Understanding Knowledge Management: a literature review

Apurva Anand

Research Scholar
Mechanical Engineering Department
M.N. National Institute of Technology,
Allahabad-211004, Uttar Pradesh, India

M.D.Singh

Professor
Mechanical Engineering Department
M.N. National Institute of Technology,
Allahabad-211004, Uttar Pradesh, India

Abstract:
This paper presents review of literature on Knowledge management (KM) characterizing the various terminologies and aims to explore the world of KM in a different way, to review the current status and analyze the main contributions, agreements and disagreements among researchers and practitioners. It provides a high-level overview of a number of key terms, concepts, traditional definition and theory involved with KM, which are critically reviewed and their features are highlighted. Approaches to KM process are considered and their connections and differences are discussed. There are a number of different approaches to the KM process such as those by Dagnfous & Kah(2006), Lee et.al.(2005), Wong & Aspinwall (2004), Bukowitz & Williams (2003), Mc Elory (1999), Meyer & Zack (1996), and Wiig (1993). By comparing and doing the critical analysis of these approaches, the major stages are identified as Knowledge capture and creation, Knowledge organization and retention, Knowledge dissemination and Knowledge utilization. At the end we have summarized the benefits of KM. The main contribution of this study is the compilation of literature on KM and to understand the basic concepts and different approaches, depending on their more descriptive perspective.

Keywords: Knowledge management; KM Introductory analysis; KM basics; KM literature; KM approaches; KM process.

1. Introduction

KM is a emerging field which can contribute a lot to engineering field, yet many issues are to be resolved, and much learning yet to be discovered because still it has not taken its final shape . It had start taking shape and come into sight on the maps of seminars and conference organizers in the beginning of 1990s, but it is important to note here that debate had started much earlier (Hayek, 1945; Bell, 1978). There are many books, articles and special issues on knowledge and its management during the last few decades is a fact recognized by all. Drukes (1960) was the first to coin the term knowledge worker. Organization can learn from past experiences stored in corporate memory systems (Senge, 1990). Barton-Leonard (1995) documented the case of chappual steel as KM success story. Nonaka and Takenchi (1995) studied how knowledge is produced, used, and diffused within organizations and how such knowledge contributed to the diffusion of innovation. A number of people, perceiving the value of measuring intellectual assets, recognized the growing importance of organizational knowledge as a competitive asset (Sveiby, 1996; Nortan & Keplan, 1996; and Edvineson & Malone, 1997).

We have historically categorized the KM journey into three generations; the period 1990-1995 can be called as the first generation of KM. The initial work started with defining KM, investigating the potential benefits of KM for businesses, and designing specific KM projects (Senge, 1990; Nonaka, 1994; Quinn, 1992; andWigg, 1993). Advancement on artificial intelligence influenced research on KM, mainly in the direction of knowledge representation and storing can be seen (Mui &Carthy, 1987; Levine &Pomerol, 1989; and Ignizo, 1991). KM practical application to organizations started around 1996, which can be stated as the second generation of KM. Many organization have started implementing KM during this generation, KM research issues focous was business development (Grant,1997; Thierauf, 1999; and McAdam & Reid, 2001), organizations (Alavi & Leidner,1999; Hasan, & Gould,2003;and LanSia, & Al-Hawamdeh,2003), frameworks (Holsapple & Joshi,2002; Rubenstein-Montano, B., et.al,2001; Chua, 2003; and Maier & Remus, 2003), operations and

processes(Rajan, Lank, & Chapple,1999; Pervan, & Ellison,2003), techonigical advancement (Carneiro,2001; Nemati,et.al.,2002; Liao,2003; and Metaxiotis, & Psarras,2003).Third generation emerged around 2002 where focous sems to be on result part such as the link between knowing and action (Paraponaris,2003).All knowledge is inherently social, cultural and organizational knowledge can only be realized through change in organizational activity and practice. Table1 presents some of the important research contributions to the field of KM, which are considered today as reference points for further research.

Table 1: Important research contributions to KM

KM topics	Generation	Authors
Explicit, Tacit and Implicit knowledge	Ist Gen	Polyani (1966); Nonaka and Takeuchi (1995)
KM fundamentals	Ist Gen	Wiig (1993),Liebowitz &Beckman (1998)
KM frameworks	IInd Gen	Holsapple and Joshi (1997), Rubenstein et al.(2001)
KM projects	IInd Gen	Davenport et al. (1998)
KM and AI	IInd Gen	Fowler (2000),Liebowitz (2001)
KM and decision support	IIIrd Gen	Courtney (2001),Bolloju et al. (2002)
KM surveys	IIIrd Gen	Liao (2003), Kakabadse et al. (2003), Singh et.al.(2006) Anantatmula & and Kanungo(2006), Wong & Aspinwall (2005)
KM software tools	IIIrd Gen	Tyndale (2002),
KM in SMEs	IIIrd Gen	McAdam and Reid (2001), Wong & Aspinwall (2004),
KM in higher education	IIIrd Gen	Rowley (2000); Metaxiotis and Psarras (2003)
KM standardization	IIIrd Gen	Weber et al.(2002)

At the end there are several noteworthy forums for comments or articles, as well as publicizing events, seminars and conferences. This helps in connecting academics and professionals who show the same interests and concurs on the topic. This study takes on this challenge and tries firstly to lay down what the term KM involves and theory related to it, secondly it attempts to study KM process by underlining its connections and differences.

2. Theoretical Perspective

The theoretical perspective is concerned with defining and describing the fundamentals of KM. Because the KM discipline is so young, we believes that presenting a variety of views is better than trying to describe the subject from just one or two perspectives. This section begins with the definition of basic terms. Then the characteristics and relationships between knowledge concepts are described.

2.1. Definition of Knowledge

Definition of knowledge ranges from practical to the conceptual to the philosophical and from narrow to broad in scope. The perception of knowledge has been actively discussed since at least the time of the ancient Greeks. Socrates, in Theaetetus by Plato (369 BC), conceptualized knowledge as a true belief with an account commonly identified as the concept of justified true belief but then indicated this definition remained inadequate. Knowledge has since received many definitions. Table 2 presents definitions are relevant to the topic of KM:

Table 2: Definitions of knowledge

Serial Number	Definitions of Knowledge	Reference
1	Knowledge is a factor of production	Nonaka & Takeuchi (1995)
2	Knowledge resides in the head of the individuals . . . knowledge is that which is known.	Grant(1996)
3	Knowledge consists of truths and beliefs, perspectives and concepts, judgments and expectations, methodologies and know-how.	Wiig(1993)
4	Knowledge is information in context coupled with an understanding of how to use it	Davenport& Prusak(1998)
5	Knowledge is information combined with experience, context, interpretation, and reflection.	Davenport& Long(1998)
6	Knowledge is reasoning about information to actively guide task execution, problem-solving and decision-making in order to perform, learn and teach	Beckman(1997)
7	Knowledge is defined as understanding the effects of input variables on the output.	Bohn(1994)
8	Knowledge as new or modified insight or predictive understanding.	Kock & Queen(1998)
9	Knowledge is the whole set of insights, experiences, and procedures which are considered correct and true, and which therefore guide the thoughts, behaviors, and communication of people	Van der Spek & Spijkervet (1997)
10	Knowledge is justified personal belief that increases an individual's capacity to take effective action.	Alavi & Leidner(1999)
11	Knowledge refers to an individual's stock of information, skills, experience, beliefs and memories.	Alexander & Schallert(1991)
12	Knowledge originates in the head of an individual (the mental state of having ideas, facts, concepts, data and techniques, as recorded in an individual's memory) and builds on information that is transformed and enriched by personal experience, beliefs and values with decision and action-relevant meaning. Knowledge formed by an individual could differ from knowledge possessed by another person receiving the same information.	Bender & Fish(2000)

At this stage we will attempt to understand the word "knowledge", it seem to mean three things by the use of the word "knowledge (Nickols, 2010)." First, it refer to a state of knowing, by which we also mean to be acquainted or familiar with, to be aware of, to recognize facts, methods, principles, techniques and so on. This common usage corresponds to what is often referred to as "know about." Second, the word "knowledge" refers to "the capacity for action," an understanding or grasp of facts, methods, principles and techniques sufficient to apply them in the course of making things happen. This corresponds to "know how." Third, the term "knowledge" refers to codified, captured and accumulated facts, methods, principles, techniques and so on. When we use the term this way, we are referring to a body of knowledge that has been articulated and captured in the form of books, papers, formulas, procedure manuals, computer code and so on.

2.2. Source of Knowledge

It is important to note that knowledge can only be gained or obtained from outside sources or generated internally. Even though knowledge is available from outside or internal sources, it generally originates within individuals, teams, or organization processes. Once extracted it may be stored in a repository to be accessed and shared by other individuals or groups within an organization. Davenport and Prusak (1998) suggested five types of knowledge that correspond to the source of each:

- Acquired knowledge comes from outside the organization.
- Dedicated resources are those in which an organization sets aside some staff members or an entire department (usually research and development) to develop within the institution for a specific purpose.
- Fusion is knowledge created by bringing together people with different perspectives to work on the same project.

- Adaptation is knowledge that results from responding to new processes or technologies in the market place.
- Knowledge networking is knowledge in which people share information with one another formally or informally.

2.2.1. Knowledge Dimensions

There are many aspects around which knowledge can be described. In this paper, several characteristics of knowledge will be discussed such as storage, media, accessibility, hierarchy and difference between data, information and knowledge. In addition, some definitions of KM will be considered for taking a more in depth look.

2.2.2. Knowledge storage media

There are several storage media in which knowledge can reside. The best known can be human mind, organization, document, and computer as shown in figure1. Knowledge in the human mind is often difficult to access; organizational knowledge is often diffuse and distributed; document knowledge can range from free text to well-structured charts and tables; computer knowledge is formalized, sharable, and often well-structured and well-organized.

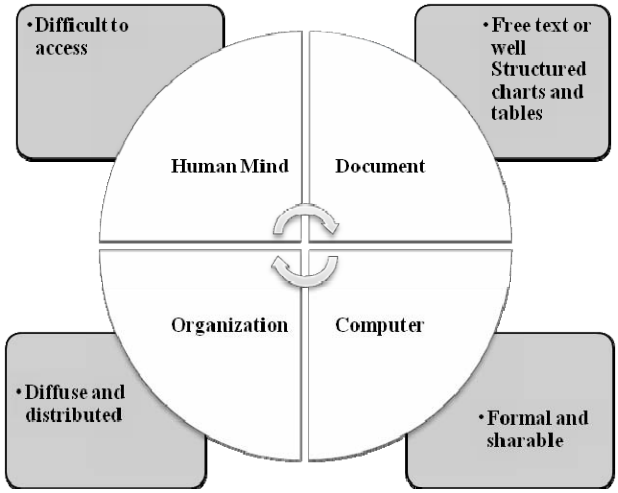

Figure1: Knowledge storage media and its features

2.3. Knowledge Accessibility

There is the dimension of knowledge accessibility. Nonaka and Takeuchi (1995) have divided accessibility into two categories: tacit and explicit. Yet, in many books it is viewed that there may be three stages of accessibility: tacit, implicit, and explicit (Liebowitz & Beckman, 1998). Accessibility can be mapped to storage media. Knowledge gains in value as it becomes more accessible and formal.

2.3.1. Tacit Knowledge

Tacit knowledge is knowledge that cannot be expressed (See Figure 2). As Michael Polanyi (1966), the chemist-turned-philosopher who coined the term put it, "We know more than we can tell." Polanyi used the example of being able to recognize a person's face but being only vaguely able to describe how that is done. This is an instance of pattern recognition. What we recognize is the whole or the gestalt and decomposing it into its constituent elements so as to be able to articulate them fails to capture its essence. Reading the reaction on a customer's face or entering text at a high rate of speed using a word processor offer other instances of situations in which we are able to perform well but unable to articulate exactly what we know or how we put it into practice. In such cases, the knowing is in the doing, a point to which we will return shortly.

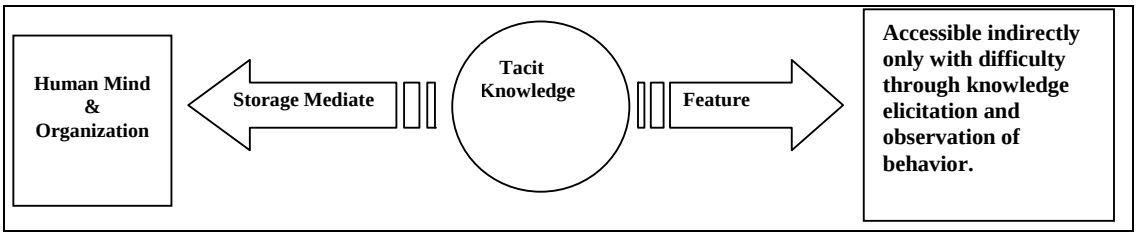

Figure2: Tacit Knowledge (storage media and its feature)

2.3.2. Implicit Knowledge

Implicit knowledge is knowledge that can be expressed (See Figure 3). Its existence is implied by or inferred from observable behavior or performance. This is the kind of knowledge that can often be teased out of a competent performer by a task analyst, knowledge engineer or other person skilled in identifying the kind of knowledge that can be articulated but hasn't. In analyzing the task in which underwriters at an company processed applications, for instance, it quickly became clear that the range of outcomes for the underwriters' work took three basic forms: (1). they could approve the application, (2). they could deny it or (3). They could counter offer. Yet, not one of the underwriters articulated these as boundaries on their work at the outset of the analysis. Once these outcomes were identified, it was a comparatively simple matter to identify the criteria used to determine the response to a given application. In so doing, implicit knowledge became explicit knowledge.

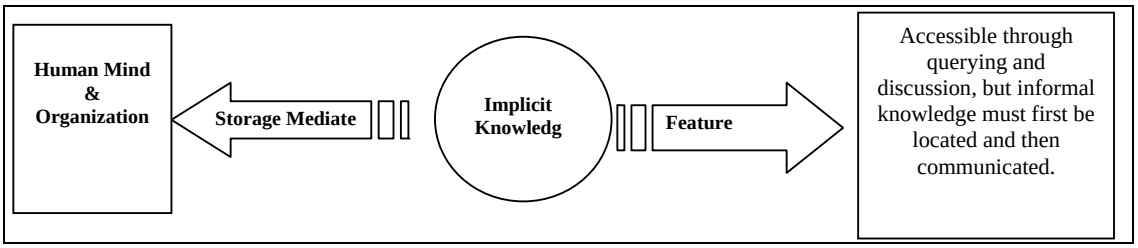

Figure3: Implicit Knowledge (storage media and its feature)

2.3.3. Explicit Knowledge

Explicit knowledge, as the first word in the term implies, is knowledge that has been expressed and captured in the form of text, tables, diagrams, product specifications and so on (See Figure 4). In Harvard Business Review article titled "The Knowledge Creating Company". Ikujiro Nonaka(1991) refers to explicit knowledge as "formal and systematic" and offers product specifications, scientific formulas and computer programs as examples. An example of explicit knowledge with which we are all familiar is the formula for finding the area of a rectangle (i.e., length time's width). Other examples of explicit knowledge include documented best practices, the formalized standards by which a claim is adjudicated and the official expectations for performance set forth in written work objectives.

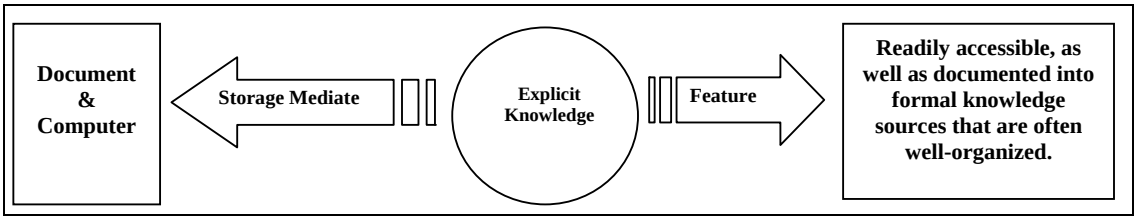

Figure4: Explicit Knowledge (storage media and its feature)

3. Key Terms Relevant To KM

The important terms identified on the bases of the literature survey conducted are data, information, knowledge and wisdom. Table 3 presents the origins of these terms which shed some light on the derivation of their meaning.

Table 3: Linguistic origins of Data, Information, Knowledge and Wisdom

Word	**Origin**	**First recorded usage in English**
Data	Latin (datum, dati)	1646, Hammond: ''From all this heap of data it would not follow that it was necessary''
Information	Adopted from Old French (informacion), adapted from Latin (informa tion, informationem)	1386, Chaucer: ''Whanne Melibee hadde herd the grete skiles and reasons of Dam Prudence, and hire wise informacions and techynges"
Knowledge	Middle English (knaulage, knowleche). Constructed on Old English and Teutonic origins	1300 approx., Cursor M.: ''To mak knaulage withsum-thing Til sir august, bair ouer-king''
Wisdom	Old English and Frisian (wı´sdo´m), as well as Old Saxon (wıˆsdoˆm)	888, Ælfred Boeth: ''ba com bær gan in to me heofencund Wisdom''

Source: Oxford English Dictionary, 2nd ed. under revision (2006)

Now we are trying to put together a collection of alternative ways of defining data, information, and knowledge on the bases of the literature survey conducted in table 4. This table demonstrates that there is no agreement within the literature of KM, but it also shows interesting similarities. Most of the authors defined knowledge, fewer defined information, fewer still defined data, and almost few or none defined wisdom.

Table 4: Definitions of Data, Information, Knowledge and Wisdom

Data	**Information**	**Knowledge**	**Wisdom**	**Author**
		Information in context		Aune(1970)
Symbols	Data that are processed to be useful	Ability to answer ''How'' questions	Wisdom is an evaluated understanding	Ackoff (1989)
		Justified true belief		Goldman (1991)
	Data that make a difference			King (1993)
		Capacity for effective action		Argyris(1993)
	Data put in context. Information is about meaning	Justified true belief. Knowledge is tied to action.		Nonaka and Takeuchi (1995)
	Data in context	Integrated information in context		Gallup et al. (2002)
Static, unorganized and Unprocessed facts. Set of discrete facts about events	Facts based on reformatted or processed data. Aggregation of data that makes decision making easier and has a meaning, purpose and relevance	Higher level of abstraction that resides in people's minds. Includes perception, skills, training, common sense, ad experiences	Wisdom is the highest level of abstraction, with vision, foresight and the ability to see beyond the horizon.	Awad and Ghazi (2004)
Transuded outputs of sensors	Fusion of data; creation of the network incorporating both data and the relationships among data	Placement of information in its larger context (a necessary condition for understanding)		Desouza (2005)
	Structured data useful for analysis and decision making	Obtained from experts based on experience	Wisdom is the ability judge soundly over time	Thierauf and Hoctor (2006)

The following definitions of data, information, knowledge, wisdom attempt to capture the common essence of the various definitions presented in the KM literature:

- Data are considered to be unprocessed raw representations of reality.
- Information is considered to be data that has been processed in some meaningful ways.

- Knowledge is considered to be information that has been processed in some meaningful ways.
- Wisdom is considered to be knowledge that has been processed in some meaningful ways.

It seems so that data can be the most basic unit of KM. However, this is still open to argument. There is a hierarchy among the concepts of data, information, and knowledge. The knowledge hierarchy is usually seen as a pyramid ascending from data to wisdom. However, Tuomi (1999). suggested reversing that hierarchy on the basis that data were more important than knowledge, also pointing out that knowledge had to come first in order to create data. Nissen (2002) proposed a dual approach, making a distinction between knowledge seekers and knowledge creators. From the seeker point of view, data is put into context to create information, and information that is actionable becomes knowledge. From the creator perspective, knowledge is needed to create information, which is in turn needed to create data. Therefore, it seems sensible that a general hierarchy of data, information, knowledge, and wisdom should permit transition in both directions – a notion supported by Williams (2006). Figure 5 illustrates the traditional knowledge pyramid.

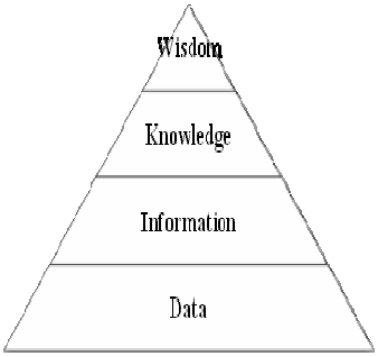

Figure 5: The traditional knowledge pyramid

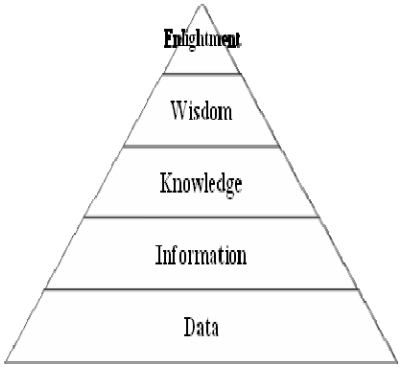

Figure6: The extended KM pyramid

While doing the literature survey we found that the traditional knowledge pyramid can be extended. Is anything higher than wisdom? The answer to question found was enlightenment (Faucher, 2008). It is the highest form of understanding. Therefore, it should be incorporated into a model that supports to represent a complete perspective on the hierarchy of knowledge. This is illustrated in Figure 6. The above discussion of the extension of the traditional hierarchy seems to be consistent with the idea yet this diagram of extensions to the traditional hierarchy does not embrace all the improvements.

4. Definition of KM

There are various concepts, conflicting definitions and overlapping views among the researchers and practitioners, but central theme is still the same for all of them i.e. managing the knowledge and encouraging people to share the same to create the value adding products and services (Bhatt, 2001; Chorafas, 1987; and Malhotra, 1998). KM is the explicit and systematic management of vital knowledge and its associated processes of creating, gathering, organizing, diffusion, use and exploitation. It requires turning personal knowledge into corporate knowledge that can be widely shared throughout an organization and appropriately applied. There is no single definition of KM. It has been defined in a number of ways, but in general the thought relates to unlocking and leveraging the knowledge of individuals so that this knowledge becomes available as an organizational resource. KM makes knowledge independent from the particular individuals. Different researchers have used different approach to define KM in their literature. Singh et.al.(2006) classified them with different theoretical perspectives namely need of KM, What KM demands, KM practices, KM and IT, KM processes, and Holistic nature of KM. The present study classifies these KM definitions further into objectives of KM and strategy, KM and Intellectual Capital, and What KM can do. These detail classifications are presented in Table 2.4.

Table 5: Definitions of KM

Serial Number	Definitions of KM	Reference
Objectives of KM		
1.	KM concerns the formalization of and access to experience, knowledge, and expertise that create new capabilities, enable superior performance, encourage innovation, and enhance customer value	Beckman (1999)
2.	KM is achieving organizational goals through the strategy-driven motivation and facilitation of (knowledge-)workers to develop, enhance and use their capability to interpret data and information (by using available sources of information, experience, skills, culture, character, personality, feelings, etc.) through a process of giving meaning to these data and information.	Beijerse (1999)
What KM demands		
3.	Ensuring a complete development and implementation environment designed for use in a specific function requiring expert systems support.	Chorafas (1987)
4.	Policies, procedures and technologies employed for operating a continuously updated linked pair of networked databases.	DePablos (2002)
5.	KM is the process of capturing a company's collective expertise wherever it resides, and distributing it to wherever it can help produce the biggest payoffs.	O'Sullivan (2007)
KM processes		
6.	KM is a process of knowledge creation, validation, presentation, distribution, and application.	Bhatt(2001)
7.	The process of collecting, organizing, classifying and disseminating information throughout an organization, so as to make it purposeful to those who need it.	Albert (1998)
8.	KM is the process of creating, capturing, and using knowledge to enhance organizational performance.	Bassi (1997)
KM and IT		
9.	KM is managing information combined with experience, context, interpretation, and reflection.	Davenport,Long & Beers (1999)
10.	Mapping knowledge and information resources both on-line and off-line; training, guiding and equipping users with knowledge access tools; monitoring outside news and information.	Maglitta (1995)
11.	Understanding the relationships of data; identifying and documenting rules for managing data; and assuring that data are accurate and integrity is maintained.	Strapko (1990)
12.	KM incorporates intelligent searching, categorization and accessing of data from disparate databases, E- mail and files.	Willett & Copeland (1998)
13.	KM is an approach to adding or creating value by more actively leveraging the know-how, experience, and judgment resident within and, in many cases, outside of an organization.	Ruggles (1997)
What Km can do		
14.	KM is how an organization identifies, creates captures, acquires, shares, and leverages knowledge.	Rumizen (2002)
15.	It is the role of KM to ensure that individual learning becomes organizational learning.	Stonehous&Pembert on(1999)
KM and strategy		
16.	KM as a conscious strategy of getting the right knowledge to the right people at the right time, and helping people to share and put the information into action in ways that strive to improve the organizational performance.	O'Dell & Grayson (1997)
17.	KM as a strategy to be developed in a firm to ensure that knowledge reaches the right people at the right time, and that those people share and use the information to improve the organizations functioning.	O'Dell & Grayson (1998)
18.	KM is the strategies and methods of identifying, capturing and leveraging knowledge to help a firm compete.	O'Dell, Wiig & Odem(1999)
KM practices		

19.	KM is the formalization of and access to experience, knowledge, and expertise that create new capabilities, enable superior performance, encourage innovation, and enhance customer value.	Beckman(1997)
20.	Bringing tacit knowledge to the surface, consolidating it in usable forms by which it is more widely accessible, and promoting its continuing creation.	Birkett (1995)
21.	Capturing knowledge and expertise created by knowledge workers as they go about their work and making it available to a larger community of colleagues. Technology can support these goals, and knowledge portals serve as a key tool for supporting knowledge work.	Mack, Ravin, & Byrd (2001)
Holistic nature of KM		
22.	KM refers to a systemic and organizationally specified process for acquiring, organizing and communicating both tacit and explicit knowledge of employees so that other employees may make use of it to be more effective and productive in their work.	Alavi& Leidner (1999)
23.	KM as a set of procedures, infrastructures, technical and managerial tools, designed towards creating, sharing and leveraging information and knowledge within and around organization.	Bounfour (2003)
KM and intellectual capital		
24.	KM is concerned with the exploitation and development of the knowledge assets of an organization with a view to furthering the organization's objectives.	Davenport & Prusak (1998)
25.	KM as the art of creating value from an organization's intangible assets.	Sveiby (1997)

5. Factors that influence KM

Literature survey shows that, it is agreed that a broad range of factors can influence the success of KM initiatives, the following factors presented by Holsapple and Joshi (2000) represent this general agreement of the researchers (SeeFigure7).

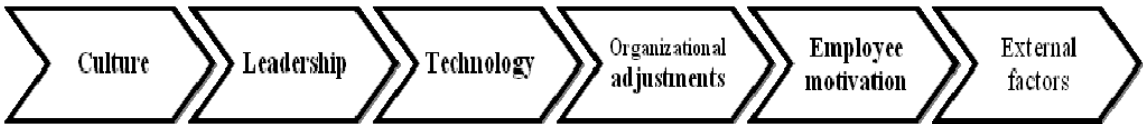

Figure7: Factors that influence KM

In a previous study made by Holsapple and Joshi (1999), the factors were organized into three categories

- Managerial influences.
- Resource influences.
- Environmental influences.

6. Knowledge Management Process

We have just seen that KM is complex, heterogeneous area. Our objective will be precisely to review the different KM process with the aim to understand the different steps involved within it. This study considers a total seven approaches: Wiig (1993), Meyer & Zack (1996), Mc Elory (1999), Bukowitz & Williams (2003), Wong & Aspinwall (2004), Lee et.al. (2005) and Dagnfous & Kah (2006). As observed by prior researchers, most small and large organizations practicing any KM would need to participate in each of these KM processes, at least to some extent. Overall KM process can be divided into four main processes and these four processes can be further classified into sub-processes (See Figure 8).

- Knowledge capture and creation.
- Knowledge organization and retention.
- Knowledge dissemination.
- Knowledge utilization.

Figure8: KM Processes

Knowledge capture and creation is a process in which knowledge identification, capture, acquisition, and creation is done (Rao, 2004). Knowledge organization and retention is a process in which knowledge in tacit form may be codified in an understandable form to the extent possible (Millar et al., 1997). After doing this knowledge needs to be categorized, and stored in repositories in a standard format for later use. Knowledge dissemination is a process which involves knowledge sharing among all within the organization both of tacit and explicit form. A combination of incentives and a cooperative culture are the main supporting factors of knowledge dissemination (Morris & Empson, 1998). Knowledge utilization is a process of the application and use of knowledge in the organization value-adding process (Currie, 2003).

7. Compression and critical analysis of the selected KM processes

Now at this stage we will try to compare and critically explore the different KM processes considered herein. We have considered nine points system for doing the analysis with an aim to find the strength and shortcomings of these approaches. These points give us extremely broader view about KM process and it allows us to present a very general perspective on all the approaches.

Table 6: Critical comparison of the approaches

Serial Number	Points	Wigg 1993	Mayer& Zack 1996	McElory 1999	Bukowitz & Williams 2003	Wong and Aspinwall 2004	Lee et.al. 2005	Dagnfous and Kah 2006
1.	Create/capture of knowledge	✓	✓	✓	✓	✓	✓	✓
2.	Refinement		✓			✓		
3.	Validation			✓				
4.	Codification							✓
5.	Store/Retrieve	✓	✓	✓	✓	✓		✓
6.	Access	✓		✓	✓			
7.	Distribution	✓	✓	✓	✓			✓
8.	Sustain				✓			
9.	Update						✓	
10.	Application					✓	✓	✓
11.	Utilization					✓	✓	
12.	Disposal	✓			✓			
	Total Points	**4**	**4**	**5**	**6**	**5**	**3**	**5**

In the study of these approaches this is very much clear that the success of K.M does not depend on only one approach, it depend on all. We found that Bukowitz & Williams considered the maximum points which shows that it is the best approach among all and can be considered as the foundation of KM process. It covers all points except the points like refinement, validation, updation and application of the knowledge. Bukowitz and Williams were the first introduces two new critical phrases. The learning of knowledge content and the decision as to whether to maintain the knowledge or divert the organization of this knowledge content and hence it is

more comprehensive among all. Approach proposed by McElory comes next, getting five points which is also covering all points. But points like refinement, sustain, updation, disposal and application are not covered by this approach. Strengths of the Mc Elroy cycle is the clear description of how knowledge is evaluated and a conscious decision is made as to whether or not it will be integrated into the organizational memory. Approaches suggested by Wigg, Mayer & Zack focused only on points like knowledge capture, refinement, store, access and use. These Authors do not describe about the points like validation, sustain update, disposal and application we believe that these two approaches are the basis for the other two approaches discussed above. The differences in approaches are because of the time in which these approaches are evolved. Wigg , Mayer & Zack approaches belong to early ninety's, so they are covering less points as per the analysis. As more research work progressed in the field of K.M. the approaches get better and more strengthend, KM process suggested by Wong & Aspinwall, Lee et.al. and Dagnfous & Kah emphasis more on the application part while all the remaining basic points remains the same.

8. **Knowledge Managements Benefits**

At the end it will be injustice if we do not talk on KM benefits. In this knowledge based economy, organizations increasingly have to deal with issues like products and processes complexity, increased relevant knowledge base both technical and non-technical, shorter product life cycles, increased focus on the core competencies, etc. KM can facilitate organizations to encounter various issues related to the emergence of the knowledge-based economy (Anantatmula & Kanungo, 2006; Beijerse, 1999). The numerous benefits can be achieved through implementing KM. Many authors have investigated the potential benefits of using KM in the organizations as per the literature survey (see Table 7).

Table 7: KM benefits

Serial Number	KM Benefits	Reference
1	Best decision making	Singh et.al.(2006), Dalkir(2005), Chase (1997)
2	Smoother collaboration	Singh et.al.(2006), Dalkir(2005),
3	Enhanced learning	Dalkir(2005)
4	Improved communication	Chase (1997)
5	Improved employee skill	Dalkir(2005), Chase (1997)
6	Increased employee satisfaction	Dalkir(2005)
7	New or better way of working	Chase (1997)
8	Sharing best practices	Davenport(1998), Singh et.al.(2006), Dalkir(2005), Chase (1997)
9	Enhanced the continuity of the organization	Beijerse(1999)
10	Improved employee loyalty and retention	Anantatmula & and Kanungo(2006), Beijerse(1999)
11	Improved productivity/efficiency	Singh et.al.(2006), Anantatmula & and Kanungo(2006),Chase (1997)
12	Increased empowerment of employees	Anantatmula & and Kanungo(2006)
13	Increased sales/profits	Singh et.al.(2006), Anantatmula & and Kanungo(2006),Chase (1997)
14	Cycle time reduction	Singh et.al.(2006), Chase (1997)
15	Develop new business opportunities	Anantatmula & and Kanungo(2006), KPMG(2000),184
16	Developing core competencies	Beijerse(1999)
17	Enhanced flexibility	Singh et.al.(2006), Chase (1997)
18	Improved business processes	Anantatmula & and Kanungo(2006)
19	Faster new product development	Beijerse(1999)
20	Improved responsiveness	Singh et.al.(2006), Dalkir(2005), Chase (1997)
21	Reduced risk	Beijerse(1999)
22	Enhanced customer relation	Dalkir(2005),
23	Enhanced products or services quality	Chase (1997), Dalkir(2005),
24	Enhanced customer satisfaction	Dalkir(2005),
25	Better management of intellectual capital	Demarest(1997)
26	Increased speed of innovation	Davenport(1998), Singh et.al.(2006), Dalkir(2005), Chase (1997)
27	Improved revenues through licensing of patents	Singh et.al.(2006), Anantatmula & and Kanungo(2006)
28	Reuse of information and Knowledge	Singh et.al.(2006)

9. Conclusions

In present era of globalization, knowledge creation and management has been the key question that has attracted the interest of the researchers from different areas. Literature review shows that research, both of qualitative and quantitative nature, have yet not taken the final shape, numerous articles, books have been published on a theoretical level. This proliferation of study has led to the fact that presently only at the very basic theoretical level of KM there is clear consensus. This is because KM does not belong to one area; people from different disciplines are working on it. Approaches to KM process are at still at emerging state and the process is ongoing, till we get a complete formal approach which shall be universally accepted. The main aim of this study can be accomplished in threefold: the first is the compilation of diverse fundamentals related to the concept of knowledge management, which gives idea about the historical background, contribution of different authors & researchers, fundamentals & concepts, definitions of knowledge and knowledge management. The second aim is to produce and connect the different perspectives on approaches to knowledge management processes by giving its conceptual outline and finally doing its critical comparison. Lastly, another relevant contribution of this study has been focus on the numerous benefits that can be achieved through implementing knowledge management to deal with issues like products and processes complexity, increased relevant knowledge base both technical and non-technical, shorter product life cycles, increased focus on the core competencies, etc. We have come to conclusion that KM is tool which helps to utilize our resources in a smarter and efficient way to achieve higher business goals in a productive way. Its aim is to develop new opportunities, creating value, obtaining competitive advantages and improve performance to attain the organizations objectives and emerging needs.

10. References

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