Introducing A Change Resistance Factor in Knowledge Management Model: A Concentration in Organizational Culture

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Abstract

Knowledge has been recognized in enterprise community as a key resource of organizations, and as such it is important to be managed. The aim of this paper is to design a model that helps to enhance knowledge management practice in environments with change-resistance culture. The paper addresses two questions, which lie at the heart of the subject: What are the factors that lead to a non-sharing approach of knowledge in companies? And how can one design a KM Model that can guide companies in countries where cultural barriers exist to better utilize KM systems and benefit from them? The research aims to design a Model, which is the research artifact. The model build part is accomplished through a comprehensive literature survey about Knowledge Management and it's relationship to organizational culture. An experts survey was conducted through questionnaires that were distributed to a number of managers and academicians in the field of knowledge management. With this research, the major factors leading to good practices in knowledge management are identified and discussed.

Keywords: Change resistance, Knowledge Management Model, Organizational culture, Persuasive Strategies.

1. INTRODUCTION

Today, with the proliferation of information and interactions, efficient knowledge management (KM) is becoming increasingly vital for organizations to compete and survive. There is a wide range of studies recognizing the importance of knowledge management and knowledge sharing activities for developing innovative capabilities in organizations to safeguard competitive advantage (Morris, 2006).

According to Duhon (1998) "knowledge management is a discipline that promotes an integrated approach to identifying, managing, and sharing all of an enterprise's information assets, including database, documents, policies and procedures as well as unarticulated expertise and experience resident in individual workers." Implementing knowledge sharing usually entails change in the way an organization conducts their business. A good practice of knowledge management leads to a better and faster decision-making process, a greater empowerment of employees, and a quicker learning and knowledge creating process. Knowledge management increases the effectiveness of companies' afforests.

Organizations need to use a well-defined guide for KM that suits their needs and specific situation in order to identify the weakness in their current knowledge management.

In reality, when implementing a knowledge management system, every individual organization varies in their recognition and implementation of the different KM practices and aspects. Due to this variety there is a need to evaluate and enhance the different parts and practices of KM implementation. There are many models, which will be introduced in the literature section, that identify the major factors that affect the success and the efficiency of knowledge management systems. However, the focus on the organization culture challenges of knowledge management was not the concern of this model. Hsieh et. al. (2009) argue that a KM model specific to a particular environment is important to the progress of knowledge management in this environment. They see that there is a lack of culture-related framework that practitioners and researchers can clearly understand and put it in practice.

The practices in organizations that have cultures with a high resistance to change need a totally different model for knowledge management success. In this kind of organization, the system quality is no longer the main issue. There are many countries, communities, and organizations in which the culture plays a major part in their business practice.

The first author conducted a study in 2010 that aimed to evaluate the KM capabilities in a number of Saudi Arabian companies. The study showed low levels of knowledge management capabilities among all the companies in general. The study also indicates that the culture and the wellness to use the system were the barriers factors in KM practice within the majority of the companies. This research aims to answer following questions: 1) what are the factors that prevent knowledge sharing in companies? And 2) how can one design a KM Framework that can guide companies in countries where cultural barriers exist to better utilize KM systems and benefit from them? The paper aims to identify a framework that would help to enhance knowledge management practice in environments with change-resistance culture, such as Saudi Arabia. The knowledge management domain has high maturity level, in general, with many studies in the field. However, the detailed solutions and consideration of a specific environment that has

a change resistant culture are still a research concern. Therefore, this paper contributes to knowledge by identifying previous knowledge management models and their limitations. We also propose a model to address sharing-resistance in organizational culture environment. Moreover, the study is written for organizations that face cultural difficulties in order to efficiently use the Knowledge Management system. The model designed here is derived from a rigorous approach of current knowledge base, theories, and research.

2. LITERATURE REVIEW

The term knowledge management has many definitions that refer to the activities of knowledge creation, dissemination, and utilization (Newman, 1991). Davenport & Prusak (1998), expressed knowledge as a mix of fluid experience, values, contextual information and intuition that provides a structure to evaluate and incorporate new experiences and information. In other words, knowledge is the utilization of information and data, coupled with the potential of people's skills, competencies, ideas, intuitions, commitments, and motivations. Knowledge is different from information at the individual and organizational levels. Individual knowledge is experience and practices that can be captured in diaries, notes, or other written form. In this sense, knowledge is a synthesis of information, experiences, processes, and understanding within an individual and cultural context (Liao & Chuang, 2006). Organizational knowledge can be captured in documents, manuals, operating procedures, a repository, etc. It contains organizational routines, processes, practices, and norms (Davenport & Prusak, 1998).

Knowledge is manifested in value-added behaviors and activities. For knowledge to be of value it must be focused, tested, and shared. Therefore, knowledge is gained not only from employees' skills but also from the organizations' environmental elements and the understanding of their relationship.

On the other hand, KM can be seen as a systematic approach of integrating people, processes, technology, and content, to enable knowledge which combines: information, experience, know-how, lessons learned, etc., to be created and flown to the right people at the right time. So that it may be used in their work and decision-making and thus can add value to the mission of the organization and back to the

knowledge prevailing in the organization (Cataline & Lemons, 2003).

Therefore, KM System is the process that helps organizations identify, select, organize and disseminate important information, best practices and lessons learned, and expertise that are part of the organization's memory. Typically, these reside within the organization in an unstructured manner, and some may not have been articulated. The structuring of knowledge enables effective and efficient problem solving, dynamic learning, strategic planning, and decision-making (Turban & others, 2006).

The KM process and implementation

In general, there are six stages to manage knowledge and to lead to the generation of new knowledge (Nissen & Espino, 2000): 1) Capture information, (2) Organize it, (3) Formalize it, (4) Distribute it, (5) Apply it, and (6) Evolve. Jennex (2009) simplified the KM processes into four sequential stages assuming overlap between some stages. They combined the organization and formalization processes into one stage called knowledge acquisition, and distribution and application into a stage called knowledge expansion. They also pointed to the evolving of new knowledge as "knowledge innovation." Alavi & Leidner (1999) expressed KMS as an information system used to effectively manage the KM life cycle. From the perspective of Information Technology (IT) Diffusion Theory the implementation of a KMS can be defined as an organizational effort directed toward diffusing knowledge within itself (Cooper & Zmud, 1990). To achieve this objective, a KMS needs to utilize the telecommunication infrastructure, computer supported cooperative work system, e-mail, document management tools, data warehousing, workflow management applications, and other related systems. Expert systems or decision support systems can be used to generate even more useful knowledge.

According to Lewin's (1952) Change Model, there are six general stages when implementing a Change: (1) initiation, (2) adoption, (3) adaptation, (4) acceptance, (5) routinization, and (6) infusion. We believe that these stages are quite relevant when implementing a KMS. In addition to the above discussions, it is important to assess the organizational culture and users when implementing a knowledge management system. Organizational culture has been characterized as the "glue that holds organizations together" and "isn't just one aspect of the game, but it is the game itself." Certainly, culture can support linkages between technology adoption and organizational growth (Balthazard & Cooke, 2004). Therefore, organizational culture affects an employee's perceived value about the importance and necessity of having an effective KM system.

Culture and Knowledge Management

The Knowledge Management process is highly dependent on the member's willingness to use the system, and to participate in the KM practices, which represents their organizational culture. Many studies on the implementation of a KMS emphasized the importance of organizational culture and people. Culture aspects in the KM process define the value of knowledge and how the internal organization perceived the knowledge to maintain constant competitive advantage (van Zolingen, Streumer & Stooker, 2001). "Few empirical studies address the influence of culture on the approach taken to knowledge management." The culture in an organization indeed affects knowledge management initiatives and evolution. Depending on the support given to KM, it may become a valuable rich information repository (Leidner et.al, 2010).

Therefore, an organization needs to establish a cultural environment that supports and encourages creating, using, and sharing knowledge. This type of culture is difficult to improve and sustain. Nonetheless, it demands support from all parts of the organization (Lee & Choi, 2003). Davenport and Prusak (1999) claim that employees need to share part of the responsibility to have a successful KMS implementation. Building an infrastructure of trust to share knowledge is one of the key drivers of KMS projects (Ruppel & Harrington, 2001). Different approaches to knowledge ownership, maintenance, sharing, and reuse seem to be influenced largely by the individualistic or cooperative nature of the culture. Thus, Management should emphasize the cooperative culture to enable knowledge sharing because Individualistic cultures work as a blocking factor for such activity. As cultural beliefs and values influence norms and practices related to KM, which consequently define the behaviors, related to KM (Leidner et.al, 2010).

The cultural factors that were identified in the literature are collaboration, mutual trust, learning, leadership, and incentives/rewards (Gan et.al, 2006). First, Collaboration represents a significant part of the knowledge management implementation. Lee & Choi (2003) defined Collaboration as the degree to which people in a

group actively assist one another in their task. On the other hand, organizational behavior literature emphasizes the mutual trust role in increasing knowledge exchange activities (Gan et.al, 2006).

In fact, high levels of trust can reduce the anxiety of risk in knowledge management activities (Lee & Choi, 2003). Another factor that increases knowledge management adoption is learning, which offers a path for the organization to be suffused with new knowledge. According to Yu, Kim & Kim (2004), sufficient leadership has enormous influence on the organizational Individual who participates in knowledge management activities. The leadership presence sets the overall direction for the knowledge management process and assumes accountability for them.

Lastly, incentives and rewards that motivate knowledge management activities amongst employees are considered an essential part in supporting KM use. The literate found that both intrinsic and extrinsic rewards have a positive influence on knowledge management performance in organizations (Yu, Kim & Kim, 2004). All of previous discussion shows how culture is embedded in the success of KM process in any organization in general and in the organization in which the culture plays a major part in their business practice. The literature argued that the practices in the organizations with a high resistance culture to change need an entirely different model for knowledge management success, which is the concern of this research.

Current knowledge management models
In the following discussion, some famous models that measure the benefits of the knowledge management system in the organizations are discussed. Bots and de Bruijn (2002) assessed KM and determined that the best way to judge the goodness of KMS was through a knowledge value chain. That is, assessing the effectiveness of each step of the knowledge process. The model describes the knowledge management process starting from setting the strategy and policy, which is derived from organization's vision. According to this model, the process terminates by applying the knowledge and hence, achieving returns to the organization. It also suggests a continuous evaluation of the KM and processes. This model assumes that KM is good if it is properly structured in accordance with the model, and therefore each of the identified activities or processes achieves its

goal. It is generally expected that both structure and process performance can be facilitated by means of the usage of information technology and the adequate attention to the human resource aspects.

However, Jennex & Olfman (2004) stated that such a model does not take into account other critical dimensions such as: KM culture, protection of the knowledge etc. this would limit its usefulness in assessing the knowledge management capability and its goodness. Massey, et al. (2002) presented another knowledge management model that reflects the understanding of the organization, its knowledge users, and how they actually use knowledge. It considers knowledge management as an organizational change process and hence knowledge management success cannot be separated from organizational change success. In their perspective, improving organizational or process performance essentially determines knowledge management success. The key components of the model are: Knowledge Management Strategy, Key Managerial Influences, Key Resources Influences, and Key Environmental Influences. Yet, this model does not take into account other important issues like culture, documentations, and learning processes. Lindsey (2002) proposed a knowledge management effectiveness Model that defines knowledge management effectiveness in terms of two main constructs: Knowledge Infrastructure Capability and Knowledge Process Capability. This model also lacks an important factor, inherent evaluation of the KMS, in order to continually determine the weakness in the system.

The model by Jennex & Olfman (2004) shows a different knowledge management model. This model considers a success achievement as an improvement in the organizational effectiveness based on the use of, and the impacts from the knowledge management. The model consists of two main pillars as follows: System Quality, which defines how well the processes of the KMS perform. This includes the functions of knowledge creation, storage/retrieval, transfer, and application. Moreover, it includes how the staff of the information system supports the knowledge management processes and its infrastructure (hardware and software). The other part of the model is the Knowledge/Information Quality, which ensures that the right knowledge with sufficient context is captured and available for the right users at the right time. User Satisfaction indicates the

actual levels of KM used as well as the satisfaction of the users of KMS. According to this model, the actual usage is most indicative as a success measure. The model emphasizes the perceived benefits, which are derived from the perceptions of the benefits and impacts of the KM on the net benefit, and the estimate of whether an individual's usage of knowledge management will produce an impact on the performance of that person in the workplace. Consequently, this will improve the performance of the whole organization. However, the model does not cover the organization learning process, culture and knowledge protection, and privacy issues. It also does not have any indication of the documentation practice within the organization. Lastly, A framework represented by Raj integrates the framework of organizational knowledge creation and conversion, competing value culture, which is analysis of organizational culture, and adds a dimension of ethical and trusting culture. Although this framework presented by Raj integrates ethical and trusting culture, it doesn't address the problem of resisting culture in KM (Raj, 2011).

3. THE METHODOLOGY

The study has two phases: 1. The Build phase, which includes identifying the problem at hand and the desired outcomes, reviewing extant theories, knowledge and data, and proposing/refining the artifact. 2. The Evaluation phase will test and validate the proposed artifact. The build phase was based on descriptive research methodology, which is grounded in previous research and knowledge. Extant theories, knowledge, and data about KM and its relationship to organizational culture were the base that guided the model design. After designing the model, we conducted an expert's survey. The primary constituent community for the output of KM model design is the professionals and managers responsible for KM support and enabling processes and activities. An open-ended questionnaire was designed to evaluate the model that evolved from the intensive literature review. Experts and employees in some organizations in Saudi Arabia, Bahrain, and UAE filled out the questionnaire. The results of the survey are analyzed and the model was modified based on this results. Appendix A includes a copy from the survey tool. The evaluation phase will be conducted through action research strategy, which will be discussed in Section 5.

4. THE RESEARCH MODEL

The Knowledge Management process is highly dependent on the member's willingness to use the system, and to participate in the KM practices. Knowledge sharing usually entails a change in the way the business of an organization is conducted. It is important that the relevant behaviors are reflected in whatever incentive systems are in place in the organization. Therefore, managers and staff should see that knowledge sharing is one of the foremost behaviors that the organization should encourage and reward (Hering & Phillips, 2005). From there the model divides the knowledge management practice into two aspects: culture, which the study focuses on, and the process aspect. (See Appendix)

Persuasive Strategies
Management needs to encourage the organization's employees to share knowledge, reassuring the benefits of this practice. Persuasive Strategies can be employed with incentives and reward systems that influence knowledge management activities amongst employees. The absence of formal incentives in the early days of knowledge sharing process can become an excuse for not implementing the system. Establishment of rewards for individual knowledge sharing activities can signal the importance of knowledge distribution, but also may run the risk of creating expectations of rewards for a behavior that should be part of the typical way of conducting the business of the organization. However, Kolodziej-Smith, et al., (2013) argue, "Culture affects the degree to which people receive and resist persuasive attempts.(p. 2)" This emphasizes that the persuasion strategies should be configured to the culture where they are implemented.

In the information and knowledge age, still, establishment of formal incentives can easily lead to over-estimating the value of incentives, although it is important for the long-run sustainability of a knowledge management program (Denning, 2000). The employment of persuasive technology is another way to encourage the use of KM. That motivation can be achieved through activities such as: providing feedback, reminders, suggestions, and activity monitoring. Based on Saidin (2012) there are three influence processes that the persuasive strategies target. The first process is thinking, which focuses on changing people's awareness and curiosity. The second process is learning to provide a user with a significant experience to

ensure that the changes made will be long lasting and with confidence. The last one is action, which is a process that influences users to take a measureable action.

Collaboration and leadership

In practice, informal encouragements, in the form of recognition by management, and visibility within the organization can often be more powerful supports than the formal incentive system. (Denning, 2000). Furthermore, middle management can establish incentives and reward systems that formally encourage participation by workers to collaborate with each other and stimulate their contributions to the KMS, and the reuse of knowledge existing in the organization's knowledge repositories (MacCormack et al., 2002) Collaborative cultures facilitate the increase of knowledge exchange levels, which is the first step for knowledge creation.

Undoubtedly, knowledge exchange and knowledge creation are only enabled in a collaborative culture. "Collaboration between team members also tightens individual differences which can help shape a shared understanding about the organization's environments through supportive and reflective communication. Without shared understanding

Among team members, very few knowledge creation activities are conducted (Gan, et al., 2006, p. 105)." A case study conducted to explore how the collaboration, leadership, and other cultural factors have impact on the KM process found that they play a significant role in facilitating knowledge distribution. "Although the knowledge management champions in all these cases are transactional leaders, they are performing a good job as their knowledge management initiatives in their respective organizations are functioning well and these organizations are leaders in their respective industries"(Gan, et al., 2006, p. 115).

Decreasing fear and increasing openness in teams will be possible because of collaborative culture (Lee and Choi, 2003) When knowledge workers recognize that sharing knowledge improves their own tasks and those of their team, they develop a positive attitude to knowledge sharing, which would lead to the motivation of the knowledge management activities. Managers and supervisors can accomplish this by setting up appropriate working conditions for sharing. For example, arranging informal settings for socialization to encourage the sharing and transfer of

knowledge, as well as arranging formal meetings with their staff and workers. (Robles-Flores & Kulkarni, 2005).

The organization management should be in direct contact with their employees to urge them to document the organization's knowledge, their experiences, lessons learned from projects, and the best practices in the organization in a database.

Training

Organizations should develop a deeply embedded learning culture and have activities like education, training, and mentoring programs available to sustain KM use and the learning process. One of the essential aspects of enhancing the knowledge sharing in organizations is raising the knowledge management awareness, and knowledge sharing spirit throughout the organization. Lee and Choi (2003) suggested that for effective knowledge creation, organizations should develop a deeply embedded learning culture and have activities like education, training, and mentoring programs available to support learning.

Effective learning is critical factor in the successful implementation of knowledge management (Peyman, et al., 2005). In a study to identify best practices for overcoming change resistance by nursing home administrators, education, training, and communication were shown to be effective ways to change a culture (Tyler, et al., 2014). In fact, tailoring the intervention to best fit the needs of each group that will be affected by the KM implementation is a factor in a successful implementation of change. For example, if a group resists the change because they do not know how the change will improve knowledge sharing, then management may use informative workshops to educate recipients about the organization's move.

KM infrastructure

KM infrastructure consists of the infrastructure, networking, core hardware; support equipment, software, intelligent and logical systems, and databases that must be aligned with the KM process and goal (Lindsey, 2002). To achieve this objective, a KMS needs to utilize the telecommunication infrastructure, computer supported cooperative work system, e-mail, document management tools, data warehousing, workflow management applications, and other related systems. Expert systems or decision support systems can be used to generate even

more useful knowledge. The KM infrastructure must be reassessed after every evaluation process.

Process quality

Process quality is concerned with how well the processes of the KMS perform. This includes the functions of: knowledge creation, storage/retrieval, transfer, and application. The aim of assessing the quality of a process is to ensure that the right knowledge with sufficient context is captured and available for the right users at the right time at the right form (Jennex & Olfman, 2004).

Learning and innovation

This part is concerned with how the employees are willing to share their knowledge and to use others' knowledge to improve their performance and innovate. It identifies the process of using the organization's knowledge database to increase the capabilities for innovations and learning. Learning and innovation is a depiction of the net benefit from using KMS. It is an estimate of whether an individual's usage of knowledge management will produce an impact on the performance of that person in the workplace, hence improving the performance of the whole organization (Jennex & Olfman, 2004). It is an important factor to measure the effectiveness of KM system.

The Knowledge Management Valuation

This factor identifies the current status of the knowledge management process in the organization. In this respect, organizations need to continuously evaluate their knowledge management system and develop ways to link the KM components to their performance. Many companies are adopting new initiatives focusing on managing knowledge. As a consequence of introducing these knowledge management initiatives, which is a complex process in itself, the need for measuring their effectiveness arises. Unless evaluation is carried out, there is no way to gauge the direction in which the knowledge management initiative is heading or detect when the knowledge management initiative deviates in the wrong direction (Iftikhar2003).

 Knowledge Management valuation will help in determining the gap between the current knowledge management process and the targeted practice. Thus, enabling management to take actions to fill this gap and improving the performance of the organization. By developing or adapting a measurement tool for KM, an organization can create the KM activities that meet its business goals. Based on their evaluations, organizations can detect any problem areas, or gaps in capabilities, and conduct further investigation to find a more suitable approach (Joslin, 2005). Another advantage of the evaluation of knowledge management capabilities is knowledge reconstruction and the capacity for the organization to enhance the effectiveness of its KMS (Segone1998). Therefore, evaluation can be used in a knowledge management as an indication of the effectiveness of KMS components such as: gathering information, systematizing the lessons learned, the dissemination of the knowledge, etc., in order to facilitate similar projects, processes, or change initiatives in the future (Vakola, 2000). The organization has to develop a specific set of indicators to judge the effectiveness of knowledge management and to allocate resources toward changing the proposed factors that measurably increase its knowledge base.

5. EVALUATION Of THE MODEL

Since the research artifact is a new model, it needs to be evaluated in a real-world setting. An action research model is the most appropriate evaluation strategy. In this research situation, the ideal organization would be one where the culture was a critical factor in their KM failure and one that is engaged in developing a new knowledge management system. The researcher will contact 40 companies in Saudi Arabia, which were part of the previous knowledge management study. These companies are interested in knowledge management development. Through implementing an action research plan we will be able to study complex KM processes by introducing changes (proposed by the model) into these processes and observing the effects of these changes. The action research will involve a team that includes researchers and the selected organizations as co-participants in the enquiry and change experiences. The diagnostic stage will require that before choosing any company we will evaluate the knowledge management capability. This involves a collaborative analysis of the situation by the researcher and the subjects of the research. The therapeutic stage involves collaborative change experiments. In this stage, changes are introduced and the effects are studied. We will be measuring the amount and/or effectiveness of KM usage after introducing changes. The targeted number of companies is between 2-3 companies.

6. CONCLUSIONS

In dealing with KM, any organization must set a vision and strategy of KMS and have extensive understanding of the potential revenue generation from its knowledge assets. The recognition of the links between KM and performance by teams' leaders are the first step towards the enhancement of their KMS. In many communities and organizations in which the culture controls a major part of their business practice, there is a need for a completely different considerations of knowledge management practices.

In this paper, the researchers designed a model to measure the KM of organizations. This was a result of an in depth comprehensive literature survey and questionnaires with experts and managers in the KM field in Saudi Arabia, Bahrain, and UAE. A model, which adds a separate culture aspect to the current KM, has been identified.   The designed artifact is predicted to help organizations with change-resistant cultures to identify the ideal KM practices and improvements.
One of the most important issues in applying a KM system is assessing an organization's future knowledge requirements and activities as well as executing plans to meet them in a systematic way, which is what this research aims to achieve.

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Appendix

Culture

Persuasion Strategies

Collaboration and leadership

Training

Process

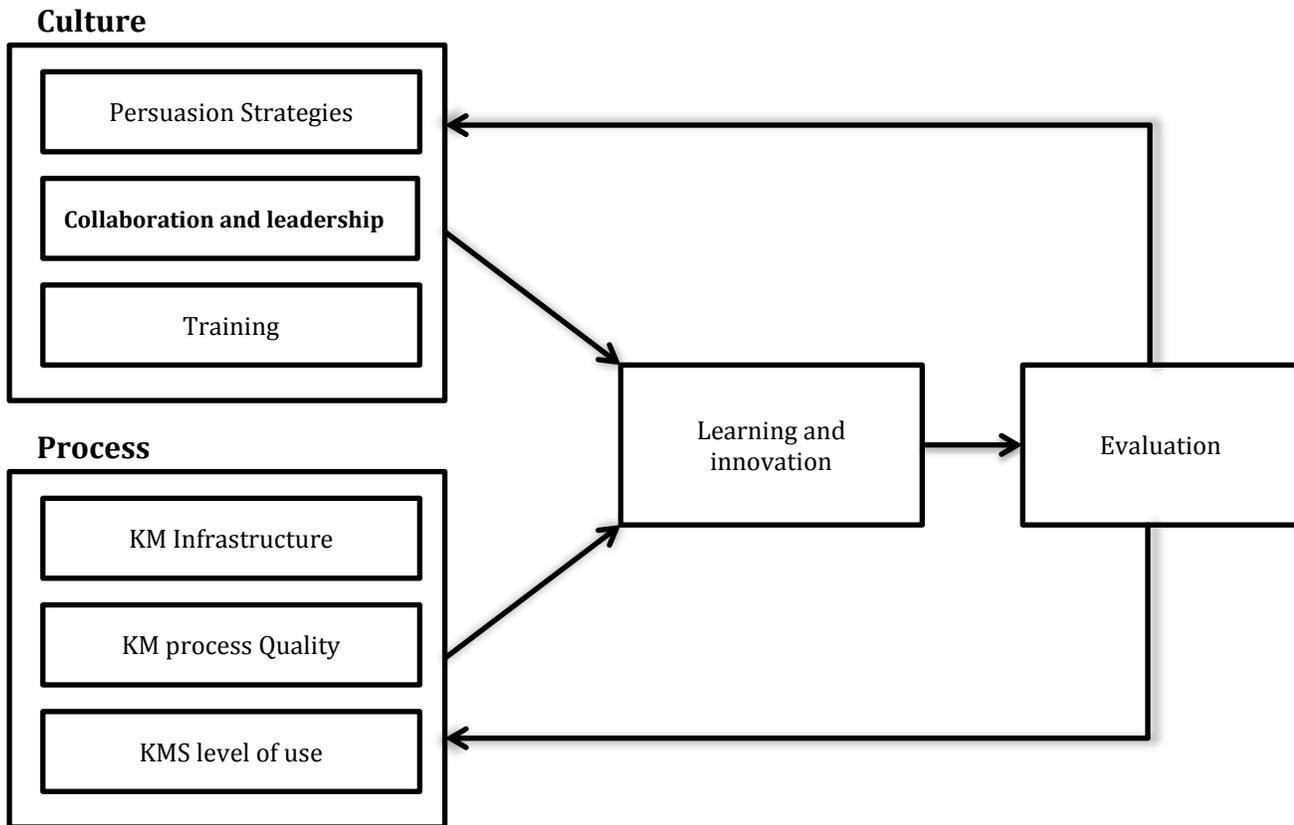KM Infrastructure

KM process Quality

KMS level of use

Learning and innovation

Evaluation

Figure (1) : The research KM Model