the knowledge conversion (SECI model) Use of knowledge Reuse of knowledge Top management encouragement toward new ideas	Use of knowledge Best practices diffusion Knowledge capitalization
People Communication	Formal (meeting) Informal (coffee breaks) Internal External (seminaries, colloquium, publications)	Knowledge sharing Best practices diffusion
Process Technology	Total number of employees Qualifications of employees Mastering of methods such as TRIZ Efficient R&D department	Background knowledge Creation knowledge

Inputs- enablers	Input descriptions	Corresponding KM outputs as defined in table 1
	Organization of slot of time Organization of space Sufficient and efficient equipment Information communication Technologies	

The table 2 outlines that out of 14 KM outcomes identified in Table 1, 9 KM outputs play a clear role
in Innovation process: knowledge sharing, Knowledge creation, knowledge use, knowledge actualization, knowledge acquisition, best practices absorption, knowledge capitalization and creation of adapted background.

Therefore organisations willing to leverage their innovation capability, need to focus on implementing the appropriated KM initiatives in order to trigger the KM outputs that will influence the innovation processes.

4 Conclusion

In this competitive and global economy, it is crucial for companies to focus on their most important intangible asset knowledge by implementing knowledge management initiatives and to align some of the KM outcomes with the innovation management processes. In this paper, we discussed the strong link between knowledge and the Innovation emergence.
The most important Knowledge management outputs that influence positively the emergence of innovation capability have been identified. Those enablers are Knowledge acquisition, capitalisation, actualisation, sharing, using, creation of routines, diffusion of best practices and creation of adapted background knowledge. The suggested general framework shows the mapping of some specific KM outputs with some innovation inputs needs to be tailored according to the organisational context and requirements.

5 References

[1] Edvinsson, L. and Sullivan, P., "Developing a model for managing intellectual capital," *European Management Journal*, vol. 14, pp. pp.356-365., 1996.

[2] Nonaka, I. and Takeuchi, H., *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*: New York:Oxford University Press., 1995.

[3] Read, "Determinants of successful organisational Innovation: a review of current research," in *Journal of Management Practice* vol. 3, 2000.

[4] Scarbrough, H., "Knowledge management, HRM and the innovation process. ," *International Journal of Manpower*, vol. 24, pp. 501-516., 2003.

[5] Cormican, K. and O'Sullivan, D., "A Collaborative Knowledge Management Tool for Product Innovation," presented at Managing Innovative Manufacturing Conference, Birmingham, UK , 2000.

[6] Gopalakrishnan, S. and Bierly, P., "Analyzing innovation adoption using a knowledge-based approach," *Journal of Engineering and Technology Management*, vol. 18, pp. 107-130, 2001.

[7] Tomala, F. and Senechal, O., "Innovation management: a synthesis of academic and industrial points of view," *International Journal of Project Management*, vol. 22, pp. 281-287, 2004.

[8] Su, C.-T., Chen, Y.-H., and Sha, D. Y., "Linking innovative product development with customer knowledge: a data-mining approach," *Technovation*, 2005.

[9] Yang, J., "Knowledge integration and innovation: Securing new product advantage in high technology industry," *The Journal of High Technology Management Research*, vol. 16, pp. 121-135, 2005.

[10] Tso and Wu, "Methodology and Indicators for Innovation,," in *STPRC #99-P-0401*, 199.

[11] Barth, S., "Defining Knowledge Management," in *CRM Magazine*, 2000.

[12] Davenport, T. and Prusak, L., *Working Knowledge: How organizations manage what they know*: Havard Business school press 1998.

[13] Hunter, G., "Some "Do"s of Knowledge Management," in *Ottawa: Health Canada*, 1999.

[14] Bassi, L. J., "Harnessing the Power of Intellectual Capital," *The Journal of Applied Manufacturing Systems*, vol. Summer, pp. pp29-35, 1998.

[15] Parlby, "The Power of Knowledge: A Business Guide to Knowledge Management," 1997.

[16] De Long, D., W., Davenport, T., H, and Beers, M., C., "Successful Knowledge Management Projects," *MIT sloan Review*, vol. 39, 1998.

[17] Firestone, J., "Key issues in knowledge management," *journal of knowledge management consortium international*, vol. 1, 2001.

[18] Malhotra, "Managing and Measuring Knowledge assets in the public sector," vol. 2007, U. Syracuse University, Ed.: United Nations Department of Economic and Social Affairs, 2003.

[19] Anantatmula, V., "Outcomes of Knowledge Management Initiatives," *International Journal of Knowledge Management*, vol. 1, pp. 50-67, 2005.

[20] Arntzen, A. and Braathe, I., "Survey of Knowledge Management Practices within Norwegian Organizations," Oslo 2005.

[21] Arntzen Bechina, A., Michon, N., and Nakata, K., "Pathway to Innovation through Knowledge Management," presented at ICICKM, the International Conference on Intellectual Capital, Knowledge Management and Organisational Learning, Dubai, United Arab Emirates, 2005.

[22] Arntzen Bechina , A., "Knowledge, Learning and Innovation: the quest for a competitive Edge," in *Integrated Knowledge management*, Y. Cader, Ed.: Heidelberg Press 2007.

[23] Dresdow, S. A., " Innovation: Toward a Model of Organisational Processes and Individual Factors Influencing Success," vol. PhD: Southern Illinois University, 1993.

[24] Burgelman, R. A. and Sayles, L. R., *Inside Corporate Innovation: Strategy, Structure, and Managerial Skills.* : New York Free Press., 1986.

[25] Gopalakrishnan, S. and Damanpour, F., " A Review of Innovation Research in Economics, Sociology and Technology Management " *Omega, Elsevier Science*, vol. 25, pp. pp. 15-28, 1997.

[26] Schumpeter, J., *Capitalism, Socialism, and Democracy*: New York, Harper and Row, 1952.

[27] Henderson, R., "Underinvestment and Incompetence as Responses to radical Innovation: Evidence from the Photolithographic Alignment Equipment Industry," *RAND Journal of Economics*, vol. 24, pp. 248-270 1993.

[28] Abernathy, W. J. and Clark, K. B., " Innovation: Mapping the Winds of Creative Destruction.," 14, 1985.

[29] Michon, N., "Quantitative and qualitative inpacts of Knowledge Management on Innovation," vol. Master. Strasbourg: University Louis Pasteur, 2004.