Knowledge management – An Overview

Preamble

In the present day market scenario of intense competition, organizations need to know what they know and be able to leverage on it's knowledge base to gain competitive advantage. In this knowledge era, organisations can create and sustain competitive advantage through initiation of appropriate knowledge management processes. The organisations that can leverage technology to exploit the data will realize the benefits by creating a competitive advantage for itself. The competitive advantage could be in the form of identifying trends, unusual patterns, and hidden relationships. The recent emphasis on knowledge management arises out of the need for organizations to manage resources more effectively in a hyper-competitive, global economy. The need for emphasis on knowledge management is also stressed by Nonaka and Takeuchi in their statement ' In an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge. Successful companies are those that consistently create new knowledge, disseminate it widely throughout the organization, and quickly embody it in new technologies and products'.

Knowledge in knowledge management

The importance of knowledge has been stressed by many management researchers and authors. Peter Drucker has declared that knowledge is just not another resource like labor, capital, but is the only important resource today. Toffler subscribes to the views of Drucker, by proclaiming that knowledge is the source of the highest-quality power and is the key to the powershift that lies ahead.

Quinn shares a similar view while stating that the economic and the producing power of modern organisations lies more in its' intellectual assets and capabilities more than the other tangible assets.

Nonaka and Takeuchi have focused on how Japanese companies have leveraged their knowledge assets to gain competitive advantage and industry leadership.

The paradox in knowledge management is that we are trying to manage what cannot be managed. Before we set about managing knowledge, we need to understand what the term knowledge refers to and the various classifications of knowledge.

Davenport has defined knowledge as a 'fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of the owners of knowledge. In organizations, it often becomes embedded not only in documents or repositories, but also in organizational routines, processes, practices and norms'

Ryle, in one of his works, has explained the different categories of knowledge. First, knowledge is referred to what is gained through the understanding of concepts and frameworks, generally referred to as 'knowing why'. Another classification of knowledge, what Peter Senge termed as ' capacity for action', refers to an understanding of the facts and procedures required for making things happen. Knowledge also refers to the codification of 'factual knowledge based on prior experience' , which is generally tacit knowledge and is termed as 'knowing that'. The

next usage of knowledge refers to codification of 'factual knowledge which is acquired knowledge' and this could be tacit or explicit. This term is also used while referring to 'social knowledge of networks' indicating the persons known. This, in general terms, is referred to as 'knowing who'. Knowledge also refers to the cultural knowledge facilitating communication, which in common terms is termed as 'knowledge of meaning'.
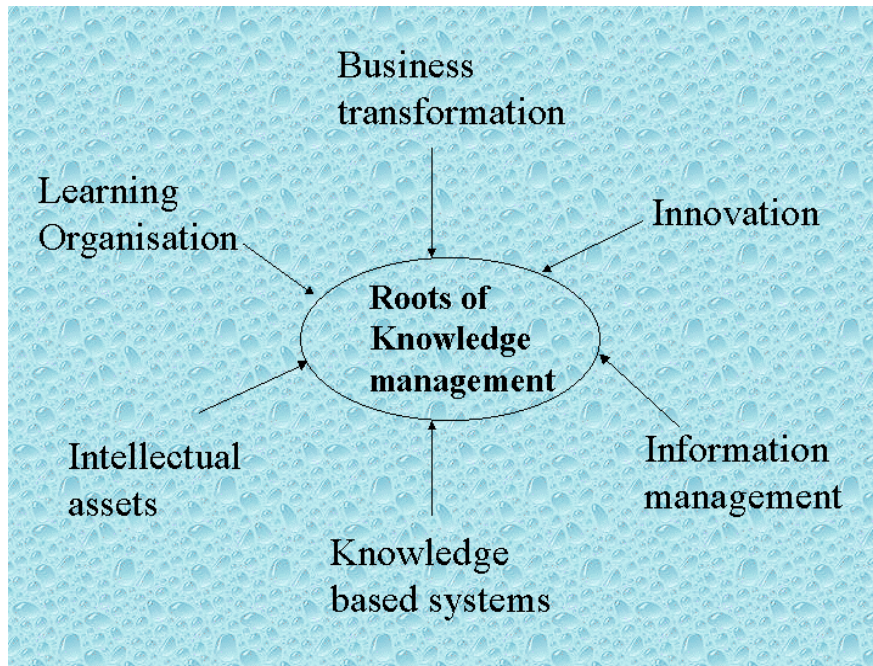

Why knowledge management

The field of knowledge management has gained currency in recent times due to a wide variety of reasons. Some of them are

- The speed of change in the market place has become so rapid that the time available for organisations to gain experience and acquire knowledge has diminished. Organisations are required to differentiate their product or produce them in fastest possible time and the lowest possible cost.
- Competition in the market place has forced organisations to reduce costs. One of the methods followed is reduction in manpower. This has led to early retirements and increasing mobility of work force resulting in a loss of knowledge
- Organisations are forced to compete on the basis of knowledge
- Market place is increasingly competitive
- Reduction is staffing create a need to replace informal knowledge with formal methods
- Reduction in work force due to competitive pressure
- Need for life-long learning is an inescapable reality
- Increasing dominance of knowledge as a basis for organisational effectiveness
- The failure of financial models to represent the dynamics of knowledge
- The failure of information technology by itself to achieve substantial benefits for organisations for organizations
- The diffusion of global capabilities causing developed countries to become service-based economies depending on labor from developing countries
- The unintended consequences of universal information access.
- The importance attached to this subject in management schools.

The importance of knowledge management is also corroborated by various research studies.

- A survey by Pricewaterhouse Coopers and World economic forum found that 95% of CEO's saw KM as an essential ingredient foe the success of their company.
- According to the International Data Corporation, companies worldwide are expected to dramatically increase their knowledge management expenditure from $2 million in 1999 to $12 million in 2003

Roots of knowledge management

Learning organisation :

If an organisation conforms to the required norms and can be termed as a learning organisation, then it becomes one of the start point of knowledge management.

Intellectual assets :

The intellectual assets in an organisation is in the people have gained expertise through years of work experience and is tacit in nature. This knowledge has to made explicit and managed in order to leverage on it and gain competitive advantage.

Knowledge based systems

The systems that are evolved in an organization to facilitate the smooth functioning of the organization should facilitate harnessing the existing knowledge in the organization. These systems could be a basis of knowledge management.

Information management

Information is the core of knowledge management, since information combined with experience and intuition leads to knowledge. Hence, proper information management systems can result in an effective knowledge management system.

Innovation

Creativity and innovation are methods by which new knowledge is created. Innovation comes out of increment changes to existing products or processes and a radical change, which is different from the original process or product.
Radical changes give a new dimension to the existing knowledge base and incremental changes result in changes in perceptions and line of thinking leading to new knowledge insights.

Business transformation

Business transformation acts as another catalyst for knowledge management. Organisations respond to the various changes in the market place through transformation processes like business process re-engineering.

Evolution of Knowledge management

Historic developments may be portrayed by the following stages of dominant economic activities and foci leading to the evolution of knowledge management.

Agrarian economics	creating products for consumption and exchange
Natural resource economics	natural resource exploitation dominate while customer intimacy was pursued separately by expert tradesmen and guilds.
Product revolution	Continued focus on operational excellence and product leadership
Knowledge revolution	New focus on customer intimacy

Hierarchy of Business Intelligence

Realising the benefits from raw data goes through a number of stages as depicted in the following figure.
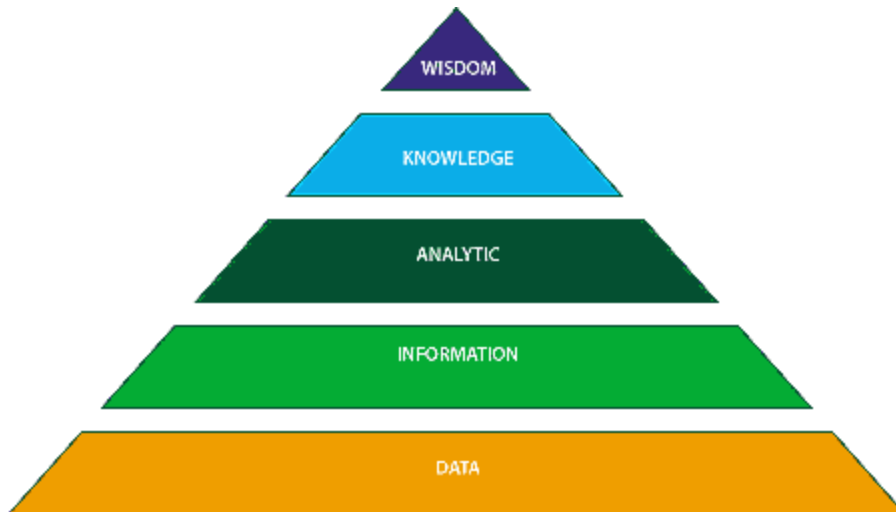
Data

The basic element of information in an organisation is in the form of data. Organisations collect, summarise and analyse this data to identify patterns and trends. Most of the data thus collected is associated with the functional processes of the organisation.

Information

Each data element is a component of a transaction and does not provide much information unless they are presented in conjunction with other data elements. The accumulation of data into a meaningful context provides information.

Analytic

The information gathered in the previous stage, although provides much insight, separating or regrouping this information and analysis extends the value of the information. Applications with analytical processing capabilities provide users with the ability to analyse information and determine relationships, patterns.

Knowledge

Knowledge is different from data, information or analytics in that it can be created from any one of those layers or it can be created from existing knowledge using logical inferences.

Wisdom

Wisdom is the utilization of accumulated knowledge to create a higher level of understanding of the data.

An example would help in understanding the distinction better. Mere numerals like 41, 42 are termed as data. This data, if read in the context of temperature would give an indication of the weather in that part of the world. The fact that these numbers indicate the temperature is information. Knowledge refers to the understanding that this temperature indicates summer. The decision to venture out or not in this weather, or an understanding of the effects of this weather is wisdom.

Definition of KM

There are as many definitions for knowledge management as there are people who are working on this subject. Given below, are some of the most commonly used definitions

KM is to understand, focus on, and manage systematic, explicit, and deliberate knowledge building, renewal, and application – that is, manage effective knowledge processes (EKP).

Knowledge management is knowledge creation followed by interpretation, knowledge dissemination and use, and knowledge retention and refinement

De Jarnett

Powerful environmental forces are reshaping the world of the manager of the 21st century. These forces call for a fundamental shift in organisation process and hr strategy. This is knowledge management

Taylor

Knowledge management is the process of critically managing knowledge to meet existing needs, to identify and exploit existing and acquired knowledge assets and to develop new opportunities

Quintas

The crux of the issue is not information, information technology. the answer turns out to lie more with psychology and marketing of knowledge within the family than bits and bytes

Peters

Knowledge management is the activity, which is concerned with strategy and tactics to manage human centered assets.

Brooking

"Knowledge management is about enhancing the use of organisational knowledge through sound practices of information management and organisational learning."

Source: Broadbent (1998)

"A learning organization ... is proficient at creating, acquiring, organizing, and sharing knowledge, and at applying this knowledge to develop its behavior, position, or objectives. [The essential goal of knowledge management is] ... to harness the organization's information resources and information capabilities to enable it to learn and adapt to its changing environment."

Source: Choo (1998a)

"The ultimate corporate resource has become information - the ultimate competitive advantage is the ability to use it - the sum of the two is knowledge management."

Source: Oxbrow & Abell (1998)

Systematic approaches to help information and knowledge flow to the right people at the right time so they can act more efficiently and effectively.

'Explicit and systematic management of vital knowledge and its associated processes of creating, gathering, organising, diffusion, use and exploitation of organisational objectives'.

Source:Knowledge networking - Creating a collaborative enterprise – David Skyrme

Thomas Davenport et all give a more comprehensive definition of knowledge management and it's implications.
' Knowledge management is concerned with the exploitation and development of the knowledge assets of an organization with a view to furthering the organization's objectives. The knowledge to be managed includes explicit, documented knowledge and tacit, subjective knowledge. Management of this knowledge entails all the processes associated with the identification, sharing and creation of knowledge. This requires systems for the creation and maintenance of knowledge repositories, and to cultivate and facilitate the sharing of knowledge and organization learning. Organizations that succeed in knowledge management are likely to view knowledge as an asset and to develop organizational norms and values, which support the creation, and sharing of knowledge.'

Understanding from definitions

- KM relates to both theory and practice
- Definitions are not predicated on information technology
- KM is multi-disciplinary
- People and learning issues are central to KM
- Technology is a useful enabler rather than a central tenet at the heart of KM.

Categories of Knowledge Management models

a. Nonaka and Takeuchi

These types of models categorise knowledge into discrete elements. Nonaka and Takeuchi look at the process of knowledge management as a knowledge creation process

	To	
	Tacit	Explicit
Tacit	Socialisation	Externalization
From Explicit	Internalisation	Combination

The transforming processes are assumed to be socialization, externalization, internalization and normalization.

<u>Critique of this model</u>

The model implies a mechanistic approach to knowledge categorisation, which is over simplistic, and the process of knowledge transfer is far more complicated in organisations.

b.Hedlund and Nonaka – knowledge management model

	Individual	Group	Organisation	Interorganisational Domain
Articulated Knowledge	knowing Calculus	QC documented Analysis of its Performance	Organisation Chart	Supplier's patents
Tacit Knowledge	Cross -cultural Negotiation Skills	Team coordination in complex world	Corporate Culture	Customer's attitudes to products and expectations

This model assumes four different carriers of knowledge in the process of knowledge creation. This is an improvement over the previous model in that it identifies the carriers of knowledge, but assumes that the carriers can be segregated and identified.

c. Boisot model

Codified

Proprietary Knowledge	Public knowledge
Personal Knowledge	common sense

Uncodified

         Undiffused   Diffused

Codified   - knowledge that can be readily prepared for transmission
Uncodified   - knowledge that cannot be easily prepared for transmission
Diffused   - knowledge that is easily shared
Undiffused   - knowledge that cannot be easily shared

Critiques of this model point to the limitation in that codified and uncodified are two distinct and discrete categories of knowledge, which is generally not as distinct as portrayed. Diffused knowledge is rather general and is not clear if it includes incorporating knowledge within the organisation, as well as spreading it.

d. Intellectual capital models

These models represent knowledge management as intellectual capital. (e-g Intellectual model (IC) of Skandia IC)

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                          ┌──────────────┐
                          │ Market value │
                          └──────────────┘
                          /              \
              ┌────────┐            ┌──────────────┐
              │ Equity │            │ Intellectual │
              │        │            │ capital      │
              └────────┘            └──────────────┘
                                     /            \
                        ┌───────────────┐   ┌────────────┐
                        │ Human capital │   │ Structural │
                        │               │   │ capital    │
                        └───────────────┘   └────────────┘
                                             /          \
                              ┌──────────┐      ┌────────────────┐
                              │ Customer │      │ Organisational │
                              │ capital  │      │ Capital        │
                              └──────────┘      └────────────────┘
         ┌──────────┐              │            /            \
         │ Customer │              │   ┌────────────┐  ┌────────────────┐
         │ Base     │──────────────┤   │ Innovation │  │ Process capital│
         └──────────┘              │   │ capital    │  └────────────────┘
         ┌──────────────┐          │   └────────────┘
         │ Customer     │──────────┤
         │ relationships│          │
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         │ Potential│
         └──────────┘
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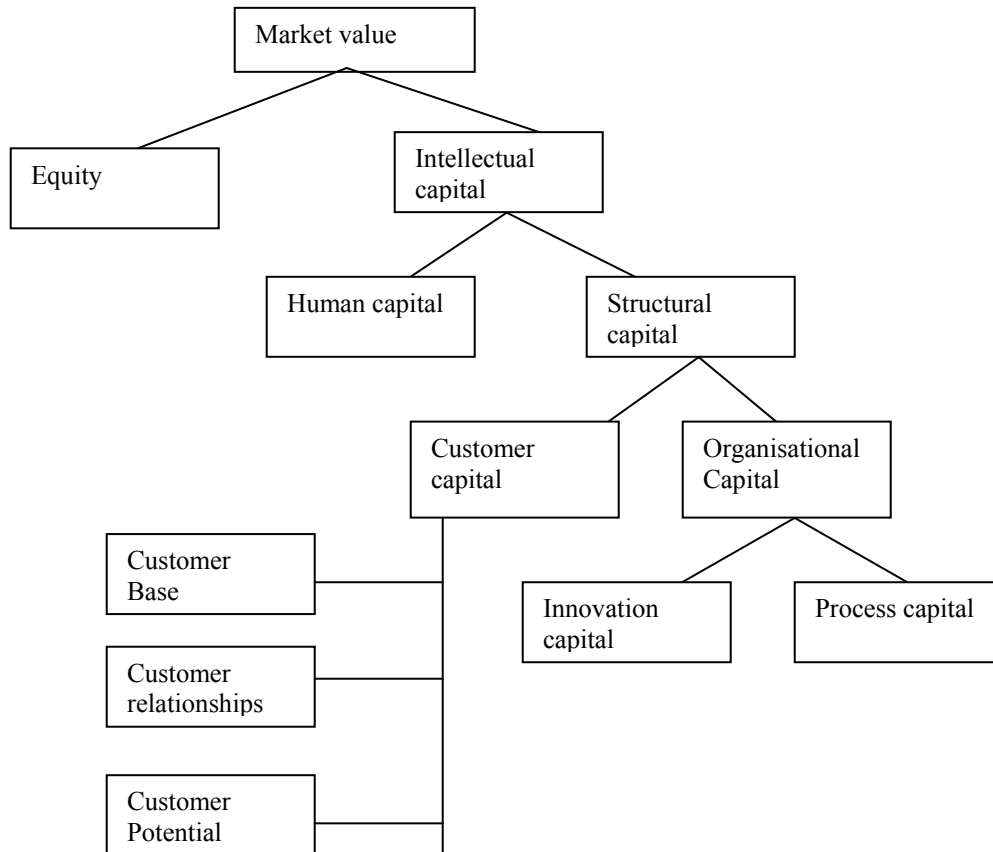
These models ignore the political and social aspects of KM. Moreover, intellectual capital models are generally mechanistic in nature, treating knowledge as an asset similar to other assets.

e. Socially constructed models of KM

This model views knowledge as intrinsically linked within the social and learning processes within the organisation. These models portray a more holistic approach to the process of knowledge creation.

Knowledge creation model - Demerest
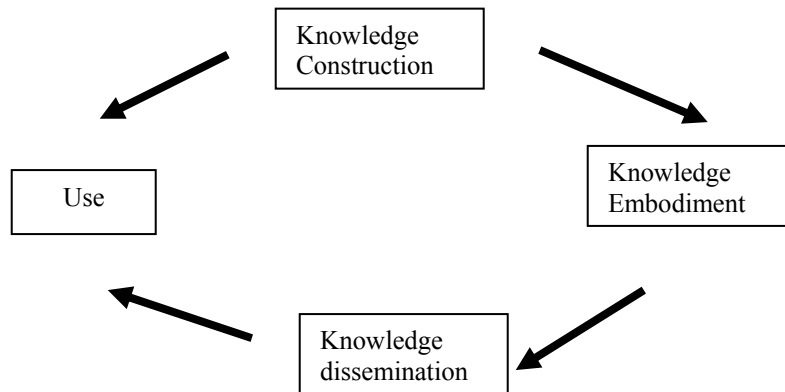
This model emphasis the construction of knowledge within the organisation. This construction includes the social and scientific inputs. This knowledge in then embodied within the organisation through explicit programs and social interchange. This is followed by a process of dissemination of espoused knowledge throughout the organisation. Ultimately, this knowledge is seen as being of economic use in regard to the organisational outputs.

This model follows the generic process of knowledge construction of collection, dissemination and use.

Critiques of this model refer to the portrayal of discrete path of flow of knowledge, which is generally not the case, practically speaking.

Types of knowledge

Knowledge can be classified into various types. Authors have classified into various categories and are presented below

Tacit knowledge	Knowledge that cannot be articulated
Implicit knowledge	Knowledge that can be articulated but has not been articulated.
Explicit knowledge	Knowledge that is articulated and more often than not, captured in the form of text, tables, diagrams etc.
Procedural knowledge	Knowledge that manifests itself in the doing of something
Declarative knowledge	Knowledge that consists of descriptions of facts and things or of methods and procedures
Strategic knowledge	Knowing when to do something and why to do it

Principles of knowledge management

Knowledge management is expensive

Knowledge is an asset, but requires investments in other assets for effective management. The investments could be for the following activities
- Knowledge capture
- Categorisation of captured knowledge
- Developing information technology infrastructures and applications for the distribution of knowledge
- Educating employees on the creation, sharing and use of knowledge.

(Buckman labarotaries spend 7% of it's revenues on KM and Mckinsey and Co. spends 10% of it's revenues on developing and managing intellectual capital)

It is worth spending this, since it is more expensive to re-invent the wheel and create the available knowledge all over again. Non-availability of adequate and appropriate knowledge at the required time may also lead to loss of opportunities.

One way of finding out the cost of knowledge management is to estimate the cost of lack of knowledge management.

Effective management of knowledge requires hybrid solutions of people and technology

Effective use of people and computers are required to manage knowledge. Computers could be used to capture, transform and distribute highly structured knowledge that changed rapidly and people are used to understand the created knowledge, interpret it, synthesise various unstructured forms and data and analyse it. So an effective systems requires a hybrid knowledge management environment in which both the humans and computers in complementary ways.

Knowledge management is highly political

Knowledge is power and hence is associated with money, success, lobbying, back-room deals which manifest power. People who manage knowledge would lobby for its use and broker deals between those who have the knowledge and those who use it.

Knowledge management requires knowledge managers

Knowledge cannot be effectively managed unless it is delegated and controlled by a group of people who are responsible for it. The tasks of this group would be to collect and categorise knowledge, establish a knowledge oriented technology infrastructure and monitoring the use of knowledge.

Organisations like Mckinsey etc have knowledge groups headed by 'Chief knowledge officers'. Politics plays a major part in this when managers think that by virtue of managing knowledge, they are more knowledgeable than the others. The most important qualification for such a role is being 'egoless' as argued by one manager at HP.

Knowledge management benefits more from maps than models, more from markets then from hierarchies

Effective knowledge management is more to do with providing maps for existing knowledge rather than creating hierarchies of knowledge. They should be able to connect the client needs with the required information from the knowledge database.

Sharing and using knowledge are often unnatural acts

The normal tendency is reluctance to sharing of knowledge with the natural tendency being to hoard knowledge and look suspiciously upon that from others. One should be highly motivated to allow knowledge to be shared by the others and to be open to share other's knowledge.

Organisations like Lotus Development devotes 25% of the total performance evaluation of its customer support workers to knowledge sharing.

Knowledge management means improving knowledge work processes

In any organisation, knowledge is created through generic knowledge management processes, but knowledge is also generated, used and shared intensively in a few specific knowledge work processes like market research, product design and development. Improvements need to be made in these processes to have a more effective knowledge management in the organisation.

Knowledge access is only the beginning

The process of knowledge management does not mean having access to knowledge. In addition to access knowledge management requires attention and engagement. In order for knowledge consumers to pay attention to knowledge, they must be active recipients through summarizing and reporting to others through role playing based on the usage of knowledge and receiving the knowledge through close interaction with the providers of knowledge, more so, in the case of tacit knowledge.

Knowledge management process never ends

The task of knowledge management is a continuous process and can't be said to be fully managed.
One reason that knowledge management never ends is that the categories of required knowledge are always changing. New technologies, management approaches, regulatory issues and customer concerns are always emerging.

Knowledge management requires a knowledge contract

Most organisations cannot fix ownership or usage rights to employee knowledge. Management of knowledge requires a contract between employees and the organisation to ensure that the knowledge acquired by the employee during his tenure is captured and properly documented.

This assumes importance in the present day environment with employees moving more quickly to new jobs and new organisations.

Thomas Devanport

Knowledge management process

(Ryder – is in the business of providing truck fleets and transportation services)

The steps involved in the process of knowledge management are

- Knowledge creation

Nonaka and Takeuchi have mapped the knowledge creation process from the tacit and explicit knowledge available in an organisation.

- Knowledge capture
  Most of the knowledge in organisations exists as tacit knowledge gained and built-up through years of experience. This knowledge has to be captured and stored in databases
- Knowledge application
  The knowledge created and captured through would then need to be applied to achieve competitive advantage.
- Knowledge measurement

Galagan proposes the following sample list of knowledge management processes

- Generating new knowledge
- Accessing knowledge from external sources
- Representing knowledge in documents, databases, software etc.
- Embedding knowledge in processes, products and services
- Transferring existing knowledge around an organization
- Using accessible knowledge in decision making
- Facilitating knowledge growth through culture and incentives
- Measuring the value of knowledge assets and the impact of knowledge management

Knowledge Development Cycle

The knowledge development cycle is defines the knowledge management process in an organization, as a cyclic process from knowledge creation to knowledge review and revision.
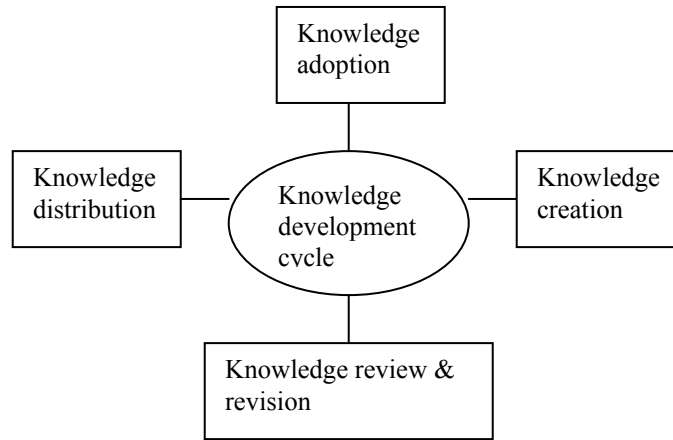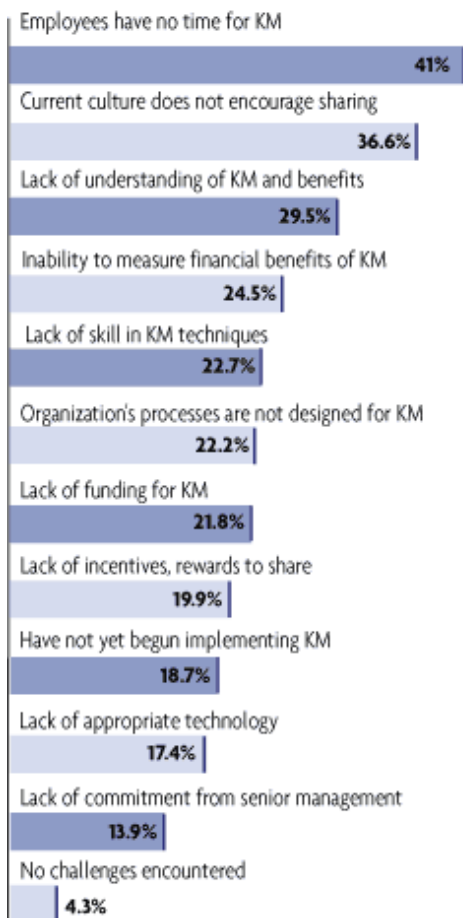
The knowledge creation process involves the creation of new knowledge in the organization. This also includes activities like research and development, consulting, education etc.

The knowledge adoption process involves the adoption of created knowledge and adapting the knowledge.

The knowledge distribution and knowledge review and revision process involves the conversion of converting the individual knowledge to organizational knowledge.

IMPLEMENTATION CHALLENGES

Employees have no time for KM
41%

Current culture does not encourage sharing
36.6%

Lack of understanding of KM and benefits
29.5%

Inability to measure financial benefits of KM
24.5%

Lack of skill in KM techniques
22.7%

Organization's processes are not designed for KM
22.2%

Lack of funding for KM
21.8%

Lack of incentives, rewards to share
19.9%

Have not yet begun implementing KM
18.7%

Lack of appropriate technology
17.4%

Lack of commitment from senior management
13.9%

No challenges encountered
4.3%

Obstacles to KM Implementation

Lack of business purpose

Most organisations look at implementation of knowledge management program as an end in itself. Organisations need to look beyond implementation and to define ways of dealing with the pressing problems of the organisation using knowledge management.

Poor planning and inadequate resources

Many companies focus their attention on the KM pilot project and forget about the roll out. Organisations need to make the plan the rollout and the pilot plant simultaneously to avoid loss of focus on the mail roll out.

Lack of accountability

Knowledge management initiatives peter out if accountability is not fixed on persons to implement the initiatives and see the end of it. Typically, knowledge management programs could be implemented by a core team dedicated for the purpose.

Lack of customization

Knowledge management is not a one-size-fit-all program. It works best when individual programs are tailored to the need of the individual users. It should also fit into the organisation culture.

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