CHAPTER II

CONCEPTUAL FRAMEWORK OF

KNOWLEDGE MANAGEMENT
Land, labour, and capital now pale in comparison to knowledge as the critical asset to be managed in today’s knowledge economy (Drucker, 1999)

2.0 INTRODUCTION

Knowledge Management begins with an understanding of the Knowledge Economy. The foundations of organized Knowledge Management are rooted in the knowledge economy. An understanding of the Knowledge Hierarchy, Knowledge and its dimensions of tacit and explicit, Characteristics of a Knowledge Organization, Definitions of Knowledge Management, Knowledge Management strategy, Concepts of Knowledge sharing, Knowledge Management culture, Role of Learning and Metrics, Benefits and Impediments in the successful implementation will form the basis of this chapter. Each of these aspects has been detailed to give a clear understanding to the study of Knowledge Management.

2.1 KNOWLEDGE ECONOMY


The global economic restructuring has transitioned over the years from an agrarian economy; where agriculture was the major contributor to the economy. The nineteenth century saw the advent of the industrial economy with an emphasis on the manufacturing sector, which extended up to the mid 1900s (Polanyi, 2001). This was followed by the service sector. The last quarter of the twentieth century was largely dominated by technology followed by information technology (Franssen, et al., 2010). The information revolution has now shifted the emphasis to the knowledge economy. (Oxley et al, 2007). This present stage has witnessed a surge in global economic restructuring and a lot of application of knowledge in technological innovations and newer products, services and processes.
The term “knowledge-based economy” results from a fuller recognition of the role of knowledge and technology in economic growth (OECD, 1996)\textsuperscript{10}. According to Leadbeater and Demos, (1999)\textsuperscript{11}, “the idea of the knowledge driven economy is not just a description of high tech industries. It describes a set of new sources of competitive advantage which can apply to all sectors, all companies and all regions, from agriculture and retailing to software and biotechnology”. It encompasses every area where knowledge is applied. Knowledge is applied in every basic industry to high tech industries. So, every aspect of work relates to the knowledge-based economy. Kok et al., (2004)\textsuperscript{12} opine that knowledge economy comprises of every aspect of the contemporary society where value is added through knowledge in any form. Dahlman (2003)\textsuperscript{13} observes that knowledge economy plays a significant role in economic as well as social development, “An economy that makes effective use of knowledge for its economic and social development. This includes tapping foreign knowledge as well as adapting and creating knowledge for its specific needs”. Jacob (2006)\textsuperscript{14} profiles a knowledge economy as one that uses data as its raw material and transforms it using technology, analysis tools, and human intelligence into knowledge and expertise.

DTI Competitiveness White Paper (1998)\textsuperscript{15} describes knowledge economy as one that generates and exploits knowledge for creating wealth through all economic activities. It also refers to the use of knowledge technologies such as knowledge engineering and knowledge management to produce economic benefits (Girard & Girard, 2011).\textsuperscript{16} In the knowledge economy a continuous influx of new ideas and approaches is needed. According to Rooney, et al. (2003),\textsuperscript{17} the knowledge economy is characterized by progressive waves of innovation; products and services have pronounced externalities; and production involves compound multidisciplinary knowledge regimes.

Some of the driving forces of the present day knowledge economy are Globalization, Information and Communication technologies, Growth of the internet and world wide web, Increase in the intensity and depth of information and knowledge, Computer Networking and Connectivity and Social Media. Hitt, Keats & DeMarie(1998),\textsuperscript{18} opine that success in the 21st century organizations will depend largely on building strategic flexibility in the new competitive landscape. Organizations require to exercise strategic leadership, build dynamic core competencies, focus on developing human capital, effectively use new manufacturing and information technologies, and employ strategies
with new organization structures and culture. Thus, the new competitive landscape will require new types of organization, and leaders with vision and global leadership.

Organizations have become more competitive and have begun streamlining their processes and have improved collaboration and communication. “Knowledge management has emerged as a methodology for capturing and managing the intellectual assets of an organization as a key to sustaining competitive advantage” (Hussain, Lucas, & Ali, 2004).19

“The essential difference is that in a knowledge economy, knowledge is a product, while in a knowledge-based economy, knowledge is a tool” (Drucker, 1999).20 But, they both are strongly interdisciplinary. (Sheehan & Tegart, 1998).21

In the knowledge economy, organization’s knowledge means, knowledge of individuals, teams, groups and employees, at large, about the business they are in. It requires new ideas and approaches from policy makers, managers, and knowledge workers.

2.2 THE KNOWLEDGE HIERARCHY

The study of knowledge comes from an understanding of the sequence of data, information, knowledge and wisdom, more commonly known as DIKW. The hierarchy gives clarity and distinction to the concepts of data, information, knowledge and wisdom. It is an information hierarchy where each layer adds certain attributes over and above the previous one. Data is the most basic level; a collection of raw facts. Information adds context and meaning to the obtained data. Knowledge analyzes and synthesizes the derived information and Wisdom uses knowledge to establish and achieve goals. Davenport and Prusak (1998)22 assert that Data, Information and Knowledge are not interchangeable concepts.

According to Rowley (2007),23 “The hierarchy referred to variously as the ‘Knowledge Hierarchy’, the ‘Information Hierarchy’ and the ‘Knowledge Pyramid’ is one of the fundamental, widely recognized and ‘taken-for-granted’ models in the information and knowledge literatures. It is often quoted, or used implicitly, in definitions of data,
information and knowledge in the information management, information systems and knowledge management literatures.

Diagram 2.1 The Traditional Knowledge Pyramid and the tacit Explicit Continuum

The traditional hierarchy was first introduced into Knowledge Management by Zeleny (1987)25 in 1987. Several researchers [Cleveland, 198226; Ackoff, 1989,27; Bellinger 1997,28; Carpenter and Cannady, 200429] have modified the traditional hierarchy and have provided their own interpretations.

Diagram 2.2. Enterprise Wisdom Management and the Flow of Understanding
Ackoff, (1989), a systems theorist and professor of organizational change, was the first to suggest the use of the knowledge pyramid in Knowledge Management. His pyramid has five constructs, namely data, information, knowledge, understanding and wisdom where the previous level is the basis for the next. Ackoff considered Data as symbols, Information as data that are processed to be useful, Knowledge as application of data and information to answer “how” questions, Understanding as the ability to answer “why” questions, and Wisdom as evaluated understanding.

According to Gottschalk, (2005), Data are independent, isolated measurements, characters, numerical characters and symbols. Information is data endowed with relevance and purpose. Knowledge is information combined with experience, context, interpretation and reflection. Wisdom is knowledge combined with learning, insights and judgmental abilities.

Data are at the lowest level of known facts, with little value on their own and have to be organized, analyzed, and interpreted in order to be of value. After the clean-up of such data, it then becomes information. Accordingly, information can be described as assembled data into a message that is meaningful (Duffy, 1999). Therefore, information is data or facts organised to describe a situation or condition (Wiig, 1993). Information then becomes knowledge after it has been validated. It is the information with context, which provides the understanding and rationale associated with knowledge and cognitive experiences; its insight, judgment, and innovation. In general, knowledge can be experience, concepts, values, or beliefs that increase an individual’s capability to take effective action [Alavi & Leidner, 1999; Allee, 1997]. This, therefore, implies that knowledge is a pre-requisite for decision making for many individuals and organizations (Karemente et al.).
According to Clark (2004), one gains knowledge through understanding and context. As the context increases, the variety of experiences also increase. The more the subject matter one is able to understand the more one is able to utilise past experiences (context) into new knowledge by absorbing, doing, interacting, and reflecting.

2.3 KNOWLEDGE

The present concept of knowledge dates back to 3500 BC, when the cuneiform language was first introduced by the Sumerians in Mesopotamia (Jones, 1999). But the definition of knowledge was introduced by the Greeks when in 369 BC, Plato, through the voice of Socrates, in Theatetus, conceptualized knowledge as 'justified true belief' (Koohang et al., 2008).

On the meaning and definition of knowledge, there have been different perceptions and interpretations. According to Drucker (1988), Knowledge leads to action and is a primary resource for economic development. "In the new economy, knowledge is the primary resource for economic development; and land, labour and capital - the economist's traditional factors of production - do not disappear, but they simply become secondary." (Drucker, 1994).

- Knowledge takes many forms. Charles Savage (1996) categorizes them as
• Knowledge takes many forms. Charles Savage (1996) categorizes them as
  o Know-how - a skill, procedures
  o Know-who - who can help with a question or task
  o Know-what - structural knowledge, patterns
  o Know-why - a deeper kind of knowledge understanding the wider context.
  o Know-when - a sense of timing and rhythm
  o Know-where - a sense of place, where it is best to do something.
• Information made actionable (Maglitta, 1996).
• Genuine and true information. (Vance, 1997).
• Relevant information with an understanding of how to use it (Davenport & Prusak, 1998). "Knowledge is a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experience and information. It originates and is applied in the mind of knower's. In organisations, it often becomes embedded not only in documents or repositories but also in organisational routines, process, practices, and norms".
• Ability to act properly in a given situation and making correct decision. (Kantner, 1999).
• Justified personal belief that increases an individual's capacity to take effective action (Alavi & Leidner, 1999).
• Actionable information that adds value to the organization (Vail, 1999).
• Unified relevant information (Galup et al., 2002).
• Nonaka, et al. (2000) describes knowledge as dynamic, since it is created in social interactions amongst individuals and organizations. Knowledge is context specific, as it depends on a particular time and space. Without being put into context, it is just information, not knowledge. Information becomes knowledge when it is interpreted by individuals and given a context and anchored in the beliefs and commitments of individuals.
• "In the business context, knowledge is information that is relevant, actionable and based at least partially on experience" (Thite, 2004).
becomes knowledge again when it is transferred to another human. Information has been defined as data with special relevance and purpose (Drucker, 1995)\(^52\).

### 2.3.1 CLASSIFICATION OF KNOWLEDGE

Polanyi (1966),\(^53\) classified knowledge as tacit and explicit. Nonaka and Takeuchi (1994),\(^54\) extended this classification in their SECI model and Frost (2010),\(^55\) extended the SECI model. He classified knowledge as tacit, explicit and embedded in his model. Tiwana (2007),\(^56\) classifies knowledge along four key dimensions of type, focus, complexity and perishability. On the basis of type, knowledge has been classified as technological knowledge, business knowledge and environmental knowledge. On the basis of focus, it has been classified as operational and strategic. On the basis of complexity, it has been classified as tacit and explicit and on the basis of perishability, it has been classified as high and low.

![Diagram 2.4. Key facets of knowledge](Source: Amrita Tiwana (2007), pp. 73)\(^56\)
A summary of some of the knowledge classification is hereunder:

**Table 2.1 Different classifications of knowledge**

<table>
<thead>
<tr>
<th>Author</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aristotle (384—322 BC)</td>
<td>Episteme Knowledge (Scientific knowledge), Techne Knowledge (Skill and craft knowledge), Prognosis Knowledge (Practical wisdom), Metis knowledge (embodied, incarnate, substantial form of knowledge)</td>
</tr>
<tr>
<td>Polanyi (1967), Nonaka (1994)</td>
<td>Tacit, Explicit</td>
</tr>
<tr>
<td>Machlup (1962)</td>
<td>Practical knowledge, Intellectual knowledge, Small-talk and pastime knowledge, Spiritual knowledge, Unwanted knowledge</td>
</tr>
<tr>
<td>Pears (1972)</td>
<td>Knowledge of facts, knowledge of facts acquaintance, knowledge of how to do things</td>
</tr>
<tr>
<td>Choo (1998)</td>
<td>Tacit, Explicit, Cultural</td>
</tr>
<tr>
<td>Rulke, Zaheer and Anderson (1998)</td>
<td>Transactive, Resource</td>
</tr>
<tr>
<td>Khandelwal and Gottschalk (2003)</td>
<td>Core knowledge, Advanced Knowledge &amp; Innovative Knowledge</td>
</tr>
</tbody>
</table>

Source: Sanghani (2009)57.

All these classifications show that knowledge can be applied in every field depending upon the need and the circumstance. Knowledge therefore needs to be understood in the context in which it is classified and applied accordingly.
2.3.2 ORGANIZATIONAL KNOWLEDGE

Organizational knowledge is the key for sustainable competitive advantage. (Magalhães, 2004). Morrison (2002, p.1150) defines organizational knowledge as “knowing about one’s larger organizational context.” It is the key ingredient in innovation as well as in the production of new products and services (Tryon, 2012).

According to Nonaka and Takeuchi (1995), “Organizational knowledge creation, therefore, should be understood as a process that "organizationally" amplifies the knowledge created by individuals and crystallizes it as a part of the knowledge network of the organization. This process takes place within an expanding "community of interaction," which crosses intra- and inter-organizational levels and boundaries.” Organizational knowledge includes information and knowledge that is contained in the collective intelligence of all the employees of the organization and is often found in rules, routines and standard operating procedures (Canary & McPhee, 2010). Employees are the custodians of organizational knowledge (Tryon, 2012).

Organizational knowledge starts with identification or creation of knowledge. It can originate through trial and error method i.e. learning from failures and mistakes, troubleshooting, and learning by innovation or creativity or it can be imported from outside like attending seminars. All the acquired knowledge is classified and stored in an organized manner. Documentation of user requirement, business scenario and project management plan can be the output of the process of organized Knowledge Management system. Web based portal, shared folders or documentation cell in the PMO can be a good platform for knowledge storage. It is made available to the users for legitimate use and reuse, exploitation and application can explore new horizons for the new ideas and processes. Thus, the cycle of Knowledge Management in a software development continues.

2.3.3 TWO DIMENSIONS OF KNOWLEDGE

Tacit Knowledge and Explicit Knowledge are the two main dimensions of knowledge.
2.3.3.1 TACIT KNOWLEDGE

The term "tacit knowing" was first introduced by Micheal Polanyi (1957). In 1966, Polanyi also propounded the two dimensions of Knowledge: Tacit Knowledge and Explicit Knowledge. "We can know more than we can tell" – Micheal Polanyi (1966).

Polanyi described tacit knowledge as:

- subconsciously understood or applied,
- difficult to articulate,
- developed from direct action and experience,
- shared through conversation, story-telling.

Polanyi further distinguished between tacit knowledge and explicit knowledge as different, but not sharply divided. "While tacit knowledge can be possessed by itself, explicit knowledge must rely on being tacitly understood and applied. Hence all knowledge is either tacit or rooted in tacit knowledge. A wholly explicit knowledge is unthinkable." (Micheal Polanyi, 1969). Tacit knowledge is the personal knowledge of an individual and is deep-rooted in the individual’s mind, making it difficult to articulate many a times. Nonaka and Konno, (1998), expanded tacit knowledge further into two dimensions. "Tacit knowledge that holds informal kinds of craft and personal skills refers to ‘know how’ (technical dimension) while a second set of tacit knowledge (cognitive dimension) refers to beliefs, values, schemata, and mental models which are deep-rooted within humans and organisations." Popadiuk and Choo (2006), reiterated on the technical and cognitive dimensions. "The tacit dimension is based on experience, thinking, and feelings in a specific context, and is comprised of both cognitive and technical components. The cognitive component refers to an individual’s mental models, maps, beliefs, paradigms, and viewpoints. The technical component refers to concrete know-how and skills that apply to a specific context."

Haldin-Herrgard (2000, p. 358), present tacit knowledge as "knowledge that entails information that is difficult to express, formalize and share. It stands in contrast to explicit knowledge, which is conscious and can be put into words. People experience tacit knowledge mostly as intuition, rather than as a body of facts or instruction sets he or she is conscious of having and can explain to others. Tacit knowledge is obtained by internal individual processes, such as experience, reflection, internalisation or individual talent. Therefore, it cannot be given in lectures and found in databases, textbooks, manuals or
internal newsletters for diffusion. It has to be internalised in the human body and soul.”

According to Boom, (2007), “It is embodied in people (human capital), or embedded in informal work processes (structural capital), or earned through working relationships outside (stakeholder capital).” It accounts for an estimated 75-95% of total organizational knowledge; expertise and mastery, the two highest forms of knowledge are both tacit; and innovation processes depend for the most part on tacit to get started. Only 5% of the personal intellectual capital of the tacit knowledge is generally contributed by employees to the knowledge repository using Information and Communication Technologies (ICT) [Boom, 2007, Alaerts & Dickenson, 2008].

Nonaka et al. (2000) have furthered the thinking of the tacit and explicit knowledge in all their studies of knowledge creation and have developed the SECI model based on the two dimensions of tacit and explicit knowledge. Kikoski and Kikoski (2004), give a deeper meaning to tacit knowledge. “Tacit knowledge is personal and hard to formalise—it is rooted in action, procedures, commitment, values and emotions, etc. Tacit knowledge is the less familiar, unconventional form of knowledge. It is the knowledge of which we are not conscious. Tacit knowledge is not codified, it is not communicated in a “language”, it is acquired by sharing experiences, by observation and imitation.” [Kikoski and Kikoski, (2004); Hall and Andriani, 2002].

Competitive advantage will only be gained if companies value their tacit knowledge, as explicit knowledge can be known by others as well. Tacit knowledge creates the learning curve for others to follow and provides competitive advantage for future successful companies (Kikoski and Kikoski, 2004).

2.3.3.1 Characteristics of Tacit Knowledge

Tiwana (2007) profiles the characteristics of tacit knowledge.

Table 2.2. Characteristics of Tacit Knowledge

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Tacit</th>
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</thead>
<tbody>
<tr>
<td>Nature</td>
<td>Personal, context specific</td>
</tr>
<tr>
<td>Formalization</td>
<td>Difficult to formalize, record, encode or articulate</td>
</tr>
<tr>
<td>Development process</td>
<td>Developed through a process of trial and error encountered in practice</td>
</tr>
</tbody>
</table>
Tacit knowledge often allows beginners to perform at a higher level than what explicit knowledge does. Mentoring by experts, Buddy system for novices, apprenticeship, direct interaction, networking and action learning that includes face-to-face social interaction and practical experiences supports the sharing of tacit knowledge throughout the company. There are four categories of tacit knowledge (Lubit, 2001, p. 166)76

1. Hard-to-pin-down skills. “Know-how”; the word skill implies tacit knowledge. People need to repeatedly practice skills, receive feedback and get a feel for them.

2. Mental models. We draw on mental models or schemas when trying to make sense of a situation; they determine how we understand and analyse situations; that is, how we understand cause-effect connections and what meaning we attribute to events. The schemas we use are often subconscious abstractions, rather than explicit models we consciously employ, and therefore they belong to tacit knowledge. They affect whether or not we see people as trustworthy, whether we see opportunity in a situation, and how we judge risk.

3. Ways of approaching problems. Tacit knowledge underlies the decision trees people use.

4. Organizational routines. Much of a firm’s tacit knowledge is stored in its routines. This tacit knowledge embedded in routines includes an intuitive grasp of what data to focus on and of the relative priority of competing demands. In time, managers leave and the routines remain as a legacy of their knowledge.

Lubit (2001) further feels that the difficulty of expressing, codifying and transmitting tacit knowledge makes it easier for a company to protect it than explicit knowledge. Moreover, tacit knowledge may only be effective when embedded in a particular organizational culture, structure and set of processes and routines. The difficulty of copying tacit
knowledge enables tacit knowledge to be the basis of an inimitable competitive advantage.

2.3.3.2 Role of Tacit knowledge in Organizations

The importance of tacit knowledge can be observed from the role it plays in the organization.

- Tacit knowledge acts as a source of Competitive Advantage [Lippman & Rumelt (1982)77, Kogut & Zander (1993)78, Teece (1982)79, and Teece & Pisano (1998)80, Berman et al (2002)81]. The more experienced and creative, the people in the organization are, the more stronger will be the organizational knowledge leading to a competitive advantage for the organization.

- Tacit knowledge is an important catalyst for new ideas [Holtshouse, 199882; Nonaka and Takeuchi, 199583, Mascitelli, 200084]. “The tacit knowledge in every knowledge worker often comes out in the form of insights, intuitions and path-breaking ideas whenever the need arises. Most of the time, it lies dormant unless he is pushed into a thinking situation”. (Leonard & Sensiper, 1998).85

- Tacit knowledge stimulates creativity (Leonard, 2011).86 Therefore, it stimulates creativity and has a positive effect on business activities. The creativity surfaces from invisible reservoirs of experience which need to get vitalized first. The whole discussion on tacit Knowledge Management including definitions was brought forward by several authors such as Rosenberg (1982, p. 143)87 who describes tacit knowledge as “the knowledge of techniques, methods and designs that work in certain ways and with certain consequences, even when one cannot explain exactly why”. Nonaka (1991, p. 98)88 has constantly stressed that the cognitive dimension consists of beliefs, ideas and values which we often take for granted which can be sometimes very difficult to articulate [(Nonaka & Konno, 1998, p. 42).89 Howells (1996, p. 92)90] defines tacit knowledge as follows: “tacit knowledge is non-codified, disembodied know-how that is acquired via the informal take-up of learned behaviour and procedures”. Grant (1997, p. 451)91 explores the term relating to its applicability: “tacit knowledge which is manifest only in its application and is not amenable to transfer”.

69
**Tacit knowledge encourages the learning process (Jawadekar, 2011)**

"Because of the very nature of tacit knowledge being very difficult to express as well as document, it encourages the learning process through close interaction."

**Tacit knowledge leads to Innovation (Nonaka, I., Takeuchi, H. (1995)).**

"It is the collective knowledge of its employees when channelised and worked on, brings innovation to the organization." (Cavusgil, et al 2003). According to Senker(1993), "tacit knowledge, which can only be transmitted through personal interaction, will continue to play an important role in innovation".

**Tacit knowledge is an important element in Collaboration (Skyrme, 1999).**

"Collaboration is the only way that tacit know-how can be transferred and shared" (Howells, 1996). Tacit knowledge is important in recognizing the network of relationships for tacit knowledge transfer (Skyrme, 1999). Joia & Lemos, (2010) Face-to-face interaction often is the primary method for transferring tacit knowledge (Nonaka & Takeuchi (1995); Spender & Grant, (1996); Sweeney, (1996); Teece et al., (1997); Teece, (2000).

**The levels of risk and uncertainty that are associated with tacit knowledge transfer are reduced by trusting relationships (Foos et al., 2006).** "Some transfers of tacit knowledge are formal, resulting from training events, or conferences, while others are more informal, resulting from interdepartmental task forces, informal social networks and employee interactions" (Marquardt, 1996). "A lot of tacit knowledge is transferred, if the level of personal intimacy and communication is high in these networks" (Leonard and Sensiper, 1998).

Key to both formal and informal tacit knowledge transfer is the willingness and capacity of individuals to share what they know and to use what they learn [Foos et al., 2006; O'Dell et al., 1998; Szulanski, 1995, 1996]. The transfer of tacit knowledge is not free from barriers (Lucas, 2005). These include coworker willingness to share and/or use tacit knowledge, limited awareness of the tacit knowledge an individual possesses, difficulty in expressing tacit knowledge that is tied to mental and/or physical action, and
difficulty of applying context-specific tacit knowledge in other contexts [Argote, 1999; Fahey & Prusak, 1998; Nidumolu et al., 2001; Nonaka & Takeuchi, 1995; Stenmark, 2000, 2002].

2.3.3.1.3 Capturing Tacit knowledge
Tacit knowledge capture is a process of capturing the expert's thoughts and experience. It is important to leverage this knowledge so that resolving problems becomes easier and the organization stands to benefit (Rhem, 2006). At the same time, capturing tacit knowledge is a challenge for the organization. Expertise management; (Rhem, 2006) Channeling informal discussions; [Rhem, 2006] (Davenport et al. (1998)), Social software [Jackson, 2010; Minnagh, 2002]; Using software that documents how you work while you're working; [Desouza, 2008; Ferrer & Alfonso, 2011], Social networking is an excellent tool for capturing tacit knowledge. (Camarinha-Matos, et al, 2009). The use of information technology, internet, intranet and the various social media tools have made sharing of knowledge easier. Various social media tools like Wikis, Blogs as well as Web 2.0 are used for capturing tacit and explicit knowledge. (Daft, 2009). The tacit knowledge captured from individuals is stored and processed by using the Knowledge Repository (Dalkir, 2005; Desouza, 2008). A good Rewards & Recognition (Remenyi, 2004) system should be in place so that the employees get motivated to build a knowledge sharing culture.

2.3.3.1.4 Factors that lead to sharing of tacit knowledge
Little, Quintas & Ray, (2002) has identified some factors that lead to sharing of tacit knowledge.

Factors that constitute the knowledge conversion process from tacit to explicit:
Tacit knowledge accumulation by managers, Extra-firm social information collection (wandering outside), Intra-firm social information collection (wandering inside), and Transfer of tacit knowledge are some of the factors for knowledge conversion from tacit to tacit.

Factors that constitute the knowledge conversion process from tacit to explicit:
Factors that constitute the knowledge conversion process from tacit to explicit are when Managers facilitate creative and essential dialogue, the use of 'abductive thinking', the
use of metaphors in dialogue for concept creation, and the involvement of the industrial designers in project teams.

Factors that constitute the knowledge conversion process from explicit to explicit are: Acquisition and Integration, Synthesis and Processing, and Dissemination by Managers in the planning and implementation of presentations to transmit newly created concepts.

Factors that constitute the knowledge conversion process from explicit to tacit:
Personal experience; real world knowledge acquisition, Simulation & Experimentation; virtual world knowledge acquisition are some of the other factors that constitute the knowledge conversion process from explicit to tacit.

Other factors:
Building trust among employees; Rewards for sharing; Recognition that the knowledge shared is of the employee; Building an Organizational Culture which encourages and motivates employees into sharing; and providing ample time for sharing are some of the other factors which encourage employees to share tacit knowledge.

2.3.3.2 EXPLICIT KNOWLEDGE

Most of the knowledge that is oral or seen, in spoken or written form, either as alphabets; pictures, symbols, circuits, codes is all explicit knowledge. Kikoski and Kikoski (2004) describe explicit knowledge as what can be embodied in a code or a language and as a consequence it can be verbalized and communicated, processed, transmitted and stored relatively easily. It is public and most widely known and the conventional form of knowledge which can be found in books, journals and mass media such as newspapers, television, and internet. It is the sort of knowledge we are aware of using and it can be shared in the form of data, scientific formulae, manuals and such like. Patents are an ideal example of explicit knowledge in a business context (Nonaka & Konno, 1998). Explicit knowledge is increasingly being emphasised in both practice and literature, as a management tool to be exploited for the manipulation of organisational knowledge. (Scarbrough et al. 1999) Explicit knowledge is well articulated and expressed making it simple for individuals to understand [Newell et al., 2002; Nonaka & Takeuchi,
It is found in organizational policies, procedures and processes, as well as in documentation such as performance management systems and position descriptions [Becker, 2006; Rebernik & Širec, 2007] which is collectively referred to as Organizational memory (Rebernik & Širec, 2007).

Explicit knowledge can be codified and is sometimes also referred to as codified knowledge. [Nonaka & Takeuchi, 1995; Alavi & Leidner, 1999]. It can be easily communicated and transferred to other individuals (Nonaka & Takeuchi, 1995). According to Pan and Scarbrough (1999), “Explicit knowledge is systematic and easily communicated in the form of hard data or codified procedures. It can be articulated in formal language including grammatical statements. This kind of knowledge can thus be transmitted across individuals formally and easily”. Mental models (Kim, 1993), frames of reference, (Mezirow, 2000 in Becker, 2006), cognitive maps, (Huber, 1991), schemas (Barrett et al., 1995), theories of action, (Hedberg, 1984), and paradigms (Markoczy, 1994 in Becker, 2006). Books, reports, data files, newsreels, audio cassettes, DVDs, CDs and other physical forms all constitute explicit knowledge for an organization (Karemente, et al., 2009).

Explicit knowledge can also be classified as object based or rule-based. “Knowledge is object-based when it is codified in words, numbers, formulas, or made tangible as equipment, documents, or models. It is rule-based when the knowledge is encoded as rules, routines, or standard operating procedures” (Choo, 1998). The rule-based knowledge is further divided into four types of procedures (Cyert and March, 1992), “as (a) task performance rules for accomplishing organizational tasks and facilitating the transfer of learning; (b) record-keeping rules on what records and how such records should be maintained by the organization; (c) information handling rules that define the organization’s communication system and (d) planning rules that guide the planning process and the allocation of resources among the activities of the organization”.

2.3.3.2.1. Characteristics of Explicit Knowledge

Tiwana (2007) has identified the characteristics of explicit knowledge.
Table 2.3 Characteristics of Explicit Knowledge

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Explicit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature</td>
<td>Can be coded and explicated</td>
</tr>
<tr>
<td>Formalization</td>
<td>Can be codified and transmitted in a systematic and formal language</td>
</tr>
<tr>
<td>Development</td>
<td>Developed through explication of tacit understanding and interpretation of information</td>
</tr>
<tr>
<td>Location</td>
<td>Stored in documents, databases, web pages, e-mails, charts</td>
</tr>
<tr>
<td>IT support</td>
<td>Well supported by existing Information Technology</td>
</tr>
<tr>
<td>Medium needed</td>
<td>Can be transferred through conventional electronic channels</td>
</tr>
</tbody>
</table>

Source: Amrita Tiwana, 2007, pp 73

Nonaka and Takeuchi (1995), distinguish between tacit and explicit knowledge. Tacit knowledge is subjective, a knowledge of experience (body), simultaneous knowledge (here and now), and analog knowledge (practice), while explicit knowledge is objective, knowledge of rationality (mind), sequential knowledge (there and then), and digital knowledge (theory).

Tacit and explicit knowledge are complementary, which means both types of knowledge are essential to knowledge creation. Explicit knowledge without tacit insight quickly loses its meaning. Knowledge is created through interactions between tacit and explicit knowledge and not from either tacit or explicit knowledge alone (Nonaka et al. 2000).

Several other authors have described tacit and explicit knowledge. The different views are listed herewith.
<table>
<thead>
<tr>
<th>Citation</th>
<th>Explicit knowledge</th>
<th>Tacit knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athanassiou and Nigh (2000)</td>
<td>Products, patents, code, databases, technical drawings, tools, prototypes, audiovisuals, operating procedures</td>
<td>Transfer “depends on the credibility of the transferor” and is “most effectively achieved through face-to-face interaction”.</td>
</tr>
<tr>
<td>Choo (2000)</td>
<td>Learned through observation and imitation; shared through analogies, metaphors, and stories</td>
<td></td>
</tr>
<tr>
<td>Clarke and Rollo (2001)</td>
<td>Codified, formal, systematic, reports, manuals, documents</td>
<td>Experimental, intuitive, communicated through face-to-face collaboration</td>
</tr>
<tr>
<td>Davenport and Grover (2001)</td>
<td>Easily codified</td>
<td>Primarily transferred through direct interaction between individuals</td>
</tr>
<tr>
<td>Epstein (2000)</td>
<td>Data, instructions, simple factual information, work progress, status</td>
<td>Big picture issues, company information/rumors/gossip, needs, new ideas, insight, intuition, problems, concerns, issues</td>
</tr>
<tr>
<td>Haldin-Herrgard (2000)</td>
<td>Handbooks, lectures, databases, textbooks, manuals, newsletters</td>
<td>Intuition, rule-of-thumb, gut feeling, personal skill</td>
</tr>
<tr>
<td>Meso and Smith (2000)</td>
<td>Know-what, know-why, know-how, copyrights, patents, trademarks</td>
<td>Mental models, beliefs, persuasions, care-why</td>
</tr>
<tr>
<td>Scott (2000)</td>
<td></td>
<td>Transferred through face-to-face interaction, observation, imitation, practice, shared-experiences based on trust</td>
</tr>
<tr>
<td>Smith (2001)</td>
<td>Practical, action-oriented, know-how, resembles intuition, mental models, values, beliefs, perceptions, insights, assumptions. Exchanged through “knowledge fairs, learning communities, study missions, tours, advisory boards, job rotation”</td>
<td></td>
</tr>
<tr>
<td>Zack (1999b)</td>
<td>Shared through high interactive sessions.</td>
<td></td>
</tr>
</tbody>
</table>

Source: Holste and Fields (2010)
2.4 CHARACTERISTICS OF A KNOWLEDGE ORGANIZATION

2.4.1 INNOVATION

According to Nonaka and Takeuchi (1995), knowledge creation leads to continuous innovation which in turn gives companies competitive advantage. Peter Drucker (1985) emphasizes that successful innovations result largely from a matter of discipline. Innovation needs, in his analysis, to be simple and focused, requiring knowledge and often ingenuity. Organizational culture is a primary determinant for innovation and it is important to understand how it affects the processes that facilitate or constrain the ability to add value (Ahmed 1998). Knowledge Management systems identify, capture, sort, store, disseminate and re-use knowledge to build innovations (Gorelick & Tantawy-Monsou 2005). Teams when they share knowledge continuously will complement one another leading to innovations (Lucas, 2006) and innovation is turning the new concept into commercial success or widespread use (Ijuri & Kuhn 1988). Amidon (1997) provides the rationale for knowledge strategy through Knowledge Innovation. In an organization, innovation culture is encouraged through the communication of all aspects from the value of the innovation to the organization, to the rewards (King, 2009).

2.4.2 KNOWLEDGE SHARING CULTURE

Ford and Chan (2003) believe that knowledge sharing is one of the most challenging processes for a knowledge-based enterprise to address and indicate that organizational culture may make employees reluctant to share what they know. Organizational cultures that promote knowledge sharing are characterized by informality, richness of communication, and openness to transfer of learning and knowledge absorption (McDermott & O'Dell, 2001). Interdisciplinary teamwork, active self-development programmes, and a climate for learning are conducive to knowledge exchange and collaboration.

A knowledge-enriching culture (Skyrme, 1999) is characterized by: an organizational climate of openness, Empowered individuals, active learning, constant search for improvement and innovation, intense communications, organizational slack-time to experiment, reflect and learn, boundary-crossing, Encouragement of experimentation,
rather than blindly following rules, Aligned goals and performance measures across departments, teams and individuals, and willingness to share knowledge widely among colleagues, even those in different groups.

Motivation, availability of ‘slack’ resources, leadership, direction, self-development, Enabling tools and resources, Communications and information exchange, Knowledge Management, cross-boundary working, appropriate structures, team working and learning also help build an innovative culture in organizations. (Bessant, 2003). Mentoring/coaching, Knowledge integration with learning and training, CoP, new culture of dialogue, valuing the knowledge of the individual and knowledge push are some of the other Knowledge Management tools that foster a knowledge sharing innovative culture (Gamble & Blackwell, 2001). Knowledge sharing within an organization tends to be difficult, due to the heterogeneous cultures of the people. Trust, common languages and beliefs are critical to effective knowledge sharing (Simonin, 1999). Therefore, the management should promote knowledge sharing and continuously support this by creating a culture which is largely supported from the top. Knowledge-intensive organizations must develop and sustain an organizational culture that supports knowledge creation and innovation (Storey & Quintas, 2001).

2.4.3 CONTINUOUS LEARNING

The creation of new knowledge is an outcome of learning. Continuous learning is the primary element of knowledge management (Franke, 2002) and knowledge sharing helps in organizational learning (Ford & Chan, 2003). The development of domain-related skills (i.e., expertise) is a pre-condition to organizational innovation (King, 2009).

2.4.4 TEAM WORK AND COLLECTIVE THINKING

Nonaka and Takeuchi (1995) emphasise the need for socializing, team work and organizational culture for good knowledge management practice. According to Senge (1994) teams (Communities of practice) and not individuals, are the fundamental learning unit in modern organizations. Unless teams can learn, the organization cannot learn, (Wieneke & Phlypo-Price, 2010). Team learning is a collective phenomena. During a 2005 study of 8000 business executives worldwide McKinsey, 78% of the
respondents believed that the growth of their companies was dependent upon effective coordination among employees across product, functional and geographic lines.  

2.4.5 ORGANIZATIONAL GOALS HIGHER THAN SELF

Organizations encourage individuals to share knowledge (Alavi & Leidner, 2001), so that it enables them to enhance their personal areas of knowledge as they apply them to best pursue organizational goals (Becerra-Fernandez & Sabherwal, 2010).

2.4.6 EMPOWERED KNOWLEDGE WORKERS

In his book “Managing for the Future: The 1990s and beyond” (Drucker, 1992) writes “from now on, the key is knowledge. The world is not becoming labor intensive, not materials intensive, not energy intensive, but knowledge intensive”. Drucker (1959, 1996) recognizes that the value in an organization is created by a group of key workers. When they are empowered, they seize the opportunities and come up with new ideas. They tackle any problems confronting the business and are always willing to put the organization first. According to McKinsey, the new age workers of the 21st century look for jobs which foster connectivity, remove barriers, facilitate learning, and provide new tools that help workers collaborate and learn within an environment that demands more and more complex and often decentralized decision making (Bryan & Joyce, 2005).

2.4.7 EMPLOYEE PARTICIPATION

For a successful Knowledge Management system, the employees participation is absolutely necessary (Montano, 2004). A motivated employee usually participates in the direction of change, concerns himself with the processes and projects of knowledge management and works on the best solutions with his team. [Mertins, Heisig, & Vorbeck, (2003); Bryan & Joyce, (2005).]

2.4.8 SELF-ORGANIZED COMMUNITIES

Knowledge is self-organizing whether in the form of non-traditional knowledge communities or a more systemized knowledge universe (Sharma, 2008). Schmitz
researches on the role of self-organized communities and its immense contribution to Knowledge Management. Becerra-Fernandez and Sabherwal (2010) have highlighted that organization structures like Self-organized Communities facilitate Knowledge Management.

2.4.9 STRONG TOP MANAGEMENT SUPPORT

Top management support is critical to any organization for a change effort (Ehie & Madsen, 2005). To get the employees to participate, top management is needed (Holsappe & Jones, 2005). It is important for the top management to help in the decision making during the initiative. Top management also needs to be visible in the support of the initiatives (King, 2009).

2.4.10 OPEN COMMUNICATIONS.

According to a research conducted by Mertins, Heisig, Vorbeck (2003) open communications largely facilitates Knowledge Management. The best way to ensure effective communications is to have a barrier-free mutually responsive and mutually reciprocative information exchange mode (Mrathyunja, 2011).

2.4.11 KNOWLEDGE NETWORKING

Krebs (1998) emphasises that innovation happens, within and between organizations, at the intersection of diverse information flows and knowledge exchanges and outlines the various network flows in the organization. Back et al. (2005) discuss the different knowledge networks and processes needed for the organization’s business strategies as well as setting up of networks, measuring and adapting to suit the organization’s needs [Skyrme, (1999); Savage, (1996)].

2.4.12 REWARDS AND RECOGNITION

Montano (2005) “Consistent rewards provide proper recognition for high performance teams and are excellent motivators. Employees must feel valuable before they will be comfortable sharing their knowledge”. Group rewards and recognition of high
performance become strong incentives and intensify the need to collaborate (Debowski, 2007).

2.4.13 INTEGRATING KNOWLEDGE SHARING INTO WORK

American Productivity & Quality Center in its Research on Knowledge Management practices in organizations outlines integrating knowledge sharing into work as an important factor for the successful implementation of Knowledge Management. O Dell (2005) observed that “Knowledge Management systems should be integrated with day-to-day activities and processes and should not be stand-alone processes and activities to yield good results” (Stenmark & Lindgren 2004).

2.4.14 STRONG TRUST BETWEEN EMPLOYERS AND EMPLOYEES

The employee will have a strong sense of commitment when he feels secure about his contributions and this comes from the type of trust the employer and the organization instills in him (Schwartz, 2006). Turner (2011) observes that in a networked organization, trust is what makes employees willing to share information.

2.5 KNOWLEDGE MANAGEMENT DEFINITION

There is no universal definition of Knowledge Management. Knowledge Management means different things to different people. Researchers have interpreted and defined KM differently. A host of definitions are found based on individual perspectives. From the introduction to, "An Open Discussion of Knowledge Management", Brian Newman (1991) is very clear that KM is just not technology, but includes a host of activities and processes leading to knowledge sharing. “Knowledge Management is the collection of processes that govern the creation, dissemination and utilization of knowledge.” According to Grey G. (1991) Knowledge Management complements and enhances other organizational initiatives such as total quality management (TQM), business process re-engineering (BPR), and organizational learning, providing a new and urgent focus to sustain competitive position. Davenport (1994) defines KM as a process. "Knowledge management is the process of capturing, distributing, and effectively using knowledge." Wigg (1994), focuses on the activities that comprise KM, “Focusing on determining, organizing, directing,
facilitating and monitoring knowledge-related practices and activities required to achieve the desired business strategies and objectives”. Nonaka and Takeuchi (1995) emphasize KM as a dynamic process of knowledge creation, "KM is the capability of a company to create new knowledge, disseminate it throughout the Organisation and embody it in products, services and systems”.

Grant (1995) describes a hierarchy of organizational capabilities, where specialized capabilities are integrated into broader functional capabilities such as marketing, manufacturing, and IT capabilities.

Svielby, (1997) emphasizes on the value creating aspect of KM, “The art of creating value from an organization’s intangible assets”.

O’Dell and Grayson (1998), propound KM as a well-planned strategy for achieving organizational performance, “Knowledge Management (KM) can be defined as a conscious strategy for moving the right knowledge to the right people at the right time which will be translated into action to improve the organisational performance”.

Duhan, (1998), reiterates Gartner Group’s definition of KM as a discipline, "Knowledge management is a discipline that promotes an integrated approach to identifying, capturing, evaluating, retrieving, and sharing all of an enterprise's information assets. These assets may include databases, documents, policies, procedures, and previously uncaptured expertise and experience in individual workers".

Further, Davenport and Marchand (1999), profile KM as a process integrating Information Science and Human Resources. “Knowledge management is the process of increasing the efficiency of knowledge markets by generating, codifying, coordinating, and transferring knowledge. Knowledge Management draws from existing resources that your organization may already have in place-good information systems management, organizational change management, and human resources management practices.” They, further emphasize the tasks of creation and sharing of knowledge. “whilst knowledge management does involve information management, beyond that it has two distinctive tasks: to facilitate the creation of new knowledge and to manage the way people share and apply it”.

[Swan et al., 1999; Skyrme, 1999; Bukowitz & Williams, 2000, p. 211], define KM as a process “any process or practice of creating, acquiring, capturing, sharing and using knowledge, wherever it resides, to enhance learning and performance in organizations”. “The explicit and systematic management of vital knowledge and its associated processes of creating, gathering, organizing, diffusion, use and exploitation in
pursuit of organizational objectives” Skyrme (1999). “Knowledge management is the process by which the organization generates wealth from its knowledge or intellectual capital” (Bukowitz & Williams, 2000, p. 2).

Young (2009) has developed KM as a discipline and process. "Knowledge Management is the discipline of enabling individuals, teams and entire organisations to collectively and systematically create, share and apply knowledge, to better achieve their objectives".

Thite (2004) gives a broader definition of KM which encompasses the entire gamut of KM, “Knowledge Management is the

- Creation, distribution, validation and utilization of
- Explicit and tacit knowledge at
- The individual, group, organizational and community level through
- Harnessing of people, process and technology for

The benefit of those involved and affected by it.”

Jain (2007) found that KM can be characterized as a core process of several activities; creating, acquiring, capturing, sharing, using and re-using it which includes both explicit and tacit knowledge; it is an ongoing activity where information is the building block of KM; it is action oriented or application based; and, the main drive behind KM is to improve organizational performance.

According to Malhotra (1998), Knowledge Management caters to the critical issues of organizational adaptation, survival, and competence in face of increasingly discontinuous environmental change. Essentially, it embodies organizational processes that seek synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings. Malhotra, further opines that KM should be a continuous adaptation to the changing environment, "In order to survive and to prosper, the focus of knowledge management is on ongoing adaptation through anticipation of changes and discontinuities thrust by the continuously changing environment".

Knowledge Management refers to an enterprise that consciously and comprehensively gathers, organizes, shares and analyzes its knowledge to achieve its goals. It is the right
mix of people, processes and technology in an organization. It is the systematic leveraging of information and expertise to improve organizational and operational innovation, responsiveness, productivity and competency.

Finally as Williams (2006), 216 observes, managing knowledge is not about managing the explicit objective, but managing strategy, relationships, and communities of practice, which make up the narrative of the organization.

2.6 DEVELOPING A KNOWLEDGE MANAGEMENT STRATEGY

A knowledge strategy can be defined as balancing an organization’s knowledge resources and capabilities to the knowledge required for providing products and services superior to those of competitors (Zack, 1999b, 131 cited in Maier, 2004). 217 It is built around the organization’s intellectual resources and capabilities. It is based on identifying what knowledge is strategic and the reasons for being so (Choo & Bontis, 2002). 218

Knowledge Management strategy is a plan that describes how an organization will manage its knowledge better for the benefit of the organization and its stakeholders. And is always aligned with the organization’s objectives and strategies. 219 It guides and defines the processes and infrastructure, both organizational and technological, for managing knowledge. It includes both generic as well as organization specific aspects of knowledge creation and sharing (Choo & Bontis, 2002). It is usually aligned with the business strategy of the organization and focuses on reducing the strategic gaps, if any.

Knowledge Management initiatives are successful when the top management is involved and supports them continuously. When executives encourage initiatives leading to improvement in customer-related practices, regular technology upgradation and continuously motivating employees on knowledge creation and knowledge sharing, the desired results will show in the organization’s performance (O’Dell & Leavitt, 2004). 220

According to Skryme (2002), 221 it is people and processes, rather than the content of a strategy, that will determine its ultimate success. Organisations that exhibit best practice in knowledge innovation show a number of recurring characteristics like clear and explicit links to business strategy, knowledgeable about knowledge and a clear understanding of the knowledge advantage, a compelling vision and architecture,
knowledge leadership and champions, systematic knowledge processes, a well-developed knowledge infrastructure and Appropriate bottom line measures. Developing a strategy consists of five main activities - information gathering; analysis and diagnosis; planning the approach; documenting the detail; communicating and gaining acceptance (Skyrme, 2002).222

According to Srikantaiah and Koenig (2000),223 developing a good KM strategy depends largely on identifying the key drivers in the organization, “The goal of developing a KM program around the most obvious strategy is to provide a clear example of how shared knowledge can provide immediate and highly visible returns to both individual and the organization as a whole”.

Knowledge Management initiatives are successful when the top management is involved and supports them continuously. When executives encourage initiatives leading to improvement in customer-related practices, regular technology upgradation and continuously motivating employees on knowledge creation and knowledge sharing, the desired results will show in the organization’s performance (O’Dell and Leavitt, 2004).224 Generally the Knowledge Management Core group headed by the Chief Knowledge Officer, will plan a myriad of initiatives. They are supported by a Steering Committee of executives drawn from different departments across the organization. The Steering Committee guides in the development of the implementation plan, funding, minimizing barriers, approving initiatives, communicating and is a bridge between the Knowledge Management initiative and the formal organization. Tiwana (2007)225 has developed a ten step Knowledge Management road map which comprises of four phases:

Diagram 2.5 Ten step Knowledge Management road map
Table 2.5 Activities related to the ten step Knowledge Management roadmap.

<table>
<thead>
<tr>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Identify knowledge critical to your business</td>
</tr>
<tr>
<td>2 Align business strategy and knowledge management</td>
</tr>
<tr>
<td>3 Analyze existing knowledge in your company</td>
</tr>
<tr>
<td>4 Building on, not discarding existing IT investment</td>
</tr>
<tr>
<td>5 Focus on processes and tacit, not just explicit, knowledge</td>
</tr>
<tr>
<td>6 Design a future-proof, adaptable knowledge management platform</td>
</tr>
<tr>
<td>7 Build and deploy a results-driven knowledge management system</td>
</tr>
<tr>
<td>8 Implement leadership and reward structures needed to make knowledge management work</td>
</tr>
<tr>
<td>9 Evaluate initiatives using real options analyses</td>
</tr>
<tr>
<td>10 Learn from war stories</td>
</tr>
</tbody>
</table>

Tiwana (2007), indicates that a good KM strategy begins with the organization’s vision, objectives and strategies. The next step is to conduct a knowledge audit which will evaluate the organization's KM needs, strengths, weaknesses, opportunities, threats and
This is followed by aligning appropriately with the three components of people, process and technology to meet the planned objectives and goals. Deploying the right infrastructure and the necessary tools and techniques and regularly reviewing short term successes to meet the long term vision is essential. Review of strategies and evaluation of performances will identify the gaps and help rectify the KM strategy in the long run.

According to Bill Kaplan's Concept-Strategy-Practice (CSP) model, planning, developing and implementing a Knowledge Management strategy helps focus on the outcomes desired, tied to select measures of KM success. Each phase focuses on a critical component of success.

<table>
<thead>
<tr>
<th>Concept</th>
<th>Strategy</th>
<th>Practice</th>
<th>(CSP) Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leverage knowledge to improve quality and performance</td>
<td>Learn from past challenges and successes</td>
<td>Improved Ability</td>
<td>Create long term value from knowledge held by workforce</td>
</tr>
<tr>
<td>Create long term value from knowledge held by workforce</td>
<td>Better Operational or Business Outcomes</td>
<td>Create long term value from knowledge held by clients/customers</td>
<td></td>
</tr>
<tr>
<td>Better Decisions and Solutions</td>
<td>Improve Ability</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Diagram 2.6 Kaplan's Concept, Strategy, Practice Model of Knowledge Management.

Source : Kaplan, B. Available at http://workingknowledge-csp.com/content/csp-model

At the initial phase of Knowledge Concepts, a basic study is conducted to assess the need for KM, KM Audit, what are the KM outcomes and the culture and dynamics of the workforce.
The next phase involves developing the KM strategic plan which is linked with the overall strategic plan of the organization. It also ensures that the measures of success are identified to make the KM programme useful to the organization.

The third phase is the implementation phase which develops the various initiatives required to achieve the planned goals and outcomes.

All this is achieved with a viable blend of people, process and the enabling technology. Creating a culture suitable for KM depends on the top management and leadership and their continuous motivation.

2.7 KNOWLEDGE SHARING

"In today's environment, hoarding knowledge ultimately erodes your power. If you know something very important, the way to get power is by actually sharing it."

-------Joseph Badaracco227

The study of knowledge management revolves very much around knowledge sharing. As Grant (1996, p. 376)228 very aptly puts it, "Knowledge sharing has become an important focus in the strategic management field, where knowledge is seen as "the most strategically-important resource which organizations possess". Knowledge is considered as a very important resource and the growth and use of this resource lies in sharing. According to Bordia et al. (2004)229 knowledge sharing is a personal attribute and is individualistic in nature. Knowledge-sharing behaviour is, "an individual behavior that is discretionary, not directly or explicitly recognized by the formal rewards system, and that in the aggregate promotes the effective functioning of the organization".

"Sharing knowledge is not about giving people something, or getting something from them. That is only valid for information sharing. Sharing knowledge occurs when people are genuinely interested in helping one another develop new capacities for action; it is about creating learning processes" Senge (1999).230 Senge is very clear that knowledge sharing is not just about information being given to other people. It is much deeper in thought and deed and should lead to creating a learning process. It should lead to more action oriented activities which benefit the organization in the long run.
The prime aim of “knowledge sharing is to share and enrich organizational knowledge by cultivating the culture of sharing at the individual level right up to management level” (Gurteen, 1999). Knowledge Management research suggests that necessary conditions for knowledge sharing include shared interest, trust, and language access to knowledgeable people in the organization, and an organizational or community culture that promotes knowledge transfer (Cohen, 2005).

Most of the work in an organizations is team work. Each team member is a specialist and an expert. But, for the completion of projects, employees have to work in teams and so, knowledge sharing will give the necessary synergetic effect needed for the completion of the projects. So, unless there is knowledge sharing, there will be a dearth of new ideas. Knowledge sharing between employees and within and across teams allows organizations to exploit and capitalize on knowledge-based resources (Cabrera & Cabrera, 2005).

Knowledge sharing helps in organizational learning (Ford & Chan, 2003) and the development of domain-related skills (i.e., expertise), a pre-condition to organizational innovation. Teams when they share knowledge continuously will complement one another leading to innovations (Lucas 2006).

Knowledge sharing has its own benefits. The re-use of knowledge has led to reduction in production costs, faster completion of new product development projects, team performance, firm innovation capabilities, and firm performance including sales growth and revenue from new products and services. (Wang & Noe, 2010). “Knowledge increases in value with use” (Alavi & Leidner, 2001).

Nonaka and Takeuchi’s (1995) SECI model is largely about knowledge sharing. Socialization is the process of sharing tacit knowledge between individuals; Externalization is about sharing tacit knowledge with other groups in the organization and making it explicit for others to use. Combination is the process of making the analysis of existing explicit knowledge thereby creating new knowledge. And finally, internalization is when the new knowledge is put to use thereby becoming an expert and internalising the created knowledge.

Knowledge sharing within an organization tends to be difficult, due to the heterogeneous cultures of the people (Simonin, 1999). Sharing knowledge often seems unnatural. People will not share their knowledge because they think it is valuable and important. Moreover, the natural tendency is to hoard knowledge and look suspiciously upon
knowledge from others (Davenport & Prusak, 1997). There are also workers with low levels of loyalty and commitment (Hislop, 2003). The management should continuously support knowledge sharing by creating a culture which is largely supported from the top (Storey & Quintas, 2001). Trust, common languages and beliefs are critical to effective knowledge sharing (Simonin, 1999).

Khosrow-Pour (2003) observes that individuals with intrinsic value systems tend to more naturally share knowledge. They help others simply for the sake of helping. They do not need rewards, incentives or recognition. But other individuals with extrinsic value systems are less likely to share knowledge by themselves. They need to be motivated with rewards, incentives and recognition.

Knowledge Management centers largely along knowledge sharing in organizations. The various tools, techniques and methods used either voluntarily or involuntarily facilitate sharing of knowledge. Developing a knowledge sharing culture is the backbone on which the success of Knowledge Management rests. Lee and Al-Hawamdeh (2002) have identified five factors that affect knowledge sharing: the people participating in the knowledge-sharing activity, the knowledge being shared, the channel used, the organization concerned and the broader environmental factors.

2.8 KM CULTURE

Besides the tacit and explicit types of knowledge by Polanyi (1966), Choo (1998) introduced a third kind of knowledge - the cultural knowledge. This refers to the "assumptions and beliefs that are used to describe, and explain reality, as well as the conventions and expectations that are used to assign value and significance to new information". Cultural knowledge is not codified but is diffused over the ties and relationships that connect a group. Although Nonaka and Takeuchi (1995) did not mention cultural knowledge, they attempted to distinguish between knowledge of the individual and the collective. Individual knowledge is created by and exists in the individual according to his/her beliefs, attitudes, opinions, and the factors that influence the personality formation. Social knowledge is created by and resides in the collective actions of a group, which forms their cultural knowledge heritage. It involves the norms that guide intra-group communication and coordination. King (2009) suggests the need for collaborative culture for the successful implementation of KM.
A knowledge culture is a working environment in which knowledge development and knowledge sharing are enabled and recognized as the workplace standard. It is an accumulation of shared beliefs and values—most often within an organization or other group of people—about knowledge and the application of knowledge for that organization or group’s success (Stanley & St. Claire, 2009). Webster’s New Collegiate Dictionary defines culture as, “Culture is the integrated pattern of human behaviour that includes thought, speech, action, and artefacts and depends on man’s capacity for learning and transmitting knowledge to succeeding generations”. “Culture is the collective programming of the human mind that distinguishes the members of one human group from those of another” (Hofstede, 1980).

From the organizational context, a good corporate culture is an invisible strategic asset and identifies five key dimensions that determine it: customer orientation; people orientation; process orientation; strong standards of performance and accountability, innovation and openness to change and company process orientation (Flamholtz & Randle, 2011). In large global companies which span across many countries, there are always differences in the social, cultural, economic and political behaviours, making knowledge exchange a major challenge (Rebernik, 1997).

Mezirows, (cited in Becker, 2006), describes culture as “those deep-seated underlying values and belief systems that guide, shape and dictate the individual’s everyday attitudes and behaviours. Culture has long been seen as the shared or commonly held beliefs, assumptions, values and taken-for-granted norms and behaviour that govern organizations”.

“Good cultures are characterised by norms and values supportive of excellence and teamwork, profitability, honesty, a customer-service orientation, pride in one’s work and commitment to the organization. Most of all, they are supportive of adaptability—the capacity to thrive over the long run despite new competition, new regulations, new technological developments, and the strains of growth” (Baker, 1980).

Nonaka and Takeuchi(1995) emphasize the importance of organizational culture in determining whether or not the exchange and communication of tacit knowledge will occur. Davenport and Prusak(2000) focus on human interaction within organizations.
to stimulate knowledge flow. They link the development of Knowledge Management to business strategy, work processes, culture, and behaviour. Von Krogh, Ichijo, and Nonaka (2000) describe knowledge creation as a social and individual process of community members and people working together. Cultural factors and human interaction play a very important role in knowledge creation. Rastogi (2000) emphasizes the importance of organizational culture in Knowledge Management. He opines that Knowledge Management cannot be accomplished if the organization culture is not built on strong values of trust, cooperation, sincerity, goodwill, help and care, shared values and vision.

Organizational cultures that promote knowledge sharing are characterized by informality, richness of communication, and openness to transfer of learning and knowledge absorption (McDermott & O’Dell, 2001).

Ardichvili, et al. (2006) opine that, “The rollout of a knowledge management system in a new country or region should be tailored to values and cultural preferences of employees”. “The introduction of country-specific knowledge sharing systems, websites or online community web pages should be based on a cultural needs assessment, and identification of culture-specific barriers to knowledge exchange.”

According to Brache, (2002, p.102), “Culture is the values, rules, practices, rituals and norms through which an organization conducts business”. Karlsen and Gottschalk (2004) observe that culture plays a critical role in knowledge sharing and suggests ways to it. “Culture(a) shapes assumptions about what knowledge is worth exchanging; (b) defines the relationship between employee knowledge and organizational knowledge; (c) establishes the context for social interaction that plays a key role in how knowledge will be shared; and (d) shapes the processes by how new knowledge is created, validated and disseminated throughout the organization”.

Janz and Prasarnphanich (2003) recommend that organizations should create environments for employees to share knowledge and motivate them.

Several studies show a strong relationship between Knowledge Management and organizational culture.
<table>
<thead>
<tr>
<th>Cultural attributes</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>School Press, Boston, MA.</td>
</tr>
<tr>
<td>Visible support of senior management, clearly defined objectives, meaningful</td>
<td>Kinsey Goman, 2002a, 2002b</td>
</tr>
<tr>
<td>objectives, high level of trust, great team leadership, shared rewards</td>
<td></td>
</tr>
<tr>
<td>“8Cs”: Connectivity, Content, Community, Culture (support and vision from top</td>
<td>Rao, 2003</td>
</tr>
<tr>
<td>management, shared sense of direction, trust, openness, excitement, and a</td>
<td>Rao, M. 2003, Leading with knowledge-Knowledge Management practices in</td>
</tr>
<tr>
<td>willingness to continually learn from peers are key components of KM culture),</td>
<td>Global Infotech companies, Tata McGraw-Hill Publishing Co. Ltd.</td>
</tr>
<tr>
<td>Cooperation, Capacity, Commerce &amp; Capital</td>
<td></td>
</tr>
<tr>
<td>Collaboration, Communication, Creativity, Empowerment, Enthusiasm, Trust,</td>
<td>Hubert, 2002</td>
</tr>
<tr>
<td>Synergy, Sharing, Open-mindedness, Positive attitude, Involvement.</td>
<td></td>
</tr>
<tr>
<td>Culture, Trust, Strategic intent, Organizational design, Transparency, Learning</td>
<td>Rolland &amp; Gauvel, 2000</td>
</tr>
<tr>
<td>capacity</td>
<td></td>
</tr>
<tr>
<td>High solidarity and High sociability, fair processes and fair outcomes, Employees</td>
<td>Goffee &amp; Jones, 1998; Smith &amp; McKeen, 2003.</td>
</tr>
<tr>
<td>work recognition.</td>
<td></td>
</tr>
<tr>
<td>Trust, Fairness, Enthusiasm for the job</td>
<td></td>
</tr>
</tbody>
</table>

Source: Holowetzki, 2002
The findings of the study by Holowetzki (2002), were synthesized into a checklist of six categories of cultural factors that impact KM initiatives: Information Systems, Organizational Structure, Reward Systems, Processes, People and Leadership.

- **Information Systems** (information systems, technology systems, information sharing, knowledge map, communication, organizational memory, explicit knowledge, tacit knowledge)

- **Organizational Structure** (organization, organizational structure, infrastructure, organizational infrastructure, functions, social structure, social ecology, social system, business enterprise, organizational policies, teams, work groups, communities of practice)

- **Reward Systems** (reward systems, rewards, incentives, incentive systems, recognition, motivators, bonuses, performance appraisal)

- **Processes** (processes, business processes, operations, programs, procedures, support systems, work processes, work flow)

- **People** (people, human systems, human resources, human capital, intellectual capital, intellectual assets, people-centered strategy, personnel, human relationships)

- **Leadership** (leadership, senior management, senior executive(s), CEO, managerial leadership)

According to Oliver and Kandadi (2006) Leadership, Evangelisation, Infrastructure, Physical Environment, Reward Systems, Communities of Practice, Process Management, Recruitment, Time allocation and Organization structure are some of the factors that affect knowledge culture.
Diagram 2.7 Factors affecting knowledge culture.

Source: Oliver S. and Kandadi K. R. (2006)\textsuperscript{265}

\textbf{Bessant (2003),}\textsuperscript{266} has identified that Motivation, Availability of 'slack' resources, Leadership, Direction, Self-development, Enabling tools and resources, Communications and information exchange, Knowledge Management, Cross-boundary working, Appropriate structures, Team working and Learning help build an innovative culture in organizations. Mentoring/coaching, Knowledge integration with learning and training, CoP, New culture of dialogue, Valuing the knowledge of the individual, & Knowledge push are some of the other Knowledge Management tools that foster a knowledge sharing innovative culture (Gamble & Blackwell, 2001).\textsuperscript{267}

\textbf{Gupta and Govindarajan (2000)}\textsuperscript{268} also examine six cultural factors that impact Knowledge Management activities within organizations. These factors are: (1) information systems, (2) organizational structure, (3) reward systems, (4) processes, (5) people, and (6) leadership. \textbf{Miller (1995)},\textsuperscript{269} identifies three key cultural characteristics:
“(1) culture is complicated, (2) culture is emergent, and (3) culture is not unitary”.

Pearson (2001),\(^{(270)}\) emphasizes that small and not-for-profit businesses can develop effective Knowledge Management initiatives by addressing larger cultural issues within their organizations.

According to De Long and Fahey (2000),\(^{(271)}\) “organizational culture is a major barrier to leveraging intellectual assets”, and recommend four ways in which culture influences organizational behaviours. “The first is the shared assumptions about what knowledge is and which knowledge is worth managing. Second is the relationship between individual and organizational knowledge. Third is the context for social interaction that determines how knowledge will be used in particular situations. Fourth is the processes by which knowledge is created, legitimated, and distributed in organizations.” Nonaka and Takeuchi (1995),\(^{(272)}\) highlight the role of organizational culture in knowledge creation and examine the relationship between human interactions and cultural characteristics.

Several research studies have been carried out to identify how cultural attributes affect organization’s knowledge sharing and the implementation of knowledge management in organizations. [Al-adaleh (2011),\(^{(273)}\); Paroutis and Al Saleh (2009)\(^{(274)}\)] reveal four key determinants of knowledge sharing using Web 2.0 technologies: history, outcome expectations, perceived organizational or management support and trust. Vazquez, et al., (2009)\(^{(275)}\) identifies several cultural barriers that can influence knowledge sharing on the employees’ level such as organizational environment, emotional intelligence and managers' commitment. Yihua et al (2004)\(^{(276)}\) suggests that teamwork and information flow contribute most to employees’ computer self-efficacy. Heejun and Vincent, (2004),\(^{(277)}\) present a correlation between specific cultural attributes and the successful implementation of Knowledge Management technology and knowledge exchange. Pérez (2004),\(^{(278)}\) observes that collaborative culture encourages the development of organizational learning, and has a significant effect on business performance. Delmonte and Aronson (2004),\(^{(279)}\) indicate that there is a significant relationship between interdepartmental connectedness, interdepartmental conflict and Knowledge Management success. Ladd and Ward (2002),\(^{(280)}\) highlight that organizational cultural traits exhibiting openness to change and innovation as well as a task-centered orientation tended to be conducive to knowledge transfer / exchange while cultural traits exhibiting a confrontational and competitive orientation tended not to be conducive to knowledge transfer /exchange. Holowetzki (2002),\(^{(281)}\) identifies (1) information systems, (2)
organizational structure, (3) reward systems, (4) processes, (5) people, and (6) leadership as the cultural factors affecting Knowledge Management activities within organizations.

Table 2.7 Differences between eastern and western views on knowledge and its management

<table>
<thead>
<tr>
<th>Japanese</th>
<th>Western</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group based</td>
<td>Individual based</td>
</tr>
<tr>
<td>Tacit knowledge oriented</td>
<td>Explicit knowledge oriented</td>
</tr>
<tr>
<td>View knowledge as part of a process</td>
<td>View knowledge as an asset, which can be moved, bought and sold</td>
</tr>
<tr>
<td>Knowledge is no leverage of individual’s power</td>
<td>Knowledge is leverage of an individual’s power</td>
</tr>
<tr>
<td>Emphasis on expertise</td>
<td>Emphasis on analysis</td>
</tr>
<tr>
<td>Knowledge management highly integrated in company’s operational activities</td>
<td>Knowledge Management is less integrated in a company’s operational activities</td>
</tr>
<tr>
<td>Group autonomy</td>
<td>Individual autonomy</td>
</tr>
<tr>
<td>Unity of knowledge and action</td>
<td>Knowledge as capital that can be valued</td>
</tr>
<tr>
<td>Redundancy of information</td>
<td>Information is focussed on a certain topic</td>
</tr>
<tr>
<td>Creative chaos through overlapping tasks</td>
<td>Creative chaos through individual differences</td>
</tr>
<tr>
<td>Knowledge creation as a continuous, self-transcending process</td>
<td>Thoughts and feelings can be made explicit and thus communicated and shared.</td>
</tr>
</tbody>
</table>


2.9 KNOWLEDGE MANAGEMENT AND LEARNING

Gareth Morgan (1986) in his book Images of Organizations, points out that organizations cannot themselves learn, it is the individuals within them who learn. However, there is more to a learning organization than simply a collection of individuals who are learning. Senge (1990: 3) defines a learning organization as continuous learning individuals creating new things for the larger organization as a whole, “Learning Organizations are organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole
together”. A learning organization, therefore, supports its members to translate information into knowledge and then converts the tacit knowledge of its individual members into explicit knowledge which can be accessed and used by others both within and outside the organization (Nonaka, 1991).

Pedler et al. (1991: 1) reiterates by defining the Learning Company on the same lines as continuously learning individuals for creating new knowledge, “The Learning Company is a vision of what might be possible. It is not brought about simply by training individuals; it can only happen as a result of learning at the whole organization level. A Learning Company is an organization that facilitates the learning of all its members and continuously transforms itself”.

It is a confluence of people who share their knowledge as well as learn new things; in the process help create new knowledge which is a continuous process. There are many different definitions of the learning organisation. Pedler, et al., (1991) has identified Eleven Characteristics of Learning Organisations. They are:

1. A learning approach to strategy (encouraging flexibility by including strategic learning feedback loops).
2. Participative policy making.
3. Informating (using information technology to inform and empower people).
4. Formative accounting and control (structuring financial systems to assist learning).
5. Internal exchange (ensuring constructive, supportive relationships within the organization).
6. Reward flexibility (using creativity in how people are rewarded for good performance).
8. Boundary workers as environmental scanners (acknowledging the value of those who deal with the ‘outside world’ as sources of crucial information which can inform decision-making).
9. Inter-organizational learning (identifying opportunities for networking, strategic partnerships, benchmarking and joint learning activities).
10. Learning climate (facilitating experimentation and allowing mistakes providing they are used as learning opportunities).
11. Self-development for all (resources and encouragement for self-development are made available for all members of the organization).

According to Martin (2000), Knowledge Management is related to the wider field of management as they both address activities such as learning and innovation, benchmarking and best practice, strategy, culture, and performance measurement. And like management, Knowledge Management involves a range of processes that affect people, technology, and systems to add or create value in pursuit of organizational aims and objectives. Martin also emphasizes the importance of learning and the need to create processes that support organizational learning and knowledge creation. Organizational culture holds the key to successful organizational learning and Knowledge Management, and leadership plays a critical role in creating and sustaining this culture.

Learning organizations are characterized by total employee involvement in a process of collaboratively conducted, collectively accountable change directed towards shared values or principles (Watkins & Marsick 1992).

Swieringa and Wierdsma (1992) define organizational learning as “the changing of organizational behaviour” which occurs through a collective learning process. They point out that an organization can only learn because its individual members learn. Without individual learning there can be no question of organizational learning.

A Learning Organization has been defined as, “An organization which actively incorporates the experience and knowledge of its members and partners through the development of practices, policies, procedures and systems in ways which continuously improve its ability to set and achieve goals, satisfy stakeholders, develop its practice, value and develop its people and achieve its mission” (Britton, 1995, 2002).

Jain and Mutula (2008) have identified some commonalities between a Learning Organization and KM intensive organization.
### 2.9.1 Commonalities of Learning Organization and KM intensive Organization

#### Table 2.8 Commonalities of Learning Organization and KM intensive Organization

<table>
<thead>
<tr>
<th>Learning Organization</th>
<th>KM intensive Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides a learning culture</td>
<td>Provides a learning organization environment</td>
</tr>
<tr>
<td>Has shared vision and culture of sharing</td>
<td>Has strong culture of sharing and creativity</td>
</tr>
<tr>
<td>Provides team learning</td>
<td>Provides team work</td>
</tr>
<tr>
<td>Key management processes present</td>
<td>Knowledge Management processes present</td>
</tr>
<tr>
<td>Availability of learning tools and techniques</td>
<td>Availability of KM tools and techniques</td>
</tr>
<tr>
<td>Applies systems learning or holistic approach</td>
<td>A central knowledge repository</td>
</tr>
<tr>
<td>Personal mastery</td>
<td>Library expertise</td>
</tr>
<tr>
<td>Mental models</td>
<td>Knowledge mapping</td>
</tr>
<tr>
<td>Learning organization strategy</td>
<td>KM strategic plan</td>
</tr>
<tr>
<td>Continuous learning</td>
<td>Regular update of knowledge</td>
</tr>
<tr>
<td>Incentive infrastructure</td>
<td>Motivation</td>
</tr>
<tr>
<td>Open system</td>
<td>Partnerships</td>
</tr>
</tbody>
</table>


This table indicates that both types of organizations have a rich learning and sharing culture along with vision and creativity. Both provide for team work with the required tools and technologies. Both have proper processes as required in place. Both have in place proper planning and strategies complemented by the right motivation and incentives. Both are updated with continuous learning and the updated knowledge. These commonalities are complementary to both types of organization and when practiced in one single organization, make it highly competitive.

Örtenblad (2002), has developed a typology of the idea of a learning organization. He suggested that there are four understandings of the learning organization concept. The first is the old organizational learning perspective, which focuses on the storage of knowledge in the organizational mind. Learning is viewed as applications of knowledge at different levels. The second type is the learning at work perspective, which sees a learning organization as an organization where individuals learn at the workplace. The third is the learning climate perspective, which sees the learning organization as one that
facilitates the learning of its employees. The fourth is the learning structure perspective, which regards the learning organization as a flexible entity. According to [Örtenblad (2002), Watkins and Marsick’s (1993),293] approach is the only theoretical framework that covers all four understandings of the idea of a learning organization.

Gilley and Maycunich (2000),294 take a systems-oriented and developmental learning approach to employee growth and describe the characteristics and processes needed for organizational renewal and growth.


In order to measure the organizational learning practices and culture as well as the changes in financial and knowledge performances, Watkins and Marsick (1996) developed this Learning model. Their proposed learning organization model integrates two main organizational constituents: people and structure. These two constituents are also viewed as interactive components of organizational change and development.

Diagram 2.8 Watkins and Marsick’s Model (1996) of the Seven Dimensions of the Learning Organization

Source: Lien et al. (2006)296

Watkins and Marsick (1996)297 identified seven distinct but interrelated dimensions of a learning organization at individual, team, and organizational levels. These dimensions and their definitions are described as follows.
The first dimension, **continuous learning**, represents an organization's effort to create continuous learning opportunities for all its members. The second dimension, **inquiry and dialogue**, refers to an organization's effort in creating a culture of questioning, feedback, and experimentation. The third dimension, **team learning**, reflects the "spirit of collaboration and the collaborative skills that undergird the effective use of teams". The fourth dimension, **empowerment**, signifies an organization's process to create and share a collective vision and get feedback from its members about the gap between the current status and the new vision. The fifth dimension, **embedded system**, indicates efforts to establish systems to capture and share learning. The sixth dimension, **system connection**, reflects global thinking and actions to connect the organization to its internal and external environment. The seventh dimension, **strategic leadership**, shows the extent to which leaders "think strategically about how to use learning to create change and to move the organization in new directions or new markets".

The learning organization is viewed as one that has the capacity to integrate people and structures in order to move toward continuous learning and change.

**Watkins, Marsick and O'Neill (1997)**[^298] have clearly indicated the constructs for the Dimensions of the learning organization questionnaire.

### Table 2.9 Constructs measured in the Dimensions of the learning organization Questionnaire

<table>
<thead>
<tr>
<th>Component</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating Continuous Learning Opportunities</td>
<td>Learning is designed into work so that people can learn on the job; Opportunities are provided for ongoing education and growth</td>
</tr>
<tr>
<td>Promote Inquiry and dialogue</td>
<td>People gain productive reasoning skills to express their views, and the capacity to listen and inquire into the views of others; the culture supports questioning, feedback, and experimentation.</td>
</tr>
<tr>
<td>Encourage Collaboration and Team learning</td>
<td>Work is designed to use groups to access different modes of thinking; groups are expected to learn together and work together; collaboration is valued by the culture and rewarded.</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Establish Systems to capture and share learning</td>
<td>Both high and low technology systems to share learning are created and integrated with work; access is provided and systems are maintained.</td>
</tr>
<tr>
<td>Empower people towards a collective vision</td>
<td>People are involved in setting, owning and implementing a joint vision; Responsibility is distributed close to decision making to motivate people to learn that for which they are accountable.</td>
</tr>
<tr>
<td>Connect the organization to its environment</td>
<td>People are helped to see the impact of their work on the entire enterprise; people scan the environment and use information to adjust work practices; organization is linked to community.</td>
</tr>
<tr>
<td>Leaders model and support learning</td>
<td>Leaders model, champion and support learning; leadership uses learning strategically for business results.</td>
</tr>
<tr>
<td>Knowledge performance</td>
<td>Enhancement of products and services because of learning and knowledge capacity (lead indicators of intellectual capital)</td>
</tr>
<tr>
<td>Financial performance</td>
<td>State of financial health and resources available for growth.</td>
</tr>
</tbody>
</table>


Watkins and Marsick's (1993, 1996) framework of learning organization has several distinctive characteristics. First, it has a clear and inclusive definition of the construct of the learning organization. It defines the construct from an organizational culture perspective and thus provides adequate measurement domains for scale construction. Second, it includes dimensions of a learning organization at all levels (that is, individual, team, and organizational) and system areas. Third, this model not only identifies the main dimensions of the learning organization in the literature but also integrates them in a theoretical framework by specifying their relationships. Last, it defines the proposed
seven dimensions of a learning organization from the perspective of action imperatives and thus has practical implications. This action perspective of the learning organization both provides a consistent cultural perspective on the construct and suggests several observable actions that can be taken to build a learning organization. Marsick and Watkins (1997), claimed that, "people will not experiment, take risks, share knowledge, and be motivated to contribute to the organization's success unless they believe that they will be supported and rewarded for doing so" (p. 83). Thus, the organization's culture must change so as to support new initiatives to stimulate learning.

![Diagram 2.9 People and Structural level variables in a Learning organization](image)

**Diagram 2.9 People and Structural level variables in a Learning organization**


The studies showed how the individual and team learning variables were highly interrelated and had indirect but significant impact on organizational outcomes. The organizational variables also were correlated with organizational knowledge, financial and mission performance outcomes (Malloch et al., 2010).

Sharifirad (2011) shows how Watkins and Marsick's Learning Model (1997) can be applied to measure at all levels in the organization: individuals, teams, organizational and global.
Based on these dimensions, Marsick and Watkins (1997), developed an instrument called the Dimensions of the Learning Organization Questionnaire (DLOQ), which consists of 55 statements about organization practices. Respondents indicate the degree to which they perceive these practices occur, using a 6-point scale (almost always to almost never). The items are organized by level—individual, team, and organization—in terms of the seven dimensions of the learning organization. As the focus is more on the learning organization than on organizational learning, it is not surprising that the DLOQ reveals more about the organization than it does about the learning process.

WATKINS and MARSICK'S MODEL (1997) has a direct connection to several of the Characteristics of the Knowledge organization. Inquiry and Dialogue (Employee Participation); Team Learning (Team work and Collective thinking), Empowerment (Empowered knowledge workers), System connection: (Self-organized knowledge communities), and Strategic leadership (Strong top management support).

SONG, JEUNG, and CHO (2011) have discussed the impact of the learning organization environment on the organizational learning process. Both prescriptive and descriptive learning in a learning organization leads to better organizational learning. As a result, there is improved and better knowledge learning to better organizational knowledge outcomes and innovations.
Lytras and Pouloudi (2006) have drawn a clear relationship between Knowledge Management and Learning and integrated the activities of both. The model illustrates how the two can be jointly supported by various knowledge management systems. The KM infrastructure and the Learning Infrastructure are integrated into the Knowledge Management process to deliver high levels of knowledge performance.

Diagram 2.12 The integration of Knowledge Management and learning infrastructure

Source: Integrated from Lytras et al. (2002), Lee and Young (2000) and Wiig (1997)
2.10 KM METRICS

"...if you can’t measure it, you can’t manage it."

- Peter Drucker

"Metrics are measures that promote discipline, consistency and focus on a quantitative way to measure qualitative benefits of a knowledge management initiative" (Awad & Ghaziri, 2010). In order to achieve its goals and value, an assessment of the organization’s knowledge, experience and intuition through its people, processes and systems is essential (Kanti Srikantaiah & Koenig, (2008). Knowledge Management initiatives have to be measured to assess if their progress is achieved, as per the planned objectives Debowski (2006). The common reason for measuring is to help monitor the value of Knowledge Management initiatives and to supply a link to the key performance indicators. This will help the organization to measure the success of the initiatives and the
directions in which Knowledge Management practices are leading. Debowski (2006), lists out several performance measures, outcome measures, output measures and system measures for measuring the Knowledge Management initiatives. System Measures relate the performance of the supporting information technologies to the KM initiative. Output Measures measure direct process output for users and give a picture of the extent to which personnel are drawn to and actually using the knowledge system. Outcome Measures determine the impact of the KM project on the organization and help determine if the knowledge base and knowledge transfer processes are working to create a more creative organization (Holsapple, 2003). Some of them are: Identifying and measuring knowledge inputs, Evaluating and measuring intellectual and social capital, Cost-benefit analyses and Knowledge value-added (KVA) approach for evaluating Knowledge Management outcomes, The balanced scorecard approach, and Benchmarking. (Debowski, 2006).

According to Skyrme and Amidon (1998), companies can take either an asset-based approach to Knowledge Management valuation or an approach that links knowledge to its applications and business benefits. The asset based approach identifies knowledge as an asset and focuses on increasing its value. In the second approach that links knowledge with benefits, some of the important measures are the Balanced Scorecard approach, Skandia’s Navigator, Stern Stewart’s Economic Value Added (EVA), M’Pherson’s Inclusive Valuation Methodology, the Return on Management Ratio, and Levin’s Knowledge Capital measure [Skyrme and Amidon, 1998; Turban, 2007]. According to some KM researchers, the assessment of KM should contain metrics which are both quantitative and qualitative and include measures of technology, processes, cultural variables, managerial behaviour, organizational dimensions, business functions, and the knowledge process itself [Geisler and Wickramasighe, 2009; Tiwana, 2007] enumerates the role of evaluating performance, measuring Return on Investment and incrementally refining the Knowledge Management system by recommending several measures like Benchmarking, Balanced Scorecard, Skandia Method and Financial Accounting Standards Board method.

According to the American Productivity and Quality center (APQC) 2001 measures should be tied to the maturity of the KM initiative which is the different phases in the Knowledge Management Life cycle. In the pre-planning phase, scenarios and simulations
to explore projected measure results and effects are used. In the start-up phase, anecdotes and qualitative metrics are most valuable to convince people of KM value. In the pilot-project phase, definitive metrics are used to show real value to business objectives. In the enterprise growth phase, a mixture of metrics to show value across the organization are used (Holsapple, 2003).

Developing metrics to assess a Knowledge Management system is inherently problematic due to the intangible nature of knowledge-based resources. Nonetheless, assessment is of vital importance for valuation purposes as well as to help managers determine whether particular Knowledge management initiatives are effective (Andone & Sireteanu, 2009).

According to Nonaka (1995), some organizations have a problem in fitting into a model because there is a feeling that only useful information can be measured [Carriço et al., 2009, Ahmed et al., 1999], observe that several enablers like leadership, people, systems, strategy, and communication, do not have proper performance indicators, which limits the evaluation process. Liebowitz and Suen (2000) have proposed a few indicators. They are

- “The number of new colleague to colleague relationships spawned
- The reuse rate of frequently accessed/reused content
- The capture of key expertise in an online way
- The dissemination of knowledge sharing to appropriate individuals
- The number of knowledge sharing proficiencies gained
- The number of new ideas generating innovative products or services
- The number of lessons learned and best practices applied to create value added
- The number of patents, trademarks, articles, books, talks at conferences per employee
- The number of apprentices one mentors and the success of these apprentices as they mature in the organization
- Interactions with academicians consultants and advisors.” (Carriço, et al, 2009)

Green et al. (2010) have also listed several activity metrics like:

- Number of video nuggets online, number in approval/number in production
- Number of best practices documents online
- Number of active communities of practice
- Number of members
- Number of links of lessons learned case studies
- Number of documented testimonials
- Initial rollout briefings and workshops
- Number of conference presentations.

Grossman (2006),\textsuperscript{320} opines that there are several measures, technologies and perspectives available, but there is no consensus as to which is the best suited to adequately assess Knowledge Management. According to Rao (2012),\textsuperscript{321} continuous measurement and assessment leads to proactive behaviours. Return on Investment and Financial measures will help in keeping the Knowledge Management investment on the right track.

SMR International (2009)\textsuperscript{322} identifies the “hard” quantitative measures and the “soft” qualitative measures to evaluate knowledge services performance in the larger enterprise. It also observes that there are likely to be other semantic problems with respect to the overlapping characteristics of some of the techniques. As critical success factors for knowledge services are identified, a wide variety of measurement techniques and tools can be considered.

<table>
<thead>
<tr>
<th>Table 2.11 Operational and Tactical Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operational</strong> (Tactical/Measures Efficiency)</td>
</tr>
</tbody>
</table>
| Quantitative (“hard”) | • Transaction counts  
• Use of resources  
• Time/$ saved looking for information (vs. time/$ saved by value of the content)  
• Benchmarking ratios  
• Input/output/process measures | • Time/$ saved using content provided or knowledge transferred (vs. time/$ saved looking for information)  
• Return On Investment |
| Qualitative (“soft”) | • Service level agreements  
• Service provision leading to partnership development with similar internal business units | • Impact  
• Anecdotal (Narrative)  
• Outcome measures |

Source: SMR International (2009)
According to Andone and Sireteanu (2009), some of the more common approaches used to measure the value of Knowledge Management by measuring the impact of Knowledge Management on the corporation's performance, are the balanced scorecard, Return on Investment (ROI), The Knowledge Management lifecycle, and Employee surveys.

2.10.1 Balanced Scorecard

The Balanced Scorecard translates an organization's mission and strategy into a comprehensive set of performance measures that provides the framework for measurement. The Balanced Scorecard approach, developed by Kaplan and Norton (1996),323 is based upon several foundational management theories, including: Management by objectives (Drucker, 1954), Principles of management (Fayol, 1916), Openbook management (Case, 1995). Leading change (Kotter, 1996), Theory Y (McGregor, 1960), Hierarchy of needs (Maslow, 1962), and Value disciplines. [(Treacy & Wiersema, 1995); (Knapp, 2001)324] The Balanced Scorecard is a strategic management tool that fits with current management thinking and is enabled by technological and social changes in the current work environment (Knapp, 2001).325 The Scorecard measures organizational performances against four balanced perspectives: financial, customers, internal business processes and learning and growth. It enables organization's to track and monitor progress [Kaplan & Norton, 1996, 2001325, 2004326, 2006327]. Balanced scorecard uses a balanced set of tangible and intangible factors to measure performance (Keyes, 2006).328

2.10.2 Return On Investment (ROI)

Return-on-investment is the ratio of net income to total assets (including knowledge assets). Financial benefits provided to the parent organization through the management and delivery of knowledge services are usually expressed as return-on-investment (ROI). The importance of ROI in managing knowledge services is considered important, as it is felt that a financial value must be attached to the products and services provided by the knowledge services unit, as well as to the costs of maintaining the function (overhead), simply because operational costs for all functional units determine whether the organization is going to continue as a viable entity or not and the unique value that the management and delivery of Knowledge Management services brings to the enterprise. But, the two important management challenges in measuring Knowledge Management
services are the relevance and the financial value that can be ascertained for some of the results obtained (Stanley & St. Clair, 2009).^{329}

According to Tom Koulopoulos of the Delphi Group Incorporated, “it is difficult to measure the Return of Investment in Knowledge Management since many initiatives like email cannot be measured” (Deckmyn, 1999).^{330}

It is difficult to establish clearly the costs and benefits of Knowledge Management such as for projects that involve an amalgam of resources from across the organization except the costs associated with an investment in information technology can be relatively straightforward to identify, but other costs, Clare and Detore (2000)\(^{331}\) have developed several approaches for showing financial returns on knowledge assets, which are complex and more appropriate to organizations that are reasonably advanced in their Knowledge Management efforts, rather than just starting out. Quantifying Return on investment on many of the Knowledge Management initiatives is not an easy task. It is particularly hard to assess the value of the knowledge contained within the system and the efficiency of the system itself (Olla and Holm, 2006).^{332}

2.10.3 The Knowledge Management Lifecycle (KLC) metrics

Knowledge Management Lifecycle (KLC) metrics measures the impact of changes in Knowledge Management or KLC process components, relationships, innovation velocity, innovation acceleration and innovation relevance and metrics for measuring the impact of changes in innovation velocity, innovation acceleration and innovation relevance on the enterprise (Firestone, 2003).^{333}

Carla S O'Dell (2001)\(^{334}\) has developed a framework known as the Road Map to Knowledge Management Results. It has Stages of implementation which provides organizations with a map to guide them from getting started right through to ‘institutionalising’ Knowledge Management – embedding it in the organization and making it an integral part of the way an organization works. The map has five stages: Get started, Develop a strategy, Design and launch a knowledge management initiative, Expand and support, and Institutionalise Knowledge Management and all these stages have their measures.
Andone and Sireteanu (2009) have developed a framework for measuring the Knowledge Management system performance. The framework for developing Knowledge Performance Indicators is divided into three phases: 1) strategy, 2) analysis, and 3) process or operation. This framework integrates the corporate strategy and measurement system and implements the Knowledge Performance Indicators in the corporate process and knowledge process.

Phase one is the Strategy Process.

- Set up corporate strategy
- Establish knowledge strategy
- Establish high level measurement system

Phase Two is the Analysis Process.

- The Input/Output of knowledge procedure identification
- Analyze of Input/Output organization procedure
- Establish measurable action model

Phase Three is the Operation Process.

- Decide key performance indicators
- Implement a software tool for the Key Performance Indicators

2.10.4 Employee surveys (Rao, 2003)

People are the most important component of the Knowledge Management system. The satisfaction of the employees will determine whether the Knowledge Management initiatives are effective or not. Surveys can be used to assess aspects of organizational culture and the extent to which people's opinions, attitudes and behaviours are, or are not, changing. People's perceptions in many ways will determine their behaviours with respect to Knowledge Management. In order to be effective, it is vital that any such surveys are carried out by people with the required expertise, whether that be through in-house capabilities or by hiring external consultants.
Most companies seek to link their KM initiatives back to business objectives, on the assumption that KM investments should satisfy the same business case requirements as any other investment.\textsuperscript{336}

O'Dell and Grayson (1998)\textsuperscript{337} recommend a two-pronged approach that seeks to measures both outcomes and activities. One, measuring outcomes focuses on the extent to which a project or a process achieves its stated objectives. And two, measuring activities which shift the focus onto the specific knowledge management practices that were applied in the project or process.

2.11 BENEFITS OF KNOWLEDGE MANAGEMENT

Skryme (1995),\textsuperscript{338} has developed the KM benefits tree which is an effective tool for showing interdependencies between different types of benefit. Skryme observes that in an organization practicing KM, the costs of the KM initiative is visible, but the benefits are diffused throughout the organization. A benefits tree relates the visible benefits, through a series of steps which will help understand the final impact of the actual benefits of KM initiatives. The KM benefits tree identifies three different classes of benefits:

- **Knowledge Benefits** – Benefits which are derived from more efficient processing of information and knowledge, for example, by eliminating duplication of effort or saving valuable time.

- **Intermediate Benefits** – Benefits which translate the knowledge benefits into benefits that can be expressed in terms of efficiency or effectiveness. A common example is that best practices databases helps to eliminate less efficient operations through transferring knowledge from the best practitioners.

- **Organizational Benefits** - Benefits those impact some of the organization's key goals, such as productivity and customer service.
An analysis of these benefits will give the amount and time saved on the different services rendered. The knowledge benefits are a direct result of Knowledge Management and the Intermediate benefits are a result of several factors, including KM and non-KM factors.

Alavi and Leidner (1999) have identified two types of benefits. Process outcomes include communication (enhanced communication, faster communication, more visible opinions of staff and increased staff participation); and efficiency (reduced problem solving time, shortening proposal time, faster results, faster delivery to market and greater overall efficiency). Organization outcomes include financial (increased sales, decreased cost and higher profitability), marketing (better service, customer focus, targeted marketing, proactive marketing), and general (consistent proposals to multinational clients, improved project management and personnel reduction).

According to Fell (2001), Knowledge Management has five major benefits. One, KM creates competitive advantage for a company and its customers by sharing information and best practices. Two, KM can create a truly customer-focussed culture by resolving customer problems swiftly. Three, KM can be a catalyst in encouraging creativity and innovation. Four, KM can improve time to market by leveraging best practices and
learning. And Five, KM can expand a company’s strategic options by leveraging its intellectual property.

According to Cong and Pandya (2003), benefits can occur at two levels; individual and organizational. At the individual level, employees are able to enhance their skills and experience by working together and sharing knowledge and learning from one another. This improves personal performance, and leads to better career advancement. “At the organizational level, knowledge management provides two major benefits for an organization: One, Improves the organization’s performance through increased efficiency, productivity, quality and innovation.” CIO Council (2001). “Two, Increases the financial value of the organization by treating people’s knowledge as an asset.” (U.S Department of Navy, 2001).

Becerra-Fernandez et al. (2004) categorized Knowledge Management benefits as people benefits (learning, satisfaction, adaptability), organizational process benefits (efficiency, effectiveness and innovation), products benefits (value-added and knowledge-based products), and organizational benefits (direct inputs such as return on investment and indirect impacts such as economies of scale and scope and sustainable competitive advantage).


Jawadekar (2011) emphasizes the benefits into hard and soft. The hard benefits are directly related to the financial performance such as reduced costs, ROI, and Profit. The soft benefits are accelerated path-breaking innovation, achieving higher customer-added value, reduced exposure to risks, quality improvement, increased teamwork, increased speed and responsiveness, and better decision making by frontline workers.

According to Fred et al. (2011), the corporate portal provides several benefits for organizations like, expands corporate reach, reduces operational cost, bolsters customer loyalty by eliminating delays, enhances online productivity through online tools,
improves corporate competitiveness through web mechanisms, accelerates decision making through rapid access to relevant information and knowledge sources, and reduces the cost of business processes.

2.12 IMPEDIMENTS FOR A SUCCESSFUL IMPLEMENTATION OF KNOWLEDGE MANAGEMENT

Davenport (2002), observes that since 1995, several companies have incorporated Knowledge Management and built repositories, but have not attained much success for a variety of reasons. It is important for organizations to realize that in addition to technology, it is the people and also the understanding the different varieties of knowledge work and applying different interventions to suit each type. The challenge faced by organizations is that for the most part Knowledge Management is soft and intangible and largely locked inside people, processes and systems (Srikantaiah & Koenig, 2008).

Skyrme, (2000), has identified several gaps in the implementation of KM. The novelty gap, the generation gap, the restructuring disruption, the culture / behaviour gap, the systems gap, language barriers, the technology gap, the innovation gap, and the biggest gap of all, is the knowledge gap. These gaps make Knowledge Management a continuing and evolving challenge.

Several reasons have been quoted for its not so successful implementation (O'Dell et al. 2000). Some of them are:

- People do not have the time to share knowledge.
- A strong not-invented here culture.
- Our organization is divided into many divisions.
- People are divided geographically and it is difficult to connect.
- People are afraid that sharing knowledge will make them less valuable to the organization.
- There is an unwillingness to share.
- Our organization is unaware of the importance of knowledge sharing.
- Leadership does not care about sharing knowledge.
• We have significant legal constraints.

• Others will know my weaknesses.

While these are more people related, some of the organizational roadblocks are:

• Lack of common perspectives,

• Lack of time,

• Non-aligned reward systems,

• Lack of motivation,

• Lack of absorptive capacity,

• No formal communication; ad hoc only,

• More emphasis placed on explicit knowledge,

• Technology and the knowledge to use it are not adequate.

The wrong perception that Knowledge Management is all about technology has led to a major failure of KM in the past. It has been introduced in a chaos and will take time to show results, (Thuraisingham, Maybury and Morey 2001).\textsuperscript{352} Gamble and Blackwell (2001)\textsuperscript{353} opine that the same people who failed the Total Quality Management will also fail KM because they tend to not believe in the benefits of KM. Malhotra (2004)\textsuperscript{354} has highlighted that KM systems fail because of two main reasons. One, KM is defined only with inputs like data, IT, best practices and does not take into consideration variables like attention, motivation, commitment, creativity and innovation. Two, the efficacy of inputs and how they are strategically deployed are important issues often left unquestioned as expected performance outcomes are achieved. These seven challenges are business and technology strategy, organizational control, information-sharing culture, knowledge representation, organizational structure, managerial command and control, and economic returns. Unless these enablers and constraints are addressed, they will become challenges in the implementation of KM. Pollard (2005),\textsuperscript{355} in a write up on ‘Knowledge Sharing & Collaboration 2015’ compiles the reasons for the failure of the first generation KM like unreasonably high expectations; over-reliance on voluntary user contributions to repositories which did not happen;
context-poor content; no one took pride of ownership in shared repositories and misunderstanding technology for KM. "The challenges faced today in getting people to share what they know and to collaborate effectively are not caused or cured by technologies, they are cultural impediments. It's extremely difficult to change people's behaviours (they usually exist for a reason), so the solutions we find have to accommodate these behaviours, and these cultures, rather than trying to 'fix' them." He has also listed twenty-three very human ‘information behaviours’ that impede the sharing of knowledge and collaboration.

Corvinus (2006), has listed several risks involved and the reasons behind the failure of Knowledge Management. The built-in knowledge of some KM systems is complex and requires special perfection of IT and knowledge systems. Unclear definitions, unconsolidated and unclear terminologies, uncontrolled access and security concerns, time-consuming documentation, and the updation and maintenance of the KM systems are some of the other reasons for the failure of KM systems.

Systems will work only when people use them. Disenchanted and unmotivated workers, showed lack of interest in implementing and participating voluntarily leading to failure (DebowskI, 2007). Awad and Ghaziri (2007), have listed several myths which have led to the failure of KM. 1. Knowledge Management is a fad. 2. Knowledge Management and data warehousing are essentially the same. 3. Knowledge Management is a new concept. 4. Knowledge Management is mere technology. 5. Technology distributes human intelligence. 6. Knowledge Management is another form of re-engineering. 7. Company employees have difficulty sharing knowledge. 8. Knowledge Management works only with an organization. 9. Technology is a better alternative than face-to-face. 10. It is 'no Brainier' to share what you know.

Singh and Kant (2008), perused the Knowledge Management barriers of lack of top management commitment, lack of technological infrastructure, lack of methodology, lack of organizational structure, lack of organizational culture, lack of motivation and reward, staff retirement, lack of ownership of problem, and staff defection to study the mutual relationships of these barriers.

Jawadekar (2011), has discussed several challenges in the successful implementation of KM. One is organization culture. People are not able to keep pace with the changing dynamics of business. Changing the mind-set of the people who have the belief that
knowledge hoarding is power; and the fear of challenge to the position and power. Second, is the paradigm shift from information to knowledge driven processes. Three, is the notion that retrieving and documenting will be an arduous and time consuming task. And fourth, is the challenge of implementation both at the top management as well as the employee level as it is a people's programme and technology is only an enabler.

2.13 CONCLUSION

Knowledge Management revolves around several basic concepts of Knowledge and the various aspects surrounding knowledge. Tacit knowledge and explicit knowledge are the dimensions that are very essential in the knowledge economy. An understanding of the characteristics of a good knowledge organization makes knowledge management practice easier and more focussed. Developing a management strategy that envelopes the knowledge sharing culture, learning and metrics, and the understanding of the benefits and impediments is important for the practice of Knowledge Management.

2.14 SUMMARY

This chapter covers the entire conceptual framework of Knowledge Management. The chapter begins with the knowledge economy, as the entire thought process of organized Knowledge Management started in the present knowledge economy. This is followed by the Data-Information-Knowledge –Wisdom hierarchy, which essentially is an introduction to the knowledge process. Knowledge and the two dimensions of knowledge provide an in-depth understanding of knowledge, tacit knowledge and explicit knowledge. The chapter also discusses the different characteristics that make a knowledge organization, Knowledge Management definitions, developing a Knowledge Management strategy, knowledge sharing, Knowledge Management culture, Learning, and Knowledge Management metrics. The chapter has dealt in detail on these aspects and how they form an essential basis for Knowledge Management.

The next chapter will discuss in detail the three components that make the Knowledge Management system.