

Analysis of Knowledge Management, Organizational Learning and Innovation: How Facebook has effectively integrated these three elements in its Structure

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Abstract

The key motive for this study had been to investigate and explore the current state of knowledge in organizational learning, knowledge management process and its impact on innovation with the help of frameworks. The report commence by a brief introduction of organizational learning and knowledge management. This is followed by a literature review carrying out an in depth analysis of conceptual and theoretical frameworks of knowledge management and organizational learning. The paper then reviews the application of these concepts on the social network service; Facebook. It will then go on to discuss the exploitation of knowledge and innovation within the organization. Finally the paper will conclude by summarizing the analysis with an attempt to validate the significance of the study.

Keywords: organizational learning, knowledge management, innovation, social network

1. Introduction

Businesses today face challenges in various forms and sizes i.e. complex products and processes, shortening product life cycles, global competition and e-technology (Wang and Ahmed, 2004, p. 675) to name a few. To survive and sustain in this era of uncertainty, businesses need to develop and invest in learning, knowledge management and innovation objectives.

The blurred boundaries between knowledge management (KM) and organizational learning (OL) (Mishra and Bhaskar, 2011, p. 345) often gives an impression of similarity between the two concepts. Learning as defined by Duncan and Weiss (1978) is a process where knowledge lays the foundation for both input and output. This view of learning is also backed by (Nonaka and Takeuchi, 1995, p. 284; Kogut and Zander, 1992, p. 384) other researchers. Knowledge Management is then explained by Birkinshaw (2001, p. 33) as a system based on a set of activities that aids the stream of "knowledge into and within the firm" through its employees and interaction with other businesses.

Darroch and McNaughton (2002, p. 217) in their study revealed that KM process is closely related to innovation. Innovation takes place when an organization intentionally alters its product or service offering (Hislop, 2005, p. 158) or the manner in which they are delivered. The concepts of KM, OL and Innovation are therefore closely interlinked as without the sound capacity of OL, it is difficult for an organization to establish successful KM system (Liao and Wu, 2009, p. 1850) to enhance innovation.

2. Literature Review

2.1 Knowledge Management Process

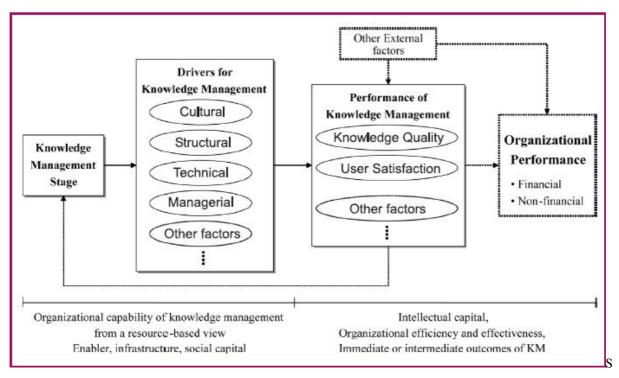
To stay competitive, organizations nowadays need to have a strategy in place to effectively use knowledge. KM basically pinpoints and strategically utilizes the individual and organizational knowledge to make the organization more sustainable (Davenport and Prusak 1998; Baird and Henderson, 2001) in the long run. Knowledge is derived from information. Information provide answers to the 'who', 'what', 'where' and 'when' questions while knowledge provides solution to 'how' (Cooper, 2007, p. 516) questions.

It is imperative at this stage to identify the sources of knowledge and information. Also known as the typologies of knowledge (Hislop, 2005, p. 18), tacit and explicit knowledge are referred to by a majority of scholars (Jasimuddin, Klein and Connel, 2005; Ward, 2007; Frappaolo, 2008) as the most common distinctions when it comes to knowledge literature. Tacit knowledge is referred to as something which is in the human mind as a result of experience and know-how (Dixon, 2001, p. 271) and difficult to transfer while explicit knowledge is codified, documented and expressed (Roberts, 2000, p. 430) on paper or stored in a system, hence easily transferrable.



The effectiveness of KM process can be tracked by the improvement (Detert, Schroeder and Mauriel, 2000, p. 853) in the performance of an organization. But this view overlooks the fact that there are other external factors affecting the operations (Bharadwaj, 2000, p. 180) of an organization and hence makes it difficult to determine and validate the degree of influence by KM. The recent studies in the field of KM therefore, points towards factors like Knowledge sharing (Bock and Kim, 2002, p. 15), "Satisfaction with KM implementation" (Fernandez and Sabherwal, 2001, p. 28) and Knowledge Quality (Huang *et al.*, 2001, p. 29) as more effective and realistic measures of KM. This provides the basis for the selection of this 'resource-based view' (RBV) model (Yu, Kim and Kim, 2007, p. 41).

Figure 1: A conceptual Framework of Knowledge Management Process



ource: Yu, Kim and Kim (2007)

The resource-based view effectively covers the connections between knowledge, KM (Carlsson, 2003, p. 195) and organizational performance. The organizational capability i.e. sustainable advantage and skills of its people can be expressed in terms of knowledge drivers i.e. technical, cultural and structural (Gold, Malhotra and Segars, 2001, p. 187) as mentioned in Figure 2. These drivers are also referred to as a social capital by Yu, Kim and Kim (2007) in the model.

Scholars (Choi and Lee, 2003, p. 413; Ruggles, 1998, p. 86) have argued that the simple presence of KM systems cannot work wonders unless it is being managed by a KM team. The team will ensure that the organizational members are well equipped to make full use (Yu, Kim and Kim, 2007, p. 43) of the system and are not resistant to this sort of change. Once the members are comfortable with the use of KM system, they will be more intent and willing to make a contribution to the KM system in terms of essential and critical knowledge (Bock and Kim, 2002, p. 15).

In the next stage, efficient performance of KM is dependent on the quality of contributions made by the organizational members (Yu, Kim and Kim, 2007, p. 44) otherwise it becomes a lengthy process to retrieve relevant pieces of knowledge and the system loses its precision. Organizations need to make full use of the knowledge repository and share it if they are to take full advantage of this process. Once the organizational members see the proficiency of the KM system and are satisfied with the implementation, they become more active in their contribution to the system (Lo and Chin, 2009, p. 452).

Yu, Kim and Kim (2007) have described the quality of knowledge and user satisfaction as an intellectual capital (IC) for the organization in the framework. KM and IC are both closely related (Maar *et al.*2003, p. 771), as IC stimulates innovation and KM provides sustainability to IC.

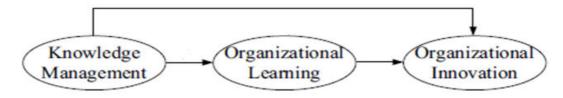


The use of KM system is of imperative importance if the organization is to realize its potential. The KM process translates the knowledge acquired through individual contributions and organizational interactions in to a "dynamic and realized real capability" (Mills and Smith, 2011, p. 160) and positively influences the organizational performance.

2.2 Organizational Learning

OL serves as a link between knowledge management and innovation (Liao and Wu, 2009, p. 1851). KM should be followed by OL if innovation is to take place within the organization as demonstrated in figure 2.

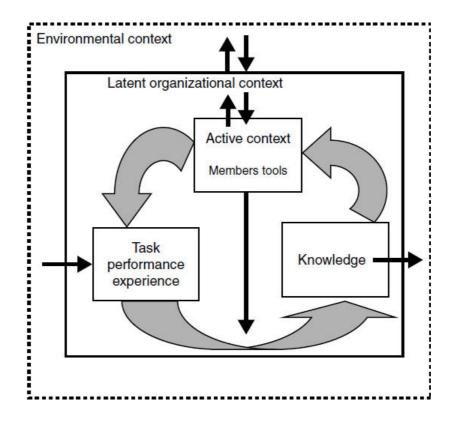
Figure 2



Adapted from Liao and Wu (2009, p. 1851)

OL is defined as a transformation that occurs as organizations accumulate knowledge (Fiol and Lyles, 1985, p. 805; Argote and Spektor, 2011, p. 1124). The learning takes place over a period of time and thus is a continuous process whereby an organization learn from its past performances which becomes a part of its knowledge repository, (Argote and Spektor, 2011, p. 1124) successively helping the organization in its future endeavors. Figure 4 demonstrates the process of OL as a result of its interaction with the environment and other internal factors.

Figure 3: A Theoretical Framework for Analyzing Organizational Learning



Source: Argote and Spektor, (2011, p. 1125)



The environmental context in this framework is referred to as something which is outside the control of the organization to some extent (Argote and Spektor, 2011, p. 1125) i.e. the competitors, consumers, interest groups and other factors. Organizations learn from the external environment as a result of their interactions with these groups. For example deriving knowledge by serving the needs and wants of customers as a result of a product order (Casey, 2005, p. 141). The learning that takes place as a result of this interaction, becomes a component of organization's active context, which is described by Argote and Spektor (2011, p. 1125) as constituents of the organization i.e. people, skills and tools.

The authors further state that the active context is responsible for creating knowledge through interactions. Acquired knowledge is then transferred and depicted in the performance of the organization which eventually helps in producing the final goods and services. The knowledge created by the organization is then transferred back in to the environment (Mansfield, 1985, p. 221) either through its products or service or transfer of personnel to other organization which completes the learning cycle.

2.3 Impact of Knowledge Management on Innovation

The technological advancements and the growth of globalization have put organizations under pressure to continuously adapt to the changes and unceasingly look for innovation (Gilson and Shalley, 2004, p. 454) to affirm their sustainability. The primary essence of innovation is the proactive process that an organization carries out for developing (King, 2006, p. 37) new products and procedures.

Subramaniam and Youndt (2005, P. 450) are of the view that empirical studies have not been able to establish a strong link between KM and innovation. However, a considerable amount of literature published on innovation (Chen, 2004, p. 311; Grant, 1996, p. 111) have pointed out the efficient use of knowledge as the main driving force behind innovation, providing firms with competitive advantage.

Innovation is related to change which takes place as the organization moves forward through the phases of KM and OL (Moorman and Miner, 1998, p. 715). The framework shown in figure 5 indicates the process of how innovation takes place within an organization.

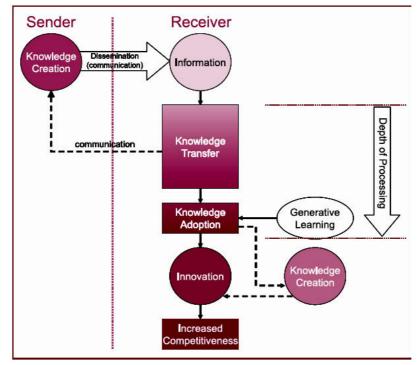


Figure 4: activities required to move from information to innovation

Source: Beesley and Cooper (2008, p. 54)

This framework (figure 5) suggests that individuals hold the key for an organization from a KM perspective. As a result of their communication with the external environment knowledge is created (Beesley and Cooper, 2008,



p. 54). It is essential that communication takes place among the individuals as it galvanizes knowledge transfer (Mahajan and Peterson, 1985) and mutual understanding among the individuals. This process makes sure that external knowledge becomes embedded in the current knowledge repository of the organization (Wu, Chiang and Jiang, 2002, p. 173).

Beesley and Cooper (2008) states that when the knowledge held by individuals is codified, it becomes explicit and gets transferred in to the knowledge repository of the firm. Once the organization has ample pieces of knowledge in its repository then it's up to the individuals to employ it in developing new products and ideas. As Darroch (2005, p. 104) explained that only a purposeful use of knowledge will facilitate innovation. This is where knowledge adoption and generative learning elements in the model come in to play. The authors further explain that knowledge adoption identifies the opportunities in the external environment while generative learning explores and exploits the internal KM system to tap those opportunities present in the external environment to induce innovation. This framework hence, is heavily dependent on the proactive approach of individuals to utilize the KM system and their awareness of the external environment if innovation is to take place.

The literature suggests that the smooth flow of the KM process till innovation can be ensured through the development of a knowledge-centered culture (Gupta, Smith and Shelley, 2006, p. 700). Such an environment is conducive for innovation as it encourages knowledge sharing and experimentation. This continuous cycle of knowledge creation starts with the initiation of tacit knowledge through interaction of individuals backed by the explicit knowledge (Shankar and Gupta, 2005, p. 271) held within the organization.

3. Contextual Analysis of a Social Network Service – Facebook (Fb)

The rise of web 2.0 technologies (i.e. social networking, blogs, wikis etc) have considerably changed the way organizations create and manage knowledge, as most web 2.0 elements share the same principles (Levy, 2009, p. 139) of a traditional knowledge management process. This phenomenon has fuelled the growth and acceptance of online social network sites (SNS) (Li, 2011, p. 562) among millions of people.

A SNS is an online platform that allows people to exhibit their interests and stay connected (Shi *et al.*, 2010, p. 1) to their friends. Facebook (SNS) is being selected as the organization for the analysis of learning and knowledge exploitation. For a detailed investigation of Facebook's knowledge management and innovation capabilities, a conceptual model is developed to demonstrate the whole process.

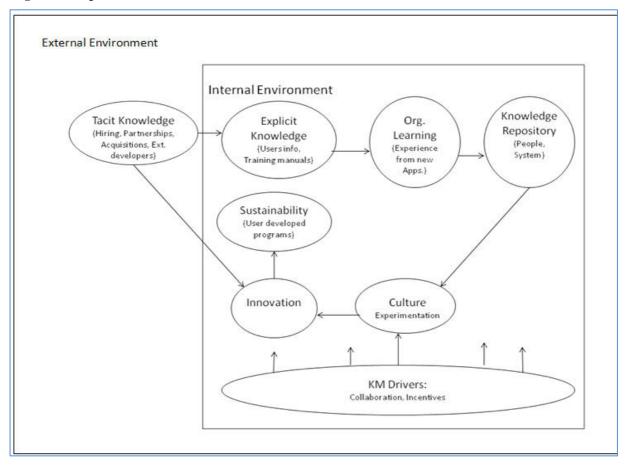
The model commences by highlighting the sources of knowledge for Facebook. Studies have revealed that organizations learn a great deal from their external networks (Gulati *et al*, 2000, p. 204) allowing them to be more sustainable .In shape of Partnership with social gaming application Zyanga, acquisition of Friendfeed (SNS) (PrivCo, 2011) and hiring of knowledge workers like former white house press secretary (The Hill, 2011) have provided Facebook with an enormous pool of tacit knowledge.

Smith (2001, p. 315) described explicit knowledge as something "technical, academic or described in formal language". In case of Facebook, their source of explicit knowledge is the information they gather and maintain on consumers i.e. their likes, dislikes and interests (BBC, 2012). The training manuals (on how to fix bugs etc.) used for newly recruited engineers (Frame Think, 2011) also contributes towards internally maintained and stored explicit knowledge. This change in the knowledge base allows Facebook to introduce more user friendly applications (MafiaWars, FarmVille, Poker) and interactive interface of its website. The experience of introducing new applications due to a change in the knowledge base signifies organizational learning (Fiol and Lyles, 1985, p. 805). As a consequence of organizational learning, which took place as a result of dealing with user needs, knowledge is created. Firestone and McElroy (2004, p. 180) identified this process as a "birth-and-death cycle" where an organization moves on, after solving a particular issue, adding new knowledge to its repository on its way.

The knowledge acquired is engrafted in organizational culture (Weber and Camerer, 2003, p. 402) and endogenously elevates learning throughout the organization. Facebook exemplifies this fact, as in the words of Stuart Crabb, Facebook's Head of Learning (CLO Media, 2011) "the Facebook learning platform is about brevity, speed, a laser-like focus and effective assimilation...". The Fb employees are encouraged to question everything, be open minded, and try new things regardless of their success rate (Quora, 2010). This belief system of learning and innovation within Facebook is clearly linked with its culture. A large and growing body of literature has associated organizational culture as an important stimulant for the diffusion of innovation (Valencia, Valle and Jimenez, 2010, p. 467; Martins and Terblanche, 2003, p. 64) among the organizational members.



Figure 5: Proposed Theoretical Framework for FB



Facebook's biggest breakthrough in terms of innovation and knowledge sharing was the introduction of web-development tools (Hirschorn, 2007, p. 149) that gave users the freedom to develop their own specialized content and share with other users. This source of innovation comes directly from tacit knowledge as depicted in the model. Literature suggests that (Hall and Andriani, 2003, p. 145; Mcevily, Das and McCabe, 2000, p. 295) tacit knowledge is ambiguous or unpredictable in nature and reduces duplication of knowledge eventually providing sustainability to the organization. This development gives Facebook an edge over other SNS.

4. Conclusion

Development, incorporation and a meaningful use of knowledge is strongly linked with value creation (Nonaka and Takeuchi, 1995) and this holds true not only for a single organization but for the whole economic system. An effective knowledge organization "represents a goal to be sought" (King, 2008, p. 39) and it is a demanding task to embed an active KM system within the organizational culture. The effectiveness of this KM system depends on how smoothly an organization integrates different sources of (internal & external) knowledge in to its system and exploits this knowledge base (Davies, 2000, p. 62) for greater productivity. Pilar *et al.* (2005, p. 716) has described the integration of knowledge as a fundamental strategic resource for OL. The growth and success of any organization is heavily dependent on level (Khandekar and Sharma, 2006, p. 688) and pace of its learning. It is critical that organizations make use of its knowledge sources and exert organizational learning because if they fail to learn from their sources of knowledge, innovation will not take place (Liao and Wu, 2009, p. 1850) and this will put a question mark on the sustainability of the organization.

The conceptual model of Facebook proposed in this paper is based on literature and the structure and functionality of the organization. The model Suggests that not only Facebook has identified itself a large pool of tacit and explicit knowledge but their exploitation of this knowledge is first class. Innovation at Facebook is largely dependent on its internal culture and external networks. By providing the external developers with the source code, Facebook has unearthed a consistent source of innovation that has played a pivotal role in Facebook's ever growing popularity providing it with an unmatched competitive advantage.



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