Implementing Knowledge Management Knowledge Mapping, Matrix And Supports

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ABSTRACT:

The "people" dimension has frequently been raised in regard to knowledge management (KM) and often in the context of the human or technology interface and in the capturing and sharing of information (Brelade and Harman, 2000). The successful knowledge management implementation needs specific attention and developed strategies. The organisation is affected by various factors of knowledge transfer which create obstacles for the implementation of KM. The KM process is also an alternative for orientating the teams for particular process change and also acts as a benchmark for assessing the adoption. This paper will highlight the steps for KM Mapping which lead the organization to effective implementation of the KM process. The KM Matrix acts as an "indicator" that analyzes the achievement of KM strategies. The KM Matrix studies various KM phases and indicates the success of each phase leading to overall assessment of activities.

Kewords: *Knowledge management, Knowledge mapping, Knowledge matrix, Sharing, Implementation*

1. Introduction

Researchers have argued that people are important to the creation, capture, and sharing of knowledge. Egan (2003) indicates that the effective flow of knowledge is only sustainable through people. When the people dimension is raised in knowledge management, it is often in the context of the human or technological interface and in the capturing and sharing of information (Brelade and Harman, 2000). Nonaka and Takeuchi (1995) suggest that knowledge, unlike information, is about beliefs and commitment. However, Ashton (1998) and Earl (2001) argue that knowledge needs to be captured and codified as much as possible in order to exploit and leverage it for the organization's benefit. Polanyi (1966) proposes grouping knowledge into two distinct types. Tacit knowledge is personal, context-specific and therefore hard to formalize and communicate. Explicit knowledge is codified, more formal and easier to transmit

Nonaka and Takeuchi (1995) believe that unless shared knowledge (Tacit) becomes explicit it cannot be easily leveraged by an organization. It is important to note that the interaction between tacit and explicit knowledge is performed by an individual and not the organization. Bollinger and Smith (2001) explained, "Tacit knowledge is unarticulated knowledge that is in a person's head that is often difficult to describe and transfer. (pp. 9). Lang (2001) stated that, "knowledge is both produced and held collectively rather than individually in tightly knit groups or 'communities of practice'… organizational knowledge is social in character" (pp. 46). Clarke and Rollo (2001) emphasize that knowledge management is primarily about making tacit knowledge more accessible since it accounts for a majority of an organization's collective knowledge.

2. Knowledge And Knowledge Management

Knowledge can be broadly categorized on the form in which it has been captured. Explicit and Tacit are two forms of knowledge. *Explicit knowledge* are the expressed knowledge that can be captured, document, transfer, share, and communicate easily, formally articulated (Radcliffe-Martin, Coakes and Sugden 2000), reported and documented form of knowledge, represented in the form of databases and codified. *Tacit knowledge* cannot be traced in documents and publication, personalized and perspective specific knowledge, officially not available, developed from direct action and experience, difficult to articulate. The difficult tasks for intrinsic figuring out how to identify, generate, share and manage it. It is mainly traced and expressed through a process of interface, deliberate, and trial and error encountered in practice, acquired through job training, joint activities, and special group effort shared through conversation, story-telling etc

Polanyi (1966) saying that it is personal, context-specific and therefore difficult to articulate. Nonaka and Takeuchi (1995) refer to tacit knowledge as knowledge that comprises experience and work knowledge that resides only with the individual. Platts considers tacit knowledge as "knowledge-in-action" which presumes that this is knowledge that has not been articulated as opposed to explicit knowledge that is readily accessible within the organizational domain. According to Scarbrough (1999) "Tacit knowledge is not available as a text. . . .It involves intangible factors embedded in personal beliefs, experiences, and values."

Some definition given by Knowledge Management practitioner, researchers and renowned authors are as follows:

- "The capabilities by which communities within an organization capture the knowledge that is critical to them, constantly improve it, and make it available in the most effective manner to those people who need it, so that they can exploit it creatively to add value as a normal part of their work." BSI's A Guide to Good Practice in KM

- "The capability of an organization to create new knowledge, disseminate it throughout the organization and embody it in products, services and systems." Nonaka & Takeuchi, 1995

- Stankosky (2001) defines Knowledge Management as: the systematic leverage of intellectual capital to improve Organizational performance.

- Knowledge Management (KM) has been defined as "the process by which an organization creates, captures, acquires, and uses knowledge to support and improve the performance of the organization (Kinney, 1998).

Knowledge itself cannot be managed, but the environment, in which, it is created and shared can be managed. In this respect, knowledge management can be defined as the creation and the effective organization and use of knowledge for development results.

2.1. Concept Of Tacit Knowledge

Tacit knowledge has been defined as one's individual, internal and core knowledge that has been recorded as an artifact. Stephen Gourlay defines tacit knowledge as "a form of knowledge that is highly personal and context specific and deeply rooted in individual experiences, ideas, values and emotions" (Gourlay, 2002). Polanyi [Polanyi et al., (1958), Polanyi and Michael (1966)] explicit knowledge is knowledge that can be explained, whereas tacit knowledge cannot be explained. Polanyi (Polanyi et al., 1966) and Nonaka et al (1995) described all knowledge as inherently personal.

3. Factors Affecting Knowledge Transfer

The factors that affect the knowledge transfer are:

- Relational channel (Rulke, Diane, Srilata Zaheer, and Marc Anderson, 2000)

- Partner similarity (Almeida et al.,1999; Darr, Eric and Terri Kurtzberg 2000)

- Organizational self-knowledge (Rulke et al., 2000)

- Divergence of interest (Alchian et al., 1972; Jensen, Michael and William Meckling, 1976)

- Quality of knowledge to be transferred (Nonaka et al., 1995)

Relational channels offer collaboration between the components especially between the people which is essential to support the knowledge transfer. The organizations that promote relational channels creating the path to transferring knowledge might be capable to transfer and successful implementation. Similarity of individuals attempting the transfer will influence the transfer (Almeida et al., 1999). It has been analysed and believed that more near and similar the partners, better the transfer of knowledge. Similar partners transfer much than other. More the similar partner higher the amount of knowledge than one reducing the complexity. Strategic similarity among all key components, levels, functional units and group of an organization improve knowledge sharing and therefore increase knowledge transfer. Organizational self-knowledge refers to the extent of knowledge they have, and likewise for those which are likely to be joined. Self-knowledge is essential due to the fact that without this, the knowledge sender and receiver will most likely never meet to make a transfer (Rulke et al., 2000). Collapse of knowledge transfer between the sender and receiver of the knowledge will restrict the transfer of knowledge. It has been established that individual interests and organizational interests tend to diverge [Alchian and Demsetz, (1972), Donaldson and Lex (1990), Jensen et al., (1976)]. Divergence of interest will tend to inhibit knowledge transfer. Transfer of knowledge is directly related to the performance of an organization. If the quality of the knowledge being transferred is defected or low in quality it will directly affect the performance of the organization. The cost and time invested for the transfer will be waste which is large in amount creating disadvantage.

4. Implementation Obstacles

Various factors like change in the organisational environment create obstacles preventing the successful implementation of knowledge management. Knowledge Management procedures becomes inactive, as people

believe that current practices are the best (LaMonica, 2001). Corporate culture that encourages knowledge hoarding rather than sharing, and ambiguous reward systems for knowledge sharing, contributes to such a political system (LaMonica, 2001). Insufficient communication, lack of time for employee learning and interaction, lack of training, complex technological systems (Davenport and Prusak, 1998; Ming Yu, 2002) are also the barriers for the effective knowledge management implementation. .

According to Davenport and Prusak (2000), Collison and Parcell (2002) and David Skyrme Associates (2003), the following points should be carefully considered in order to avoid potential pitfalls of a knowledge management initiative.

- Collaboration among various components of the organization.
- Specified set of roles and skills to do the knowledge work of capturing, distributing and using knowledge
- Improper resourced of time and Money: The people, process and technology are short of time and money resources.
- Lack of knowledge management strategies, embedded knowledge goals, planning and other managerial aspects like time and space
- Lack of trust, interaction among the employees, openness, communication in the organization.

5. Mapping KM Implementation

This paper will highlight the road map for implementation of KM in an organization. The effective implementation of KM process has systematic phases and steps to initiative the application. The KM process contains five phases:

- KM system formulation
- KM system design and development
- KM system implementation
- KM system change and development
- KM system evaluation and control

The five phases represents the implementation of the KM process in nutshell these phases are further divided into various sub-process acting as a map for implementing KM process. The result of implement KM process can also be evaluated and control in the consequential manner. KM process is also an alternative for orientating the teams for particular process change also it will act as a benchmark for assessing the adoption with the environmental factor.

The KM process mapping include following steps: Phases and Steps

1. *KM system formulation*
    a. Analyzing existing infrastructure
    b. Knowledge strategy development
        i. Objective, sequence

2. *KM system design and development*
    a. Infrastructure design
        i. Technological design
        ii. System design
    b. Knowledge system alternative
    c. Knowledge group formulation
        i. KM worker group
    d. Knowledge system integration

i. KM system + technology process

3. *KM system implementation*
   a. Knowledge system implementation
      i. Communication and implementing
   b. Knowledge system resources
      i. KM system allocation and development

4. *KM system change and development*
   a. Knowledge change
      i. Culture
      ii. Process
      iii. Reward
      iv. Structure
      v. Learning
      vi. Steps
      vii. Know - how
      viii. Know – what
      ix. Know – where
      x. Communication
      xi. Transfer

   b. Knowledge change Development

5. *KM system evaluation and control*
   a. Knowledge system control
   b. Knowledge system evaluation
      i. System Measurement
         1. Returns
         2. Development
         3. Adoption
   c. Knowledge system deviation
      i. Finding deviation
   d. Feedback

6. Discussion

6.1. KM System Formulation And Evaluation

The first phases comprises of analyzing the internal capability and strength of the organization to implement the KM initiatives. The KM process initiative should match with the organization objective, strategies and resources of the organization. The organization has to formulate sufficient KM infrastructure like technology, workers and overall organizational culture. Specifically, the organization has to adopt KM strategy to develop and implement sequential KM process. The strategy and the infrastructure act as a platform where the KM process initiative will be build and leverage the benefits by support to identify the desired result and performance.

With the use of technology and strategic framework the critical gap in the organization for KM initiative KM process. The KM strategy at the initial phases includes the vision and force which is strong enough to generate momentum to adopt KM process. The balance alignment between the infrastructure and strategy will help the organization to implement and initiate KM process.

6.2. KM System Design And Development

This phase of KM process mapping include five steps which are considered as the backbone of the KM process mapping and implementation. KM system design and architecture of the structure for knowledge sharing, capturing and dissemination among various components and levels in an organization. Technology and system infrastructure design will support the flow of knowledge in faster and accurate way.

Meanwhile the system alternative is means of collaboration on which the organization adopt, transfer and share knowledge. Knowledge which is in the organizational documents (explicit) and in virtual form (tacit) has to be stored, captured and disseminated. The KM initiative and implementation has to be administered by the KM workgroup which plays a vital role in shaping the design and architecture of KM mapping. KM group and formation will act for the integration KM resources, technology and system for optimizing KM process. This integration of various components will analyze the future fantasies of KM process. The system development analyzes scalability and the affect of KM process and develops the alternative.

6.3. KM System Implementation

Implementing the pilot process under development the KM process will be enhanced and applied at higher intensity. Communication and knowledge transfer plays a critical role in KM mapping. System integration has to lead effectively and successfully for creating advantage. The phase includes KM resources development implementing the desired filtration of knowledge and separating duplication. Resources integration and development help the organization to change the system.

6.4. KM System Change

The KM system implementation gives indication for the change process. Various hindrances which are created in the initial phases will change during the implementation and mapping. Organizational culture, process, reward system, belief, behavior of employees, structure, learning process, know-how, leadership, know-where, know-what, communication channel, collaboration, and so on. These changes and development will govern the system process for long run.

6.5. KM System Evaluation And Control

The KM process implementation and mapping are controlled by the KM group which looks and integrate the process. The performance are evaluated with the system measurement based on various scales like Net present value (NPV), Return on investment (ROI), cost benefits ratio etc which give the deviation between the expected and the actual outcomes. This deviation will lead again to the assessment of KM process as feedback and necessary change can be done. The main purpose of evaluation is to refine the KM system process for effective management.

During the phase, various measurements for controlling KM activities are developed for continuous mapping. This phase also provide and analyze the adoption of KM strategies in the future finding deviation from the actual course. KM system phase analyze and suggest various process change leading to redesigning the process.

7. KM Matrix

KM matrix will be a pathway which defines the KM objectives and analyses its success at various stages and pushes the radical change for the process. It acts as an “indicator” analyzing the achievement of KM strategies. KM matrix studies various KM phases and indicates the success of each phase leading to overall assessment of activities. The use of KM matrix will be vital for organization to assess the impact of KM process.

7.1. Advantages of KM Matrix:

Assessment –“indicator”: the matrix will study and clearly assess and indicates the achievement the KM process. It will act as the “Result finder” and develop and initiate change in KM process. It allows assessment outcomes of each activities and result for implementing KM process.

Matrix act as Line of Control: Being an indication applicable at each activity level clearly defines objective allowing appropriate design change and implementation. It indicates measure and control proving the activity benefits. Provide various quantitative measurements indicating deliverance, change, resolving issues before going wrong.

Tracking the process: Matrix provides direction for the KM activities. It also continuously highlights the activity deviation from the path. Meanwhile, it spread and analyzes each phase giving insight and understanding of the application. It can be utilized for change in KM process for resolving the implementation problems.

KM Implementation process and initiatives are presented in the following tabula:

KM Process	KM Initiatives
• Technology • Tools • Techniques • Phase • Knowledge creation • Knowledge capture • Knowledge sharing • Knowledge transfer / dissemination	• Internal - Production - Marketing - Finance - IT - Organizational culture - Motivation - Morale - Belief - Learning - Behavior • External - Technology - Suppliers - Competitor - Legal/political - Social/cultural - Others

KM implementation matrix measures the success of KM system opted by the organization from the initial stages. It often relates with measurement based on the focus on each projects. It is categorized into two major areas:

1. KM process
2. KM Initiative

KM Process: KM process implementation in an organization will be assessed at all levels at its various technological levels, implementing KM tools and techniques and phases the KM process have been used for knowledge creation, capture, sharing and dissemination. Various forms of knowledge like tacit, explicit as well as implicit knowledge can be used for competitive advantage. It will also act as assets for the use in the future process of the organization.

*KM Initia**tive***: the major initiative for implementing KM at various organizational levels are:

- ♦ Internal
- ♦ External

Organization affected by both internal and external factor can be managed by the effective and efficient use of KM. Internal factor like production, marketing, finance, IT, organizational cultural aspects like motivation, beliefs etc. can be effectively used for active knowledge transfer and usage. The internal system can be developed into strength for the organization.

External factor with the use of KM can be turned into opportunity. Various factors like competitors, technological change, socio cultural issues,, legal- political issues and other can be developed to create advantage.

8. Conclusion

Communities within an organization capture, store and reuse the knowledge that is critical to them, continuously improving it, and make it available in the most effective manner to those people who need it. This process of doing knowledge activity in a systematic manner will affect the organization to create learning environment. The organization looks for the knowledge management to be implemented effectively creating advantage. The organization faces many obstacles to be removed for the improvement of its performance. KM mapping and Matrix will support the organization in developing effective KM implementation.

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