International Conference on Inter Disciplinary Research in Engineering and Technology [ICIDRET]

ISBN	978-81-929742-5-5
Website	www.icidret.in
Received	14 - February - 2015
Article ID	ICIDRET013

Vol	I
eMail	icidret@asdf.res.in
Accepted	25 - March - 2015
eAID	ICIDRET.2015.013

A Study About "Knowledge Management"

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Abstract- *Knowledge management is not one single discipline. Rather, it an integration of numerous endeavours and fields of study. This paper provides a framework for characterizing the various tools (methods, practices and technologies) available to knowledge management practitioners. It provides a high-level overview of a number of key terms and concepts, describes the framework, provides examples of how to use it, and explores a variety of potential application areas. The most effective knowledge management systems are able to access information from multiple documents and databases, capture it in a centralized knowledgebase, and continually improve it for on-going use by individuals seeking answers. Typically, these individuals comprise the support agents in customer support environments, as well as the customers, employees, partners, and/or vendors they serve. This paper draws on our decade of implementing knowledge management systems for support organizations large and small to discuss the six best practices to success.*

Key words: Knowledge management, phenomena, endeavours.

I INTRODUCTION

Over the past several years, a number of authors have proposed a variety of approaches for classifying the tools (methods, practices and technologies) that typically comprise knowledge management systems. This is not the first attempt to develop a framework for organizing and understanding knowledge management tools.1 and, given the emerging practices and changing understanding of knowledge management; it will not be the last. As with any discipline that lacks a recognized unifying paradigm, various views will emerge, each based on what can be readily observed or what can be applied from practices associated with other disciplines. Likewise, as individuals encounter particular phenomena, they tend to describe and interpret them in different ways (Kuhn, 1996).

The most effective knowledge management systems are able to access information from multiple documents and databases, capture it in a centralized knowledgebase, and continually improve it for on-going use by individuals seeking answers. Typically, these individuals comprise the support agents in customer support environments, as well as the customers, employees, partners, and/or vendors they serve. As such, support centres are the perfect microcosm for successful knowledge management initiatives. Not only are they the most rigorous question-answer environment in the company, but they also record problem-resolution times, which helps measure the effectiveness of knowledge management technologies. Beyond this, support centres face increasing pressure to offset costs with self-service options that can deliver complete, accurate answers via the web. In the past, however, knowledge management systems have failed as often as they have succeeded. This paper draws on our decade of implementing knowledge management systems for support organizations large and small to discuss the six best practices to success.

Objective of study:

1. To understand about the knowledge model.
2. To know about Knowledge Life Cycle.

What is Knowledge Management?

Knowledge management has enjoyed increasing popularity in recent years, but as a term it often means different things to different people. For the sake of discussion, we will draw from Thomas Davenport, the prolific author of several works on the subject including, Information Ecology: Mastering the Information and Knowledge Environment and Working Knowledge: How

Cite this article as: J Chitra. "A Study About "Knowledge Management"." *International Conference on Inter Disciplinary Research in Engineering and Technology* (2015): 84-88. Print.

Organizations Manage What They Know. Generally speaking, Davenport defines knowledge as what happens at the moment in time when information becomes valuable to the individual seeking it. In call centres, help desks, and other support environments, that individual is either the support agent seeking information to help a customer, or a customer (product user, employee, partner, or vendor) seeking answers in a web-based self-help environment. In either case, effective knowledge management systems are able to access information from documents and databases across the organization, capture it in a centralized knowledgebase, and continually enhance it for on-going use by individuals seeking answers. In the past, however, knowledge management systems have failed as often as they have succeeded for several reasons:

- In addition to their regular work, knowledge workers were expected to do extra work to support the knowledge initiative and maintain knowledge management processes.
- Knowledge workers were unable to access information when they needed it, because information was dispersed throughout the organization in inaccessible silos. In cases where they could access it, poor search technology typically returned irrelevant results. Yet, the time and effort required to recreate that information was prohibitive.
- The process of improving the body of knowledge that already existed in the organization through protracted knowledge engineering or quality assurance processes severely undermined the value of knowledge initiatives.

Knowledge flows comprise the set of processes, events and activities through which data, information, knowledge and meta-knowledge are transformed from one state to another. To simplify the analysis of knowledge flows, the framework described in this paper is based primarily on the General Knowledge Model. The model organizes knowledge flows into four primary activity areas: knowledge creation, retention, transfer and utilization (Figure 1)

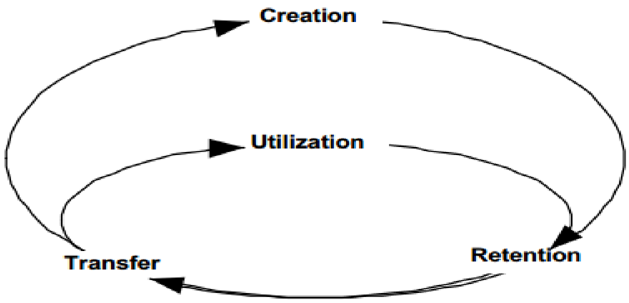

Figure 1. The General Knowledge Model

Knowledge Creation: This comprises activities associated with the entry of new knowledge into the system, and includes knowledge development, discovery and capture.
Knowledge Retention: This includes all activities that preserve knowledge and allow it to remain in the system once introduced. It also includes those activities that maintain the viability of knowledge within the system.
Knowledge Transfer: This refers to activities associated with the flow of knowledge from one party to another. This includes communication, translation, conversion, filtering and rendering.
Knowledge Utilization: This includes the activities and events connected with the application of knowledge to business processes.

The General Knowledge Model sequences the activity areas in a deterministic fashion. In reality, though, all but the most rigorously automated knowledge flows comprise complex systems that are built mostly from asynchronous processes. The model is valuable precisely because it relates the individual, highly dynamic behaviours and processes to general activity areas and, by association, to each other. Various theories of learning, problem solving and cognition may imply specific activity patterns, but they are usually not required to organize the key relationships and dependencies among the activity areas. The model allows analysts to trace individual knowledge flows by helping them to examine and understand how knowledge enables specific actions and decisions. Within each activity phase exists other, smaller knowledge flows and cycles. These layers span a wide range of macro- and micro-behaviours, ranging from broad organizational and multi-organizational processes to discrete actions and decisions, and include all the various intervening layers: activities, tasks, workflows, systems, interfaces and transformations.

Explicit Knowledge Artifacts:
These are knowledge artifacts that have been articulated in such a way that they can be directly and completely transferred from one person to another. This normally means that they have been codified so it is possible to touch, see, hear, feel and manipulate them (e.g. books, reports, data files, newsreels, audio cassettes and other physical forms).

Tacit Knowledge Artifacts:
These may be the most insidious and powerful of the three. Michael Polanyi referred to tacit knowledge as “knowing more than we can say” (Polanyi 1966). Simply stated, tacit artifacts are those that defy expression and codification.3 This is not to say that tacit knowledge artifacts are without influence. The most vivid example is the old saw about what would happen to the centipede if she

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were to stop and think about how to walk. It is important to note that, for the most part, artifacts are passive. While they can change (or, more accurately, be changed), they can't act. Has anybody ever seen a financial report make a decision or a book on aerodynamics build an airplane? Agents Knowledge artifacts do not perform actions and make decisions. Actions and decisions are undertaken by agents: people, organizations, or in some cases, technology. Agents carry out all the actions and exhibit all the behaviors within a knowledge flow.

Often, analysts attempt to apply the same behavioural models to all agents in a system. More appropriately, agents can be placed in three categories:
• Individual agents
• Automated agents
• Organizational agents.

Individual Agents:
These agents sit at the centre of almost every knowledge flow. For most analysts, the individual (human) serves as the prototypical active force for affecting change. In this paper, the term individual is used in the collective sense and is not meant to imply that every specific individual is capable of the full range of behaviours attributed to this class of agent. Individual agents are capable of working with knowledge and knowledge artifacts in all degrees of abstract articulation. They are limited, however, in their ability to deal with artifacts that are codified in ways that fall outside the range of human perception (radio waves, for example). The individual agent is the only agent capable of performing all aspects of knowledge development, retention, transfer and utilization without the need for intervention by either of the other two agents.

Automated Agents:
These agents can include any human construct that is capable of retaining, transferring or transforming knowledge artifacts. They are not exclusively computerized processes, as is often assumed in discussions of knowledge management. A conventional camera that encodes a representation of the visual world through chemical changes to the surface of a film could act as an automated agent, supporting knowledge creation and capture.

Organizational Agents:
These agents exist in situations in which knowledge retention and transfer cannot be fully attributed to individuals or specific automated agents. In these cases, the organization itself serves as an agent in the retention and dissemination of knowledge. As with tacit knowledge artifacts, current tools and concepts do not account very well for the roles of organizational agents in knowledge flows. Organizational value systems provide strong evidence for the existence of organizational agents. Much has been written about the ability of organizations and communities to establish value systems that outlive the involvement of specific individuals and the power that these value systems have to influence the behaviour of individuals and groups (Krogh and Roos, 1995; Kuhn, 1996). The principles and practices that make up these value systems are almost never codified.

How can support centres succeed with knowledge management initiatives?
In nearly a decade of implementing knowledge management systems for support organizations of all sizes, we have found six keys — or best practices — to success:

- Knowledge access, capture, use, and improvement are a natural part of the support centre's work processes.
- Existing information throughout the company — even from isolated silos — is available to the people seeking it.
- Executives actively support the knowledge initiative and commit the necessary resources to ensure long-term success.
- Management recognizes that knowledge-based support may entail a shift in cultural values and facilitate the transition.
- The knowledge initiative rewards knowledge workers for their participation.
- The knowledge management system includes analytical tools to report results and document areas that need improvement.

The Knowledge Life Cycle, the Business Processing Environment, and the DEC So far, our account of DLL/problem solving as involving sequences of DECs has focused on the individual level of analysis. But DECs may also form patterns of interpersonal collaboration, cooperation, and conflict, and these patterns may also integrate into knowledge processes. When they do, we can differentiate between problem formulation, developing alternative solutions, and error elimination, on the one hand, and problem claim formulation, knowledge claim formulation, and knowledge claim evaluation in order to distinguish the individual level of knowledge processing from the interpersonal and collective levels, respectively. We also distinguish information acquisition and individual and group learning, as additional knowledge sub-processes preceding knowledge claim formulation. Information acquisition includes activities of finding and retrieving knowledge claims produced in external systems. Individual and group learning is a category identifying levels of knowledge processing nested within the knowledge production process being analysed. Individual and group learning produces knowledge from the viewpoint of nested knowledge processes, and knowledge claims from the viewpoint of knowledge claim formulation at higher levels of analysis. When we view knowledge processing at levels of analysis higher than the individual level, we identify the pattern including problem claim formulation, information acquisition, individual and group learning, knowledge claim formulation, and knowledge claim evaluation as the knowledge production process resulting in both new tested and

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surviving beliefs and knowledge claims. Once new knowledge is produced at the collective level, it must be integrated into organizational memory, key DECs and business processes. This process of knowledge integration is made up of four more sub-processes, all of which may use interpersonal, electronic, or both types of methods in execution. They are: knowledge and information broadcasting, searching/retrieving, knowledge sharing (peer-to-peer presentation of previously produced knowledge), and teaching (hierarchical presentation of previously produced knowledge). Knowledge integration is about system-level knowledge claims being communicated from one part of the Distributed Organizational Knowledge Base (DOKB), the configuration of previously produced knowledge claims, beliefs and belief predispositions in the organization (Firestone and McElroy, 2003) to another. Knowledge claims are stored in media and information systems. Beliefs and belief predispositions are stored in minds. Through the DOKB, both knowledge claims and belief phenomena are accessible in varying degrees to individual decision makers in DECs, within both the Business Processing Environment, and the knowledge and KM processing environments. That is, the DOKB is the knowledge and information foundation for all of the organization's DECs and processing environments. When knowledge claims are evaluated, results of evaluation in the form of changes in beliefs and new knowledge claims, including those we call "meta-claims" which provide the "track record" of criticism, testing, and evaluation of knowledge claims produced during knowledge claim formulation, are stored in the DOKB. Knowledge claims, as well as meta-claims, are then integrated and reintegrated into the DOKB as they are broadcasted, retrieved, shared and taught again and again. A visual of knowledge processing and its relationship to operational business processing, the Knowledge Life Cycle (McElroy, 1999, 2000, 2003, Firestone, 2000, 2003a, Firestone and McElroy, 2003, 2003a, 2003b, Cavaleri and Reed, 2000, 2001). Actually, the KLC extends from problem claim formulation to the integration of knowledge and information in the DOKB. Knowledge claim evaluation (KCE) occupies a central place in the visual and in knowledge production. It is KCE that produces surviving, falsified, and undecided knowledge claims, and also meta-claims, for storage in the DOKB. Of course, the extent to which this "track record" is stored or lost depends on the specifics of each organization. The bottom of the figure illustrates the workings of the business processing environment, including its role in using knowledge for business processes and in recognizing problems that arise through mismatches of results and expectations, which, in turn, initiate DLL/knowledge production activity.

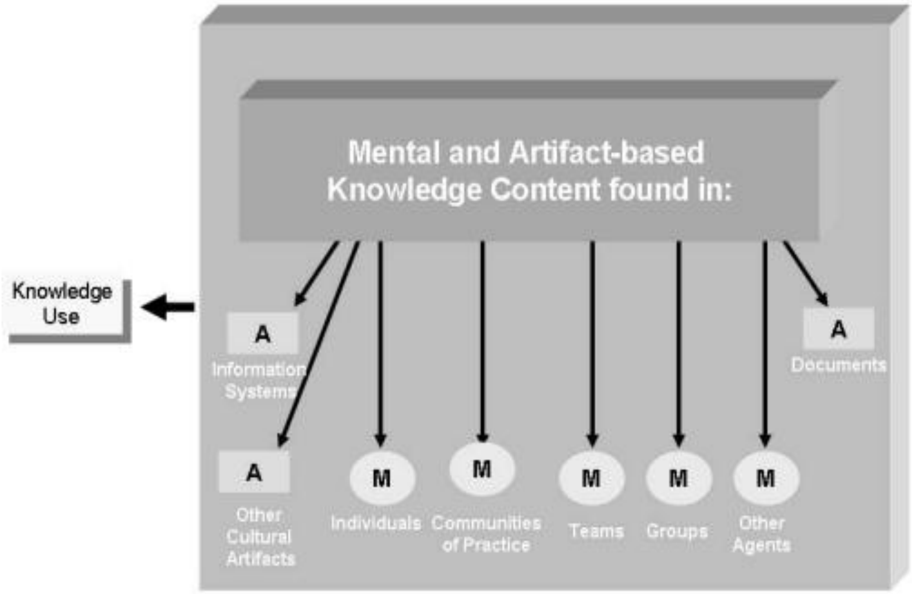

Fig 2 The Distributed Organizational Knowledge Base (DOKB)

II CONCLUSION

Selecting knowledge management technologies is often a daunting and risky task. Without an independent frame of reference, attempts to compare knowledge management technologies can be very confusing and fail to drive needed decisions. By providing a means to differentiate technologies according to their impacts on agents, artifacts and behaviours, the characterization framework described in this paper provides just the kind of neutral reference point organizations often need. The framework also adds value to supporting analytical, design, development and deployment activities by guiding the analysis of knowledge flows and construction of a usefully comprehensive picture. The framework provides a mechanism for developing a balanced, high-level view that can be used to set the stage for deeper analysis, identifying the compelling and critical issues that warrant more careful examination. Once the picture

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is complete, the framework can be used to identify the specific needs that can be met with off-the-shelf technology, localized customizations or change-management programs.

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