

A Theoretical Framework for Knowledge Management Process: Towards Improving Knowledge Performance

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Abstract

Evidently, there is a strong competition among organizations and rapid changes in business surroundings. Therefore, the organizations start thinking of developing their performance and processes. In this regard, Knowledge Management (KM) processes have turned out nowadays to become an organization strategic resource to the extent in which KM is viewed as a base of success or failure. The aim of this paper is presenting a conceptual KM process framework. It mainly emphasizes on developing phases such as knowledge infrastructure, knowledge combination, knowledge filtering, knowledge repository, knowledge sharing, knowledge application, and finally, knowledge performance across the KM process. The paper describes a more valid process to Improving Knowledge Performance.

Key Words: KM, Knowledge Performance, Knowledge Infrastructure, Knowledge Application.

1. Introduction

KM has turned out to become a strategic resource of organization to the extent in which KM nowadays is viewed as the basis of a competitive advantage in the organization.

KM also has surfaced as a major issue that managers must deal with if they want to maintain a competitive advantage. Additionally, KM has become an important subject since knowledge considered as a competitive element for individuals, firms and nations. Knowledge about competitive, customers, products, processes and past successes and failures are considered as an asset for the organization in the twenty-first century. Furthermore, KM evolves from a distinct responsibility to a strategic component of a business solution [13].

In fact, the organizations start thinking of how to improve their performance and processes. In this

regard, knowledge has become a key source for organizations to enhance the competitive advantage which is a prime significance for the organization's performance. In addition, KM has become embedded in the policy, strategy, and implementation processes of worldwide corporations, governments, and institutions [23]. Many organizations today are laying much emphasis on the adoption of KM. The objective of KM is not to manage all Knowledge, but to manage the Knowledge which is most essential to the development organizations. As a result, KM can help grow such a stage to enhance and expand the innovation process [28].

The rest of the paper structured as follow: Section two introduces review of studies related to KM. Section three presents a conceptual framework for KM and finally the conclusion is given.

2. Literature Review

This section gives the reader an overview of different contribution in literature which includes the definitions of Data, Information, Knowledge and Wisdom and includes definitions of KM. Finally, the section describes and analysis the KM theories related to the literature.

2.1 Data, Information, Knowledge and Wisdom

[19] Provide a distinction among these terms: data, information and knowledge. Data viewed as a set of facts. Information is represented as categorized, reviewed and scrutinized data. Knowledge is the result of merging information with practice, perspective and expression, resulting in insinuation and presents approaches and plans on which decision is based on.

Additionally, [32] states that as data developed into information more value is added, which in turn converts information to knowledge by appending

insight and enhanced understanding. As a result, knowledge widens to wisdom through actions such as unearthing, value, skill and more.

As will, [28] indicates that data is raw facts gathered from business transactions and activities. Information defined as a structured data. Data also processed and viewed through a specific filter or from information while the concept that Knowledge defines is an interpretation of information. When information placed in context, internalized, and evaluated based on a mental model or view of the world, knowledge is generated.

[33] Define data as un-interpret indication with no relevance, while information is data formed in an application situation, and knowledge is information used for a resolving precise dilemma, which presents the realistic stage.

Finally, [5] define data as unprocessed facts and raw number collected from the business operation and application, with no concern of any value and purpose. Information is a processed data and added value to determine purpose. Knowledge is also an interpretation of information to improve the understanding of purpose and can be used for solving problem and wisdom includes the new activity to achieve purpose.

Table 1: Taxonomy of Definitions of Data, Information, Knowledge, and Wisdom

Definition (Data , Information , Knowledge, and Wisdom)	Description of Definition		References
Sales Forecasting	Data	Data viewed as a set of facts	[19]Kahn and Adams (2000)
	Information	Represented as categorized, reviewed and scrutinized data.	
	Knowledge	Knowledge is the result of merging information with practice, perspective and expression.	
Information Systems (IS)	Data	Does not include a value	[32] Spiegler (2000)
	Information	Limited value	
	Knowledge	Append insight, abstractive value, enhanced understanding	
	Wisdom	Knowledge widens to wisdom through actions such as unearthing, value, skill and more	
Research and Development/ IT Company KM Platform/ Development in High Tech Sight Project KM Process	Data	Raw facts gathered from business transactions and activities	[28] Parikh (2001)
	Information	Structured data	
	Wisdom	Interpretation of information	
	Data	Understood as un-interpret indication with no relevance	[33] Stollberg et al., (2004)
	Information	Data formed in application situation	
	Knowledge	Information used for resolving a precise dilemma, which presents the realistic stage.	
	Data	Unprocessed facts, with no concern of any value and purpose	[5] Alryalat and ALHawari (2008)
	Information	Processed data - added value to determine purpose	
	Knowledge	Interpretation of information- improves the understanding of purpose, used for solving problem	
	Wisdom	Includes the new activity to achieve purpose	

As illustrated in Table 1, the novel classification of definitions of Data, Information, Knowledge, and Wisdom allows researchers to compare and better analyze the definitions that deal with KM. It could be concluded from the above definition that there is a relationship between the definition of data, information, knowledge, and wisdom. The authors define "Data" as unprocessed collection of details,

with no purpose, value and meaning. "Information" is manipulated structured data, with little value and could be classified, structured and organized for use. "Knowledge" understanding and thoughtful information can be used to solve problems. Finally, "Wisdom" is a broaden knowledge through value and cleverness joined with more actions and activities.

2.2 Knowledge Management

This section describes many definitions of KM. More examples on the definitions of KM have been published see Table 2. [2] Describe KM as an organized and systemic process for acquiring, organizing and exchanging knowledge among employees to effectively utilize knowledge.

Additionally, [28] clarifies that KM needs to view all organization activities as a process of producing knowledge to transport the firm into learning organization. According to [16], KM can be illustrated as a technique to enhance and abridge the process of implementing sharing, distributing, creating and comprehending the knowledge of the organization. Also, [26] depict KM as a structure based on past experience and build new mechanisms for exchanging and generating new knowledge. [4] Portray KM as a process which contains creation, acquisition, incorporation, allocation, and application of knowledge to advance the operation efficiency and

competitive advantage of an organization. KM presents the exact information to the exact group at the correct time. Moreover, [20] define KM as the methodical means of administrating this valuable resource, by promoting an incorporated approach to identifying, capturing, structuring, organizing, retrieving, sharing, and evaluating an enterprise's knowledge assets. [14] Describes KM as a methodical leveraging of data, information, proficiency and different structures of assets and resources to enhance organizational innovation, reaction, efficiency and capability. It represents the significant issues of organizational procedures, through the exercise of suitable technologies to connect dissimilar kinds of knowledge assets.

Finally, [5] define KM as a procedure, process or practice to accomplish process about knowledge, process for knowledge, and process from knowledge which leads to improve the internal and external operation.

Table 2: Taxonomy of Definitions of KM

KM Definitions	Description	References
Role of IT	Organized and systemic process for acquiring, organizing and exchanging knowledge among employees in order to effectively utilizing knowledge.	[2]Alavi and Leidner (1999)
Research and Development/ IT company	Needs to view all organization activities as a process of producing knowledge to transport the firm into learning organization.	[28] Parikh (2001)
KM Technology in Law Firms	A technique to enhance and abridge the process of implementing sharing, distributing, creating and comprehending knowledge of the organization.	[16]Gottschalk (2002)
KM Learning	A structure based on past experience and builds new mechanisms for exchanging and generating new knowledge.	[26] Miltiadis et al., (2002)
Innovation Process	A process that contains creation, acquisition, incorporation, allocation, and application of knowledge to advance the operation efficiency and competitive advantage of an organization.	[4] Albers and Brewer (2003)
Knowledge Architecture	A methodical means of administrating this valuable resource, by promoting an incorporated approach to identifying, capturing, structuring, organizing, retrieving, sharing, and evaluating an enterprise's knowledge assets.	[20] Kim et al., (2004)
CRM Adoption	A methodical leveraging of data, information, proficiency and different structures of assets and resources to enhance organizational innovation, reaction, efficiency and capability.	[14] Goh (2005)
KM Process	A Procedure, process or practice to achieve process about knowledge, process for knowledge, and process from knowledge which leads to improve the internal and external operation.	[5]Alryalat and ALHawari (2008)

As illustrated in Table 2, the novel classification of definitions of KM allows researchers to compare and better analyze the definition when dealing with KM. Therefore, the authors define KM as a structured process with activities to capture, discover, create, filter, evaluate, store, share and apply knowledge from individuals to advance business processes and meet organization 's objectives and goals.

2.3 Knowledge Management Process Theory

KM process is essential in modern and successful organizations which look at knowledge as a major factor in competitiveness. KM has been seen as a fast response to weakness and threats that affect the way of organization business. This section describes different KM processes exist in the literature. See Table 3.

[21] segregate the KM framework into six stages: Initiation, Generation, Modeling, Repository, Distribution and Transfer, Use, and finally Retrospect. The initiation stage deals with comprehending the requirement for knowledge. The generation stage concerned with identifying what knowledge exists in organization, who owns it; identify the thought leader and importing and collecting knowledge from external sources or learning from obtainable knowledge. Modeling stage deals with justifying the produced knowledge. The repository stage required for maintaining the explicit knowledge and ease additional sharing. Distribution and transferring stage used to manage knowledge distribution to other individuals. Knowledge use explains knowledge development as a commercial value. Finally, retrospection stage deals with process examination.

[3] Propose that KM process should be alienated into: Knowledge Creation, Storage and Retrieval, Transfer, and Applications. The knowledge creation phase deals with combining new sources of knowledge. Knowledge storage and retrieval used to support organization memory and individuals to access knowledge. Knowledge storage provides coding and indexing of knowledge for later recovery. Knowledge transfer provides communication channels and faster access to knowledge sources. The last step of the process is knowledge application which assists in applying knowledge in different sites through workflow automation.

[28] Presents 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 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 increases applying knowledge to a new scenario and learning from it

Another KM process model proposed by [7] is divided into six steps: Discovery, Acquisition, Creation, Storage and Organization of the Knowledge, sharing, and finally, Use and Application step. Discovery engages in tracing internal knowledge contained by the organization, which can be beneficial when one department is not aware of knowledge existence in another department. The acquisition step alleviates importing knowledge from the external source into the organization. The creation step involves in creation of new knowledge from different sources by either combining internal knowledge with other internal knowledge to create new knowledge, or analyzing information to create new knowledge.

Knowledge storage and organization involve in storing and organizing information to provide a better understanding of knowledge. Knowledge sharing engages in transmitting knowledge from one individual to one of more individuals. At the end, using and applying knowledge indicate the success of KM cycle.

Also, [33] describe the KM process as knowledge Identification, Acquisition, Preparation, Allocation, Dissemination, Usage, and finally, Maintenance. Knowledge identification focuses on comprehending the attributes of the required knowledge, selecting the obtainable applicable knowledge and assigning the knowledge assets which need to be studied and produced.

Knowledge acquisition process concentrates on discovering the required knowledge such as buying, consulting, researching and development and self-creation. Knowledge preparation focuses on how to

present information easily. Knowledge dissemination ensures the distribution of knowledge. Knowledge use guarantees usability of knowledge among individuals through KM systems. Lastly, knowledge maintenance process maintains KM system up-to-date.

According to [22] the knowledge management process is divided into four processes. First, Knowledge Acquisition focus is to extract knowledge from data, refines knowledge from information and access knowledge from the knowledge base. Second, Knowledge Coordination and Induction meant re-illustrating knowledge and classify it to provide access in proper way. Third, Knowledge transmission and diffusion provide beyond the barrier of time and social culture the transfer and share of knowledge. Finally, Knowledge Creation purpose to produce new knowledge based on both the human cleverness and existed knowledge.

Furthermore, [36] reveal 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 establish knowledge management strategy to acquire new knowledge form internal or external sources. Knowledge dissemination emphasizes 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.

[29] Describe KM processes into five phases: 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 phase use data mining and learning tools referred to as organization memory. Knowledge transfer describes the relocating of knowledge between individuals, from individuals to explicit sources and between groups and organizations. Knowledge application phase 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.

[5] Propose that KM process includes the three main phases. 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 phase of KM begins with the process about an idiom knowledge which refers to understanding how to capture the needed knowledge to solve specific problems that have occurred. The second phase of KM focuses on process for knowledge. This phase refers to Knowledge Creation which considers creating new knowledge in the organization as its major priority. The third phase called Process from Knowledge to be applied through organizations' products, services and processes that yield in attaining high standards of improvement and progress.

[12] Propose KM processes with five steps: Identifying, Capturing, Selecting, Storing and Serving. The process starts with identifying knowledge of corporations. The identified knowledge is captured and collected in a form compatible by computers. The knowledge selection evaluates the knowledge based on the relevance, value and accuracy before store in the repository. Next, the knowledge selected will be organized into archive and stored in the repository. Finally, the knowledge manager provides service to knowledge seekers.

Finally, [25] propose six phases of KM: Relating Value, Acquiring, Organizing, Enable Reusing, Transferring and Using. Relating value process demands from the team member to verify, identify, filter and select the knowledge objective. Acquiring process refers to the facility of the project team member to formalize, codify, represent, format and map the knowledge fundamentals to secure their existence in a usable format. Organizing consist of the store, classify and transformation the Knowledge. Enable reuse phase support to adapt and create the Knowledge. The transfer phase has to be designed to concern of knowledge paths, where knowledge repositories and specific knowledge objects are linked to people, promotes the exploitation of knowledge. The knowledge using has been transformed into reusable formats to construct meanings of higher value and of course has to support the learning process.

Table 3: Taxonomy of Definitions of KM Process

KM Process	Description of Process							References
	1	2	3	4	5	6	7	
Practical Development KM	Initiation	Generate	Modeling	Repository	Distribution and Transfer	Use	Retrospect	[21] Lai and Chu, (2000)
Role of IT	Creation	Storage and Retrieval	Transfer	Applications				[3] Alavi and Leidner (2001)
Research and Development/ IT Company	Acquisition	Organize	Disseminate	Application				[28] Parikh (2001)
Potential Differences with Information Management KM Platform	Discovery	Acquire	Creation	Storage and organization	Sharing	Use and Apply		[7] Bouthillier and Shearer (2002)
	Identify	Acquire	Preparation	Allocation	Disseminate	Usage	Retention	[33] Stollberg et al., (2004)
A Theoretical Base of KM Applications	Acquisition	Coordination and Induction	Transmission and Diffusion	Creation				[22] Lei et al., (2000)
KM Architecture	Organization and Retention	Creation and Acquisition	Dissemination	Utilization				[36] Supyuenyong and Islam (2006)
Analysis of Gaps in Published KM Research	Creation and Generation	Storage and Retrieval	Transfer	Application	Roles and Skills			[29] Peachey and Dianne (2005)
KM Process	Process about Knowledge	Process for Knowledge	Process from Knowledge					[5] Alryalat and ALHawari (2008)
Product Development	Identify Knowledge	Capture	Select	Stored	Service			[12] Deng and Yu (2006)
KM Learning	Relate value	Acquire	Organize	Enable Reuse	Transfer			[25] Miltiadis and Pouloudi (2003)

As illustrated in Table 3, the novel classification of KM process allows researchers to compare and better analyze the process when dealing with KM processes. Many of the models described above are broad enough to provide a complete analysis of the knowledge flow

in the organization. The next section proposes the new KM process that could improve the existing KM process to provide the Knowledge Infrastructure, Knowledge Combination, Knowledge evaluation, Knowledge Filtering, Knowledge Repository,

Knowledge Sharing, Knowledge Application and finally, Knowledge Performance.

3. Proposed Knowledge Management Model

The importance of implementing the knowledge management framework for organizations is to provide guidelines for executing KM successfully, save time and efforts and to avoid inaccuracies. Therefore, the authors have proposed and developed a conceptual and coherent Model of KM. See Model 1, depending mostly on a thorough investigation of various models presented in the novel classification of KM process in Table 3. The main emphasis was placed upon the process knowledge infrastructure, knowledge combination, knowledge filtering, knowledge repository, knowledge sharing, knowledge application and finally, knowledge performance. These elements are fully discussed in this section.

3.1 Knowledge Infrastructure

Knowledge infrastructure, the first element in this conceptual framework, relies on building the appropriate culture for Knowledge Management System (KMS). It also establishes the awareness of the importance of KM among the individuals in the organization. Therefore, the Knowledge infrastructure promotes understanding the strategic capabilities or knowledge domain and/or comprehending the requirements for knowledge [21]. Since the role of the knowledge worker in contributing to the knowledge plays a major part in the success or failure of the KM cycle execution. Knowledge Discovery relies on the support of the upper management for successful execution. Therefore, if the upper management does not endorse the KM, none of the knowledge worker will contribute resulting in KMS failure.

[1] noted that knowledge infrastructure establishes different technologies to provide information retrieval and presentation such as an intranet to provide easy and customizable interface to knowledge workers, groupware to provide a medium for knowledge works to communicate in a non-real approach using discussion groups and agent technology to monitor knowledge resources for any new or update knowledge added or changed based on the user's preferences and interests. Furthermore, [15] explain that knowledge infrastructure consists of technology, structure, and culture, beside the knowledge process cycle is essential for effective knowledge management. The knowledge infrastructure includes three stages.

In this knowledge infrastructure, the first stage is the Knowledge discovery which is a method for

developing new tacit or explicit knowledge from data or information or from mixture of previous knowledge [6]. In addition, [34] describe that Knowledge Discovery is the process of locating precious knowledge exists in the organization. Knowledge Discovery also used to excavate the valuable intellectual capital from database, documentation and the tacit of experts [34].

The knowledge Discovery phase involves in finding internal knowledge within the organization or external sources. It searches through the large sum of data and chooses the applicable information. It relies on digging out information from a verity of data sets such as modern experimental and examination techniques. It also relies on individuals who have the knowledge and not being able to either express it publicly. Furthermore, this phase is useful in discovering knowledge exists within large, nonhierarchical or geographically diffuse organization [7].

Knowledge Discovery relies on tools such as data mining and interviews. Data Mining assists knowledge hunters to discover preferred knowledge or unforeseen valuable knowledge from an enormous database. While interviewing accompany with incentive encourage individuals to express their knowledge they possess [34].

The second stage is Knowledge Capture defined as the process of reclaiming either explicit or tacit knowledge residing inside people, artifacts or organizational bodies [6]. Also, [30] noted that knowledge capture symbolizes the gaining of knowledge with an essential competences and experiences for the creation and updating of the selected knowledge areas. Moreover, knowledge capture or acquisition confines knowledge using matching technologies and symbolize or formalize knowledge in format used by computers [12].

Furthermore,[9] illustrate knowledge acquisition as a process of obtaining the needed knowledge from sources such as buying and consulting, Research and Development (R&D) and learning and self-creation. The significance of knowledge capture also depends on the culture and objectives of the organization [34]. Consequently, Knowledge acquisition is implemented using database holding indexes of external sources that can be important for the organization [34]. Furthermore, [28] portrays knowledge capture for finding and acquiring knowledge in the knowledge-based resources.

Knowledge Creation is a process of creating new knowledge through combining internal knowledge with another internal knowledge and analyzes information to create new knowledge [7]. Moreover, knowledge creation relies on the selection of both the internal and external knowledge needed by the organization [35].

Organization should recognize the enterprise requirements by comprehending their tasks, responsibilities and the knowledge needed [36]. Furthermore, the organization needs to recognize the old, existing and new knowledge which might be desirable during the route of the knowledge management endeavors and for business in broad [35].

Additionally, [34] claim that knowledge creation in the organization focuses on creating new products, enhanced ideas and more effective services or new ideas. Also, knowledge creation phase is attractive if the obtainable knowledge does not match needs or it is exclusive [35]. Additionally, the knowledge creation depends on the organization culture, organization objectives and research efforts [10]. Furthermore, knowledge creation use technological components such as brainstorming, decision support system, enterprise information portal, artificial intelligence, business intelligence, data mining and knowledge discovery tools [18].

The three stages promote a knowledge understanding of the specific topics relevant to the organization's goals and objectives. Three phases can either interact with each other to enhance the knowledge obtained into the knowledge combination, which serves as a temporary repository.

3.2 Knowledge Combination

This element of our framework is concerned about Knowledge combination phase to collect information discovered, captured and created into a single portfolio. This collected information is combined and prepared to go through evaluation, filtering then storage to prepare it for sharing and application. This phase can be viewed as a temporary repository of collected information from the infrastructure phase.

3.3 Knowledge Evaluation

Knowledge evaluation phase used to assess the knowledge based on the value; accuracy and relevance after the knowledge have been combined from different sources. [35] Note that knowledge can be assessed based on the relevance to the organization,

management strategy and business strategy. Moreover, knowledge must be evaluated to ensure knowledge is accurate and valuable before it can be shared in next phases [34].

Since this acquired knowledge derived from different sources can be either inaccurate, has no value to the organization and unrelated to the core business. Moreover, any new obtained knowledge can be undeveloped knowledge with many mistakes [34]. Therefore, the evaluation phase is used to assess if the new knowledge is worth to further development [34].

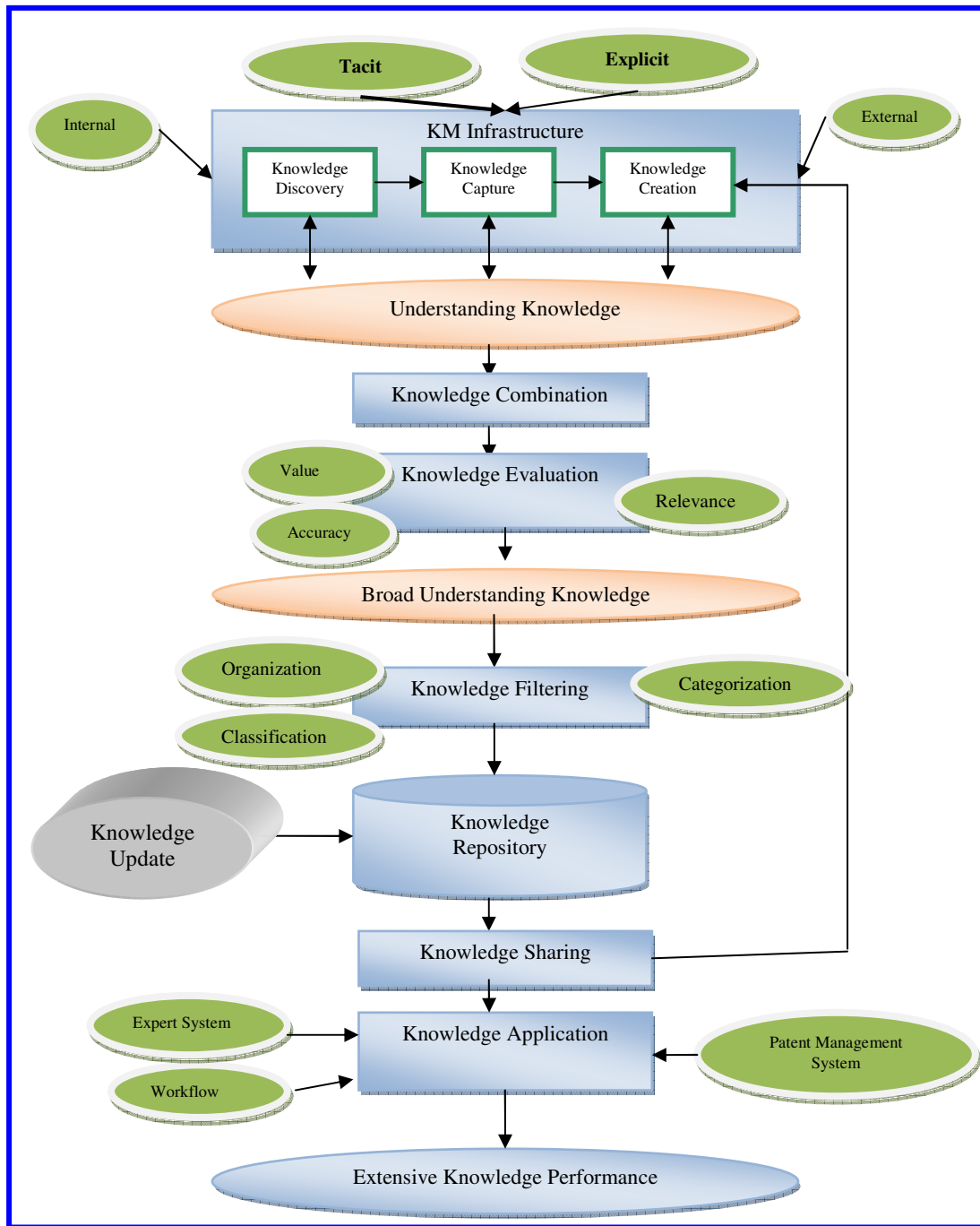
[30] Stated that evaluation is focused on quality and synthesizing knowledge for future application. The purpose is to determine the relevance and value of information. Also, establish the trust degree of knowledge, discard of redundant knowledge. Moreover, the reduction of the uncertainty degree of unproven knowledge, identify and propose of solutions for problems related to conflicting knowledge and finally, the use of multiple views in cases of unsolved conflicting knowledge. The output is a deeper and broad understanding of the knowledge in hand.

3.4 Knowledge Filtering

Knowledge filtering prepares knowledge to be stored in the next phase, after going through classification, categorization and organization. Knowledge also will be classified based on the sensitivity of the information and which access is restricted by law or regulation to particular classes of people. Furthermore, knowledge can be categorized to recognize, distinguish and understand the information for exact purposes based on a specific purpose or type. Categorizing can be used to make practically significant differentiation between dissimilar categories of knowledge.

[21] Recommended classifying knowledge by index. Then knowledge can be linked, combined and integrated. In other words, this stage is concerned with organizing knowledge and representing it into the knowledge repository for future retrieval.

Furthermore, knowledge can organize and rearrange the information based on certain rules and map the knowledge into specific requirements. Additionally, knowledge filtering structures the information with indexes, links and catalog for storage [28]. Knowledge is filtered to identify and cross-list the dimensions that are useful for different research and development projects.



Model 1: Conceptual Framework for Knowledge Management Process

3.5 Knowledge Repository

Knowledge repository serve as a storage for the knowledge collected in the past stages. Therefore, Knowledge repository is viewed as organization memory and retention of knowledge assets. According to [34] knowledge repository must have sufficient storage media to accumulate knowledge and prevent

valuable expertise from disappearing. Also, knowledge repository importance relies on the viscosity of knowledge to store, amount of knowledge accruing, objective of organization, infrastructure and culture [17].

Moreover, [21] state that to preserve the explicit knowledge and smooth the progress of additional sharing, it is significant to accumulate significant knowledge and to settle on what knowledge and how it should be positioned into the repository is an important issue. Finally, updating the knowledge residing in the repository is an important task, and it can be assigned to particular knowledge worker to maintain up-to-date information and remove obsolete information. Approach to knowledge repositories are database systems, expert yellow-pages, frequent-ask-question (FAQ), standard operation procedures (SOP), enterprise informational portal and centralized file management [18].

3.6 Knowledge Sharing

Knowledge sharing concerns are in transferring and sharing knowledge among the individuals in the organization. In addition, this phase is considered as a core process of the KM, since the main goal and objectives of the KM research and practice is to foster the flow of knowledge among individuals [8],[31]. Moreover, a successful knowledge management system is a shared system where people can retrieve and contribute to the knowledge pool as well. In fact, people must speak same language to be able to share knowledge.

Moreover, knowledge sharing is executed by distributing and employing of knowledge chosen from within the organization or outside [34]. Furthermore, during sharing of knowledge, a new knowledge created by combining the shared knowledge and existing knowledge [10]. Knowledge sharing can be further expanded to include personalization and distribution [28]. Also, knowledge sharing structure is based on job expert training, training centers, focus group meetings, workshop and knowledge sharing councils [18].

According to [28], intranets and extranets provide a suitable platform for knowledge sharing. User profiles can be use to personalize presentation and access to knowledge. Push technology can be used to automatically update and alert users when a change occurs. Therefore, to support knowledge sharing initiative, a mixture of inducement and co-operative structures of behavior within the culture of the organization is required.

[34] Asserted that knowledge sharing contains the following sub-processes: knowledge representation, knowledge distribution and knowledge utilization. Knowledge representation is to represent knowledge in a more clear and storable way. Knowledge distribution supports the spread of knowledge throughout the

organization. Finally, knowledge utilization supports knowledge application.

3.7 Knowledge Application

Knowledge application's purpose is to apply and represent information to knowledge seekers in appropriate matter. Also, Knowledge application is the solution to wrapping knowledge to guarantee widespread usage. Moreover, knowledge application translates information into practical tools and applying the knowledge into real world. Knowledge application presents the knowledge in more clear and storable way [34].

[21] Stated that knowledge can be available to individuals through human interactive processes or by using information technology. Moreover, technology can support knowledge applications by implanting knowledge into organizational practices. Likewise, knowledge can be pushed based on two strategies: push and pull [11]. Push strategy makes a decision on what information is to be allocated to whom and automatically alert users of changes, while pull strategy is based on user requests and needs. Also, knowledge applications are based on technological components such as: workflow, expert system, patent management systems and enterprise information portal [18]. Consequently, applying and having a value adding knowledge culture guarantee successful execution [18].

3.8 Knowledge Performance

Knowledge Performance, the final stage in the KM cycle which concentrates on evaluating every KM system, is performing according to the organization goals and objectives. Moreover, KM goal is to capitalize on the knowledge assets to reach maximum attainable business performance [9]. Also, knowledge performance is concerned with evaluating the process, performance and impact of KM and perceives if new knowledge was created [21]. Additionally, KM can improve a business process by contributing to knowledge performance which can evaluate the impact of the change and provide a further enhancement.

[1] Noted that measurements can be implemented to benchmark the system to ensure quality and productivity to increase the Return of Investment (ROI). Also, [27] claim that measurement methods is based on different processes used to provide information on the amount of knowledge resources, their type and their exploit in pursue of organizational goals. Furthermore, knowledge performance can measure the knowledge sharing performance among the employees. Additionally, knowledge performance can evaluate the current potentials of the employees

and how much gain was obtained from using the system. Finally, knowledge performance can evaluate the incentive and reward structures for sharing knowledge and pinpoint internal inconsistency [24]. It is not necessary for these knowledge processes to be sequential process. Some activity may have a feedback to or from the others. Since some latter processing phases can be a basis for some former processing phases. For example, during knowledge sharing phase, a new knowledge is created and it has to go through the knowledge life cycle.

4. Conclusion

This paper presents a conceptual framework of KM process. The objectives of the paper is to describe a more valid process to identify how organization deals with tools and techniques used to execute each phase in the life cycle, and presents a robust KM framework with extensive and detailed processes. Based on the topic of this research, this paper concludes that the proposed KM framework would give a broadest analysis of the KM process. To the best of the author's knowledge, there are few KM models in the literature, which includes phases such as knowledge infrastructure, knowledge combination, knowledge repository, knowledge sharing, knowledge application and finally, knowledge performance. These phases which the proposed model considers improve the execution process.

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