

A Comprehensive Perspective of Knowledge Management Processes: Building An Octagon Framework

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Abstract: This study aimed to answer the following question: What are the processes required to utilize organizations' intellectual capital efficiently and effectively, in light of the knowledge management concept? This study is part of a series of studies aimed to build a comprehensive and resilient KM model. Content analysis was adopted as a methodology based on exploratory and in-depth readings as a basis for the techniques of disassembly and synthesis, as well as the comparison. Besides, the study adopted two intellectual premises, which are the knowledge notion perspectives and the ontological geographic chart of knowledge (OGCK). Many studies and models of knowledge management processes were reviewed. The study discussed and developed the seven-stage model by (Evans, Dalkir, and Bidian)[1], which is the upgraded version of the (KMC) model presented by (Heisig)[2]. The study produced an eight-step KM model that includes the following processes: identification, organization, storage, dissemination, application, development, learning, and generation of knowledge.

Keywords: Knowledge management; KM framework; KM processes.

1 Introduction

The dominant feature of this era is the pace of change and the legendary progress in the fields of knowledge and technology, which in turn have posed great challenges to a young and ambitious society, such as the Saudi society, which is facing challenges within an ambitious plan that includes many programs, including the transition of the Saudi society to the world of knowledge through comprehensive knowledge transformation in all fields, such as education, economy, health, etc. The most important of these challenges is the intellectual transformation into the world of knowledge. The importance of intellectual transformation comes through its pivotal role in establishing and developing theories, models, processes, methods and tools necessary to manage knowledge efficiently and effectively, commensurating with the society needs, capabilities, resources and prevailing culture in organizations, which contribute to transforming the society in all its sectors into a productive knowledge society.

This study is part of a series of studies that aims to build an integrated knowledge management framework to meet the needs of organizations in the Kingdom of Saudi Arabia and other similar countries with the same culture. This study aims to answer the following question: What are the required processes to benefit from the intellectual capital of organizations efficiently and effectively? In light of the knowledge management concept, the main approach was to develop and synthesize a framework for knowledge management processes. The study adopted the content analysis approach, in which the study gathered the analytical technique in the analysis of information and the previous models, and the elicitation technique, which provides a large space for creativity and initiation of new perspectives and issues which have not been presented before. Therefore, the study adopted two intellectual premises, which are the knowledge notion perspectives and the ontological geographic chart of knowledge (OGCK). This study attempted to achieve its objective through studying and reviewing the KMC life cycle model produced by Evans, Dalkir, and Bidian [1], which was

an amendment of the original KMC life cycles presented by Heisig's. [2]. Accordingly, an octagon KM processes framework was developed, which comprises the following processes: identification, organization, storing, dissemination, applying, developing, as well as learning and generation of knowledge.

2 Methodology

Within the content analysis approach, the study combined analytical and constructive techniques that focus on innovative learning techniques in presenting new perceptions, issues and concepts.

Extensive and in-depth reading was performed to collect, summarize and analyze data and information from specialized intellectual production, which was found in books, academic research, universities' theses, blogs and websites, concentrating on the aspects of KM processes and KM frameworks.

The study adopted a process of comparison between some previous frameworks and the proposed one, highlighting its contribution.

Validating the proposed framework was done by means of proving that the framework is sufficiently accurate for the knowledge management processes. A semi-structured interview technique was selected to verify the proposed framework validity, as a systematic forecasting method that involves semi-structured interaction with four academic experts in knowledge management and three practitioners in business administration. Before the interviews, the proposed framework, together with sufficient required information was sent to the interviewees.

3 Results

This study reveals some significant results that follow:

3.1 Building a practical and comprehensive octagon framework for knowledge management processes

By studying and reviewing the KM life cycle model produced by Evans, Dalkir and Bidian, besides other models, a practical and comprehensive octagon framework for knowledge management processes was built, which is illustrated in Figure 1.

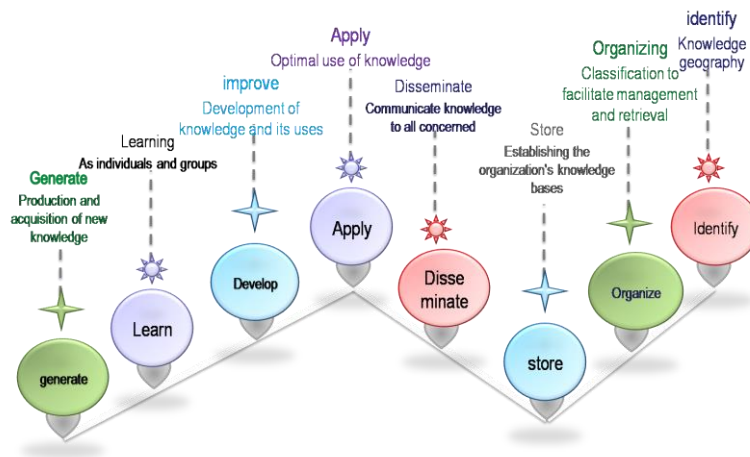


Fig. 1 The Octagon framework for KM processes

3.2 Subsequent Comparison Process

Table. 1 summarises the comparison between the proposed framework of this study, the (KM) life cycle model produced by Evans, Dalkir and Bidian in (2014), and the KMC model presented by Heisig in (2009), using the producing years as the reference.

Tab. 1 Cross review of knowledge management processes

Study	Framework processes								
2018	identify	organize	store	disseminate	apply	develop	learn	generate	*
2014	identify	*	store	share	use	improve	learn	Creat	*
2009	identify	*	store	share	Use	*	*	Creat	acquire

3.3 Validity test: Interviews outcome

The interviewees determined that the framework proposed by this study, within its domain of applicability, is sufficiently accurate for knowledge management processes; therefore, the produced framework achieved a high degree of face validity.

4 Discussion

How can we benefit from intellectual capital within organizations in light of the knowledge management concept? What are the required processes? By using the knowledge management perspectives, this paper will improve the firms' perceptions of managing the organizational knowledge and highlight its importance. To ensure that the reader is on the same page, it is essential to articulate the intellectual premises which have been adopted as bases for the study and which also reveal the contribution of this study. These intellectual premises contain knowledge notion perspectives and the ontological geographic chart of knowledge (OGCK), which are explained as follows.

4.1 The knowledge perspectives

There were three perspectives of the knowledge concept taken into consideration while writing this paper.

- a. First, the binary concept of knowledge, which divided it into two categories: The explicit knowledge, which is in printed or electronic formats, structured or unstructured. The implicit knowledge, which consists of cognitive capabilities, attitude and skills, which is partially corresponding with what Dalkir mentioned in 2011[3].
- b. Second, the historical eras of the knowledge management, as presented by Nancy Dickson 2014, starting with the data and information management, to the experience management and the ideas management[4].
- c. Third, the location of the knowledge resources related to the firm, whether they are outside or inside.

4.2 The ontological geographic chart of knowledge

At the start, the ontological Geographic Chart of Knowledge is an unforeseen gathering of terms. “Ontology” indicates a group of notions and classifications in a subject field or domain that shows their properties and the relations between them [6]. “Geography” presents description of the Earth [5]. “Knowledge,” on the other hand, implies the material and immaterial realm of ideas, experiences and human cognition, skills and attitudes [5]. Locating knowledge or tracking its transmigrations disturbs these common perceptions but indicates the substantial and social nature of knowledge.

The ontological geographic chart of knowledge is a descriptive map. The main point of this chart is to identify, gather, organize, locate, and relocate the knowledge, which can be easily communicated, disseminated, improved and learned.

4.3 The octagon framework for knowledge management processes

We reviewed a wide range of knowledge management models. The most interesting model was presented by Hisig under the title Knowledge Management Lifecycle (KMC). The strength and contribution of Hisig’s comprehensive study is shown in three main points. First, he conducted a content analysis of 160 KM frameworks that had been proposed. Second, he concluded that KM activities were centered around six processes and the most frequently mentioned activities included: use, identification, creation, acquiring, sharing and storing. Third, he involved practitioners in the identification of KM frameworks and the required activities.

Moreover, we reviewed the work of Evans, Dalkir and Bidian, published in 2014 and developing an advanced KMC model that contains seven processes: identification, storing, sharing, using, learning, improving, and creating.

As a result of the content analysis, this study proposes an octagon KM processes framework, which consists of identification, organization, storing, dissemination, application, improvement, generation of knowledge and learning (Figure 1).

a) Identification

Generally, the identification phase depends on obtaining and maintaining a clear and updated knowledge geography. Analyzed and evaluated knowledge are major attributes of knowledge presented by this phase. The study suggested the ontological geographical chart of knowledge as the main method. It shows strong and weak points related to the knowledge carried within the organization. This phase has direct and strong relationships with some other phases, such as

organizing, storing, disseminating, improving and learning. It is the start point to provide the knowledge needed at all management levels, problem solving and improving the decision-making process. The identification phase of this framework is almost identical to the building process by Evans and Ali (2013) [14], the capturing process by Dalkir (2005) [7] and the identifying process by Wiig (1993) [8].

b) Organization

Due to the importance of organization, this study considers it as an independent phase. The advanced knowledge management tools and techniques play important roles in the organizing phase as a dependent phase besides quick and incredible improvement on the side of information technology. Suitable knowledge organizing presents different correlations between multiple aspects, which lead to generating new ideas and creating added value. The ontological geographical chart of knowledge expectedly presents a great value to the organizing phase. This phase is mostly impeded within the store phase in other studies.

c) Storing

This phase is mostly considered as the organizational memory, where each valuable piece of knowledge is planned to be in use at a proper time and for a specific length of a period. An updated ontological geographical chart of knowledge will help as a contemporary methodology storing all kinds of knowledge. The previous phase strengthens the storing phase, and it allows the stored knowledge to be efficiently and effectively manipulated, retrieved, and eventually shared. The storing process has multi-correlation with other phases, such as organization, dissemination, application, developing and generating.

d) Dissemination

Knowledge is retrieved out of the ontological geographical chart of the knowledge (organizational memory) for dissemination both internally and externally. The dissemination of knowledge is a significant process, where the problem is that most of the employees are not aware of knowledge presence, particularly when new knowledge is generated, obtained, developed and stored. Luckily, deploying the ontological geographic chart of knowledge will make the problem part of history. As per Meyer and Zack (1999), having an explicit, dynamic, and flexible network of expertise (e.g. community of practice) enhances collaboration and can greatly assist in disseminating of information, experience and ideas as an organizational intellectual capital [9]. Other knowledge management tactics and methods may encourage the disseminating of more tacit forms of knowledge, such as coaching, mentoring, and an on-job training as well as storytelling (Peroune, 2007) [10].

e) Application

It is important to remember that unless this phase is achieved successfully, “all of the knowledge management efforts have been in vain, for knowledge management can only succeed if the knowledge is used” (Dalkir, 2011)[11]. When the knowledge is applied (put to use), its value can be extracted throughout the organization, to make decisions, solve problems, enhance efficiency, or boost innovative thinking. According to Dalkir (2011), the involvement of the experts is required to apply the tacit knowledge correctly, effectively and efficiently [11]. The

application phase is also a key to internalizing implicit knowledge. Yuasa (1987: 25) called this ‘learning with the body’[12] and Boisot (2002) ‘learning-by-doing’[13].

f) Learning

Within the knowledge perspective, tacit knowledge was built according to Bloom’s learning domains, which consist of (cognitive) knowledge, skills and attitude, which might help to create and enhance a learning culture in the organization. The disseminated and applied knowledge can also be improved or used as the basis for generating new knowledge and refining existing knowledge. A part of the learning phase, especially in the status where experts provide understandable context, assures that employees gain experience as they explicate the impact of the knowledge on their work environment (Evans and Ali, 2013) [14]. The repeated process of thinking of the value and applicability of knowledge comprises double-loop learning (McElroy, 2003) [15].

g) Improving

The previous learning phase leads to more improvement in the knowledge in use. A new value is either identified or generated from them and additions or updates are made to keep the knowledge current and applicable to the organization operations. On the other hand, a short lifecycle is the most common characteristic of products and services in the market nowadays; therefore, the improvement phase will work to lengthen the products and services lifecycles. This study is consistent with what M. Max Evans, Kimiz Dalkir and Catalin Bidian (2014) reported [1], that the improvement phase is a decision stage for knowledge to be retired, reorganized, stored, improved or transferred for further use.

h) Generating

Necessity is the mother of invention [16]. A need or problem promotes creative efforts to satisfy a need or solve a problem. This saying appears in the dialogue Republic, by the ancient Greek philosopher Plato. Generating and creative innovation are the attributes of the organization that leads its sector. Building an innovation culture based on a learning organization and system thinking is the road map for the organization to survive and achieve its planned goals. The ideas management is required the most in this phase.

4.4 The subsequent comparison process

This study headed towards discussing and development of the Evans, Dalkir and Bidian seven-stage model. It concludes with emphasis on the seven processes of the model and adding the stage of organizing, as in Figure 1, based on its great importance. This is explained by Zaim (2009): "Knowledge is meaningful when categorized, placed and stored in a specific and useful form, so it can only be used by the right person at the right time and in the right way" [17]. Based on the above, the study concludes with an octagon framework for knowledge management processes consisting of identification, organization, storing, dissemination, application, development, learning and generating.

- This study agrees with Hieseg’s model in term of the following processes: identifying, storing, and generating. And differs in the title of the disseminating and applying processes,

- Heisig's study is unique in the acquisition process as a stand-alone process, while this study included the concept of acquisition in the generating process.
- This study differs from Heisig's study in its assurance on organizing and learning phases because of their pivotal role in promoting knowledge management.
- This study agrees with Evans, Dalkir and Bidian in the titles and contents of the processes identifying, storing, developing, generating and learning. They differ in the name but agree in the content, in the applying and disseminating processes.
- This study differs from the Evans, Dalkir and Biden model with organizing as an independent process, which is partially embedded in the store phase of their model.

4.5 Validity test: Interview outcomes

Seven semi-structured interviews were conducted. Our interviewees included four academic experts in knowledge management and three practitioners in business administration. Before the interviews, the proposed framework, together with sufficient required information was sent to the interviewees to help them in preparation.

The conversation pivots were indicated in verifying the following points:

- the model assumptions
- the model technical structure
- validation of the model behaviour
- testing of business policies
- assuring that the results appear reasonable
- their point of view regarding the application of this framework if circumstances permit
- Besides, the model may be compared to the actual work environment to see how they correspond [18].

After all, the interviewees determined that the proposed octagon framework for knowledge management processes was sufficiently accurate for knowledge management processes; therefore, the produced framework achieved a high degree of face validity.

With our deepest appreciation of the participating group, it was agreed to implement a future study to determine the implementation mechanisms of the proposed framework to enhance knowledge management in organizations.

5 Conclusions

The key contribution of this study is that it is the third attempt at building and improving the knowledge management lifecycle, which started with Heisig's extensive analysis of 160 knowledge management frameworks presented in the original 6 stage model (KMC), followed by the expansion of the view of KMC process model performed by Evans, Dalkir and Bidian.

The study used two intellectual premises, including the emphasis on knowledge management perspectives based on the historical context (information, experiences and ideas), as well as the binary classification of knowledge, which adopted Bloom's domains of

learning as a basis for implicit knowledge. Moreover, the study presented the ontological geographic chart of knowledge (OGCK) as a new notion for organizing knowledge, in order to assure the importance of the organizing phase and its reliability to add value to the knowledge.

The study proposed a high rank validity octagon framework for the knowledge management processes and recommended further studies in the following subjects: in-depth illustration of the chart of knowledge management processes, arranging of recommended and useful tools and techniques to facilitate the framework process, and implementation mechanisms of the proposed framework.

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