Managing Knowledge in Organizations: Tools & Techniques for Competitive Advantage

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DOI: http://dx.doi.org/10.15520/jbme.2016.vol4.iss2.175.pp09-13

Abstract: This paper looks at the tools and techniques required to build organizational intelligence by enhancing how information is captured, shared and utilized within organizational boundaries. Knowledge Management (KM) focuses on the practices that have transformed the business culture to facilitate innovation and organizational preparedness that broaden the scope of competitive advantage. Most information found in an organization are not tactile but need to go through a degree of KM processes which renders them very useful for the organization both to introspect and protect core competencies. KM processes come from different approaches ranching from IT to human psychology which have detailed in this paper. The end goal of KM is to improve organizational performance with better organizational practices, strategy implementation and policy making.

Keywords: Knowledge Management (KM), Business Culture, IT, Leadership, Innovation, Core Competencies

INTRODUCTION

There is no set conjunction to the exact scope of Knowledge Management (KM), but most non-arbitrary definitions agree that it is utilization of organizational intelligence to enhance or reciprocate the organization’s core competencies. It is important to realize that most organizational information are not usable from the onset, they require the implementation of different processes to make it an intellectual capital. Peter Drucker associated KM as “the coordination and exploitation of organizational knowledge resources, in order to create benefit and competitive advantage” (Drucker 1999). The way KM is done has changed with the introduction of informational technology and newer HR practices in the workplace, with greater implication on the organization culture with regards to how information is shared.

First, a differentiation for the terms such as data, information and knowledge must be made because they have different connotations in the knowledge management domain. Data are specific in nature and present quantifiable facts that have no inherent meaning when taken alone. Data is converted into information when they are organized to provide applicability and purpose, often requiring a unit of analysis. Knowledge on the other hand is the information that has been synthesized to provide context and highly personal to the source. Knowledge management use these relative terms and facilitate how they are captured, shared and utilized within organizational boundaries. This paper highlights some of the theories and models, as well as tools and technologies for knowledge management.

DEFINITIONS AND CONCEPTS

Knowledge management (KM) refers to the process of capturing, developing, molding, sharing, as well as effectively making use of organizational knowledge. It implies a multidimensional approach and mechanism for realizing the goals and objectives of the organization by making the best and most efficient use of knowledge (Rao, 2012). Organizations normally dedicate large proportions of their resources towards internal KM efforts as part of the key goals of the organization and the strategy of their human resource, information technology, or as a business strategy of the organization, whether public or private. In most cases, knowledge management efforts are geared or focused on organizational objectives, including improved performance, innovation and creativity, competitive advantage, integration, organizational knowledge and lessons sharing, and continuous organizational improvement. Normally, there is an overlap between knowledge management and organizational learning (Easterby-Smith & Lyles, 2011). However, KM may be distinguished from organizational learning by laying a greater emphasis on the management of knowledge as an organizational strategic asset that focuses on knowledge sharing.

In the context of KM, the concept of organizational knowledge is defined as the information embedded in routines, functions and processes which enable organizational action. According to Geiser & Wickramasinghe (2015), knowledge is in this sense regarded as an innate human quality that resides in the living human mind due to the fact that a person must identify, interpret as well as internalize knowledge (Rao, 2012; Geiser, & Wickramasinghe, 2015). Knowledge is thus seen as a fluid mix of framed experiences, values, expert insights, contextual information which provide a framework for evaluation and incorporation of new experiences and information. In the context of organizations, knowledge normally becomes embedded not only in repositories or documents but also in organizational practices, processes, routines, as well as norms and culture.
**KM MODELS AND THEORIES**

Knowledge management theories and models have been used as the basis and rationale for organizational knowledge management, and have been instrumental in defining knowledge management processes, enabling the evaluation of the results of such processes. Several theories have been advanced that seek to explain the concept of organizational knowledge management. These theories also provide a framework of a set of tools and models that help organizations manage knowledge and organizational processes. Some of these theories include: intellectual capital model,

Intellectual capital model considers knowledge as the only important and meaningful economic resource, hence the concept intellectual capital (Massaro et al., 2015). In this perspective, the real market valuation of public and private enterprises not only consists of their tangible physical and financial assets but also of their intangible assets that are created via intellectual and practical activities accruing from knowledge acquisition (or learning and interventions) and valuable organizational relationship creation. Examples of such intellectual assets include copyright, patents, trade secrets, trademarks, as well as other kinds of intellectual property that provide value to the organization. According to this theory, knowledge is seen as a body of intellectual capital alongside the traditional organizational capital including machinery and equipment (Rao, 2012).

The assumptions of intellectual capital model is that intellectual capital and knowledge management can be categorized into human and structural (organizational) capital, both integrated into the human, process, customer, and growth elements of the organization. As a knowledge management tool, the intellectual capital model enables organizations to convert human capital into structural or organizational capital in the form of organizational knowledge that exists in repositories or documentations of organizational knowledge and processes. This helps in organizational knowledge retention and continuity even when individuals exit the organization, thus avoiding the risk of potential loss of important organizational knowledge.

However, intellectual capital model has been criticized for its notable ignorance of the social and political aspects that surround knowledge management including power, relations, rewards and recognition, as well empowerment dimensions. In this regard, the model is discredited as a mechanized approach to social complexities that guide knowledge management (Geiser & Wickramasinghe, 2015).

Another theory that has been considered for the understanding of knowledge management is the SECI model. This model provides a slight improvement on the intellectual capital model by considering knowledge management as process for knowledge creation, rather than an asset. The SECI model was developed in the works of Nonaka and Takeuchi in 1995 as a simple theory for understanding knowledge creation in the organizational environment as a tool for setting up an organization as a framework for knowledge creation (Geiser & Wickramasinghe, 2015). The model is decomposable into three parts, including knowledge creation and conversion process (SECI), resource development and use, and knowledge support context. It is based on the assumption that the creation of human knowledge flows from a continual interaction between explicit and tacit knowledge emanating from groups and individuals in an organization through knowledge conversion processes.

According to SECI model, there are four ways of creating knowledge, including: *socialization* – the process of converting tacit knowledge to tacit knowledge through individual tacit knowledge sharing processes in the organization; *externalization* – the process of converting tacit to new form of explicit knowledge via stories, group reflections, narratives, multimedia presentations, emails and organizational memos communicated in permanent or semi-permanent forms; *combination* – the conversion of explicit to new explicit knowledge through education and training, research and development; and *internalization* – the conversion from explicit new tacit knowledge through reframing and interpretive mechanisms that provide a framework of reference for the organization as a way of translating theory into practice(SECI). (Geiser & Wickramasinghe, 2015). According to the SECI perspective, the organizational leadership is seen as a knowledge asset or tool which can be used to provide knowledge vision, promote knowledge sharing and establish a knowledge generation climate that is trustful and caring in character. Despite its potential to explain knowledge management, SECI model has been criticized for its insufficiency in fully explaining the much complicated knowledge issues in organizations, as well as its applicability context away from its originating Japanese context.

Finally, Leavitt’s diamond organizational model has been used as a framework for understanding knowledge management, and views organizations as complex system in which four fundamental variables including: structure, task, humans, and technology, interplay in order to influence organizational processes in an interdependent interaction (Geiser & Wickramasinghe 2015). Organizational structure is seen in terms of organizational form and power distribution, while tasks include goods and services for the organization exists to produce. Technology is important as it enables the interaction process among other variables and the human or personnel component.

With these models or frameworks for understanding knowledge management, organizations require tools (software) and technologies (hardware) appropriate for the management of knowledge (Dutta & Madalli, 2015; Ghani, 2009). Generally, organizations hardware technologies as the basis for knowledge management, including personal computers, scanners, phones, among other information communication technologies. Knowledge management systems or software have also been developed such as data warehouse, document management, content management, visualization software among others.

**IMPLICATIONOF KM**

Another term that has great implication with KM is organizational knowledge which has yet to get a wide consensus on the scope of reference in the management
Knowledge management is also inclusive of frameworks and models which aim to implement components necessary to facilitate innovation and organizational preparedness that ultimately sharpening the competitive advantage of the firm. The initial phase of frameworks help to identify needs and determine knowledge resources. The later phase deals with acquisition, retrieval and storage of those knowledge resources. However, the frameworks can get complex if there overlapping models that used for similar disciplines such as project management or strategic management. Essentially, knowledge management frameworks can choose to answer “What/How? Why? When?” questions related to organizational intelligence. “What/how” indicates the procedures used to implicate KM, “Why” refers to reason behind choosing one methodology over the other and “When” refers to optimum timing when it is to be used.

A very vital part of the KM is the tools and techniques required to introduce KM and its supporting practices to an organization. The tools and technique have two sub divisions, the first one is IT based and the second one is non-technical knowledge management tools. IT based tools utilize: Groupware systems & KM 2.0, the internet and intranet, Data warehousing/mining &OLAP, Decision Support Systems, Content management System, Document management system, Artificial intelligence tools, Simulation tools and Semantic networks (Gupta and Sharma 2005, Bali et al 2009). The non-technical or non-IT tools include the formation and implication of: Cross-functional project teams, KM training &education, storytelling and mentoring programs. The system of the strategic information implicated by the organization determines the quality and services that one will get. So as to get the best method, the business must pinpoint the significant means and tasks for effective scheduling.

IMPLEMENTATION AND ASSESSMENT

The system of the strategic information to implement chosen by the organization determines the quality and services that one will get. So as to get the best method, the business must pinpoint the significant means and tasks for effective scheduling. Implementation of tactical supervision process is the final step as is it concerned with executing the formulated scheme. Depending on the type of formulated strategy, the strategic management can include organizational, operational or tactical changes. Further, concerning planning, the crew would make an exhaustive implementation plan considering the changes that may occur in the organization. The implementation should effectively fit in the organization system since the performance of organizations process is measured by the effectiveness of the information system within the organization. The scorecard and measure of value are two of the examples used in determining performance. The primary aim of implementation stage is aligning the organizations activities with their goals and objective (Brancheau & Wetherbe, 2012). The strategic implementation involves management of information in an establishment. It is because the management needs to formulate the plans that need implementation. The course in the system is supposed to input the results in the formulated strategy. Then the SIM process will recognize the data or information required in the organization as a result of strategy management process. For efficacy and efficiency, identification must be planned and carefully thought out. The information implication in the formulated strategy must be mapped and assessed. It would lessen mix-up in the business. The existence of a fissure between the old and current information necessitate addressing and analysis. This enables the organization to avail the required material. The impost of the system entails the appraisal of the rationale for the formulated strategies.

After identifying the information requirement, the process of implementation strategy management proceeds to the finding other alternate ways to create the information system to implement the formulated strategy. In a different explanation, the process of SIM generates more options of strategic information that can implement the requirement of information. It will arise different requirement of information for the different department within the organization. The SIM process at times ends up with several options for strategic information. For complementary co-existing, solutions can be a viable option for strategic information.

An example is an organization with many subsidiaries globally and it has intentions of reducing its generic and inventory cost. This strategy needs the SM process to determine main performance indicators. To implement the strategy, the implementation strategy management team needs first to find the organizations required information by detailing who needs the information and the time frames.

Analysis of the system before implementation is important as it states the best option of strategic information that the organization needs to implement. During an evaluation, different options of strategic information are weighed out to establish the best option to adopt. After evaluation, the suitability and feasibility of every option are assessed. Organizations choose different techniques of acquiring their best option based on the organizations goals and objectives. The organization can use different technique such as sensible judgment, simple models, analytical techniques and tools among others.
The SIM process is entirely responsible proper infrastructure of information implementation. Strategic information implementation may be of different sizes depending on the size, objectives and goals of an organization. Also, the formulated strategy affects the time required for implementation. Some of the strategies involve processing of simple information while others may involve complex information that will make changes in the organization structure. The execution strategy organization handles identification, scheduling, implementation and assessment of formulated strategies (Thawatchai & Sema, 2009).

It is also important to understand the reasons why implementation fails in an organization. Factors limiting the implementation and assessment of strategic information system include:

**Impersonal systems**- the system does not provide the needed information to the managers but give general information that is not required by the organization.

**Designer's under-estimation**- When designing the system, the designers may underrate the complexity of the organization that may result in major problems during the implementation of the system.

**Lack of proper training**- Inadequate training on generators of data and users may bring about a collapse of the system due to mishandling.

**Non-conformation**- The system does not meet the standard of responding to the query on the database forcing the management to look for alternative ways since its cant process the information in the manner they want.

**Cost Issues**- Setting up the system is costly for many organizations to achieve. Also, the implementation and assessment takes a lot of time before the enrollment of the entire organization department in the system.

**Human power loss**- The system does not incorporate any human power on the operation. Due to this, at times the system is not able to present all information accurately. Provision of wrong information is not good for an organization since it is not accurate communication, it ultimately affects productivity.

**GLOBAL PERSPECTIVE**

Companies that are large often expand across borders and gain valuable global and intercultural knowledge. In most scenarios global enterprises fail to capture and utilize the knowledge available to them. They needlessly spend money on training and development to gain knowledge they already have. In the worst-case scenario, they repeat old mistakes (Goodman, 2014). The problem that most multinational companies don’t realize is that they are facing process redundancy and need a centralized system to collect their already exiting global intelligence.

The most common challenges faced by companies in developing such a system to utilize their global competencies is that they are collecting inferior or poor quality data. Data that are not accurate and incomplete can substantially hamper the data collecting process, companies need to focus on cleansing such maligned databases and considerably raise their maintenance standards. Other problems include the cross-departmental and cross-divisional data redundancies, meaning different internal organizational structures needlessly house the same information under different pretext and categories. Implementation of company-wide protocols are necessary to eliminate duplication and confusion. Something which can also be tied in with these problems is the bias for action, where preexisting culture promulgates favoring of certain type of information over the other leading to misinformation.

However, companies that want to develop knowledge management with a global perspective might need to focus on the following things:-

- Develop a virtual platform where users can find information about the organizational challenges, global goals, case studies, lesson learned and personal references to develop a organizational community based on commonality.
- Build a curriculum path, whereby team cross-cultural team building may be exercised to further strengthen core competencies.
- Keep records on the lessons learned by employees that are on international assignments and capture the information of the business challenges which can serve as a roadmap for the future.
- Analyze the available data to spot trends that might aid in developing alternatives or improvement opportunities. Companies must be in a constant lookout to identify and interpret trends both domestically and internationally that can add to their core competencies.
- Facilitate collaboration; leaning from both spectrums is essential in international knowledge management.

**LIMITATIONS OF THIS STUDY AND DIRECTION OF FUTURE RESEARCH**

There were several limitations regarding this research paper; primarily that the writers of this paper are not expert scholars specializing in the study of knowledge management. The short time presented to complete study meant that not all facets pertaining to this subject could be covered, and the lack of access to latest scholarly research articles means that some of the references used in this paper might be outdated or have been revised recently. This paper also only focused on the KM for structured organizations, smaller or mid-level organizations might not be able readily use the KM as a viable organizational function. The lack of high-end and subscription based informational resources also meant that sources that could be easily procured were used, which might not carry precedence over exclusive and sponsored content. For the direction of future research; it is recommended that larger group of experienced researchers are used with better access to exclusive content and with a longer duration of study.

The future research also should focus on eliminating the limitations and disadvantages that are associated with information systems. The research should provide an insight as to why information technology should be embraced as the
hallmark of organizational KM. Further research should also be done on ways to reduce the time between planning and implementation of an information system within an organization which will promulgate better integration of knowledge management.

**IMPLICATION FOR MANAGERS**

**Key Takeaways:**

1. **General Understanding:** Managers should have implicit knowledge of how to use KM can be to build a conducive environment for a learning organization. Senge (1990) defines learning organization as place "where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole (reality) together."

2. **Select the right team/ Framework:** Managers should use the general understanding of KM to build a well-staffed team and select the right framework that can perform across department lines. KM teams should have members that have a broad range of expertise from library sciences to IT facilitation. The selection of the right framework should be highly dependent on the needs and purposes of the organization.

3. **Assessment:** The managers should periodically monitor and assess KM goals. Managers should monitor KM goals through performance indicators and measurable benefits the assessment. If there is evidence of KM failure, then required actions must be taken to remedy the situation.

4. **Reporting:** All positive and negative aspects pertaining to KM assessment are to be recorded and reported to higher ups if the current level management are not in the position to make deliberate on it.

**CONCLUSION**

In order to manage knowledge, organizations normally rely on fundamental concepts, tools, constructs and techniques which are theoretically sound and cover important areas of organizational knowledge processes as way of easing communication and practical organizational integration. Knowledge management is an important process in modern organizations. For this reason, theories such as the capital asset model, SECI, and Leavitt models have been developed in order to provide a framework for understanding the process of knowledge management in organizations. Importantly, tools and technologies remain critical enablers for organizational knowledge management.

**REFERENCES**


