Development of Conceptual Framework for Knowledge Management Process*

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Knowledge has become one of the most important driving forces for business success. Organizations are becoming more knowledge intensive. Many firms in the global market are aware of this, and they try to explore the field of knowledge management (KM) in order to improve and sustain their competitiveness. Knowledge has always been the central in the functioning of society. However, in today’s “knowledge economy”, organizations are increasingly aware of the need for a “knowledge focus” in their organizational strategies as they respond to changes in the environment. The aim of this paper is to describe the theoretical concepts and approaches of KM process that could be implemented in organizations by reviewing KM process theories and present suggestions for what a general process should include based on analysis of various models presented in KM. The main emphasis is laid upon the concept of goal definition review, validation, and knowledge training processes in order to make sure that KM process initiative will deliver competitive advantage to the organization.

Keywords: KM, KM process, knowledge identification, and knowledge application

Introduction

It is necessary to say that we are now changing steadily from an information age to a knowledge age, where knowledge has been recognized as the most important aspect in human life. Individuals and organizations are starting to understand and appreciate knowledge as the most valued asset in the emerging competitive environment. This leads to the essential of improvement of a strategic, comprehensive, holistic and implementation knowledge management (KM) to enhance the process and get competitive advantage (Nehari-Talet, Alhawari, Mansour, & Alryalat, 2010). KM process has become the foundation for long lasting competition between organizations. In the past, organizations gave no attention to knowledge management

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(KM), because it was believed that knowledge was easily managed internally and was a simple process.

Therefore, KM is a critical step to organizations for two reasons. First, it helps to address the issues related to developing, managing and maintaining the technical infrastructure that are required to hold and share knowledge. Second, it enhances business performance by maximizing the use of information and knowledge as well as maintaining its learning capacity to remain innovative and competitive (Mau, 2005).

The impact of KM on key business results might well be the greatest through its potential for improving the performance of business processes. This suggests that the design or redesign of business processes should factor in an understanding of where and how knowledge plays a role in the performance of the process. In this regard, knowledge has become a key source for organizations to enhance the competitive advantage which is of prime significance for organizations’ performance (Alryalat & Alhawari, 2008). In turn, this is accomplished by identifying the knowledge needed to make the decisions or take the actions that make up the process, as well as addressing considerations related to the knowledge generated by those decisions and actions. To be of practical value, KM must affect what is done, how it is done, and how well it is done. Clearly, then, one critical link between KM and business results is through business processes.

In terms of definition, KM is the systematic, explicit, and deliberate building, renewal, and application of knowledge to maximize an enterprise’s knowledge-related effectiveness and returns from its knowledge assets (Wiig, Hoog, & Spek, 1997). KM comprises a set of actions intended at designing and influencing processes of knowledge has become the most dominant new organization practice (Kautz & Mahnke, 2003). Additionally, Goh (2005) gave a definition of KM as systematic leveraging of data, information, skills, expertise, and various forms of assets and capital to improve organizational innovation, responsiveness, productivity and competence.

Many organizations today are emphasizing the adoption of KM in their business processes. Since the objective of KM is not to manage all knowledge but to manage the knowledge which adds value to organization that act as intelligently as possible to be secured in terms of viability and overall process.

In fact, during the global economy, unstable changes and strong competitive market, knowledge played a major role in establishing the company’s position on the market, opportunities for development and capital growth as a result (Moczydlowska, 2007).

The importance of KM process is to support the organization’s strategic objectives by means of the tasks of knowledge workers and the implementation of business process to add business value to the organization. As a result, KM can help grow such a stage to enhance and expand the innovation process (Parikh, 2001).

The paper is organized as follows: first, introduction, next relevant literature review for knowledge management after and the research model and its components. Last that includes the conclusion.

Literature Review

The Importance of Knowledge Management Process in Organization

The purpose of KM is to manage the most significant knowledge in the organizations. It involves applying the collective knowledge and ability of the entire workforce to achieve specific organization objectives which, in return, can lead to getting the right information to right people at right time and help people generate and share knowledge to enhance organizational performance (Alryalat & Alhawari, 2008). In addition, Deng and Yu (2006) viewed KM process as a kind of business process in the existing corporate business processes. KM process is essential in modern and successful organizations which look at knowledge as a major factor for competitiveness. KM can be seen as a quick response to weakness and threats that affect the way of
Furthermore, organizations are asked to develop new ways to compete with the information age. Knowledge has emerged as the main resource and most valuable asset for organizations in an ever-changing environment. In our time, the key question is: “where and how does knowledge come into play in an organization’s processes?” Figure 1 describes the process.

(1) Inputs and outputs. One place knowledge comes into play in a process is as a production input, that is, as an input that is to be operated upon and transformed into an output. Consider, for example, units such as research and development (R&D) groups or Marketing departments. Each depends heavily on knowledge input from the outside (i.e., scientific data, client feedback, consumer surveys, legislation, changing governmental policies, etc.). These inputs are then operated upon (e.g., through analysis or experimentation) to produce the unit’s outputs.

(2) Controllers. Another place where knowledge comes into play in a process is in the form of controls. Consider, for example, an automatic refill system. The system is programmed to refill certain products automatically when inventory levels drop to pre-set point. That point might reflect knowledge about production runs, order processing times and delivery pipelines. In these kinds of situations, knowledge can be said is “embedded” in the process.

(3) Processors. The “processor” performs the actions needed to produce a result from the process. If the processor is automated, the actions may be anticipated, that is, designed in advance. This is especially true of computer programs that carry out algorithmic processes such as automated insurance claims adjudication or automated loan application evaluations. This kind of knowledge is also embedded or, more precisely, “encoded” in the process.

The actions, however, might still be predicted, as is the case when a claims examiner, in accordance with clear-cut procedures handed down from on high, processes a claim that has been suspended from automated processing for manual resolution. Relevant knowledge is again captured in the procedure. Actions might also be configured by the performer that is, tailored to the situation at hand. For example, a sales representative for a business software firm might call on a several Managers during a day’s work. In discussions with the Managers, the representative will probably present some “preserved” information but, in all possibilities, the
representative will also customize his or her presentation to suit the interests and requirements of a particular manager during a particular call. In these situations, the knowledge, or capacity for action, clearly resides within the individual.

(4) Design. Although some processes may be said to have evolved over time, many production and business processes are consciously designed. Their form and structure are not left to chance—or to evolution. As a consequence, a lot of knowledge is “embedded” in these processes in the form of specifications for the outputs, inputs, routines and requirements. Some of this “embedded” knowledge is obvious, as might be the case with the sequence of operations making up the process. Some is not so obvious and reflects the tacit knowledge of the designers. This might be reflected in standards of performance which, although few seem to recognize this fact, must always be set instead of determined. In any event, the knowledge embedded in a process makes itself felt through what is done, when, how, by whom and to what standards.

In the enterprise-wide processes, knowledge in and knowledge of the process is fragmented. It is distributed across people, equipment, functions and even organizations. Frequently, no one person—or even small group of people—has a full understanding of the entire process. As much as anything else, this highlights the potential value of a KM effort that enables efficient access and sharing of high-quality, relevant, timely knowledge up, down, and across organizational lines, especially those functional and organizational lines that result in fragmented processes.

Based on the above discussion, the need of an organization to adapt KM in their business can be easily observed, therefore, KM in organizations can help develop such a stage to enhance and expand innovation process (Parikh, 2001). Therefore the successful KM is the creation of management processes and infrastructure to get together knowledge and communities in a common ecology that will sustain the creation, utilization and retention of knowledge, KM also help to keep good relationships with clients by growing customer knowledge, expediting response to customer queries, suggestions, and complaints. It also ensures improved consistency and quality when serving customers (Sun & Hao, 2006).

KM has been investigated in the context of decision support and expert systems for over a decade, interest in and attention to this topic have exploded (Nissen, Kamel, & Sengupta, 2000). Also, the realization of KM is complete through a series of knowledge activities or knowledge processes that specify consequently life cycles (Miltiadis, Pouloudi, & Poulymenakou, 2002).

A prerequisite of implementation of KM is to understand and develop the infrastructure elements required to support the acquisition, management, and transformation of tacit and explicit organizational knowledge (Halawi, Aronson, & McCarthy, 2005). Three areas of importance form the literature on organizational knowledge infrastructure; are the emphasis on people, process and technology (Halawi et al., 2005).

**Knowledge Management Process Theories**

There are some processes of KM that have appeared in a number of existing process models in KM. Demarest (1997) identified four KM processes that operate in an organization for the purposes of knowledge production. These four KM processes (he also called them knowledge economies) are construction, dissemination, embodiment, and use. Construction refers to “the process of discovering and structuring a kind of knowledge”. “Dissemination refers to the human processes and technical infrastructure that make embodied knowledge available to the people within the firm”. Use refers to the production of commercial values of the customer. He also suggested that KM is the systematic underpinning, observation, instrumentation, and
optimization of a firm’s KM knowledge economies.

Lai and Chu (2000) divided KM into a comprehensive theoretical framework that consists of seven steps: (1) initiation, (2) generation, (3) modeling, (4) repository, (5) distributing and transfer, (6) use and (7) retrospect. Initiation stage is concerned with understanding requirements for knowledge and or the recognition of strategic capabilities and knowledge domain. Generation were concerned to identify what knowledge exists in the organization, who owns it, and who are thought to the leaders, kind of gather and import knowledge from outside or learning from existing knowledge. Modeling phase is concerned with justifying the generated knowledge. Repository stage is necessary in order to maintain the explicit knowledge and facilitate further sharing. It is important to have a repository for maintaining all critical knowledge. Distributing and transferring phase is concerned with how to distribute knowledge to other people. The next phase is the use of the knowledge that describes how to develop knowledge in order to produce commercial value. Finally, retrospection stage includes examination of the process, performance of KM and detecting if new knowledge was created in order to keep pace with knowledge creation and management in a changing environment.

Parikh (2001) presented another interesting theory of KM cycle to channel the knowledge accumulated from these sources. This cycle contains four processes by which organizations are able to adapt KM. The four processes are: knowledge acquisition, organization, dissemination, and application. Knowledge acquisition is an activity deals with finding and acquiring knowledge in knowledge-based resources. The firm should make conscious efforts to sense, search, and define relevant knowledge and its sources. Knowledge organization this phase involves refining, organizing, and storing the knowledge collected. Knowledge is first filtered to identify and cross-list the dimensions that are useful for different Research and development projects. Knowledge dissemination are activities aimed to gets what knowledge personalization and how distribution. Not all collected information and knowledge is useful to everybody. Irrelevance can confuse the interpretation and application of relevant knowledge. Knowledge application can be considered as an activity to increase applying knowledge to a new scenario and learning from it.

Alavi and Leidner (2001) suggested that the knowledge process can be divided into four stages: knowledge creation, storage and retrieval, transfer, and applications. Knowledge creation process concerned with combining new sources of knowledge just in time learning. Knowledge storage and retrieval is used support of individual and organizational memory Inter group knowledge access. Knowledge storage involves obtaining the knowledge from organizational members and or external sources, coding and indexing the knowledge for later recovery, and capturing it.

Knowledge transfer in an organization occurs when members of the organization pass tacit and explicit knowledge to each other through the availability to communication channels. Information technology assists knowledge transfer by providing knowledge means for capturing, storing, and retrieving. Finally, knowledge application process is used to apply knowledge in many locations more rapidly than applications of new knowledge through workflow automation.

Rus and Lindvall (2002) stated that KM cycle consists of five phases Firstly, originate/create knowledge refer to members of an organization develop knowledge through learning, problem solving, innovation, creativity, and importation from outside sources. Secondly, capture/acquire knowledge that refers to acquire and capture information about knowledge in explicit forms. Thirdly, transform/organize knowledge that refers to written material and knowledge bases. The next phase is deploy/access knowledge to distribute through education, training program, and automated knowledge base system or expert networks. Finally, apply
Knowledge to make knowledge available whenever it is needed.

KM process model proposed by Bouthillier and Shearer (2002) is divided into six steps: knowledge discovery, acquisition, creation, storage and organization of the knowledge, sharing and finally use and application. Discovery involves locating internal knowledge within the organization. This phase especially is useful as one part of the organization may not be aware of the knowledge existing in its other parts. Acquisition process makes the process of bringing the knowledge into an organization from external sources possible. Creation process contains creation of new knowledge may be accomplished in several ways. First, internal knowledge may be combined with other internal knowledge to create new knowledge. Secondly, information may be analyzed to create new knowledge. After knowledge has been created, it must be stored and organize to get better understanding of the knowledge. The knowledge sharing phase involves the transfer of knowledge from one person to another or more. In the end, the cycle of knowledge management is not successful if efforts are not ready to ensure the use and application.

Sunassee and Sewry (2002) proposed a knowledge life cycle of six steps: creating new knowledge that includes identifying new knowledge old existing knowledge. Identify knowledge relevant to organization, verifying selected knowledge, capturing & organizing knowledge, disseminating and using knowledge, combining new knowledge and re-evaluating assumptions to create knowledge. Initially, knowledge needs to be created for the organization, based on a selection of the internal and external knowledge required by the organization. Additionally, the organization also needs to identify old and existing knowledge as well as any new knowledge which it might need during the course of the knowledge management effort in specific and for the business in general. The next step in the cycle is to identify which knowledge is relevant to the organization in terms of its knowledge management strategy and its business strategy. It is also essential that the knowledge which has been chosen to be included in the repository is verified, in terms of its relevancy and importance to the organization, then to capture that knowledge, and organize it in relevant sections. The next step is to disseminate that knowledge, and to use it. The last step of the cycle is to combine new knowledge and re-evaluating assumptions held by the organization and use these new assumptions with the knowledge created by the organization to create new knowledge.

Miltiadis and Pouloudi (2003) proposed six phases of KM. These phases are relating value, acquiring, organizing, enabling, reusing, transferring and using. Relating value process demands from the team member to verify, identify, filter and select the knowledge objects that encourage the objective. Acquiring process refers to the facility of the project team member to formalize, codify, represent, format and map the knowledge fundamentals in order to secure their existence in a usable format. The next phase is organizing. It consists of the store to classify and transform the knowledge. Enable reuse phase support to adapt and create the knowledge. Organizing and enabling and reusing re phases are essential to create administrative mechanisms for the exploitation of catalogued knowledge. The transfer phase has to be designed in order to concern of knowledge paths, where knowledge repositories and specific knowledge objects are linked to people, promotes the exploitation of knowledge. The last phase is the use of knowledge that has been transformed in reusable formats necessary to apply in the context of specific projects, has to be integrated in order to construct meanings of higher value and of course has to support the learning process.

Stollberg, Anna, and Dieter (2004) explained the KM as seven processes: knowledge identification, acquisition, preparation, allocation, dissemination, usage and maintenance. Knowledge identification focuses on understanding the character of the needed knowledge, picking out existing relevant knowledge and
allocating the knowledge assets which need to be learned and created. Knowledge acquisition phase focuses on finding the needed knowledge such that buying, consulting, research and developing, learning and self-creation. Knowledge preparation mainly focuses on the presentation of information in an easy way to learn. Knowledge allocation process describes how to present of information in an easy accessible way. Knowledge dissemination makes it possible to create knowledge distribution infrastructure. Knowledge usage is a process ensuring that people use knowledge in KM system. The finally process is knowledge maintenance to keep KM system in an up-to-date condition.

Sun and Hao (2006) suggested the hierarchical model for KM that includes five main processes. The first process is knowledge selection which identifies knowledge needs by understanding and selecting useful knowledge from the existing repository. This process helps in making knowledge easy to search and determine. There are four sub-processes in the main process of knowledge selection; that is, knowledge identification, knowledge discovery, knowledge understanding and knowledge retrieval. Knowledge identifying include identifies the need for knowledge, and determines it. Before knowledge can be created or shared, the need for knowledge has to be identified. Knowledge discovery refers to finding valuable knowledge existing in the organization. Knowledge discovery is to mine this valuable intellectual capital from documentation, database and mind of experts. Some tools and techniques like data mining and interview are useful for knowledge discovery. Knowledge understanding refers to comprehending the discovered knowledge. Understanding knowledge comes from a number of attributes, both of the knowledge itself and the format in which it is used, and the previous experience of the user. Knowledge retrieval refers to extracting knowledge from the existing knowledge resources such as a document, database, a data warehouse, a computer system or an employee.

The second process is knowledge creation that supports generation and creation of knowledge. Development of new knowledge in an organization focuses on creating new products, better ideas and more efficient services or new skills. The main process of knowledge creation consists of the following sub-processes: knowledge ontology design, knowledge generation, knowledge acquisition, and knowledge evaluation. Knowledge ontology design is to formalize the existing knowledge and offer a format for adding new knowledge. Knowledge generation is concerned with producing new knowledge. Knowledge generation also occurs when knowledge cannot be acquired from outside organization. Knowledge acquisition supports to obtain knowledge. The importance of knowledge acquisition depends on the organization culture and objectives. Knowledge evaluation needs to be conducted after the knowledge has been generated internally or acquired from outside.

The third process is knowledge sharing which is fulfilled after existing knowledge has been identified or the new knowledge has been created. Knowledge sharing is performed by distribution and utilization of the knowledge that has been selected or generated from the organization and acquired outside. The main process of knowledge sharing contains the following sub-processes: knowledge representation, knowledge distribution and knowledge utilization. Knowledge representation means to represent the knowledge in a clearer and more storable way. Knowledge distribution supports the spread of knowledge. Knowledge has to be made available throughout the organization. That is spreading and sharing know-how which is already presented within the organization. Knowledge utilization supports knowledge application. Simple availability does not guarantee that present knowledge is indeed used.

The new knowledge has to be stored in the fourth main process: knowledge preservation and retention. Knowledge preservation aims at retention of knowledge assets, the new valuable knowledge has to be stored
the time for come. This has to be accomplished by efficient storage media to access knowledge, to prevent valuable expertise from disappearing. Finally, the knowledge needs to be updated frequently because the knowledge becomes obsolete rapidly in the knowledge society. Nowadays, the transformation of the world and technology forces the organization to renew and update knowledge on time. Otherwise, the use of obsolete knowledge would mislead and cause negative influence on organization.

Abdullah, Selamat, Sahibudin, and Alias (2005) defined four activities involved in the KM process model in order to utilize the knowledge in the organization. These are the activities that begin with acquiring and storing the knowledge into the KM system followed by disseminating and using knowledge among the communities. The first step is acquisition of knowledge in a collaboration environment uses elements, this step involve sequential steps that should be taken in order to make sure that the knowledge could be acquired from the right people, time and place. It is suggested as follows: identify knowledge (determine sources and type of knowledge); collect knowledge (gather and transform knowledge according to the specifications); adapt knowledge (categorize the knowledge); organize knowledge (prepare and map knowledge into the specific requirements.); store knowledge (keep and index the knowledge dynamically). The second step is store: this is a process where the knowledge will be kept in repositories. These can be documents that are organized and categorized to enable browsing or fast access of knowledge. The third step disseminating knowledge: the KM system can disseminate knowledge in a collaboration environment essentially into four ways depending on whether the communication method is synchronous, asynchronous or a combination of both. The final step use: in the process of use, knowledge of how to use the KM system in a collaboration environment will be increased.

Peachey and Hall (2005) described KM processes in terms of five processes: creation and generation, storage and retrieval, transfer, application, and finally knowledge roles and skills. Knowledge creation and generation focus on describing the different methods of generating new knowledge from the organization and from outside. Knowledge storage and retrieval process use data mining and learning tools referred to as organization memory. Knowledge transfer describes the relocation of knowledge either between individuals from individuals to explicit sources or between groups and organizations. Knowledge application process describes integrating knowledge into organizational practices by using technology to guarantee effectual use of knowledge. Finally, knowledge roles and skills illustrate the importance of roles and skills existence to perform capturing, distributing and using knowledge.

Deng and Yu (2006) suggested a KM process that includes five steps: identifying, capturing, selecting, storing and servicing. This pattern starts by identifying knowledge that exists in corporations. Then this knowledge is captured and selected using the corresponding technologies. “Knowledge capture” is also a synonym for the word “acquisition”. It collects and represents knowledge in a form that can be accessed by computers. Knowledge selection refers to the process of assessing knowledge relevance, value, and accuracy. The knowledge selection is executed by the experts members of knowledge management team to judge whether or not the captured knowledge is valuable to be stored in repository. After that, the selected knowledge is organized into archive and/or stored into repository. Finally, knowledge manager should provide knowledge service to knowledge bearers. Knowledge service activity can also be referred to by terms such as share, distribute, exchange, transfer, and retrieve.

Supyuenyong and Islam (2006) revealed that KM process can be separated into knowledge organization and retention, knowledge creation and acquisition, knowledge dissemination and finally, knowledge utilization. Knowledge organization and retention examine knowledge for reliability according to organization needs and
implement classification through filtration and indexing. Knowledge creation and acquisition contain several sub-processes such as capturing, searching, gathering and synthesis, based on recognizing organization requirements and establishing KM strategy to acquire new knowledge from internal or external sources. Knowledge dissemination processes sharing knowledge among individuals within organization and knowledge transfer between the company and their third parties. Lastly, knowledge utilization is described as an application by integrating knowledge among the organization’s services and products.

Abdullah et al. (2008) defined knowledge management (KM) processes comprise of knowledge creation, knowledge storage, knowledge distribution and knowledge application, as illustrated in Figure 2. The act of creating knowledge coincides with the act of working through the learning spiral of conceiving, acting and reflecting. Reflection is the key to knowledge creation. Companies must develop the infrastructure to capture, store and disseminate the knowledge created from experience. KM allows organizations to leverage lessons learned to be more effective in the future. In addition, a KM system must help users to get their work done easier and more efficiently.

Alryalat and Alhawari (2008) proposed that KM process includes the three main processes. Starting with the process about knowledge to capture knowledge, process for knowledge to create knowledge need, and process from knowledge to apply knowledge. The first KM process deals with the idiom knowledge which refers to understanding how to capture the needed knowledge to solve specific problems that have occurred. The second process of KM focuses on the process for knowledge. This process refers to knowledge creation which considers creating new knowledge in the organization as its major priority. The third process called process from knowledge to be applied through organizations’ products, services and processes that yield in attaining high standards of improvement and progress.

To summarize all the KM theories above, this research’s purpose is to contribute to this area by looking at the present taxonomy of KM process (see Table 1).

Table 1

<table>
<thead>
<tr>
<th>Sub dimension/description of process</th>
<th>Knowledge economies</th>
<th>Practical development KM</th>
<th>Research and development/ IT company</th>
<th>Role of IT</th>
<th>KM in software engineering</th>
<th>Potential differences with information management</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Construction</td>
<td>Initiation</td>
<td>Acquisition</td>
<td>Creation</td>
<td>Originate/ create knowledge</td>
<td>Discovery</td>
</tr>
<tr>
<td>2</td>
<td>Dissemination</td>
<td>Generate</td>
<td>Organize</td>
<td>Storage and retrieval</td>
<td>Capture/ acquire knowledge</td>
<td>Acquire</td>
</tr>
<tr>
<td>3</td>
<td>Embodiment</td>
<td>Modeling</td>
<td>Disseminate</td>
<td>Transfer</td>
<td>Transform/ organize knowledge</td>
<td>Creation</td>
</tr>
<tr>
<td>4</td>
<td>Use</td>
<td>Repository</td>
<td>Application</td>
<td>Applications</td>
<td>Deploy/ access knowledge</td>
<td>Storage and organization</td>
</tr>
<tr>
<td>5</td>
<td>Distributing and transfer</td>
<td>Use</td>
<td></td>
<td></td>
<td>Apply knowledge</td>
<td>Sharing</td>
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<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Use and application</td>
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<tr>
<td>7</td>
<td></td>
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<td></td>
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<td>Bouthillier and Shearer (2002)</td>
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</table>
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Proposed Knowledge Management Model

The authors have proposed and developed a conceptual and coherent model of KM, depending mostly on a thorough investigation of various models presented in novel classification of KM process in Table 1. The main emphasis was placed upon the concept of goal definition review, validation, and knowledge training processes. The model is represented in Figure 2.

Need for Knowledge Management

In this conceptual framework, the first element is the need for KM which addresses the necessity for the organization to implement KM processes. The organization must explicitly define the importance of KM to their stakeholders to contribute in identifying all knowledge associated with business objectives.

Goal Definition Review

The goal definition states the organization goals, clearly defines the constraints and explicit goals and analyzes the goals of the stakeholders in order to clearly output the objectives, expectation and constraints. Additionally, during the goal definition review, the organization mission and vision are defined.

The formulation of knowledge goals is the starting point of KM on an individual as well as on an organizational level. The process of knowledge evaluation can be seen as the end of the KM processes. There is
a feedback look from assessment to goals in that the results of the assessment may lead to changes in the knowledge goals. A wide range of possible tasks and processes are relevant between goal setting and assessment. These can be grouped into four kinds of processes that are closely connected and interactive: knowledge representation, knowledge communication, use of knowledge, and development of knowledge. These categories describe the KM processes on an individual as well as on an organizational level.

![Conceptual framework for knowledge management processes.](image)

**Knowledge Identification**

The formulation and identification of knowledge goals is necessary to provide the initial direction for the knowledge management activities. Carefully planned KM processes are the basis of knowledge goals on an individual as well as on an organizational level.

Knowledge identification starts with the realization or discovery that a particular knowledge is of importance or of relative value to the organization which if utilized or deployed has an added value. This knowledge can exist in various formats or obtained from many sources like documents, reports, books, media, artifacts and internet or generated through the exchange of ideas. All these examples are based on two types of knowledge; tacit and explicit knowledge. Tacit knowledge is stored deeply in the minds of people based on their experience and know-how. Explicit knowledge is codified in different forms and can be accessed (Nonaka & Konno, 1998) through reading, research and media. Also, Abdullah et al. (2005) stated that knowledge needs to determine sources and types of knowledge.
Knowledge Acquisition

Acquisition of knowledge where a deliberate effort is extended to the collection of data, research into various sources or even knowledge generation via means of exchange of ideas, questionnaire or even commissioning research. It is also a proactive stage where search could go into identifying what knowledge exists in the organization, who owns it, and who are the thought leaders, or gather and importing knowledge from outside or learning from existing knowledge (Alryalat & Alhawarii, 2008).

It describes the process of knowledge identification, preparation, documentation and actualization. The main goal of this category is to transform knowledge into a format which enhances the distribution and exchange of knowledge.

It is also a process where the effort calls for converting all tacit knowledge into explicit knowledge which can be stored or shared as per the requirements of later stages.

Knowledge Validation

On both an individual as well as on an organizational level it is necessary in evaluation to estimate if the knowledge goals have been reached within this context. This requires an effort to validate the knowledge sources and the information obtained. Any incorrect information could spread between people based on certain assumptions or sources, which become fact and reality.

Knowledge Storage

As previously indicated, there are three external factors affecting KM. These are people, resources and technology. The latter has now clearly become the most important factor in view of the enormous technological advances allowing better organization, easier storage or capturing of information and with the right methodology, easier access and distribution. This clearly needs resources and people to finance this important process and at the same time be involved in all kinds of activities such as coding, categorizing, classifying, designing work-flow and so on. All of which will serve towards ensuring effective later recovery, and capturing it (Alavi & Leidner, 2001). In other words, this is an infrastructural process that will underpin all the later stages and therefore will require some conceptual and long term thinking to ensure further accumulation and renewal of knowledge.

Knowledge Distribution

Processes are combined to ensure the distribution of information and knowledge, the mediation of knowledge, knowledge sharing, and the co-construction of knowledge, as well as knowledge-based cooperation.

By knowledge distribution we mean the existence of several systems, procedures and protocols that will ensure that all stored knowledge is shared, distributed, broadcasted or made accessible to all those who need knowledge or must know of its existence through any number of means from regular reports or updates to bulletins and publications down to reminders and e-mails. The nature of the knowledge in question will ultimately determine the best means of its distribution, frequency of distribution and the target audience.

Knowledge Application

Use of knowledge focuses on the de facto transformation of knowledge to products and services. This category is of special interest because this is perhaps the most critical process in KM whereby the proactive and direct involvement or intervention of management will be detrimental to the success of any KM program to be matched by full responsiveness from all those involved or targeted. Besides this, monitoring or measuring the usage or application of this knowledge will be another important components of this process to assess all the
previous stages and will determine the viability of the KM program being implemented. In all cases, the monitoring or measurement components of this process will also need to be supplemented with improvement programs reflecting on all the previous stages in terms of the type of knowledge being acquired or how it is stored or distributed. Finally, application or usage will need time to take effect or become integral part of the working procedures and may involve training, coaching or even incentives.

Knowledge Retention and Update

Finally the process knowledge retention and Update will need to be integrated to keep knowledge management system in an up-to-date condition (Stollberg et al., 2004). We can imagine that there is a loop that goes from this stage to the second stage (acquisition) ensuring that new sources, references and knowledge is continuously fed back into the system and all obsolete knowledge is over-written or at least archived. At the same time, all feedback from the application process or stage can also be fed into this stage as another means of updating current Knowledge, assessing its usefulness or relative value.

Knowledge Training

KM can be used in different fields, ranging from training, project management, customer relation, and more. In training, the goal of information-based training is to realize the optimization of teaching and studying which means to communicate the knowledge through the best way. The objective of knowledge training is to convey appropriate knowledge to right person by best method in the suitable time.

Conclusions

The organizations produce high-value added products and services that can act as a knowledge base. Due to the large amount of knowledge and intellectual capital, applying an effective KM approach is a vital necessity.

They should also be aware of other vital implications. The focus should be not on the finding of truth, but on effective actions and enhanced performance through knowledge recycling. This paper described the theoretical concepts and approaches of KM process that could be implemented in organizations by reviewing KM process theories and presented suggestions for what a general process should include based on analysis of various models presented in KM. The main emphasis is laid upon the concept of goal definition review, validation, and knowledge training processes in order to make sure that KM process initiative will deliver competitive advantage to the organization. The main conclusion is that within the field of KM different Critical success factors for the execution of KM processes have been found such as (corporate culture, qualification of employees, learning culture, management support, integration of knowledge processes to organization’s processes, and new information and communication technologies).

References


