TEERTHANKER MAHAVEER UNIVERSITY MORADABAD, INDIA

CENTRE FOR DISTANCE AND ONLINE EDUCATION

Programme: Bachelor of Commerce

Course: Knowledge Traditions & Management Practices of India

Course Code: BCPCC305

Semester-III

Programme Coordinator

Dr. Chanchal Chawla

Professor, Department of Commerce

Center for Distance and Online Education,

Teerthanker Mahaveer University, Moradabad

Units Written by

Dr. Bindoo Malviya

Editor

Professor Vipin Jain

Director,

Center For Distance and Online Education,

Teerthanker Mahaveer University,

Moradabad

Dr. Amit Kansal

Assistant Director,

Center for Distance and Online Education,

Teerthanker Mahaveer University,

Moradabad

Syllabus

Course: Knowledge Traditions & Management Practices of India
Course Code: BCPCC305

OBJECTIVE: The study of Knowledge Traditions and Management Practices of India involves understanding the rich heritage, historical practices, and indigenous knowledge systems that have shaped management and organizational practices in the country. The objectives of exploring this field are diverse and include.

BLOCK -I Review of Scientific Literature in Sanskrit

UNIT-1 References of sciences/scientific knowledge through different textual sources of Literature in Sanskrit.

BLOCK-2 Chemistry and Mathematics

UNIT-2 Various treatises on Chemistry, Use of chemistry in medicines, Metallurgy, Use of chemistry for occult practices.

UNIT-3 Mathematical concepts through Shulbasutras, Development of different mathematical branches and Treatises based on Chemistry & Mathematics, Development of astronomy.

BLOCK-3 Dietetics

UNIT-4 Study of different texts based on culinary art Nalapakadarpana, Bhojanakutuhalam, Supashastra,

UNIT-5 Modes of preservation of food, Dietary guidelines through branches of Ayurveda, Food and diseases.

BLOCK-4 Agriculture and Zoology

UNIT-6 Study of krishisuktas, Krishiparashara, Brihatsamhita,

UNIT-7 Types of crops, Manures, Types of land- deva matruka, nadimatruka.

UNIT-8 Animal husbandry, Animals for medicines, Use of animals in warfare.

UNIT	TITLE	PAGE
UNIT-1	References of sciences/scientific knowledge through different textual sources of Literature in Sanskrit.	
UNIT-2	Various treatises on Chemistry, Use of chemistry in medicines, Metallurgy, Use of chemistry for occult practices.	
UNIT-3	Mathematical concepts through Shulbasutras, Development of different mathematical branches and Treatises based on Chemistry & Mathematics, Development of astronomy.	
UNIT-4	Study of different texts based on culinary art Nalapakadarpana, Bhojanakutuhalam, Supashastra, UNIT-5 Modes of preservation of food, Dietary guidelines through branches of Ayurveda, Food and diseases.	
UNIT-5	Modes of preservation of food, Dietary guidelines through branches of Ayurveda, Food and diseases.	
UNIT-6	Study of krishisuktas, Krishiparashara, Brihatsamhita,	
UNIT-7	Types of crops, Manures, Types of land- deva matruka, nadimatruka.	
UNIT-8	Animal husbandry, Animals for medicines, Use of animals in warfare.	

BLOCK -I **Review of Scientific Literature in Sanskrit**

The magical and religious aspect of medicine in the Vedas was gradually supplemented by observations based on scientific thinking. Ayurvedic scholars from subsequent generations gave a sound and logical footing in phi losophy to Ayurveda. The material scattered in the Vedas was collected and subjected to

rigid tests of efficacy and systematicall y re-arranged. Many of these compilations no longer exist. Onl y three authentic works have st ood the test of time and arc available today - the Charaka Samhita, Sushruta Samhita and Vaobhata. This reat trio - the Bri · atrayi as it is called - has cn· oyed much popularity and respect or t e ast two·thousand years. Although these texts have undergone some modification by various authors in subseque nt periods, their present form i s at least 1 200 years old. They are all in the Sanskrit language. These compe nclia are the vast treasures of the knowledge about the Indian system of medicine.

CHARAKA SAMHITA

Charaka Samhita i s a classical textbook of internal medicine (Kayachtkttsa). It is the oldest of the three and was probably first compiled around the first century BC. It is considered the prime work on the basic concepts of Ayurveda. Charaka re resents the A reya c oo o phystcmns. It i s a systematic work divided into ight sections, whtch are further divided into 120 cha t s. The tst sectiOn o this book describes the fundamental principles of Ayurveda. Then it elaborates the physiological and anatomical structure of the human body, various etiological agents, along with their role in pathogenesis, symptoms and signs of various diseases, the methodol gy for examination of patients, treatment and prognosis. .

The preventive aspects of treatment includes daily and seasonal regimens, as well as dietetics and social behavior conducive to mental health. The chapter on dietetics is a vast store of informati on. Th :-. ct i un on cu rl.lli vc t real ments incluJes deta:led desc riptions of medicinal plants and t heir properti• various herbal prep;mltions, and therapeutic proced ures suc h as el iminati on the rapy. The chapters on reju venation therapy and prevntion of the aging process are today considered as a good source for modern research work. The Charaka Sam hita is written in prose as wel l as in beaut iful poetry, com parable to any Sanskrit class ic. It's com bined medico-social and medico-philosophical approach is a sou rce of inspirat ion to anyone who st ud ies the original text.

Time Period -

Charaka Samhita might have been written bet ween the periods of Panini and King Kanishka. It was clearly y written before the time of Yagbhatta, because Vagbhatta has mentioned many subjects of Charaka. So the period of Charaka. can be concluded to be between Ist and 2nd centu ry BC.

lf we compare Charaka Samhita, and Sushruta Samhita, basic principles appeared to be the same in both of them. But Charaka Samhita has mentioned Dhan vantari (surgical) tradition in man y places·. So the original form of the Sushru ta text must have been prepared before Charaka Samhita. But reformation of Sushruta's text was completed after Charaka Sam hita because, Sushruta accepted many principles of Charaka in the first part and classified them in the 2nd part.

Drudhbala was the final editor and presented the existing Charaka Samhita in complete form.The thre stages in which Charaka Sam hita was completed can be shown as below.

1) Agnivesha tantra   1000 BC
2) Charaka's addition   2nd century BC.
3) Drudhabala's reformation   4th century AD.

SUSHRUTA SAMHITA

- Sushruta represen ts the Dhan vantri School of surgeons and is constdered i n A_yurvega to be tbe_lather of _yrgery. Even a great American society of surgeons is named after Sushruta. In the Sushruta Samhita there are sophisticated descriptions of surgical instruments. Its classifications of fractu res,   wounds, ab cesses and bums as well as its elaboration of procedures for .plastic surgety and anal rectal surgery have all stood the test of time. Sushruta has also described the original concepts of pathogenesis. Sushruta describes a procedure for dissection of the human body by the maceration method. The knowledge of anatomy - bones, joints, nerves, heart, blood vessels and circulation is surprisingly accurate and praise worthy. The descriptions of the marmas, vital points in the body. are comparable to the system of Acupuncture points used in traditional Chi nese medicine. Sushruta clearly

- , states the importance of both theoretical and practical knowledge and describes ways and means to develop surgical skill.

- Evolution of Ayurveda - as per Sushruta Samhita- (Textbook of surgery)

- Originally a11 the sages Sushruta, Oupadhenava, Vaitarana,

-)urabhra, Paushkalavata, Karavirya and Gopurarakshita were mabie to see the depth of human suffering from exogenous and n ogenous diseases which affected body and mind. Hence they pproached, Dhanvantari who was the king of Kashi. He had the Jecific knowledge of surgery. The sages requested him to teachem Ayurveda, so that the diseases and suffering of people could relieved and they could live a happy life.

- Dhanvantari told them that Ayurveda is a part of Atharva:da. Brahma recollected this science of life .and wrote one msand chapters, consisting of one lakh (hundred thousand) nzas. ahzmg the limitations of intellect   and the short   life mof human beings, he further dividedJ.Lint<Lcight..specialties as medicine, surgery, etc. Brahma taught this knowledge to

Prajapati. who in turn taught the sc ience to Ash wini kumars. The-y in turn taught AY.!:!Iveda to Jndra. train w hom Dhanvan tari learned it Da   < ! _i ta g_!lA--y-u-r-v-edatO. s·shruta and

other disc1 ples.

J]le available Susbruta Samhita contains only about 1 2,000

verses. Sushruta describes 1 25 different i nstruments and various operations includin last1c surgery, Opthalmol ogy, Gynecology, Neuro surgery, Orthopedics, Intestma surgery, and Uro surgery.

NLmi learned Ayurveda from Indra and specialized in surgery of eyes, ear, nose, throat and head. H1s treatise is known as 'Shalakya Tantra'(ear nose and throat and ophthalmology).

Theory and Practice-both are Important

Every coin has two sides head and tail, similarly the coin of medicine has two sides theory and practice. Ayurveda requires both logic and hands on experience. So Sushruta declares - 'A learned physician must never try to examine on grounds of pure logic for the efficacy of a medicine, which is known by dire t observation, as having by nature a specific medical action.' Every · physician should be well learned in Ayurvedic knowledge and also well trained in clinical practice.

- The word "surgery" comes from the Greek word meaning "manual operation" arid Sushruta emphasizes that in all surgical instruments, the hand is the most important, because all other instruments are useless without it. For the purpose of creating. Skilled hands, students dissected human corpses to learn about anatomical structures and practiced the arts of surgery, such as extraction and incision on dummies, melons, animal bladders, cadaver skin, dead animals and lotus stems. Sushruta describes in detail the method of cadaver dissection: Find a corpse, which is not missi ng any of its parts, is not superannuated and did not die of poisoning or medico legal problems. After removing its bowels and their contents, wrap the corpse in a grass called as 'kusha' and keep it in a swiftly flowing

UNIT 1

INTRODUCTION TO KNOWLEDGE MANAGEMENT

1.2 Learning objectives

- To understand the design and the clear concepts of knowledge management
- To understand the history and evolution of knowledge management
- To have a clear understanding about the knowledge, intelligence, experience, common sense and its importance
- To entail basic knowledge of knowledge management

1.3 INTRODUCTION

What is knowledge?

- Knowledge can be gained and accumulated as "information combined with experience, context, interpretation, reflection and is highly contextual".
- It is a high-value form of information that is ready for application to decision and actions within organizations.
- Knowledge is increasingly being viewed as a commodity or an intellectual asset. It possesses some contradictory characteristics that are radically different from those of other valuable commodities. In this rapid changing business environment the ability to manage knowledge is becoming more crucial in today's knowledge economy.
- The power of knowledge is increasingly documented as the new strategic tool in the growing organizations. The common pupil trends to hold knowledge towards their organizations knowledge as an asset to their service.
- Today, knowledge is considered as a great source to an organization. The creation and diffusion of knowledge have become ever more important factors in competitiveness.

Types of Knowledge

"We know more than we can tell Polanyi."

The term knowledge means skill or information acquired either through education or experience. The knowledge can be broadly classified into two types

1. Tacit knowledge
2. Explicit knowledge

Tacit Knowledge

- The word tacit means understood and implied without being stated.
- The tacit knowledge is unique and it can't explain clearly.
- That is the knowledge which the people possess is difficult to express.
- The cognitive skills of an employee are a classic example of tacit knowledge.
- The tacit knowledge is personal and it varies depending upon the education, attitude and perception of the individual.
- This is impossible to articulate because sometimes the tacit knowledge may be even

sub conscious.

- This tacit knowledge is also subjective in character.

- This knowledge is exhibited by the individual automatically. They utilize this knowledge without even realizing it.

Explicit Knowledge

The word explicit means stated clearly and in detail without any room for confusion. The explicit knowledge is easy to articulate and they are not subjective. This is also not unique and it will not differ upon individuals. It is impersonal. The explicit knowledge is easy to share with others.

In existing situation the organizations are fundamentally dissimilar when been evaluated to the organization that survived in past decades. In the mid 1990's the researchers and practitioners acknowledged the knowledge based industries were mounting in an elevated profit. The speedy growth of information technology produced a prospect for forming and propagates new forms of knowledge from corner to corner of the organization. Currently, knowledge has become a significant foundation of competitive advantage, knowledge has been recognized as one of the most important assets and knowledge management in any organization is to be imperative to the organization's success.

What is Knowledge Management?

- Knowledge management is that the firms manage know-how their employees have about its products, services, organizational systems and intellectual property. Specifically, knowledge management embodies the strategies and processes that a firm employs to identify, capture and leverage the knowledge contained within its corporate memory.
- Knowledge Management is appropriate towards the basic activity of planning and implementing our tasks in a systematic and efficient manner.
- Knowledge management is well documented that organizations with efficient communication linkages have higher "information flow, knowledge sharing, cooperation, problem-solving, creating, efficiency and productivity.
- Companies built on such well develop networks to, "produce measurable business results, such as faster learning, quicker response to client needs, better problem-solving, less rework and duplication of effort, new ideas and more innovation. They enjoy higher sales, more profits, and superior market value".

What is a Knowledge Management Principle?

What do we mean by KM Principles? Well a dictionary definition of a principle is a 'fundamental truth or law as a basis of reasoning or action'.

Furthermore, principles have, at least, four distinct characteristics:
- They are timeless. They will be just as relevant in 50 years' time as they are now.
- They are changeless. Whereas knowledge will change over time, principles do not change ever.
- They are universal. That is to say, they can be applied anywhere.
- They are scale able. That is, the same principles can apply to individuals, teams, organizations, inter-organizations, and even globally.

So one can say that principles, are 'the heart of the matter', the fundamental source. In the context of knowledge management, over many years, our KM consultants are continually striving to uncover these principles and apply them, at the personal, team, organization, inter- organization and global levels.

We are dedicated to principle centred knowledge leadership.

- Our mission is to turn these KM principles into daily knowledge working reality. But how can you do that?

- The answer is to embed them in practical KM strategies, processes, methods, systems, tools, technologies and techniques. This will bring about a natural knowledge based, and knowledge driven culture and capability across the organization.

- Knowledge management principles need to be embedded in the organization and embodied in the people.

- Are you, your team, your organization, your professional community, are knowledge principle driven?

- But, to get started, providing you with a simple list of principles is not that effective. Although the principles may be profound, they need to be applied in a meaningful, balanced and holistic way.

- This is why we need a holistic KM Framework to act as a roadmap for the implementation of KM principles.

- The KM framework, we use in all our KM consulting engagements. There are two levels. The KM infrastructure to be built around the knowledge assets, and the knowledge networking dimensions.

- For each of these elements in the KM Framework, we list below the corresponding KM principles.

- Over time, we expect these KM principles to be further developed and refined, so it is a good idea to come back to this section from time to time.

According to Michael Sutton (2007: 1)

KM does not appear to possess the qualities of a discipline. If anything, KM qualifies as an emerging field of study. Those involved in the emerging field of KM are still vexed today by the lack of a single, comprehensive definition, an authoritative body of knowledge, proven theories, and a generalized conceptual framework.

There are a couple of reasons for this. First, there is little consensus regarding what underline knowledge actually is (Mika, 2004:1). Some regard knowledge as being virtually synonymous with information, while others incorporate concepts such as experience, know-how, know-what, understanding, values, etc. At the risk of generalisation, the former approach tends to be more common in IT dominated circles while the latter is more prevalent in business management literature.

Second, KM has a wide range of contributors from different fields, industries, and so on, which further perpetuates different understandings of what the term actually means. Onyancha and Ocholla (2009: 2) identify the following disciplines as being the greatest contributors to, or users of KM: computer science, business, management, library and information science, engineering; psychology, multidisciplinary science, energy and fuels, social sciences, operation research and management science, and planning and development.

To illustrate some of the differences in the definition of KM, compare the following three definitions with the one I selected for this paper in the previous section:

1. GMI Market Research Terms (2013): <u>Knowledge management</u> "is a system that affords control, dissemination, and usage of information. This is often a Net-enabled corporate initiative.

2. "Knowledge Based Solutions, Definition of Terms (2002): "Knowledge Management is a set of processes used to effectively use a knowledge system to locate the knowledge required by one or more people to perform their assigned tasks."

3. Skyrme (2011b): "Knowledge Management is the *explicit* and *systematic* management of *vital knowledge* - and its associated *processes* of creation, organisation, diffusion, use and exploitation - in pursuit of business objectives."

I chose these three definitions because they represent largely incompatible views. In reality, I could have selected from literally dozens and dozens of KM definitions, all of which regard the discipline somewhat differently.

Looking at the definitions above, the most striking aspect should be that definition 1 does not even mention the word "knowledge". According to that definition, KM is information focused technological discipline. It should also be apparent that definition 2, although more nuanced than definition 1, is still far narrower in scope and far more technology-dependent than Skyrme's definition (no. 3), while at the same time also lacking the strategic element that Skyrme implies through the term "vital" knowledge.

The problem with a lack of a common definition is that each KM initiative could, in theory, have widely different goals, scope, and success criteria. The differences are so great that to even talk of KM failures or successes is potentially misleading. Moreover, if there is a lack of understanding as to what knowledge or KM represents within the firm itself, it is easy to see how problems, misunderstandings, and widely different expectations could arise.

Therefore, when dealing with KM, keep in mind that before when you are faced with results, advice, theories, etc. it is imperative to first understand what the author meant by knowledge management. Secondly, whenever you deal with KM in your organization, make sure everyone is on the same page as to what KM is and hopes to achieve.

1.4 History of Knowledge Management

As great attention has received in this field in recent years; however, the root of this area can be traced back many years. In fact, "the concept of knowledge management is nothing new. Corporation have always has some process to synthesize their experience and integrate it with knowledge acquired from outside sources like inventions, purchased patents.

In modern expansion, the change in "technology speciation", explains how advances in technological development often occur in rapid "bursts of evolutionary activity" after a small improvement in a technology opens the door to a wider range of application. Technology speciation can also be used to analyze the development of the knowledge management field. "Recent developments in information technology have an important role for the sudden emergence of knowledge management. Information technology has provided new tools to better perform the activity of building knowledge capital". Specifically, the knowledge management field witnessed substantial "evolution" after the introduction of Lotus Notes, which was one of the earliest integrated email, Database and document management applications. This software for the first time allowed users to access, share information and communicate with employees across a global organization.

Netscape's browser development and deployment of corporate intranets, which have had a substantial role for the further development of firms' knowledge management and sharing efforts, like recently, "two important areas in particular have contributed to the birth of modern knowledge management systems: communication (or network technologies) and relational database. These advanced communication technologies, which enhanced collaboration between project teams. Relational databases, which allow data from different sources to be linked together, have allowed firms to "link" data and knowledge from one area of the firm to another. These knowledge "links" allow the firm to construct knowledge "bridges" which contribute to the firm's ability to use existing knowledge to generate new learning. Other notable technological advances which have played a substantial role in the development of knowledge management include advances in file storage, search and retrieval technologies.

Specifically, in the post-war era, the U.S. economy has undergone a dramatic structural shift from a manufacturing-based economy to that of a service-based economy, as the service sector now comprises 80% of U.S. employment and 63% of U.S. GDP. Since people are the primary asset in a service organization, firms have begun to recognize that retaining their employees' knowledge will be increasingly important as firms grapple with how best to institutionalize the knowledge of their employees given the current high levels of employee turnover. The Bureau of labor Statistics estimates that employees change jobs so frequently that 54% of all employees have been with their current employer for less than four years.

The historical overview of the knowledge management provides the importance of information technology to the field, it is important to remember that knowledge management is a business process. Technology is the backbone of knowledge management, but it is only one such important component of an integrated knowledge management system.

1.5 EVOLUTION OF MANAGEMENT

Period	Author	Brief Description
1938	H.G.WELLS Coined the word 'World Brain' which depicts an intellectual organization the sum total of collective knowledge	Coined the word 'World Brain' which depicts an intellectual organization the sum total of collective knowledge
1960	PETER DRUCKER	Coined the term 'knowledge worker'
1986	Dr.K.WIIG	Coined KM concept at UN
1989	McGRAW& HARRISSONBRIGGS	Described 'knowledge engineering' as involving information gathering, domain familiarization, analysis & design efforts and accumulated knowledge must be translated into code, tested and refined
1990	SENGE	Focused on the 'learning organisation' as one tha can learn from past experiences stored in corporate memory systems
1991-95	NONOKA & TAKEUCHI	Studied how knowledge is produced, used, and diffused within organizations and how much knowledge contributed to the diffusion of innovation
1994	BROWN	Described what is 'Community of Practices'
1996	STEWART	Introduced the concept called 'Intellectual Capital'
1997	KALPAN & NORTON	Concept of Balanced Scorecard
2000-03	ACADEMIA KM	Courses in Universities with KM tex

1.6 Definitions of Knowledge Management

i) "The physical toil of manufacturing is being replaced by a world where we work more with our brains than our hands" – Sewel

ii) Knowledge management refers to identifying and leveraging the collective knowledge in an organization to help the organization to compete with their competitors.

iii) "Knowledge management (KM) is an effort to increase useful knowledge within the organization. Ways to do this include encouraging communication, offering opportunities to learn, and promoting the sharing of appropriate knowledge artifacts" - McInerney, C.

Nature of Knowledge Management Knowledge management draws upon a vast number of diverse fields such as:

Organizational Science. Cognitive science, Linguistics and computational linguistics.

- Information technologies such as knowledge- based systems, document and information management.
- Electronic performance support systems and database technologies. Information and library science.
- Technical writing and journalism. Anthropology and sociology.
- Education and training.
- Storytelling and communication studies.
- Collaborative technologies such as computer supported
- Collaborative work and groupware, as well as intranets, extranets, portals, and other web technologies.

This list is by no means exhaustive, but it serves to show the extremely varied roots that gave life to KM and continues to be its basis today. Figure illustrates some of the diverse disciplines that have contributed to KM.

The multidisciplinary nature of KM represents a double- edged sword. On the one hand, it is an advantage because almost anyone can find a familiar foundation on which to base their understanding and even practice of KM. Someone with a background in journalism, for example, can quickly adapt his or her skill set to the capture of knowledge from experts and reformulate them as organizational stories to be stored in corporate memory. Someone coming from a more technical database background can easily extrapolate his or her skill set to design and implement knowledge repositories that will serve as a the corporate memory for that organization.

1.7 Interdisciplinary Nature of Knowledge Management

THE INTERDISCIPLINARY NATURE OF KNOWLEDGE MANAGEMENT
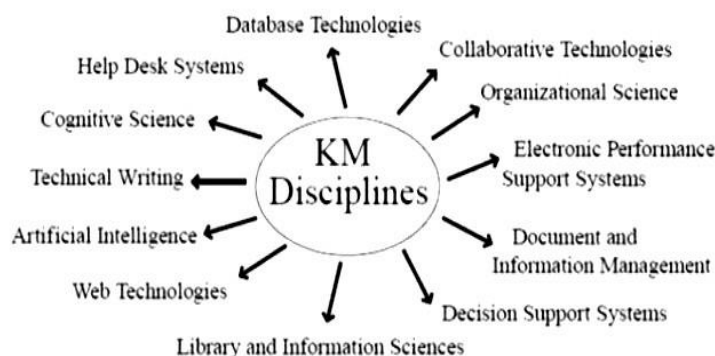
Knowledge Management Processes

This section will deal with the actual knowledge management processes. So far, I have presented an introduction to knowledge management as well as several frameworks. Now it is time to talk about the different processes and initiatives.

This section, as well as the subsequent one on knowledge management strategy, will be structured according to the layout of the integrated knowledge managementmodel presented earlier.

Under the initiative referred to as "act", the integrated model outlines a series of knowledge management processes. They will be used as headings for the subsections presented here, and can be accessed through the menu on the left. These are:

- Knowledge Discovery & Detection
- Knowledge Organization & Assessment Knowledge Sharing
- Knowledge Reuse
- Knowledge Creation
- Knowledge Acquisition

Reasons for Developing Knowledge Management

- Nearly 60% of the job requirements need knowledge
- Knowledge works have high demand
- The knowledge workers can do the job effectively than traditional workers
- The success factor in today economy is knowledge
- Knowledge is power and it is very scarce

Challenges Faced by the Organization

The key challenges faced by any organization are listed below:

1. How to attract customer and service them in the world of internet and electronic commerce?
2. How to transfer the technology and use them according to the customer wants and develops the organization?
3. How to re-engineer the mindsets of employees and motivate them and develop the organization into a learning organization?

This is due to the fact that the application of knowledge and practice of knowledge management will be able to create excellent results in the organization. In current business scenario of value addition, products to customers and value creation to stake holders and technology capabilities at various levels of organization can be effectively managed with the help of knowledge management. Knowledge Society Earlier the term knowledge society was known as information society or post-industrial society.

The term knowledge society was coined by UNESCO towards the end of 90's. The general sub director of UNESCO Mr. Abdul Waheed Khan quoted as given below: "Information society is the building block for knowledge societies. Whereas I see the concept of information society as linked to the idea of technological innovation, the concept of knowledge societies includes a dimension of social, cultural, economic and political transformation and more a pluralistic and development perspective". The knowledge rhetoric is used to shape business and educational policy in the United Kingdom. Then in late 90's the academics were keenly interested in   knowledge management and drafted various articles about knowledge management.

The knowledge management has been analyzed in the mid of 70's because society in 70's was knowledge and information intensive. Society can be categorized into 3 namely:

1. Pre industry society
2. Industry society
3. Post - industrial society

1. Pre Industrial Society

- This society is where the mankind started its civilization. They never used machines to produce goods.
- They used manual (hand) techniques to produce the goods. They were ruled by kings and military leaders.

2. Industrial Society

- This is the era when the industrialization was blossoming after the world war.
- The machines were invented and the manufacturing industries developed at an unprecedented rate.
- The people were ruled mostly by their democratic leader.
- The importance was given to process rather than information.

3. Post Industrial Society

The post - industrial society can be defined as "A society where the service sector is central and knowledge based goods or services have replaced industrial and manufactured goods as the main wealth generation".

- This society is gaining momentum in the start of 20th century.
- The people started giving importance to service sector rather than manufacturing sector. In this era knowledge is power.
- The most knowledge people were given respect in this society.
- The main character of this society is that the knowledge is used as a main resource for wealth creation.

Conclusion

Knowledge is an intrinsic part of any activity. No activity can be conducted smoothly unless one acquires complete knowledge to perform the activity, Knowledge management forms the base for the working of the organizations. It encourages flows of ideas, opinions, views among the employees within the organization to perform better and focus on the technological development of their products. Knowledge management covers various aspects which are required for the success of any organization

1.8 Exercise

- Compare the types of knowledge explained above on the basis of their characteristics and properties
- Explain the nature of knowledge Management in the field of education and training.
- Suggest some measures for the challenges faced by the organizations

2.1   Learning Objectives

- To understand the concept of Knowledge, intelligence, experience, common sense, cognition
- To understand the distinction between knowledge management and information management.
- To have a clear understanding about the knowledge, intelligence, experience, common sense and its importance
- To understand KM cycle and KM myths

2.2   Understanding of Knowledge, intelligence, experience, common sense, Cognition

The overall objective is to create value and to leverage, improve and refine the firm's competences and knowledge assets to meet organizational goals and targets. Implementing knowledge management thus has several dimensions including:

- ***KM Strategy:*** Knowledge management strategy must be dependent oncorporate strategy. The objective is to manage, share, and create relevant knowledge assets that will help meet tactical and strategic requirements.
- ***Organizational Culture:*** The organizational culture influences the way peopleinteract, the context within which knowledge is created, the resistance they will have towards certain changes, and ultimately the way they share (or the way they do not share) knowledge.
- ***Organizational Process:*** The right processes environments, and systems thatenable knowledge management to be implemented in the organization.
- ***Management & leadership:*** knowledge management requires competent andexperienced leadership at all levels. There are a wide variety of Knowledge management related roles that an organization may or may not need to implement, including a Chief Knowledge Officer, knowledge managers. Knowledge brokers and so on.
- ***Technology:*** The systems, tools, and technologies that fit the organization'srequirements properly designed and implemented.
- ***Politics:*** The long-term support to implement and sustain initiatives thatinvolve virtually all organizational functions, which may be costly to implement (both from the perspective of time and Money), and which often do not have a directly visible return on investment.

Typically, failed initiatives have often placed an undue focus on knowledge management tools and systems while neglecting the other aspects. This issue will also be addressed throughout the site, and particularly in the knowledge management strategy section.

2.3 Understanding Knowledge, Information and Data

Data   = Unorganized facts

Information   = Data + Context

Knowledge   = Information + Judgment

Knowledge

Know-how, understanding, experience, insight, intuition and contextualize dinforamtion

Inforamtion

Contextualized, categorized, calculated and condesed data

Data

Facts and figures which relay something specific, but which are notoranized in any way

Data, Information and Knowledge

- Data symbolize unorganized and unrefined facts. Typically data is stagnant in nature.
- It can correspond to a set of distinct facts about events. Data is a precondition to information.
- An organization from time to time has to decide on the nature and amount of data that is necessary for generating the required information.

Information

- Information can be measured as a collection of data (processed data) due to which decision making becomes easier.
- Information has generally got some connotation and function.

Knowledge

- Knowledge indicates human understanding of a subject matter that has been attained in the course of appropriate study and familiarity.
- Knowledge is usually based on learning, thinking, and proper perception of the problem area.
- Knowledge is not information and information is not data.
- Knowledge is resultant from information in the same way information is derivative of data.

We can view it as an understanding of information based on its perceived importance or relevance to a problem area. It can be measured as the incorporation of individual discerning processes that assist them to draw consequential conclusions.

Understanding Knowledge

Knowledge can be defined as the, "understanding obtained through theprocess of experience or appropriate study". Knowledge can also be an accumulation of facts, procedural rules, or heuristics; A fact is generally a statement representing truth about a subject matter or domain; A procedural rule is a rule that describes a sequence of actions; A heuristic is a rule of thumb based on years of experience.

Intelligence implies the capability to acquire and apply appropriateknowledge; memory indicates the ability to store and retrieve relevant experience according to will; Learning represents the skill of acquiring knowledge using the method of instruction/study.

Experience relates to the understanding that we develop through our pastactions. Knowledge can develop over time through successful experience, and experience can lead to expertise.

Common sense refers to the natural and mostly unreflective opinions of humans.

Human thinking and learning provides a strong background forunderstanding knowledge and expertise. Here the study of interdisciplinary study of human intelligence is cognitive Psychology. This tries to identify the cognitive structures and processes that closely relates to skilled performance within an area of operation. The two major components of cognitive psychology are:

Experimental psychology: This studies the cognitive process thatconstitutes human intelligence.

Artificial Intelligence (AI): this studies the cognition of computer-based intelligent systems.

The process of eliciting and representing experts' knowledge usually involves a knowledge developer and some human experts (domain experts). In order to gather the knowledge from human experts, the developer usually interviews the experts and asks for information regarding a specific area of expertise. It is almost impossible for humans to provide the completely accurate reports of their mental processes. The research in the area of cognitive psychology helps to a better understanding of what constitutes knowledge, how knowledge is elicited, and how it should be represented in a corporate knowledge base. Hence, cognitive psychology contributes a great deal to the area to the area of knowledge management.

2.4 Information Management to Knowledge Management

Information Management vs Knowledge Management

This has always been a bit of a tricky subject, because knowledge and information are used interchangeably by so many people. Therefore, you will often find KM solutions even today which are essentially nothing more than information or document management systems, i.e. which handle data, information, or perhaps even explicit knowledge, but which do not touch the most essential part of KM - tacit knowledge.

Below you can find an info-graphic of the main differences, with a short explanation below. Please keep in mind that IM in many ways is a useful tool for KM, in that information can help create and refine knowledge, but as a discipline it is a different one.
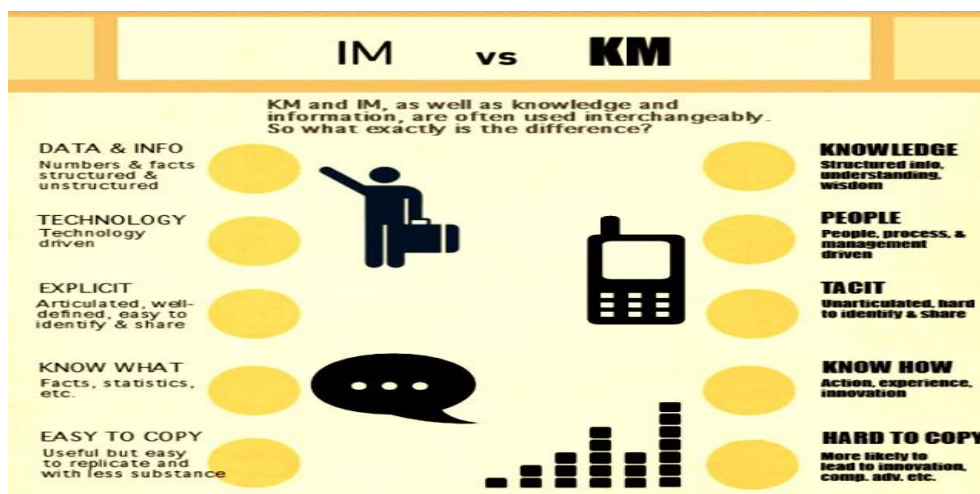
As I showed in the previous sections, knowledge and information are actually quite different, as is tacit and explicit knowledge. So, while information and data management are certainly very useful, particularly as information sources are growing at exponential rates and with the new focus on big data, it is not synonymous with KM.

 So what exactly is the difference?

Information and IM

Focus on data and information

- Deal with unstructured and structured facts and figures.
- Benefit greatly from technology, since the information being conveyed is already codified and in an easily transferrable form.
- Focus on organizing, analyzing, and retrieving - again due to the codified nature of the information.
- Is largely about know-what, i.e. it offers a fact that you can then use to help create useful knowledge, but in itself that fact does not convey a course of action (e.g. sales of product x are up 25% last quarter).
- Is easy to copy - due to its codified and easily transferrable nature.

Knowledge and KM

Focus on knowledge, understanding, and wisdom

- Deal with both codified and uncodified knowledge. Uncodified knowledge - the most valuable type of knowledge - is found in the minds of practitioners and is unarticulated, context-based, and experience-based.
- Technology is useful, but KM's focus is on people and processes. The most valuable knowledge cannot effectively be (directly) transferred with technology, it must be passed on directly from person to person.
- Focus on locating, understanding, enabling, and encouraging - by creating environments, cultures, processes, etc. where knowledge is shared and created.
- Is largely about know-how, know-why, and know-who
- Is hard to copy - at least regarding the tacit elements. The connection to experience and context makes tacit knowledge extremely difficult to copy. This is why universities cannot produce seasoned practitioners - there are some things (the most important things) that you simply cannot teach from a textbook (or other codified source of information/explicit knowledge). These are learnt in the field and understood on an intuitive level. You cannot easily copy or even understand this intuition without the right experience, context, etc. - and it is this intuition that represents the most valuable organizational knowledge.

    In general it seems like knowledge management as a branch of information technology, but it is important to realize that there is much more to knowledge management than technology alone. It is the business process through which firms create and use their institutional or collective knowledge".

Though knowledge and information are used interchangeably by many, but knowledge management which are essentially nothing more than information or document management systems, i.e. which handle data, information, or perhaps even explicit knowledge, but which do not touch the most essential part of knowledge management –tacit knowledge.

Knowledge and information are actually different, as is tacit and explicit knowledge. So, while, particularly as information sources are growin g at exponential rates and with the new focus on big data, it is not synonymous with knowledge management.

Information management Vs Knowledge Management

Information management and Knowledge management are often used interchangeably, but still exists the differences.

Information management	Knowledge Management
Data and Information – Number and facts, structured and unstructured	Knowledge–structured information understanding wisdom
Technology – technology driven	People–people, process and management driven
Explicit – articulated, well defined, easy to identify and share	Tacit – unarticulated, hard to identify and share
Know what – facts, statistics, etc	Know how – Action, experience, innovation
Easy to copy- useful but easy to replicated and with less substance	Hard to copy – More likely to lead to innovation etc.

Information and Information management

*Focus on data and information*

- Deal with unstructured and structured facts and figures
- Benefit greatly from technology, since the information being conveyed is already codified and in an easily transferrable form
- Focus on organizing, analyzing, and retrieving – again due to the codified nature of the information.
- Is largely about know-what, i.e. it offers a fact that you can then use to help create useful knowledge, but in itself that fact does not convey a course of action.
- Is easy to copy as it is codified and easily transferrable in nature

Knowledge and Knowledge Management

- Focus on knowledge, understanding and wisdom
- Deal with both codified and un-codified knowledge. Un-codified knowledge the most valuable type of knowledge is found in the minds of practitioners and is unarticulated, context-based, experience based.
- Technology is useful, but knowledge management's focus is on people and processes. The most valuable knowledge cannot effectively be (directly) transferred with technology; it must be passed on directly from person to person.
- Focus on locating, understanding, enabling and encouraging by creating environments, cultures, processes, etc. where knowledge is shared and created.

- Is largely about know-how, know-why, and know-who.
- Is hard to copy – at least regarding the tacit elements, the connection to experience and context makes tacit knowledge extremely difficult to copy. This is why universities cannot produce seasoned practitioners. There are some things (the most important things) that you simply cannot teach from a test book (or other codified source of information / explicit knowledge). These are learnt in the field and understood on an intuitive level. It's not easily copied or even understands this intuition without the right experience, context, etc. And it is this intuition that represents the most valuable organizational knowledge
- According to Gartner Group, Knowledge management is defined as a discipline that promotes an integrated approach to identifying, managing and sharing all of an enterprise's information assets. These information assets may include databases, documents, and procedures, as well as previously unarticulated expertise and experience resident in individual workers.

Gartner defines Knowledge management as an integrated and collaborative approach to the Creation, Capture, organization, Access and Use of Information Assets.
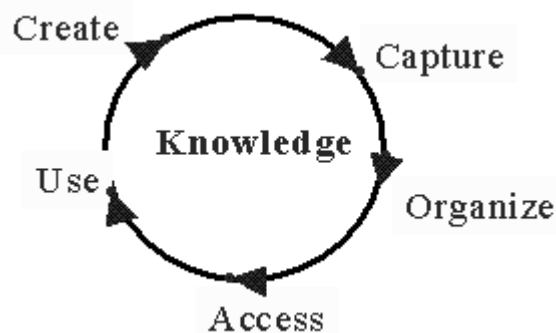
Knowledge as an Attribute of Expertise

- In most areas of specialization, insight and knowledge accumulate quickly, and the criteria for expert performance usually undergo continuous change.
- In order to become an expert in a particular area, one is expected to master the necessary knowledge and make significant contributions to the concerned field.
- The unique performance of a true expert can be easily noticed in the quality of decision making.
- The true experts (knowledgeable) are usually found to be more selective about the information they acquire, and also they are better able in acquiring information in a less structured situation.
- They can quantify soft information, and can categorize problems on the basis of solution procedures that are embedded in the experts long range memory and readily available on recall.
- Hence, they tend to use knowledge-based decision strategies starting with known quantities to deduce unknowns.
- If a first-cut solution path fails, then the expert can trace back a few steps and then proceed again.

- Non-experts use means-end decision strategies to approach the problem scenario. They usually focus on goals rather than focusing on essential features of the task which makes the task more time consuming and sometimes unreliable.
- Specific individuals are found to consistently perform at higher levels than others and they are labeled as experts.

Human Thinking and Learning

- Research in the area of artificial intelligence has introduced more structure into human thinking about thinking.
- Human do not necessarily receive and process information is exactly the same way as the machines do.
- Humans can receive information via seeing, smelling, touching, hearing (sensing) etc., which promotes a way of thinking and learning that is unique to humans.
- One macro level, humans and computers can receive inputs from a multitude of sources. Computers can receive inputs from keyboards, touch screens etc.
- One micro level, both human brain and CPU of a computer receive information as electrical impulses. The point to note here is that the computers must be programmed to do specific tasks. Performing one task does not necessarily transcend onto other tasks as it may do with humans.

Human learning: they learn new facts, integrate them in some way which they think is relevant and organize the result to produce necessary solution, advice and decision. Human learning can occur in the following ways:

- o Learning through experience
- o Learning by Example.
- o Learning by Discovery.

The various steps involved are described as follows:

Knowledge is created by area-wise departmental heads

Knowledge is captured. It put on black and white report, entered into a computer system of some kind, or simply remembered.

Knowledge is organized, where it is organized, codified and de-codified. Organizing knowledge is the basic indexed that can be extended by various subjects and department, codification and de-codification is to add on context, background security or other way to retrieve the information later use.

"Knowledge is shared and used. When knowledge is shared and used, it's modified by the resources that use it, and can modify to the current needs.

Why Knowledge Management?

Before we start to explore and understand the details of what knowledge management is, and how to implement knowledge management projects and initiatives, we need to first ask ourselves why we want to consider knowledge management in the first place?

What are the real benefits that can be gained from effective knowledge management for the individual, the team, the entire organization, the community, the nation, or even the entire planet Earth?

Knowledge management is far reaching. Maybe you are considering developing your own personal knowledge management competencies, to become a more effective player in the global knowledge economy, or becoming a more competitive knowledge leader and knowledge driven organization.

Maybe you wish to develop and apply knowledge management strategies to government, military operations, global poverty eradication, and international disaster management and even, now, knowledge management for global climate change.

The list is endless. Knowledge management is applied today across the world, in all industry sectors, public and private organizations and humanitarian institutions and international charities.

Most importantly, effective knowledge management is now recognized to be 'the key driver of new knowledge and new ideas' to the innovation process, to new innovative products, services and solutions.

Once we can understand the value and benefits to be gained, we will then become far more motivated to look further at the implementation of knowledge management. Doing 'knowledge management' for knowledge management's sake is likely to produce a failure or mediocre results at very best.

Knowledge management, as a discipline, must result in better achieving, or even exceeding, your objectives. The purpose of knowledge management must not be to just become more knowledgeable, but to be able to create, transfer and apply knowledge with the purpose of better achieving objectives.

How can we better achieve objectives with effective knowledge management? Well, for a start, effective knowledge management should dramatically reduce costs. Most individuals, teams and organizations are today continually 'reinventing the wheel'. This is often because they simply do not know that what they are trying to do have already been done by elsewhere. They do not know what is already known, or they do not know where to access the knowledge. Continually reinventing the wheel is such a costly and inefficient activity, whereas a more systematic reuse of knowledge will show substantial cost benefits immediately.

But as well as reducing costs, effective knowledge management should also dramatically increase our speed of response as a direct result of better knowledge access and application.

Effective knowledge management, using more collective and systematic processes, will also reduce our tendency to 'repeat the same mistakes'. This is, again, extremely costly and inefficient. Effective knowledge management, therefore, can dramatically improve quality of products and/or services.

Better knowing our stakeholder needs, customer needs, employee needs, industry needs, for example, has an obvious immediate effect on our relationship management.

So it is very easy to see how effective knowledge management will greatly contribute to improved excellence, which is to:

a) Dramatically reduce costs

b) Provide potential to expand and grow

c) Increase our value and/or profitability

d) Improve our products and services

e) Respond faster

Knowledge simply underpins everything we do.

But the benefits of knowledge management for improved excellence, is simply 'one side of the coin'. There is more. Effective knowledge management, especially accelerated knowledge creation, is the driver for innovation. Increasingly, products and services are becoming 'smarter' and more knowledge based.

Our ability to better collaborate in physical and virtual teams, as knowledge workers, is driving the process of new knowledge creation. Ideas can now be turned into innovative products and services much faster.

As organizations, we are learning faster, and that means that individuals are learning faster. People are developing their competencies and confidence faster in organizations that practice effective knowledge management.

In summary, we simply cannot afford not to mainstream, to embed and embody knowledge management principles, strategies, policies, processes, methods, tools and technologies into our daily personal, team and organizational lives.

The Knowledge Economy is the next booming economy in a world of recession

In a world that is facing economic recession many are starting to ask 'What is going to be the next booming economy, what are its characteristics and, how will it help us to grow out of recession?' At knowledge-management-online.com we strongly suggest that the next booming economy is already here! It's the rapidly growing global knowledge economy! More individuals, teams, organizations and inter-organizational networks will be restructuring and renewing themselves with the primary purpose of profitably trading their knowledge to add even higher value, predominantly on the World Wide Web.

Already we see more enlightened organizations developing and applying the knowledge they have about their industry, customers, partners and stakeholders, as their prime strategic asset, and at the highest point in the value chain. And many are becoming less involved, and more open to profitably outsourcing the other business operations.

Around the world we hear automobile companies talking far more about their critical and key knowledge areas of design, knowledge of manufacturing , knowledge of distribution, knowledge of service and support etc as their 'crown jewels' or 'master recipe'.

Based on applying this key knowledge they then outsource the other business components. We hear the same from the aerospace industry, the oil and gas industry, the information technology industry, the food and agricultural industry, the healthcare industry, in fact most, if not all, industries.

Our knowledge mantra is 'know and apply what you know the best, and link to the best of the rest' Knowledge has become the key strategic asset for the 21st Century and for every organization that values knowledge it must invest in developing the best strategy for identifying, developing and applying the knowledge assets it needs to succeed.

Every organization needs to invest in creating and implementing the best knowledge networks, processes, methods, tools and technologies. This will enable them to learn, create new knowledge, and apply the best knowledge much faster.

Every individual who wishes to successfully participate in the rapidly growing global knowledge economy must now consider the development of their personal knowledge management competencies as an 'essential life skill' for the 21st Century.

It has been said many times, 'knowledge will radically and fundamentally transform economies'. One thing is absolutely certain in this rapidly changing world. The best knowledge will always be in demand. In, say, fifty years' time you can be certain of one thing. Leaders of economies, industries and organizations will always be very interested in finding new and better ways to create and apply knowledge.

Effective Knowledge Management is a timeless and changeless principle.

The strategies, methods and tools of knowledge management will undoubtedly change, but the timeless principles will, of course, remain unchanged.

And to survive and succeed in the new global knowledge economy, we must become far more effective and more productive. We must always strive for the best relations and highest quality.

To do that, the successful organizations and individuals will not allow themselves to keep 're-inventing the wheel' or 'repeating the same mistakes. This is so costly and, we suggest that good leaders will simply not tolerate, nor be able to afford, such cost inefficiencies caused by knowledge gaps and bad knowledge flows. Would the global financial crisis have been prevented or minimized with far more effective global knowledge management?

Finally, those individuals and organizations that can best sense, become quickly alerted to, find, organize, and apply knowledge, with a much faster response time, will simply leave the competition far behind.

All of this can only be achieved through good knowledge leadership that understands the unchanging timeless principles for knowledge that transforms individuals and organisations to become far more responsive and effective players in a growing knowledge economy.

Knowledge Management is for everyone.

Global and/or Planetary Knowledge Management is becoming a reality today. It is our belief that the knowledge economy is rapidly becoming the largest and most successful and sustainable economy in the world.

Why need to choose knowledge management?

Today, some see knowledge management as a choice. Today, those that work with knowledge very well are considered extraordinary. Those that fail to understand knowledge management will consider it as 'extra effort' to our main work, or consider it a passing fad. They will risk 'throwing the baby out with the bathwater'.

We predict that effective and extraordinary knowledge management, at all levels, for the individual, team, organization and global community will naturally become mainstream and ordinary, as the only way to successfully develop and grow for the future.

More articles and reports on the importance of knowledge development to the national economies, and knowledge management to organizations and individuals, can be found

2.5 KM Myths

Knowledge management is all about people's intelligence based on information technology application in this modern technology global. Even knowledge management can exist within the individual and among the individuals, technology merely enables knowledge to be capture, recorded, and retrieved more efficiently. Example lecture Hall of any topic. Misconceptions about what it is and isn't having a very clear clarity about are process.

Knowledge management is a continuous, cycle process, by hiring intellectual people. It is applied for both production and service oriented organization. Technology certainly plays a key role, especially in distributing it, though the technology alone won't improve the organizations knowledge management or make more competitive.

It is true that knowledge management is like "Grandma's attic" approach to saving any information that might possibly be useful someday. But these aren't the organizations accumulate a value knowledge. Knowledge yields value when people know where it is, know how to get at it, know it will help them and join in keeping it current, practical and useful. Knowledge management means certain huge, unwieldy databases.

The creation, distribution and application of knowledge drive the value of an organization's goods and services and determine its market value. Recognizing and cultivating the right knowledge is the hear t of the business. Right knowledge management is obsessed by a good chief knowledge officer of chief learning officer.

2.6 KM Cycle

The knowledge management cycle consists of four fundamental steps that involves the storage, processing and communication of information. We begin the discussion of this cycle as it applies to the individual and move on to discussing the cycle as it applies to small and then large organizations. In each case the methods of storing, processing and communication information are described and followed by a description of the progression through the four steps of the knowledge management cycle.
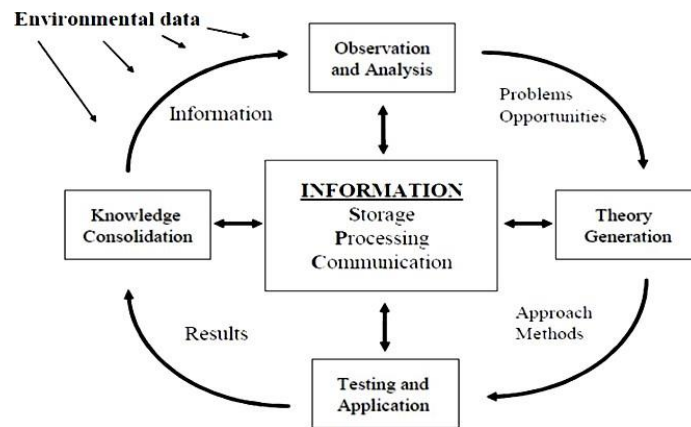
The human uses his own memory as well as notes and paper files for storing information. The Human's brain processes the information with possibly the aid of a calculator or a small computer. Communication of information is primarily internal from a knowledge management perspective. As a human being, we pride ourselves on our ability to learn from our triumphs and defeats through the effective consolidation of knowledge.

The figure depicts, knowledge consolidated at the end of one iteration through the knowledge management cycle provides new information that can be used in iteration.

CONCLUSION

There is a steady relation between information management and knowledge management. They are interrelated to each other in many ways. There is further more scope to be discussed and evaluated further.

2.7 EXERCISE

Are information management and knowledge management interrelated? Justify your answer. Explain the relation between data, information and knowledge Evaluate drawbacks of artificial intelligence

UNIT 3

3.1 Learning objectives

- To understand the concept of Knowledge- Expert Knowledge, Human Thinking and Learning
- To understand the types of knowledge
- To understand the relation of knowledge economy and industrial economy To have a brief overview of the knowledge economy

3.2 Types of Knowledge- Expert Knowledge, Human Thinking and Learning

Knowledge management deals with two types of knowledge,

- Explicit
- Tacit

In effect, these two types of knowledge are like two sides of a coin, are equally applicable for the overall knowledge of an organization.

Explicit knowledge

It is referred as formal knowledge that can be packed as information. This can be found in the organization in the form of reports, articles, manuals, patents, pictures, images, video, sound, software etc., which have been created with the goal of communicating with another person. Explicit knowledge defines the identity, the competencies and the intellectual assets of an organization independently of its employees; thus, it is ganizational knowledge par excellence, but it can grow and sustain itself only through an affluent background of tacit knowledge. Explicit knowledge, on the other hand, "is more precisely and formally articulated, although removed from the original context of creation or use". Explicit knowledge includes, for example, the content of spreadsheets, management reports, procedural and training manuals". This knowledge is hard to codify and store.

Tacit knowledge

It is referred as informal knowledge embedded in individual experience and is shared and exchanged through direct, eye-to-eye contact. Tacit knowledge is knowledge the "knower" is not aware of. Individuals may not know what tacit knowledge they have and also might not be able or willing to externalize it. Tacit knowledge is much more difficult.

Tacit knowledge can be defined as knowledge that " is subconsciously understood and applied, difficult to articulate, development from direct experience and action and usually shared through highly interactive conversation, storytelling and shared experience". Example is "best practice" performed in an organization, management skills, technologies, customer, competitor intelligence and market". Tacit knowledge is, by definition, hard to codify and store.
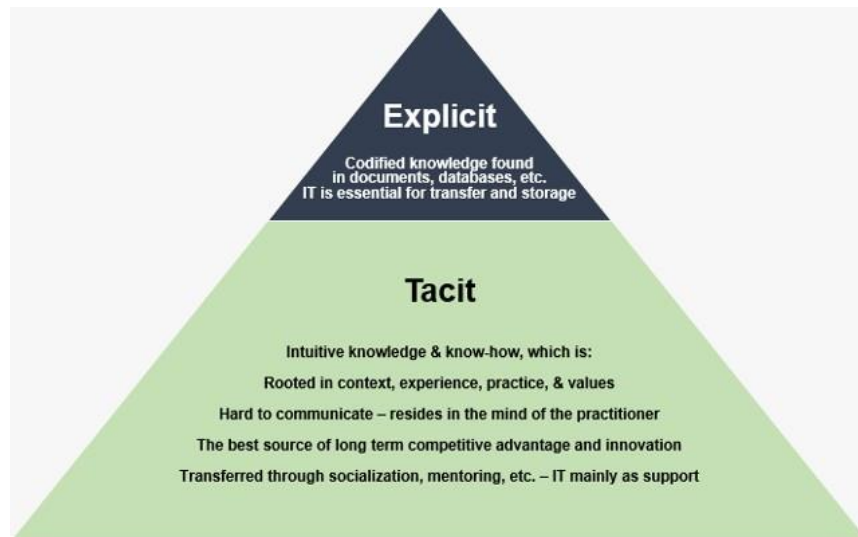
Embedded Knowledge

Embedded knowledge refers to the knowledge that is locked in processes, products, culture, routines, artifacts, or structures (Horvath 200, Gamble & Blackwell 2001). Knowledge is embedded either formally, such as through a management initiative to formalize a certain beneficial routine, or informally as the organization uses and applies the other two knowledge types. The challenges in managing embedded knowledge vary considerably and will often differ from embodied tacit knowledge. Culture and routines can be both difficult to understand and hard to change. Formalized routines on the other hand may be easier to implement learned directly into procedures, routines and products. This embedded knowledge is found in rules, processes, manuals, organizational culture, codes of conduct, ethics, product, etc. It is important to note, that while embedded knowledge can exist in explicit source(i.e. a rule can be written in a manual), the knowledge itself is not explicit, i.e. it is not immediately apparent why doing something this method is beneficial to the organization.

Expert knowledge

It is the information woven inside the mind of an expert for accurately and quickly solving complex problems.

Knowledge chunking

Knowledge is usually stored in expert's long-rangememory as chunks. Knowledge chunking helps experts to optimize their memory capacity and enables them to process the information quickly. Chunks are groups of ideas that are stored and recalled together as a unit.

Basic structure of Organization's Knowledge management

Create knowledge repositories

a. External knowledge (competitive intelligence, market data, surveys, etc.)

b. Structured internal knowledge (reports, marketing materials, etc.)

c. Informational internal knowledge (discussion databases of 'know-how')

d. Technical expert referral

e. Expert networks used for staffing based on individual competencies.

f. Turnkey video conferencing to foster easy access to distributed experts Enhance the knowledge management.

g. Change organizational norms and values related to knowledge in order to encourage knowledge use and knowledge sharing

h. Customer's rating of organization's expertise Manage knowledge as an asset.

i. Attempt to measure the contribution of knowledge to bottom line success

3.3 Industrial Economy to Knowledge Economy

The key concepts of the knowledge economy is that knowledge and education otherwise referred as human capital, can be treated as, A business product, as educational and innovation intellectual products and services can be exported for a high value return and a productive asset.

The most important factor determining the standard of living, in today's advanced technological life style is knowledge based. For countries and the world the knowledge-based economy is the front line for any operations. For the last two hundred years, neo-classical has recognized only two factors of production: labour and capital. Knowledge, productivity, education and intellectual capital were all regarded as exogenous factors that are, falling outside the system.

Production and services based on knowledge-intensive activities that contribute to an accelerated pace of technical and scientific advance. The key component of knowledge economy is a greater dependence on intellectual capabilities than on physical inputs or natural resources.

New Growth theory is based on work by Stanford economist Paul Romer and others who have attempted to deal with the causes of long-term growth, something that traditional economic models have had difficulty with. The changes by few economists like, Joseph Schumpeter, Robert Solow and others, Romer has proposed a change to the neo-classical model by view on the dynamics in technological application. Knowledge has become the third factor of production in leading economics.

Knowledge based technology are now the key factors of production. Romer's theory differs from neo-classical economic theory in several important ways:

Knowledge is the basic form of capital. Economic growth is driven by the accumulation of knowledge.

While any given technology breakthrough may seem to be random, Romer considers that new technological developments, rather than having one-off impact, can create technical platforms for further innovations, and this technical platform effect is a key driver of economic growth.

Technology can raise the return on investment, which explains why developed countries can sustain growth and why developed countries can sustain growth and why developing economics, even those with unlimited labour and ample capital, cannot attain growth. Traditional economics predicts that there are diminishing returns on investment. New Growth theorists rue that the non-rivalry and technical platform effects of new technology can lead to increasing rather than diminishing returns on technological investment.

Investment can make technology more valuable and vice versa. According to Romer, the virtuous circle that results can raise a country's growth rate permanently. This goes against traditional economics.

Romer, argues that earning monopoly rents on discoveries is important in providing an incentive for companies to invest in R&D for technology innovation. Traditional economics sees "perfect competition" as the ideal.

Enhancing human capitals is critical for GDP growth. But sustained GDP growth doesn't just happen. In order to make investments in technology, a country must have sufficient human capital. Human capital is the formal education, training and on-the job learning embodied in the workforce.

As we are living in a knowledge economy, the nature of the work in the an organization has changed enormously with the shift from an industrial economy where the focus is production of commercial products to a knowledge economy where the main outcomes are service and expertise. Employers have recognized the value of identifying and accessing a diversity of expertise and knowledge from different sources to work on common goals.

According to Housel and Bell 'a knowledge based economy is the one where knowledge is the main source of wealth, growth and employment, with a strong reliance on information technology'. The World Bank Institute offers a formal definition of a knowledge economy as one that creates, disseminates, and uses knowledge to enhance its growth and development.

A knowledge-driven economy is one in which the generation and exploitation of knowledge play the predominant part in the creation of wealth, but in this knowledge economy with high-technology industries such as telecommunications and financial services. To a significant extent, the linkages of the operations n the service sector lie in the hardware part. Thus, chips, integrated circuitry, and technology used in biosciences are important aspects of knowledge economy. The space occupied by the Information Technology (IT) industry within the content of the term knowledge economy is significantly large, probably due to its being an early starter. However, a certain extent of grayness is associated with the term knowledge economy, primarily because, so far, it has not been adequately defined; nor have its boundaries been drawn with clarity.

- In the knowledge economy the distance will be meaningless and the world will be considered as a global village where using appropriate technology virtual a virtual organizations, virtual teams and market places are doable in which operations will be quicker than in the traditional economy.
- In the knowledge economy, it is tricky to pertain controls in terms of laws, taxes and obstacle in the national level as the trade become global in nature.
- In the knowledge economy, the knowledge and information drip may be unavoidable where the demand is maximum and the obstacles are lowest.
- In the knowledge economy the goods which are developed on the basis of knowledge will magnetize premium price in comparison to the products with small entrenched knowledge or knowledge concentration.

- Price and worth of knowledge dependent heavily on perspective. The similar knowledge can have dissimilar value to diverse people at dissimilar times.
- Knowledge when sheltered into systems or processes has elevated intrinsic value than when it can 'walk out of the door' in people's heads.
- Human capitals - competencies - are an input constituent of value in a knowledge based company, however a small number of companies report proficiency levels in annual reports. In contrast, rationalizing is often seen as a positive 'cost cutting' measure.

The above mentioned characteristics are so diverse from those of the physical economy; necessitate new thinking and approaches by policy makers, senior executives and knowledge workers the same. To do so despite the fact that requires leadership and risk taking against the existing and sluggish changing attitudes and practices of existing institutions and business practice.

Impact of knowledge in the knowledge economy

Unlike capital and labour, knowledge struggle to be a public good. Once knowledge is exposed and made unrestricted, there is zero marginal cost to sharing it with additional users. Secondly, the originator of knowledge finds it inflexible to thwart others from using it. Instruments such as trade secrets protection and patents, copyright, and trademarks offer the maker with some fortification.

The insinuation of the knowledge economy is that there is no unconventional way to opulence than to make knowledge and knowledge-creation of primary significance. There are diverse kinds of knowledge. "Tacit knowledge" is knowledge acquired from practice, relatively than that instilled by official education and training. In the knowledge economy tacit knowledge is as vital as formal, codified, prearranged and unequivocal knowledge.

According to New Growth economics a country's capability to take benefit of the knowledge economy is dependent on how rapidly it can become a "learning economy". Learning means not only making use of new technologies to admittance global knowledge, it also means using them to converse with other people about advancement. In the "learning economy" individuals, firms, and countries will be proficient to fashion wealth in ratio to their competency to gain knowledge and distribute innovation.

CONCLUSION

The various economic theories of knowledge management are of great importance and effectiveness to the organization for its success and future expansion.

3.5 Exercise

- Differentiate between Romer's theory and neo classical economic theory.
- Do you agree with Housel & Bell knowledge based economy? Justify your answer.
- Explain the impact of knowledge based economy on an organization.

UNIT 4

4.1 Learning Objectives
- To understand the mechanisms of knowledge management
- To have a detail knowledge of the various tools of knowledge management
- To have a clear understanding of knowledge matrix

4.2 Knowledge Management Mechanisms

In this chapter will be discussed the overview of the types of KM tools available on the market today and to gain an understanding of what their role is in the KM process. KM is about managing people, culture, and organizational practices & structures. Effective KM initiatives are therefore never exclusively technology driven. However, in conjunction with sound practice, KM tools are invaluable at providing support to KM initiatives and at facilitating interaction, exchange of ideas, locating experts, and storing knowledge in both structured and unstructured forms. While it can be said that these tools were not absolutely necessary when KM peaked at the turn of the last century, today they are a necessary competitive advantage within knowledge sharing. The following are the used in knowledge management:

1. *Cross-functional project teams*

This basically refers to the practice of assembling project teams using members of the organization from different functions. Typically, this would involve selecting a number of specialists under a generalist project manager.

The role of project manager can be particularly demanding when using cross-functional project teams. Apart from being an expert at project management, the project manager must also have enough general knowledge to understand what his specialists know and how it can be used. The project manager must also be skilled at conflict resolution, which is more likely to happen within a diverse group.

As with all projects but perhaps more so for cross-functional project teams, proper planning is required, which involves clear definitions of the roles and responsibilities of the project team, as well as a timeline and cost estimation (Zoerman 2008).

Cross-functional project teams have several key benefits related not only to knowledge management (KM) but also to innovation. These are:

Creation of new knowledge

Project teams have often been considered to be a particularly important source of new knowledge, particularly when they are given a certain degree of freedom and autonomy (Zoerman 2008, Nonaka& Takeuchi 1995, Peters 1988). Ideally, the project team should be self-organizing and be able to make its own project decisions. Using cross-functional project teams allows for the integration of a wider knowledge base into the project.

Knowledge sharing across organizational boundaries

The team members work together during the project, enabling the transfer of all types of knowledge. In the absence of this kind of arrangement, often only explicit knowledge could be transferred, since these specialists would typically not socialize professionally.

Support of the creation of informal knowledge networks

As we have previously determined, particularly in the section on communities of practice, informal networks are a crucial part of organizational learning. Cross-function project teams bring people together from different parts of the organization, encouraging future collaboration and the expansion of personal informal networks.

2. Knowledge Management Training Consultancy

This is almost always expensive but it can be very useful. Trained consultants can work with all aspects of the organization, not just implementing KM processes but also educating the managers in the subject. Make sure to have a good grasp of what the consultant plans to do, and to emphasize the training aspect. Have local management be involved hands-on throughout the process, working with the consultants so as to pass on their tacit knowledge. Finally, give the consultants the freedom to do their jobs, understanding that knowledge management is a process that involves the entire organization.

A similarly broad definition is presented by Davenport &Prusak (2000), which states that KM "is managing the corporation's knowledge through a systematically and organizationally specified process for acquiring, organizing, sustaining, applying, sharing and renewing both the tacit and explicit knowledge of employees to enhance organizational performance and create value."

I will also choose to answer the question "what is knowledge management" in the broader perspective, encompassing not just the exploitation and management of existing knowledge assets, but the also the initiatives involved in the creation and acquisition of new knowledge. In the next article, I will arrive at a specific knowledge management definition

3. Story telling

Storytelling is a very old technique, dating back throughout most of human history. The practice is embedded into our culture; it was the primary form of family entertainment before the television (which is a different medium for story telling), it is mastered by competent politicians and journalists, and it remains as one of the most effective ways to reach someone and move them with your message.

Stories can be used to shape vision, to pass on knowledge and wisdom, and to shape identity and organizational culture. Storytelling is regarded as one of the most effective and influential techniques, and has been documented extensively in numerous fields. Sole & Wilson (2002) identify the role of storytelling as follows:

Share norms and values

> Stories act as a medium for passing on values andcreating vision.

Develop trust and commitment

Personal stories can communicate one's ownability and commitment, as well as conveying openness by sharing something personal. Organizational stories influence the perceived trustworthiness of the firm and its management (either positively or negatively).

Share tacit knowledge

Enables the users to articulate tacit knowledge and communicate with feeling, which helps them convey more than they realize that they know (Weaver 2005 in Bali *et al* 2009).

Facilitate unlearning

Unlearning often requires more than rational arguments. It needs an intuitive and emotional anchor, which stories can provide.

Generate emotional connection

We connect with stories emotionally and a storythat has had an impact on us will be easily recalled long into the future.

4. Mentoring

Mentoring is one of the most effective ways of passing down tacit know-how from an expert to an aspiring expert. This practice dates back throughout human history, and is just as relevant today. Mentoring is about practice under the guidance of an expert. Unlike classroom learning, the apprentice or mentee is given practical tasks, under the supervision and guidance of his mentor. *Liebowitz (2009)* refers to formal mentoring programs as a well-established way to retain and transfer knowledge. He highlights an example from the NASA Goddard Space Flight Center, where the mentoring program runs for a year, and includes assignments, meetings, formal mentor training, assessment, etc.

Mentoring can be implemented both formally (as above) and informally. Informal mentor relationships could involve assigning a guide to a new employee, or simply encouraging him to seek out a mentor. For the most part however, organizations are beginning to look at formal relationships designed to train the newcomer as quickly and effectively as possible.

The characteristics of an ideal mentor are:

- Personal expertise
- Familiarity with the organization: its procedures, culture, etc.
- Desire to teach/guide
- Ability to motivate
- **Ability to allow for personal development of the mentee:** Must acceptdifferent approaches and offer his own advice as an alternative not a mandate.
- **Commitment:** Time, Resources, Persistence, etc.
- Skilled communicator
- **Ability to remain professional:** includes the ability to realize when the mentoring relationship has run its course and/or when it is no longer functioning
- Self-aware and self-critical
- Ability to foster trust

Mentoring is a key process for knowledge management. Apart from transferring tacit knowledge and retaining expertise within the organization, it can also help the mentee to become a recognized and accepted member of the community, by passing on corporate vision and values and improving his grasp of corporate networking (Clutterbuck 2001). Companies should therefore consider implementing formal mentoring relationships and mentor training as an investment in the future knowledge stock of the organization.

4.3 Techniques of knowledge management

For any teaching and dissemination there is a need to recognize the applicability of different levels of teaching required. In this case, knowledge management at the strategic level requires the organization to analyze and plan its business in terms of the knowledge it currently has and the knowledge it needs for future business processes. At the tactical level the organization is concerned with identifying and formalizing existing knowledge, acquiring new knowledge for future use, archiving it in organizational memories and creating systems that enable effective and efficient application of the knowledge within the organization. At the operational level knowledge is used in everyday practice by professional personnel who need access to the right knowledge, at the right time, in the right location

1. Knowledge Development Managers:

It needs a strategic perspective on all knowledge assets. They need to understand the current state of the assets and to form a vision of how these knowledge assets could be improved or utilized t o move the organization forward.

2. Knowledge Developers

It needs a comprehensive understanding of individual knowledge assets. They need to understand all the processes, roles, rights, and constraints associated with each knowledge asset, so that they can represent everything that may be relevant when describing or applying that knowledge asset.

3. Professional Personnel

It need to know about the existence of relevant knowledge assets and must understand how to apply them at the operational level. This paper focuses on the techniques we employ for managing knowledge within the organization.

It must be recognized that the ultimate success of any knowledge management programme for a particular organization will also depend critically on the attitude and culture adjustments of its key workers.

4.4 KNOWLEDGE MATRIX

Type / Approach	Embodied	Represented	Embedded
Sense	Observe	Gather	Hypothesize
Organize	Contextualize	Categorize	Map
Socialize	Share	Disseminate	Simulate
Internalize	Apply, Decide, Act		

The KM Matrix by Gamble and Blackwell (2001)

This KM model presents a general theoretical framework, as well as specific guidelines for implementation..

The KM process is split into four stages. First management must locate the sources of knowledge. Then they must organize this knowledge so as to assess the firm's strengths and weaknesses and determine its relevance and reusability. This is followed by socialization, where various techniques are used to help share and disseminate it to whomever needs it in the organization. Finally, the knowledge is internalized through use.

As all sequential models, the steps are not to be taken literally, but they do provide an excellent overview of the role of the KM manager. However, one limitation of this model is its focus. First of all, the overall strategic role outline by Bukowitz and Williams is not included. Secondly, KM's role here is limited to knowledge sharing, omitting the processes of knowledge acquisition/creation and divestment. This is a perfectly legitimate approach to KM where the focus is on the sharing and retrieval of existing knowledge, but it does not fulfill the scope of the knowledge management definition outlined on this site.

Knowledge Matrix helps in identifying different islands of knowledge to create a Knowledge Management database/data warehouse. The following Knowledge Matrix enables organizations to uncover various sources of knowledge in order to provide knowledge services to both internal and external customers.

4.5 KM Tools

In this section, I present an overview of the IT-based tools and systems that can help knowledge management (KM) fulfill its goals.

The scope of this section is to provide the reader with an overview of the types of KM tools available on the market today and to gain an understanding of what their role is in the KM process. This is the most important step, since there are literally thousands of options to choose from. However, in the future, I intend to also take a look at some actual KM tools and present a few reviews.

To recap, I have dealt with KM tools throughout the section on tactical management initiatives, outlining its role in knowledge discovery, organization, sharing, etc. In the section on knowledge management strategy, I presented an article on knowledge management systems implementation, where I stated that IT based tools, for the most part, fall into one of the following categories (adapted from Gupta and Sharma 2005, in Bali et al 2009)

- Groupware systems & KM 2.0 The intranet and extranet
- Data warehousing, data mining, & OLAP Decision Support Systems
- Content management systems
- Document management systems Artificial intelligence tools
- Simulation tools

Semantic Networks

For now, in the subsections that follow, I will discuss **the first six KM toolcategories on this list**, as they are usually what people refer to when speaking ofKM tools. Simulation tools is too broad a category for the scope of this site, and artificial intelligence systems are of questionable usefulness and are outside my area of expertise. However, in the (not too near) future, I do plan to add a segment on semantic networks and artificial intelligence.

A quick note on artificial intelligence: While there was much excitement about this a few years ago, to my understanding, it has not lived up to its expectations (yet). Expert systems for example, designed to capture human decision-making and to make the correct decisions in certain circumstances, have not been so successful due to constantly changing requirements (Botha et al 2008). For more on this, research topics such as neural networks, intelligent decision support systems, and expert systems.

Again, I would like to remind the reader that KM is about managing people, culture, and organizational practices & structures. Effective KM initiatives are therefore never exclusively technology driven. However, in conjunction with sound practice, KM tools are invaluable at providing support to KM initiatives and at facilitating interaction, exchange of ideas, locating experts, and storing knowledge in both structured and unstructured forms. While it can be said that these tools were not absolutely necessary when KM peaked at the turn of the last century, today they are a necessary competitive advantage within knowledge sharing.

If IT is used right - as a supporting and enhancing mechanism for sound, existing KM practices - it can be a very valuable tool indeed.

CONCLUSION

There is a great need of knowledge matrix within the organization and the techniques derived for acquiring knowledge turns out to be very effective for the employees as well as the organization.

4.6 Exercise

- Explain in your own words the necessity of knowledge matrix in an organization.
- How important are the knowledge management techniques for acquiring knowledge in an organization?
- Discuss about the importance of knowledge management tools in your own words.

UNIT 5

5.1 Learning objectives

- To understand the concept of knowledge conversion To understand the knowledge conversion process
- To understand the relation of communities of practice in organizations
- To have a detail vie of communities of practice and its importance to the organization

5.2 Knowledge Conversion

Definition

The incorporation of knowledge into the process of solving analytical tasks is a fast emerging area in visualization is Knowledge Conversion.

The SECI Model and Knowledge Conversion

Arguably the most important contributor to this subject has been IkujiroNonaka. He worked extensively with the concepts of explicit knowledge and tacit knowledge, and drew attention to the way Western firms tend to focus too much on the former (Nonaka& Takeuchi 1996). This sentiment has since been echoed throughout organisational learning and knowledge management (KM) literature (e.g. Cook & Brown 1999, Kreiner 1999, Tsoukas&Valdimirou 2001, etc.). Nonaka and Takeuchi introduced the SECI model (***Nonaka& Takeuchi 1996***) which has become the cornerstone of knowledge creation and transfer theory. They proposed four ways that knowledge types can be combined and converted, showing how knowledge is shared and created in the organization. The model is based on the two types of knowledge outlined above.

Socialization: Tacit to tacit. Knowledge is passed on through practice,guidance, imitation, and observation.

Externalization: Tacit to explicit. This is deemed as a particularly difficult andoften particularly important conversion mechanism. Tacit knowledge is codified into documents, manuals, etc. so that it can spread more easily through the organization. Since tacit knowledge can be virtually impossible to codify, the extent of this knowledge conversion mechanism is debatable. The use of metaphor is cited as an important externalization mechanism.

Combination: Explicit to explicit. This is the simplest form. Codifiedknowledge sources (e.g. documents) are combined to create new knowledge.

Internalization: Explicit to tacit. As explicit sources are used and learned, theknowledge is internalized, modifying the user's existing tacit knowledge.

The SECI Model Knowledge Creation Spiral

In this model, knowledge is continuously converted and created as users practice, collaborate, interact, and learn. The process should be seen as a continuous, dynamic, swirl of knowledge rather than a static model. It is basically a visual representation of overlapping, continuous processes that take place - or should take place - in an organization.

Below I have included a graphical representation of this concept as presented in the SECI model:
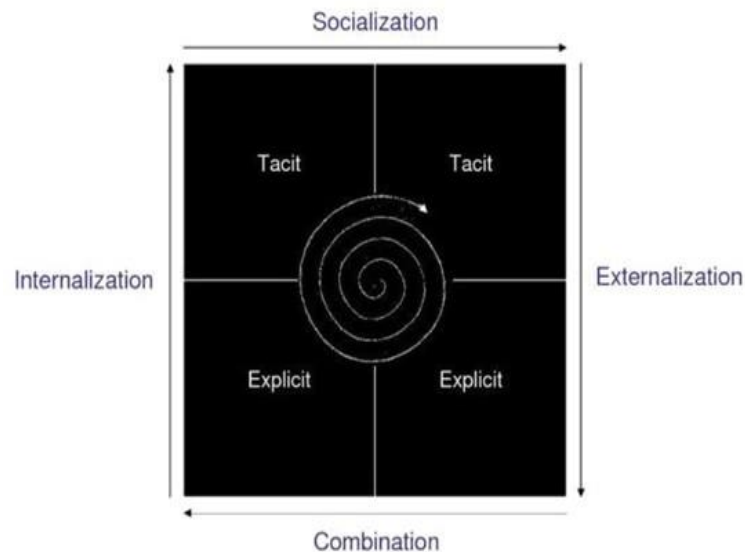
A great deal of effort has been put into investigating its practical applicability (with mixed results), but in recent years the applicability of the model has been linked strongly to culture, both organizational and national. The issue is whether culture is more than just an element in a KM model, i.e. culture-in-the-model, but rather acts as a limiting factor for a model, i.e. culture-of- the-model (Andreeva&Ikhilchik 2011). The issue of culture as a limiting factor for KM models is an issue I will incorporate into the site in the future and provide a link from this article to the new sections.

Nonetheless, the SECI model remains at the core of knowledge conversion theory within KM, and this almost universal attraction to the model may in itself be an indication that some aspects of it appeal to virtually all cultures (Andreeva&Ikhilchik 2011).

5.3 Knowledge Conversion Processes

Nonaka and Takeuchi defined four types of conversion processes which they describe as "fundamental to creating value". The four are the combinations of conversion of explicit and tacit knowledge (see diagram).

- Tacit-to-tacit (socialization) - individuals acquire knowledge from others through dialogue and observation
- Tacit-to-explicit (externalization) - the articulation of knowledge into tangible form through elicitation and documentation
- Explicit-to-explicit (combination) - combining different forms of explicit knowledge, such as that in documents or databases
- Explicit-to-tacit (internalization) - such as learning by doing, where individuals internalize knowledge into their own mental models from documents.

5.4 COMMUNITIES OF PRACTICE

We now recognize knowledge as a key source of competitive advantage in the business world, but we still have little understanding of how to create and leverage it in practice. Traditional knowledge management approaches attempt to capture existing knowledge within formal systems, such as databases. Yet systematically addressing the kind of dynamic "knowing" that makes a difference in practice requires the participation of people who are fully engaged in the process of creating, refining, communicating, and using knowledge. We frequently say that people are an organization's most important resource. Yet we seldom understand this truism in terms of the communities through which individuals develop and share the capacity to create and use knowledge. Even when people work for large organizations, they learn through their participation in more specific communities made up of people with whom they interact on a regular basis. These "communities of practice" are mostly informal and distinct from organizational units. However, they are a company's most versatile and dynamic knowledge resource and form the basis of an organization's ability to know and learn.

5.5 Defining Communities of Practice

- Communities of Practice (CoPs) are groups of people in organizations that form to share what they know, to learn from one another regarding some aspects of their work and to provide a social context for that work.
- Communities of practice are groups of people with common interest who meet to share their insights in order to develop better solutions to problems or challenges. Although the term "Community of Practice" is new, CoPs are not. Such groups have been around ever since people in organizations realized they could benefit from sharing their knowledge, insights, and experiences with others who have similar interests or goals.

One of the best-known examples of a CoP was formed by the copy machine repair technicians at Xerox Corporation. Through networking and sharing their experiences, particularly the problems they encountered and the solutions they devised, a core group of these technicians proved extremely effective in improving the efficiency and effectiveness of efforts to diagnose and repair Xerox customers' copy machines. The impact on customer satisfaction and the business value to Xerox was invaluable. Yet, for the most part, this was a voluntary, informal gathering and sharing of expertise, not a "corporate program" (however, once the company realized the value of the knowledge being created by this CoP, steps were taken to support and enhance the efforts of the group). Members of a community are informally bound by what they

do together–from engaging in lunchtime discussions to solving difficult problems–and by what they have learned through their mutual engagement in these activities. A community of practice is thus different from a community of interest or a geographical community, neither of which implies a shared practice. A community of practice defines itself along three dimensions:

What it is about –itsjoint enterpriseas understood and continuallyrenegotiated by its members

**How it functions -** mutual engagement that bind members together into asocial entity

What capability it has produced –theshared repertoireof communal resources(routines, sensibilities, artifacts, vocabulary, styles, etc.) that members have developed over time. Communities of practice also move through various stages of development characterized by different levels of interaction among the members and different kinds of activities. Communities of practice develop around things that matter to people. As a result, their practices reflect the members' own understanding of what is important. Obviously, outside constraints or directives can influence this understanding, but even then, members develop practices that are their own response to these external influences. Even when a community's actions conform to an external mandate, it is the community–not the mandate – that produces the practice. In this sense, communities of practice are fundamentally self-organizing systems. CoP groups function through discussion lists, web-site forums or other forms of virtual networking.

5.6 Communities of Practice in Organizations

Communities of practice exist in any organization. Because membership is based on participation rather than on official status, these communities are not bound by organizational affiliations; they can span institutional structures and hierarchies. They can be found:

Within businesses: Communities of practice arise as people address recurringsets of problems together. So claims processors within an office form communities of practice to deal with the constant flow of information they need to process. By participating in such a communal memory, they can do the job without having to remember everything themselves.

Stages of Development
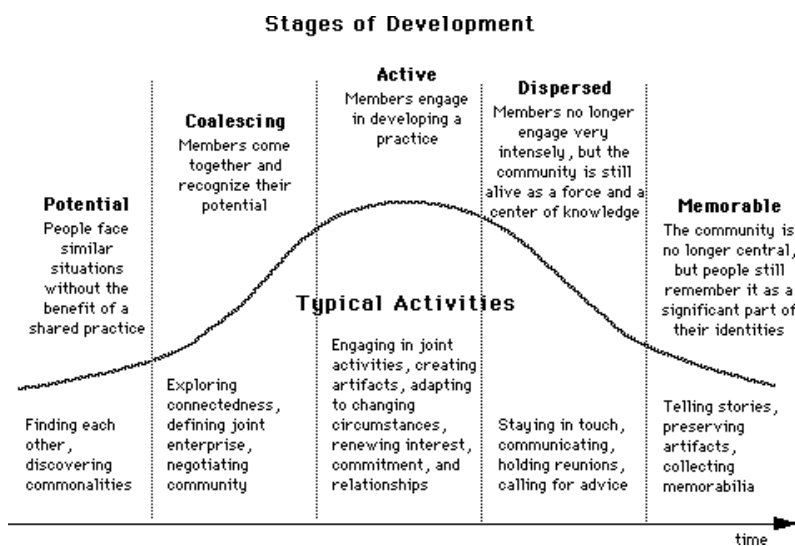
Across business units: Important knowledge is often distributed in differentbusiness units. People who work in cross-functional teams thus form communities of practice to keep in touch with their peers in various parts of the company and maintain their expertise. When communities of practice cut across business units, they can develop strategic perspectives that transcend the fragmentation of product lines. For instance, a community of practice may propose a plan for equipment purchase that no one business unit could have come up with on its own.

Across company boundaries: In some cases, communities of practice becomeuseful by crossing organizational boundaries. For instance, in fast-moving industries, engineers who work for suppliers and buyers may form a community of practice to keep up with constant technological changes. Communities of practice are not a new kind of organizational unit; rather, they are a different cut on the organization's structure–one that emphasizes the learning that people have done together rather than the unit they report to, the project they are working on, or the people they know. Communities of practice differ from other kinds of groups found in organizations in the way they define their enterprise, exist over time, and set their boundaries

A community of practice is different from a business or functional unit in that it defines itself in the doing, as members develop among themselves their own understanding of what their practice is about. This living process results in a much richer definition than a mere institutional charter. As a consequence, the boundaries of a community of practice are more flexible than those of an organizational unit. The membership involves whoever participates in and contributes to the practice. People can participate in different ways and to different degrees. This permeable periphery creates many opportunities for learning, as outsiders and newcomers learn the practice in concrete terms, and core members gain new insights from contacts with less-engaged participants.

A community of practice is different from a team in that the shared learning an interest of its members are what keep it together. It is defined by knowledge rather than by task, and exists because participation has value to its members. A community of practice's life cycle is determined by the value it provides to its members, not by an institutional schedule. It does not appear the minute a project is started an does not disappear with the end of a task. It takes a while to come into being and may live long after a project is completed or an official team has disbanded.

A community of practice is different from a network in the sense that it is "about" something; it is not just a set of relationships. It has an identity as a community, and thus shapes the identities of its members. A community of practice exists because it produces a shared practice as members engage in a collective process of learning. People belong to communities of practice at the same time as they belong to other organizational structures. In their business units, they shape the organization. In their teams, they take care of projects. In their networks, they form relationships. And in their communities of practice, they develop the knowledge that lets them do these other tasks. This informal fabric of communities and shared practices makes the official organization effective and, indeed, possible. Communities of practice have different relationships with the official organization.

The table "Relationships to Official Organization" shows different degrees of institutional involvement, but it does not imply that some relations are better or more advanced than others. Rather, these distinctions are useful because they draw attention to the different issues that can arise based on the kind of interaction between the community of practice and the organization as a whole.

Status	Definition	Typical Challenges
Unrecognized	Invisible to the organization and sometimes even to members themselves	Lack of reflexivity, lack of awareness of community's value and limitations
Bootlegged	Only visible informally to a circle of people "in the know"	Getting resources, having an impact, keeping hidden
Legitimized	Officially sanctioned as a valuable entity	Scrutiny, overmanagement, new demands
Strategic	Widely recognized as central to the organization's success	Short-term pressures, blindness of success, smugness, elitism, exclusion
Transformative	Capable of redefining its environment and the direction of the organization	Relating to the rest of the organization, acceptance, managing boundaries

5.7 Importance of Communities to Organizations

Communities of practice are important to the functioning of any organization, but they become crucial to those that recognize knowledge as a key asset. From this perspective, an effective organization comprises a constellation of interconnected communities of practice, each dealing with specific aspects of the company's competency–from the peculiarities of a long- standing client, to manufacturing safety, to esoteric technical inventions. Knowledge is created, shared, organized, revised, and passed on within and among these communities. In a deep sense, it is by these communities that knowledge is "owned" in practice. Communities of practice fulfill a number of functions with respect to the creation, accumulation, and diffusion of knowledge in an organization:

- They are nodes for the exchange and interpretation of information. Because members have a shared understanding, they know what is relevant to communicate and how to present information in useful ways. As a consequence, a community of practice that spreads throughout an organization is an ideal channel for move in information, such as best practices, tips, or feedback, across organizational boundaries.
- They can retain knowledge in "living" ways, unlike a database or a manual. Even when they routines certain tasks and processes, they can do so in a manner that responds to local circumstances and thus is useful to practitioners. Communities of practice preserve the tacit aspects of knowledge that formal systems cannot capture. For this reason, they are ideal for initiating newcomers into a practice.

- They can steward competencies to keep the organization at the cutting edge. Members of these groups discuss novel ideas, work together on problems, and keep up with developments inside and outside a firm. When a community commits to being on the forefront of a field, members distribute responsibility for keeping up with or pushing new developments. This collaborative inquiry makes membership valuable, because people invest their professional identities in being part of a dynamic, forward-looking community.
- They provide homes for identities. They are not as temporary as teams, and unlike business units, they are organized around what matters to their members.

Identity is important because, in a sea of information, it helps us sort out what we pay attention to, what we participate in, and what we stay away from. Having a sense of identity is a crucial aspect of learning in organizations. Consider the annual computer drop at a semiconductor company that designs both analog and digital circuits. The computer drop became a ritual by which the analog community asserted its identity. Once a year, their hero would climb the highest building on the company's campus and drop a computer, to the great satisfaction of his peers in the analog gang. The corporate world is full of these displays of identity, which manifest themselves in the jargon people use, the clothes they wear, and the remarks they make. If companies want to benefit from people's creativity, they must support communities as a way to help them develop their identities. Communities of practice structure an organization's learning potential in two ways:

- Through the knowledge they develop at their core and through interactions at their boundaries. Like any asset, these communities can become liabilities if their own expertise becomes insular.
- It is therefore important to pay as much attention to the boundaries of communities of practice as to their core, and to make sure that there is enough activity at these boundaries to renew learning. For while the core is the center of expertise, radically new insights often arise at the boundary between communities. Communities of practice truly become organizational assets when their core and their boundaries are active in complementary ways.

To develop the capacity to create and retain knowledge, organizations must understand the processes by which these learning communities evolve and interact. We need to build organizational and technological infrastructures that do not dismiss or impede these processes, but rather recognize, support, and leverage them.

5.8   Developing and nurturing Communities of Practice

Just because communities of practice arise naturally does not mean that organizations can't do anything to influence their development. Most communities of practice exist whether or not the organization recognizes them. Many are best left alone–some might actually wither under the institutional spotlight. And some may actually need to be carefully seeded and nurtured. But a good number will benefit from some attention, as long as this attention does not smother their self-organizing drive. Whether these communities arise spontaneously or come together through

seeding and nurturing, their development ultimately depends on internal leadership. Certainly, in order to legitimize the community as a place for sharing and creating knowledge, recognized experts need to be involved in some way, even if they don't do much of the work. But internal leadership is more diverse and distributed. It can take many forms:

- The inspirational leadership provided by thought leaders and recognized experts
- The day-to-day leadership provided by those who organize activities
- The classificatory leadership provided by those who collect and organize information in order to document practices
- The interpersonal leadership provided by those who weave the community's social fabric
- The boundary leadership provided by those who connect the community to other communities
- The institutional leadership provided by those who maintain links with other organizational constituencies, in particular the official hierarchy

The cutting-edge leadership provided by those who shepherd "out-of-the-box" initiatives. These roles may be formal or informal, and may be concentrated in a core group or more widely distributed. But in all cases, leadership must have intrinsic legitimacy in the community. To be effective, therefore, managers and others must work with communities of practice from the inside rather than merely attempt to design them or manipulate them from the outside. Nurturing communities of practice in organizations includes:

1) *Legitimizing participation.*

> Organizations can support communities of practice byrecognizing the work of sustaining them; by giving members the time to participate in activities; and by creating an environment in which the value communities bring is acknowledged. To this end, it is important to have an institutional discourse that includes this less-recognized dimension of organizational life. Merely introducing the term "communities of practice" into an organization's vocabulary can have a positive effect by giving people an opportunity to talk about how their participation in these groups contributes to the organization as a whole.

2) *Negotiating their strategic context.*

In what Richard McDermott calls "double knitorganizations," people work in teams for projects but belong to longer-lived communities of practice for maintaining their expertise. The value of team-based projects that deliver tangible products is easily recognized, but it is also easy to overlook the potential cost of their short-term focus. The learning that communities of practice share is just as critical, but its longer-term value is more subtle to appreciate. Organizations must therefore develop a clear sense of how knowledge is linked to business strategies and use this understanding to help communities of practice articulate their strategic value. This involves a process of negotiation that goes both ways. It includes understanding what knowledge–and therefore what practices–a given strategy requires. Conversely, it also includes paying attention to what emergent communities of practice indicate with regard to potential strategic directions.

3) *Being attuned to real practices.*

To be successful, organizations must leverageexisting practices. For instance, when the customer service function of a large corporation decided to combine service, sales, and repairs under the same 800 number, researchers from the Institute for Research on Learning discovered that people were already learning from each other on the job while answering phone calls. They then instituted a learning strategy for combining the three functions that took advantage of this existing practice. By leveraging what they were already doing, workers achieved competency in the three areas much faster than they would have through traditional training. More generally, the knowledge that companies need is usually already present in some form, and the best place to start is to foster the formation of communities of practice that leverage the potential that already exists.

4)   *Fine-tuning the organization.*

Many elements in an organizational environmentcan foster or inhibit communities of practice, including management interest, reward systems, work processes, corporate culture, and company policies. These factors rarely determine whether people form communities of practice, but they can facilitate or hinder participation. For example, issues of compensation and recognition oftencome up. Because communities of practice must be self-organizing to learn effectively and because participation must be intrinsically self-sustaining, it is tricky to use reward systems as a way to manipulate behavior or micro-manage the community. But organizations shouldn't ignore the issue of reward and recognition altogether; rather, they need to adapt reward systems to support participation in learning communities, for instance, by including community activities and leadership in performance review discussions. Managers also need to make sure that existing compensation systems do not inadvertently penalize the work involved in building communities.

5)   *Providing support.*

Communities of practice are mostly self-sufficient, but theycan benefit from some resources, such as outside experts, travel, meeting facilities, and communications technology. A companywide team assigned to nurture community development can help address these needs. This team typically

- provides guidance and resources when needed
- helps communities connect their agenda to business strategies
- encourages them to move forward with their agenda and remain focused on the cutting edge makes sure they include all the right people helps them create links to other communities

Such a team can also help identify and eliminate barriers to participation in the structure or culture of the overall organization; for instance, conflicts between short-term demands on people's time and the need to participate in learning communities. In addition, just the existence of such a team sends the message that the organization values the work and initiative of communities of practice. Different members of an organization can take actions in their own domains to support communities of practice and maximize the benefits they can provide:

Line managers must make sure that people are able to participate in the right communities of practice so they sustain the expertise they need to contribute to projects.

Knowledge managers must go beyond creating informational repositories that take knowledge to be a "thing," toward supporting the whole social and technical ecology in which knowledge is retained and created.

Training departments must move the focus from training initiatives that extract knowledge out of practice to learning initiatives that leverage the learning potential inherent in practice.

- Strategists must find ways to create two-way connections between communities of practice and organizational strategies.
- Change managers must help build new practices and communities to bring about changes that will make a constructive difference.
- Accountants must learn to recognize the capital generated when communities of practice increase an organization's learning potential.
- Facilities managers must understand the ways in which their designs support or hinder the development of communities of practice.
- Work process designers must devise process improvement systems that thrive on, rather than substitute for, engaged communities of practice.

Conclusion

The practice of communities of practice turns out to be beneficial to the employees as well as the entire business organization on a whole. The knowledge conversion techniques can also be further evaluated more for smoother functioning of knowledge management

5.9 Exercises

- Explain the scope nature and scope of communities of practice for social organizations.
- Explain the benefits of communities of practice to an organization.
- Give out new ways of knowledge conversion for business organizations.

UNIT 6

6.1 Learning objectives

- To understand the concept of Social knowledge management To understand the concept of social network analysis
- To have a clear understanding of knowledge sharing
- To understand the different barriers to knowledge sharing.

6.2 Social Knowledge Management:

Social knowledge management can be defined as applying social media in the knowledge management context to identify, share, document, transfer, develop, use or evaluate knowledge. Another Definition of social Knowledge Management is the management of social knowledge - where the aim is then more economic development - not only individual competitive advantage by companies

- Increase knowledge quantity through leveraging user generated content
- Use social review methods like ratings, comments to increase the quality of knowledge
- Integration of social media tools and applications into organizations business context to improve knowledge access and sharing - and leverage the benefits of social media in all relevant work contexts
- Leverage social media concepts to increase motivation to share knowledge, e.g. gamification, communities of practice
- Use advanced, self-learning search providing context relevant results
- Help to learn on demand and informally using social learning tools

Social Knowledge Management can be applied in many organizational processes, like in customer service, employee-supplier collaboration, or in people development & education.

6.3 SOCIAL NETWORK ANALYSIS

Social network analysis (SNA) is the process of investigating social structuresthrough the use of networks and graph theory. It characterizes networked structures in terms of nodes (individual actors, people, or things within the network) and the ties, edges, or links (relationships or interactions) that connect them. Examples of social structures commonly visualized through social network analysis include social media networks, memes spread, friendship and acquaintance networks, collaboration graphs, kinship, disease transmission, and sexual relationships. These networks are often visualized through socio grams in which nodes are represented as points and ties are represented as lines.

Social network analysis has emerged as a key technique in modern sociology. It has also gained significant in following anthropology, biology, communication studies, economics, geography, history, information science, organizational studies, political science, social psychology, development studies, sociolinguistics and computer science now commonly available as a consumer too.

Social network analysis [**SNA**] is the mapping and measuring of relationships and flows between people, groups, organizations, computers, URLs, and other connected information/knowledge entities. The nodes in the network are the people and groups while the links show relationships or flows between the nodes. **SNA** provides both a visual and a mathematical analysis of human relationships. Management consultants use this methodology with their business clients and call it Organizational Network

Analysis [**ONA**]. ONA allows you to x-ray your organization and reveal the managerial nervous system that connects everything. To understand networks and their participants, we evaluate the location and grouping of actors in the network. These measures give us insight into the various roles and groupings in a network -- who are the connectors, mavens, leaders, bridges, isolates, where are the clusters and who is in them, who is in the core of the network, and who is on the periphery?

Degree Centrality

Social network researchers measure network activity for a node by using the concept of degrees -- the number of direct connections a node has. In the kite network above, Diane has the most direct connections in the network, making hers the most active node in the network. She is a 'connector' or 'hub' in this network. Common wisdom in personal networks is "the more connections, the better." This is not always so. What really matters is where those connections lead to -- and how they connect the otherwise unconnected! Here Diane has connections only to others in her immediate cluster -- her clique. She connects only those who are already connected to each other.

Betweenness Centrality

While Diane has many direct ties, Heather has few direct connections -- fewer than the average in the network. Yet, in may ways, she has one of the best locations in the network -- she is between two important constituencies. She plays a 'broker' role in the network. The good news is that she plays a powerful role in the network, the bad news is that she is a single point of failure. Without her, Ike and Jane would be cut off from information and knowledge in Diane's cluster. A node with high betweenness has great influence over what flows -- and does not -- in the network. Heather may control the outcomes in a network. That is why I say, "**As in RealEstate, the golden rule of networks is: Location, Location, Location**."

Closeness Centrality

Fernando and Garth have fewer connections than Diane, yet the pattern of their direct and indirect ties allow them to access all the nodes in the network more quickly than anyone else. They have the shortest paths to all others -- they are close to everyone else. They are in an excellent position to monitor the information flow in the network -- they have the best visibility into what is happening in the network.

Network Centralization

Individual network centralities provide insight into the individual's location in the network. The relationship between the centralities of all nodes can reveal much about the overall network structure.

A very centralized network is dominated by one or a few very central nodes. If these nodes are removed or damaged, the network quickly fragments into unconnected sub-networks. A highly central node can become a single point of failure. A network centralized around a well- connected hub can fail abruptly if that hub is disabled or removed. Hubs are nodes with high degree and between less centrality.

A less centralized network has no single points of failure. It is resilient in the face of many intentional attacks or random failures -- many nodes or links can fail while allowing the remaining nodes to still reach each other over other network paths. Networks of low centralization fail gracefully.

Network Reach

Not all network paths are created equal. More and more research shows that the shorter paths in the network are more important. Noah Friedkin, Ron Burt and other researchers have shown that networks have horizons over which we cannot see, nor influence. They propose that the key paths in networks are 1 and 2 steps and on rare occasions, three steps. The "small world" in which we live is not one of "six degrees of separation" but of direct and indirect connections < 3 steps away. Therefore, it is important to know: who is in your network neighborhood? Who are you aware of, and who can you reach?

In the network above, who is the only person that can reach everyone else in two steps or less?

Network Integration

Network metrics are often measured using geodesics -- or shortest paths. They make the (erroneous) assumption that all information/influence flows along the network's shortest paths only. But networks operate via direct and indirect, shortest and near-shortest paths.

We often hear interesting things from various sources in the network. Different interpretations arrive via different paths. Therefore, it is important to be on many efficient paths in networks that reach out to various parts of the extended network. Those well integrated in the network of paths have both local and distant information, along with several flavors of it!

Boundary Spanners

Nodes that connect their group to others usually end up with high network metrics. Boundary spanners such as Fernando, Garth, and Heather are more central in the overall network than their immediate neighbors whose connections are only local, within their immediate cluster. You can be a boundary spanner via your bridging connections to other clusters or via your concurrent membership in overlappping groups.

Boundary spanners are well-positioned to be innovators, since they have access to ideas and information flowing in other clusters. They are in a position to combine different ideas and knowledge, found in various places, into new products and services.

Peripheral Players

Most people would view the nodes on the periphery of a network as not being very important. In fact, Ike and Jane receive very low centrality scores for this network. Since individuals' networks overlap, peripheral nodes are connected to networks that are not currently

mapped. Ike and Jane may be contractors or vendors that have their own network outside of the company -- making them very important resources for fresh information not available inside the company!

Client Feedback

When sharing network maps and metrics with clients I explain to them that the maps and metrics are mirrors, not report cards! The consultant and the client together make sense of what the maps/metrics reflect about the organization. The consultant brings external expertise and context, while the client provides internal context about the organizations and its goals. Both are necessary to analyze the networks properly!

6.4 KNOWLEDGE SHARING

As stated earlier, knowledge management is fundamentally a   bout making the right knowledge or the right knowledge sources (including people) available to the right people at the right time. Knowledge sharing is therefore perhaps the single most important aspect in this process, since the vast majority of KM initiatives depend upon it. Knowledge sharing can be described as either push or pull. The latter is when the knowledge worker actively seeks out knowledge sources (e.g. library search, seeking out an expert, collaborating with a coworker etc.), while knowledge push is when knowledge is "pushed onto" the user (e.g. newsletters, unsolicited publications, etc). Knowledge sharing depends on the habit and willingness of the knowledge worker to seek out and/or be receptive to these knowledge sources. The right culture, incentives, and so on must therefore be present.

In the rest of this section I will discuss the concepts of knowledge sharing according to the different types of knowledge. The role of IT will also be explored and discussed from a general perspective.

The following basis can be considered for determining knowledge sharing in an organization they are as follows:

Articulation : The ability of the user to define what he needs.

Awareness : Awareness of the knowledge available. The provider isencouraged
to make use of directories, maps, corporate yellow pages, etc.

Access : Access to the knowledge.

Guidance : Knowledge managers are often considered key in the build-up of aknowledge sharing system (Davenport &Prusak 2000, Gamble & Blackwell 2001). They must help define the areas of expertise of the members of the firm, guide their contributions, assist users, and be responsible for the language used in publications and other communication material. This is so as to avoid an information/knowledge overload.

Completeness : Access to both centrally managed and self-publishedknowledge. The former is often more scrutinized but takes longer to publish and is not as hands-on (and potentially relevant). Self-published information on the other hand runs the risk of not being as reliable.

Characteristics of Knowledge Sharing	Explicit knowledge	Tacit knowledge
Characteristics	Codified knowledge found in documents, databases, etc. Easy to share, modify, and copy.	Intuitive, knowledge rooted in context & practice. Difficult to articulate, share, modify, and copy.
Management	Organize, categorize, refine, & share.	Common practice, mentoring, apprenticeships, project teams, informal networks, chaos, etc.
Use of IT	Very useful for storage, transfer, and combination.	Moderate – with careful implementation.

To facilitate knowledge sharing, KM must understand the requirements of the users, as well as the complexities and potential problems with managing knowledge and knowledge sources. Very broadly speaking, management must therefore implement the right processes, frameworks, and systems that enable knowledge sharing. They must also foster a knowledge sharing culture that ensures that these investments are fully utilized.

For explicit knowledge, seven issues have been identified that KM must consider, these are: articulation, awareness, access, guidance, completeness. IT has been identified as a key component of this type of knowledge sharing, facilitating and lowering the cost of the storage, access, retrieval, and variety of explicit knowledge.

Tacit knowledge sharing depends on socialization and practice. KM must offer the means for this to take place by providing the right forums (primarily physical, but also virtual), supporting networks and communities, and accepting unstructured work environments. Generalists, known as knowledge managers, should be used to gain an understanding of the location of knowledge sources and to bridge the gaps between communities and networks.

In order to support the transfer of tacit knowledge, KMS must support the socialization functions, while at the same time not enforcing strict managerial practices/routines/hierarchies/etc. One of its roles is as an expert finder, and it can also help in the direct transfer of tacit knowledge through the support of rich and varied methods of communication, which preferably include informal communication channels.

Embedded knowledge sharing is a process whereby embedded knowledge is passed on from one product, routine, or process to another. Several tools have been described that can help management understand the effects of embedded knowledge and help in its transfer. These were: scenario planning, after action reviews, and management training

6.5 BARRIERS IN KNOWLEDGE SHARING:

Knowledge management (KM) has proven that a knowledge-sharing culture leads to increased productivity, improved cycle times for business processes, and innovation. The ongoing role of KM is to develop an environment where people freely create, share, and use information and knowledge; work together toward a common purpose; and are supported and rewarded for

doing so. While this may seem like an easy feat, it is not. It is imperative to remember that implementing a KM program is not an automatic trigger to transform an organization's culture. Yet, many KM leaders immediately begin their efforts by trying to "change the culture." It is at this point that APQC suggests you stop, collaborate, and listen. It is vital to appreciate the culture of your organization and what drives people's behaviors before trying to implement any type of enterprise wide change. Your level of cultural understanding could determine the success (or failure) of the proposed change to a familiar process, routine, or technology.

DEFINING THE BARRIERS

There are, and will always be, barriers that hinder the flow of knowledge among colleagues. People bring their own values, beliefs, and habits into workplace and KM cannot achieve its objectives without implementing solutions to overcome behavior-related barriers. We often try to change our culture before understanding it—without taking into account the core values of the organization; the entrenched ideas about how "things get done around here;" and the variety of perspectives contributed by people with different jobs, in different geographic locations, from different generations, and so forth.

Individual knowledge sharing barriers

- general lack of time to share knowledge, and time to identify colleagues in need of specific knowledge;
- apprehension of fear that sharing may reduce or jeopardise people's job security;
- low awareness and realisation of the value and benefit of possessed knowledge to others;
- dominance in sharing explicit over tacit knowledge such as know-how and experience that requires hands-on learning, observation, dialogue and interactive problem solving;
- use of strong hierarchy, position-based status, and formal power ("pull rank");
- insufficient capture, evaluation, feedback, communication, and tolerance of past mistakes that would enhance individual and organisational learning effects;
- differences in experience levels;
- lack of contact time and interaction between knowledge sources and recipients;
- poor verbal/written communication and interpersonal skills;
- age differences;
- gender differences;
- lack of social network;
- differences in education levels;
- taking ownership of intellectual property due to fear of not receiving just recognition and accreditation from managers and colleagues;
- lack of trust in people because they misuse knowledge or take unjust credit for it;
- lack of trust in the accuracy and credibility of knowledge due to the source; and
- differences in national culture or ethnic background; and values and beliefs associated with it (language is part of this).

Organisational knowledge sharing barriers

- integration of KM strategy and sharing initiatives into the company's goals and strategic approach is missing or unclear;
- lack of leadership and managerial direction in terms of clearly communicating the benefits and values of knowledge sharing practices;
- shortage of formal and informal spaces to share, reflect and generate (new) knowledge;
- lack of transparent rewards and recognition systems that would motivate people to share more of their knowledge;
- existing corporate culture does not provide sufficient support for sharing practices;
- deficiency of company resources that would provide adequate sharing opportunities;
- external competitiveness within business units or functional areas and between subsidiaries can be high (e.g. not invented here syndrome);
- communication and knowledge flows are restricted into certain directions (e.g. top-down);
- physical work environment and layout of work areas restrict effect sharing practices;
- internal competitiveness within business units, functional areas, and subsidiaries can be high;
- hierarchical organisation structure inhibits or slows down most sharing practices; and
- size of business units often is not small enough and unmanageable to enhance contact and facilitate ease of sharing.

Technological knowledge sharing barriers

- lack of integration of IT systems and processes impedes on the way people do things;
- lack of technical support (internal and external) and immediate maintenance of integrated IT systems obstructs work routines and communication flows;
- unrealistic expectations of employees as to what technology can do and cannot do;
- lack of compatibility between diverse IT systems and processes;
- mismatch between individuals' need requirements and integrated IT systems and processes restrict sharing practices;
- reluctance to use IT systems due to lack of familiarity and experience with them;
- lack of training regarding employee familiarisation of new IT systems and processes;
- lack of communication and demonstration of all advantages of any new system over existing ones.

CONCLUSION

Knowledge sharing is an important source of transfer of knowledge within business organization. But it has certain barriers which needs to overcome by coming up with new and innovative methods.

6.6 Exercise

- Explain the nature and scope of social knowledge.
- Knowledge sharing forms a base for the transfer of knowledge in an organization. Justify your answer.
- Give out suitable measures to overcome knowledge sharing barriers within an organization.

UNIT 7

7.1 Learning objectives

- To understand the mechanisms of organizational learning
- To have a detail knowledge of the process of organizational learning
- To have a clear understanding of social capital knowledge and its application

7.2 ORGANIZATIONAL LEARNING

Organizational Knowledge Resources

Business knowledge can exist on several different levels:

Individual: Personal, often tacit knowledge/know-how of some sort. It can also beexplicit, but it must be individual in nature, e.g. a private notebook.

Groups/community: Knowledge held in groups but not shared with the rest of theorganization. Companies usually consist of communities (most often informally created) which are linked together by common practice. These communities of practice (Lave & Wenger 1991) may share common values, language, procedures, know-how, etc. They are a source of learning and a repository for tacit, explicit, and embedded knowledge.

Structural: Embedded knowledge found in processes, culture, etc. This may beunderstood by many or very few members of the organization. E.g. the knowledge embedded in the routines used by the army may not be known by the soldiers who follow these routines. At times, structural knowledge may be the remnant of past, otherwise long forgotten UNITs, where the knowledge of this UNIT exists exclusively in the process itself.

Organizational: The definition of organizational knowledge is yet another conceptthat has very little consensus within literature. Variations include the extent to which the knowledge is spread within the organization, as well as the actual make-up of this knowledge. Hatch (2010) defines it as: "When group knowledge from several subunits or groups is combined and used to create new knowledge, the resulting tacit and explicit knowledge can be called organizational knowledge." Others present a broader perspective: "individual knowledge, shared knowledge, and objectified knowledge are different aspects or views of organizational knowledge" (Ekinge&Lennartsson 2000). As always, texts emphasizing an IT based outlook once again offer shallower, information-based definitions, e.g. Virvou& Nakamura 2008, "Information internalized by means of research, study or experience that has value to the organization".

For the purpose of this site I will adopt a broad, knowledge-based perspective. Organizational knowledge is therefore defined as: all the knowledge resources within an organization that can be realistically tapped by that organization. It can therefore reside in individuals and groups, or exist at the organizational level.

Extra-organizational: Defined here as: Knowledge resources existing outside theorganization which could be used to enhance the performance of the organization. They include explicit elements like publications, as well as tacit elements found in communities of practice that span beyond the organization's borders.

In order to enhance organisational knowledge, KM must therefore be involved across the entire knowledge spectrum. It must help knowledge development at all levels and facilitate & promote its diffusion to individuals, groups, and/or across the entire firm, in accordance with the organization's requirements. KM must manage organizational knowledge storage and retrieval capabilities, and create an environment conducive to learning and knowledge sharing. Similarly it must be involved in tapping external sources of knowledge whenever these are necessary for the development of the organizational knowledge resources.
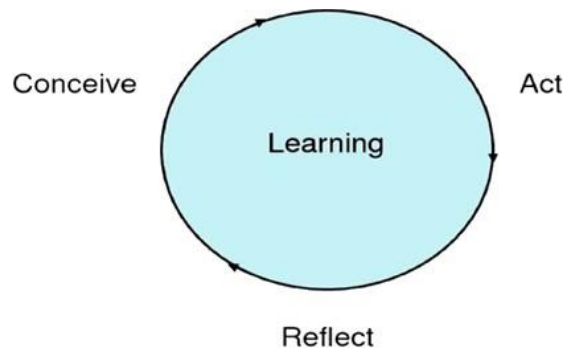
To a large degree, KM is therefore dependent on the understanding and management of organizational learning, organizational memory, knowledge sharing, knowledge creation, and organizational culture.

Learning is the way we create new knowledge and improve ourselves. Although there is ample debate regarding the mechanisms and scope of learning, in its simplest form this is no different for organizations. Botha *et al.* describe the organizational learning process as follows:

As one can see organizational learning is based on applying knowledge for a purpose and learning from the process and from the outcome. Brown and Duguid (1991) describe organisational learning as "the bridge between working and innovating." This once again links learning to action, but it also implies useful improvement.

      The implications to knowledge management are three-fold:

- One must understand how to create the ideal organizational learning environment

- One must be aware of how and why something has been learned.

- One must try to ensure that the learning that takes place is useful to the organization

Organizational Learning Pitfalls

Senge (1990) argues that often it is failure that provides the richest learning experience, which is something that organizations need to understand and use more effectively. He criticizes the way we reward success and look down upon failure as something that can be detrimental to the long term health of the organization. Levitt and March (1996) further argue that success is ambiguous and depends on how it is interpreted. This interpretation may not only vary significantly between different groups within the organization, but may change over time as success indicators and levels of aspiration change.

Levitt and March (1996) also discuss superstitious learning. This occurs when positive or negative results are associated with the wrong actions. Success and failure can both generate superstitious learning. If a firm does well, the routines that they followed are linked to this success and are subsequently reinforced. The opposite is true for failure. In such cases, the organization thinks that it has learned when in fact it has not. Real organizational learning would have resulted from the examination of the information generated from their actions rather than from relatively arbitrary success or failure criteria.

Organizational Memory and Knowledge Repositories

Traditional memory is associated with the individual's ability to acquire, retain, and retrieve knowledge. Within business this concept is extended beyond the individual, and organizational memory therefore refers to the collective ability to store and retrieve knowledge and information. So how does one define organizational memory? Any definition would need to span all the different repositories in which a company may store knowledge. This includes the more formal records, as well as tacit and embedded knowledge located in people, organizational culture, and processes.

Walsh and Ungson (1991) offer some deeper insight into the workings of organizational memory. They look at how and organization's history can influence current decision making. They shared understandings evolve, becoming part of an organizational whole which may remain constant even after key individuals have left the firm. This is done through the formation of collective interpretations regarding the outcome of decision making. The information defining the decision's stimulus and response is stored in information, and it affects present decisions when it is retrieved. Walsh and Ungson (1991) define a number of stages in the organizational memory process and outline five retention facilities:

Acquisition: Organizational memory consists of the accumulated informationregarding past decisions. This information is not centrally stored, but rather it is split across different retention facilities. Each time a decision is made and the consequences are evaluated, some information is added to the organizational memory.

- *Retention:* Past experiences can be retained in any of the five differentrepositories: Individuals
- *Culture:* The language and frameworks that exist within an organizationand form shared interpretations.
- *Transformations:* The procedures and formalized systems that theorganization employs. These systems reflect the firm's past experiences and are repositories for embedded knowledge.
- *Structures:* These link the individual to other individuals and to theenvironment. Social interaction is conditioned by mutual expectations between individuals based on their roles within the organization. The interaction sequences for a pattern over time and begin to extend to an organizational level. This can take place both through formal and informal

structure and it constitutes a social memory which stores information about an organization's perception of the environment.

- ***External activities:*** The surroundings of the organization whereknowledge and information can be stored. E.g. former employees, government bodies, competitors, etc.
- **Retrieval:** This can either be controlled or automatic. The latter refers to theintuitive and essentially effortless process of accessing organizational memory, usually as part of an established sequence of action. Controlled refers to the deliberate attempt to access stored knowledge.

As one can see, the three stages presented here are essential to the learning process of the firm. Much like an individual, the firm must be able to access and use past experiences so as to avoid repeating mistakes and to exploit valuable knowledge. Unlike an individual however, OM is not centrally stored and resides throughout the firm and even beyond it. The process of retrieving knowledge/information will inevitably vary depending on the retention facility that one is trying to access. For example, written documentation may be accessed through IT while cultural memory is accessed through the understanding and/or application of the norms and procedures of the working environment.

A further distinction regarding the type of knowledge retained in the organization is offered by ***Ramage and Reif (1996)***. They separate the documented aspects from the more subtle knowledge that belongs to individuals as a result of their role as members of the organization:

Artifacts of Cooperation*:* These are the hard indicators which are visible andexaminable. The include products, records of collaboration, and ideas. The latter refers to minutes of meetings, reports, FAQs, and other items that record common knowledge. These are easily storable and presumably also more easily accessible.

Knowledge of the Organization Qua Entity*:* This type of knowledge cannotbe stored in the same way as the artifacts of cooperation. It includes knowledge of the political system, of the culture, and of how things are normally done within the firm. It can include the knowledge of who is an expert, of where a particular person is, and on who to contact for a specific problem.

This definition is useful as a way of understanding the knowledge categories and the potential management challenge that organizational memory, and ultimately knowledge management (KM) would pose.

Furthermore, as is the case with many KM related disciplines, one finds a distinct difference in the way organizational memory is perceived between IT practitioners and business theoreticians. In the words of Wellman (2009): "The IT path emphasizes the acquisition and storage of organizational knowledge including datawarehousing, document management, and search tools. The organization development (OD) path emphasizes tacit knowledge, coaching, social interactions, and encouraging ad hoc knowledge exchange."

IT based models thus tend to focus on more concrete, definable memory and less on people, culture, and informal structures. Essentially, they focus more on artifacts of cooperation.

Since this site deals with organizational memory within the context of KM, it is not necessary to arrive at a specific definition or model. Instead it is important to understand the scope of organizational memory, its varied and often complex retention facilities, and the types of

knowledge available. In later sections, I will investigate more closely the specific role that IT can have in supporting, promoting, and enhancing organizational memory.
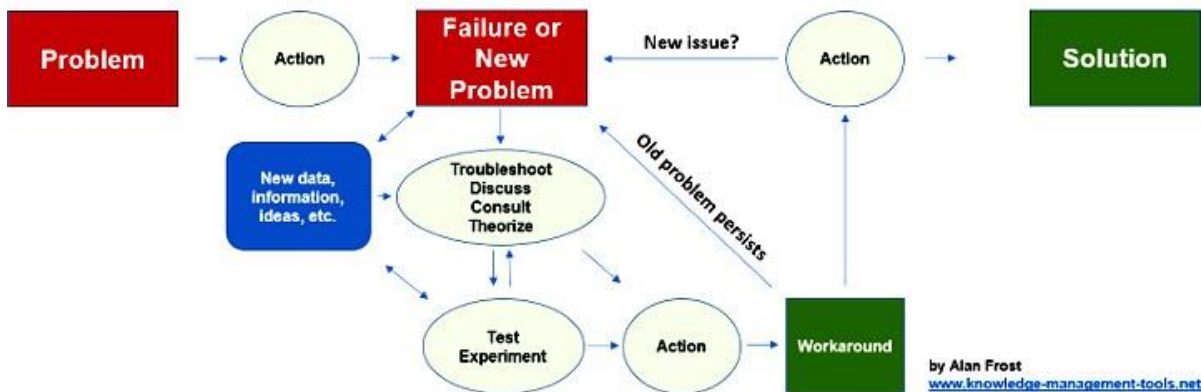
7.3 Organizational Learning Theory: Company Perspective

Two of the most noteworthy contributors to the field of organizational learning theory have been Chris Argrys and Donald Schon. Organizational learning (OL), according to Argrys&Schon is a product of organizational inquiry. This means that whenever expected outcome differs from actual outcome, an individual (or group) will engage in inquiry to understand and, if necessary, solve this inconsistency. In the process of organizational inquiry, the individual will interact with other members of the organization and learning will take place. Learning is therefore a direct product of this interaction.

7.4 Espoused Theory

This refers to the formalized part of the organization. Everyfirm will tend to have various instructions regarding the way employees should conduct themselves in order to carry out their jobs (e.g. problem solving). These instructions are often specific and narrow in focus, confining the individual to a set path. An example of espoused theory might be "if the computer does not work, try rebooting it and then contact the IT department."

Theory-in-use

This is the actual way things are done. Individuals will rarely followespoused theory and will rely on interaction and brainstorming to solve a problem. Theory in use refers to the loose, flowing, and social way that employees solve problems and learn. An example of this might be the way someone actually solves a problem with their computer by troubleshooting solutions, researching on forums, asking co-workers for opinions, etc.

The fact that there is a mismatch between these two approaches is potentially problematic if the company enforces its espoused theory. In order to create an environment conducive to learning, firms are encouraged to accept theory in use, and make it easy for the individual to interact with his working environment in an undefined and unstructured way. Essentially they should provide the right environment for organizational inquiry to take place, unconstrained by formal procedures. Levitt and March (1996) expand further on the dynamics of organizational learning theory. Their view presents the organization as routine-based, history dependent, and target oriented. While UNITs from history are stored in the organizational memory, the event itself is often lost. They note that past UNITs are captured by routines "in a way that makes the UNITs, but not the history, accessible to organizations and organizational members." The problem most organizations face is that it is usually better to have the event rather than the interpretation. This is often too costly (both financially and time-wise) to be feasible.

OL is transmitted through socialization, education, imitation and so on, and can change over time as a result of interpretations of history.

7.5 Organizational Learning Theory: The Three Types of Learning

Argrys and Schon (1996) identify three levels of learning which may be present in the organization:
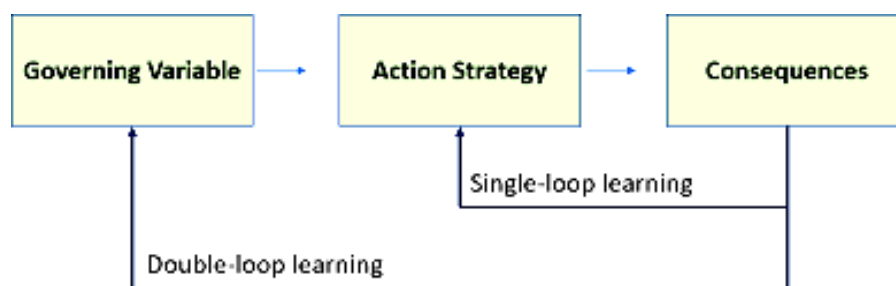
Single loop learning: Consists of one feedback loop when strategy is modified in response to an unexpected result (error correction). E.g. when sales are down, marketing managers inquire into the cause, and tweak the strategy to try to bring sales back on track.

Double loop learning: Learning that results in a change in theory-in-use. The values, strategies, and assumptions that govern action are changed to create a more efficient environment. In the above example, managers might rethink the entire marketing or sales process so that there will be no (or fewer) such fluctuations in the future.

Deuterolearning: Learning about improving the learning system itself. This is composed of structural and behavioral components which determine how learning takes place. Essentially deuteron learning is therefore "learning how to learn."

This can be closely linked to Senge's concept of the learning organization, particularly in regards to improving learning processes and understanding/modifying mental models. Effective learning must therefore include all three, continuously improving the organization at all levels.

However, while any organization will employ single loop learning, double loop and particularly deuteron learning is a far greater challenge.

From organizational learning theory we can infer the following issues which may affect knowledge management and knowledge management systems:

- OL is dependent on allowing organizational inquiry to take place according to theory-in-use, not espoused theory
- OL is a complex mechanism, resulting often in the storage of interpretations of past events, rather than the events themselves.
- OL can take place on three different levels. While single loop learning comes natural to any individual/organization, special attention must be paid to the double-loop and deuteron learning.

7.6 Organization learning and social capital

Organization is an inevitable part of human life. All human beings work in some kind of organization or they start their own venture. Either way their experience with organizations can't be avoided in their lifetime.

Organization is a place where different kind of people with different type of attitude, education, cultures come together to achieve common objectives. Therefore the organization consists of diversified people and it is the job of HR manager to manage these diversified people and to get work done from them effectively.

In a knowledge based organization, the work nature requires skilled workers. In KBO, the use of information technology ensures the delivery of the project/service at the stipulated time schedule. The HR manager in KBO can initiate two types of changes in the organization called reactive or proactive change.

When a KBO changes itself when there is a change in the environment then it is known as reactive change. This change happens due to the factors in external environment like technological changes, political and legal changes, etc. When an organization initiates a change within the organization then it is known as proactive change. This change occur due to internal environment factors like top management level, change in strategy, diversification of the firm, etc.

Life in Organizations

People have always been central to organizations, but their strategic importance is growing in today's knowledge-based organizations. An organization's success increasingly depends on the knowledge, skills, and abilities of employees, particularly as they help establish a set of core competencies that distinguish an organization from its competitors. When employees' talents are valuable, rare, difficult to imitate and organized, an organization can achieve a sustained competitive advantage through people.

Advanced technology has given rise to reduced number of jobs that require little skill and has increased the number of jobs that require considerable skill, thus a shift is taking place from touch labour to knowledge work. This displaces some employees and requires that others be retrained. In addition, information technology has influenced HRM through human resources information systems (HRIS) that streamline the processing of data and make employee information more readily available to managers.

Both proactive and reactive change initiatives require HR managers to work with line managers and executives to create a vision for the future, establish an architecture that enables change, and communicate with employees about the processes of change. In order to contain costs, organizations have been downsizing, outsourcing and leasing employees, and enhancing productivity. HR's role is to maintain the relationship between a company and its employees, while implementing the changes.

The workforce is becoming increasingly diverse and organizations are doing more to address employee concerns and to maximize the benefit of different kinds of employees. Demographic changes, social and cultural differences, and changing attitudes towards work can provide a rich source of variety for organizations. But to benefit from diversity, managers need to recognize the potential concerns of employees and make certain that the exchange between the organization and employees is mutually beneficial.

Through strategic planning, organizations set major objectives, and develop comprehensive plans to achieve those objectives. Once the strategy is set, executives must make primary resource allocation decisions, including those pertaining to structure, processes, and human resources.

Companies such as Domino's Pizza, Sony, Southwest Airlines, and Wal-Mart revolutionized their industries by developing skills – core competencies – that others didn't have. These competencies helped them gain advantage over their competitors and leverage this advantage by learning faster than others in their industries. Underlying a firm's core competencies is a portfolio of employee skills and human capital. In any given organization, different skill groups can be classified according to the degree to which they create strategic value and are unique to the organization.

Core knowledge workers: This group of employees has firm-specific skills that are directly linked to the company's strategy e.g., R&D scientists in a pharmaceutical company, computer scientists in a software development company. These employees are typically engaged in knowledge work that involves considerable autonomy and discretion. Companies tend to make long-term commitments to these employees, investing in their continuous training and development and perhaps giving them an equity stake in the organization.

Traditional job-based employees: This group of employees has skills that are quite valuable to a company, but not unique e.g., sales people in a department store, truck drivers for a courier service. These employees are employed to perform a predefined job. As it is quite possible that they could leave to go to another firm, managers frequently make less investment in training and development and tend to focus more on paying for short-term performance achievements.

Contract Labour: This group of employees has skills that are of less strategic value and generally available to all firms e.g., clerical workers, maintenance workers, staff workers in accounting and human resources.

Individuals in these jobs are increasingly hired from external agencies on a contract basis, and the scope of their duties tends to be limited. Employment relationships tend to be transactional, focused on rules and procedures, with very little investment in development. Alliance/partners: As a consequence, companies tend to establish longer-term alliances and partnerships with them and nurture an ongoing relationship focused on mutual learning. Considerable investment is made in the exchange of information and knowledge. An increasingly vital element of strategic planning for organizations that compete on competencies is determining if people are available, internally or externally, to execute an organization strategy.

Managers have to make tough decisions about whom to employees internally, whom to contract externally, and how to manage different types of employees with different skills who contribute in different ways to the organization. Human resource planning plays an important role in helping managers weigh the costs and benefits of using one approach to employment versus another. Changes in the external environment have a direct impact on the way organizations are run and people are managed. Environmental Scanning is the systematic monitoring of the major external forces influencing the organization. Managers attend to a variety of external issues; however, the following six are monitored most frequently:

Economic factors, including general and regional conditions.Competitive trends, including new processes, services, and innovations. Technological changes, including robotics and office automation. Political and legislative issues, including laws and administrative rulings.Social concerns, including child care and educational priorities. Demographic trends, including age, composition, and literacy.

By scanning the environment for changes that are likely to affect organization, managers can anticipate their impact and make adjustments proactively. In a rapidly changing environment, it is extremely dangerous to be caught off guard.

The labour-force trends illustrate the importance of monitoring demographic changes as a part of human resource planning. Such changes can affect the composition and performance of an organization's workforce. In addition to scanning the external environment, organizations such as Syntex, Lotus Development, and Southwest Airlines are careful to also scan their internal environments.

Because these companies view their employee-oriented cultures as critical to success, they conduct cultural audits to examine the attitudes and activities of the workforce. Sears has found that positive employee attitudes on ten essential factors – including workload and treatment By superiors – are directly linked to customer satisfaction and revenue increases. Cultural audits essentially involve discussions among top-level managers of how the organization's culture reveals itself to employees and how it can be influenced or improved. The cultural audit may include such questions as:

How do employees spend their time?

How do they interact with each other?

Are employees empowered?

What is the predominant leadership style of managers?

How do employees advance within the organization?

By conducting in-depth interviews and making observations over a period of time, managers are able to learn about the culture of their organization and the attitudes of its employees. Cultural audits can be used to determine whether there are different groups, or subcultures, within the organization that have distinctly different views about the nature of work the quality of managers, and so on.

Any knowledge management strategy designed to improve business performance must address three components: the work processes or activities that create and leverage organizational knowledge; a technology infrastructure to support knowledge capture, transfer, and use; and behavioral norms and practices (organizational culture) that are essential to effective knowledge use. Even though the economic incentives are becoming clearer and technological capabilities now exist to support knowledge-based organizations, pioneers in knowledge management are finding the behaviours supported by their existing organizational cultures to be a major barrier to this transformation. In short, the organizational knowledge and culture are intimately linked, and that improvements in how a firm creates, transfers, and applies knowledge are rarely possible without simultaneously altering the culture to support new behaviours.

The HR managers must counsel the employees and use their diversified skills to improve productivity and cut down the cost of production using innovative process. Many companies develop their core competency as they think it is the crucial factor for success and withstand the cut throat competition. Companies like GE; Sony has survived the competition by revamping their organization and developing their core competency. The core competency of retail giant Wal Mart is it supplies chain management.

The knowledge workers can be classified into various types namely:

1. *Core Knowledge Workers*

These workers are the intellectual asset of the organization. They are very highly skilled knowledge workers. They are also rich in experience. They are the people who form the vision, mission and strategy of the organization. The people perform work that involves autonomy and discretion.

The organization invests in them by giving them training & development. Generally the organization will have long term commitments with these types of workers and even in some companies they also given a share in the organization as a sign of reward and commitment to the organization... typical example for core knowledge workers is Research & development employees in a pharmaceutical company.

2. *Traditional Job Based Workers*

These are employees who possess skill and they are vital for the organization. These employees possess skill which not unique likes core knowledge workers. Sometimes these traditional workers perform work which is repetitive in nature. The employees generally perform the predefined job/ these employees are not committed to with the organization for a longer period.

The organization invest very less amount of capital for their training 7 development as these employees can quit their job and move to an another company. The company expects the traditional job based workers to perform their work effectively and they are rewarded accordingly. The short term performance of these employees is taken into consideration while rewarding them. An example for traditional based workers is sales person in a departmental store.

 3. *Contract Labor*

Unlike the traditional job workers, the contract workers have an agreement with the organization to work for certain period of time. Once the time limit is over, their contract is terminated and thereby they are not connected with to organization in any terms. The organization will hardly invest in contract labor.

Generally these issues will be take care by the third parties like consultants. These consultants are like a bridge to the company and the contract labor. The contract labor may be unskilled or semi-skilled workers. A clerk in a bank is an example for contract labor.

 4. *Alliance/Partners*

These are people in which organization tends to have long term relationships. These people indirectly related to the organization like formulation of strategy, documentation of financial reports, etc. They possess skill in particular field with rich knowledge. They have great demand in the market and the number of people with such skill is very scarce. This is the reason why the organization tends to have long term commitments with either alliance or partners. Charter accountant is a classic example for this category.

7.7 Organizational Effectiveness

Organizations need to launch programs that encourage learning and knowledge acquisition. By pursuing efforts to create learning organizations and high-performance workplaces, decision makers can set the right tone to support continued individual and team growth and development. Changes in company culture do not occur overnight, so it is important to establish a track record of experiences in the organization to show that development and creativity do matter and are considered in pay raises, promotions, work assignments, and other issues of importance to employees.

Organizational effectiveness is enhanced when people have targets of focus. What a better target than effectively servicing a customer or beating the competition? Knowledge attainment centered on such endeavors can change a corporate culture.

CONCLUSION

Organizational learning has a great impact on the employees of the organization and is to certain extent based on the creativity of the employees as well.

 7.8 EXERCISE

- Explain the impact of organizational learning on the employees of the organization.
- Suggest some measures for effective organizational learning.
- Explain the implications of social capital knowledge on the organization.

UNIT 8

8.1 Learning objectives

- To understand the concept of knowledge management strategy To understand the concept of knowledge audit
- To have a detail understanding of GAP analysis To have a knowledge of balance score card
- To gain an understanding of ROAD MAP

8.2 Knowledge Management Strategy

The various cross functional teams in a knowledge based organization follow various knowledge strategies to accomplish their objectives. This strategy and sometimes it will be conflict with other teams.

The best way is to analyse whether the strategy formed runs in parallel with organization mission and focus to strengthen its core competency.

The knowledge management strategy adopted in the firm is illustrated below in form of a diagram:

- Business Strategy
- Culture And People
- Organization Development Process
- Infrastructure And Facilities
- Intellectual Asset

The organization must involve in long term planning for man power. It is different from long term, planning for productivity. There are various factors needs to be carefully considered before planning how to develop the labour force in terms of knowledge, skill and creativity. The organization must be very careful in approaches related to succession planning as it requires vast amount of time to plan and implement it. The long term planning also plays a role in the HR practices followed in the organization.

The organization need to invest in training and development of their laborers. They must look it a s way for gaining competitive advantages at all levels of the firm. The leaders play an important role in shaping people as the intellectual asset to the company, thereby giving the firm competitive advantage from their competitors.

Mr.Peter Drucker told that the members of an organization need to learn about expanding knowledge and it is much more imperative to learn how and when to utilise the same.

Generally the employees especially in the middle and low level of management have a tendency that their performance doesn't have impact or important for the success for organization. They are wrong about this, in fact it is their performance and their presence indeed has a great impact on the firm's success.

The organization must find a way to make employee realize this fact. The organization must inform their employees and make them aware of the realities and threats posed by external environment.

The strategic planning process is usually formulated by any firm to obtain their objectives. This strategic planning must change completed as it supports the knowledge management and evolving strategy which supports both organizational strategic intent and knowledge management.

The organization must identify the talents and the competency required for every individual job in the organization. Then the people must be recruited according to their competencies, thereby putting right people at the right job which improves the performance of the employees and their job satisfaction level.

8.3 KNOWLEDGE AUDIT

The knowledge audit (K-Audit) is a systematic and scientific examination and evaluation of the explicit and tacit knowledge resources in the company. The K-Audit investigates and analyses the current knowledge-environment and culminates, in a diagnostic and prognostic report on the current corporate 'knowledge health'. The report provides evidence as to whether corporate knowledge value potential is being maximized. In this respect the K-Audit measures the risk and opportunities faced by the organization with respect to corporate knowledge.

Knowledge audit is a systematic examination and evaluation of organizational knowledge health, which examines organization's knowledge needs, existing knowledge assets/resources, knowledge flows, future knowledge needs, knowledge gap analysis as well as the behavior of people in sharing and creating knowledge. In one way, a knowledge audit can reveal an organization's knowledge strengths, weaknesses, opportunities, threats and risks. A knowledge audit should also include an examination of organization's strategy, leadership, collaborative, learning culture, technology infrastructure in its various knowledge processes. In order to transform an organization into a learning organization and ensure an effective knowledge management strategy, a knowledge audit should be conducted, which will provide a current state of knowledge capability of the organization and a direction of where and how to improve that capability in order to be competitive in this fast changing knowledge era. The first stage in adopting a knowledge strategy is performing an audit of existing data, information and knowledge contained within the organization.

This section will cover four main areas of the knowledge audit:

The aims and objectives of the audit The key tasks involved.

- Process mapping.
- The audit outcomes.

Aims and objectives

There are three broad aims of a knowledge audit:

- Leveraging the organization's knowledge.
- Creating new knowledge or promoting innovation.
- Increasing collaboration and hence enhancing the skill level of employees

- It gives tangible evidence of the extent to which knowledge is being effectively managed and indicates where improvements are needed.

- It explains how knowledge moves around in, and is used by, that organization.

- It provides a map of what knowledge exists in the organization and where it exists, revealing both gaps and duplication.

- It provides an inventory of knowledge assets, allowing them to become more visible and therefore more measurable and accountable.

- It provides vital information for the development of effective knowledge management programmes and initiatives that are directly relevant to the

- organization's specific knowledge needs and current situation.

- It helps in leveraging customer knowledge.

The objectives of a knowledge audit are:

- Study and develop a deeper understanding of existing communities (groups that share resources, provide support and show reciprocity) content (forms and combinations of words, images and pictures) and conversations (exchanges of sentiments, observations, opinions, or ideas).

- Identify opportunities to add value to current communities, content and conversations.

- Develop a knowledge management strategy that delivers on the identified opportunities.

- K-audit helps an organization to clearly identify what knowledge is needed to support overall organizational goals and individual and team activities.

The outcome of a knowledge audit tends to be marked by the production of a document. This document should be made available in both hard and soft copy. It should be accessible both as a dynamic Intranet site and interactive CD ROM.

Components of a Knowledge Audit

A Knowledge audit can have the following components :
  o Knowledge need analysis
  o Knowledge inventory analysis
  o Knowledge Flow analysis
  o Knowledge mapping

8.4 Knowledge Needs Analysis (K-Needs Analysis)

The major goal of this task is to identify precisely what knowledge the organization, its people and team possess currently and what knowledge they would require in the future in order to meet their objectives and goals. Knowledge need analysis can help any organization to develop its future strategy. The following figure to CAN explain the Knowledge-Strategy Link.

STRATEGIC K GAP ANALYSIS

The K-Gap Analyzer

If an organization wants to be successful, it needs to know what the assets it requires to be successful. Similarly the knowledge based organization must identify what knowledge assets they are going to concentrate on developing their edge over the competitors.

Mostly the organizations like to improve their core competency to sustain in the market and be a leader or pioneer to other firm. The strategy and the vision of the firm will not be based only upon the current situation of the firm. It will be focused how the organization can develop its core competence in the long run.

The K-Gap Analyzer acts as a tool to identify the following:

- What is the current status of the firm ?
- What kind of skill acquisition plans need to be contemplated ?
- What are the requisites time frame ?

Generally a strategy is broken into small tasks to achieve the objectives. For each knowledge business drivers, the knowledge assets which are known as Knowledge – sets required to achieve that Knowledge business drivers need to be identified.

In this context, the **K- Gap Analyzer aids in the following processes**

Building the knowledge strategy

Aiding a Knowledge Need analysis

- Evolving a learning strategy as well as integrated subset of the knowledge strategy
- Synchronizing a top down knowledge strategy with a bottom up skills acquisition plan
- Providing a basis for a quantitative analysis of investments in knowledge acquisition versus realization of business goals.

GAP Analysis

This involves establishing the current and desired states of knowledge resources and KM levels. Specific projects further defined in order to address specific gaps that were identified and agreed upon as high-priority areas.

A good gap analysis addresses the following points −

- The major differences between the current and desired KM states of the organization.
- Enlist barriers to KM implementation like culture where "knowledge is power" or where individual possession of knowledge is consistently rewarded.
- Enlist KM leverage points or enablers like existing initiatives that could be built upon.

- Identify opportunities to collaborate with other business initiatives like combine knowledge continuity goals with succession planning initiatives in Human Resources.
- Conduct a risk analysis like knowledge that will soon "walk out the door" due to imminent retirements or knowledge that is at risk because only a few individuals are competent in this area and very little of their expertise exists in coded or tangible knowledge assets.
- Redundancies within the organization like the case of the right hand not knowing what the left hand is doing.
- Presence of knowledge silos like groups, departments, or individuals that hoard knowledge or block fluid knowledge flows to other groups, departments, or colleagues.

This analysis is further used to list and prioritize KM objectives to be addressed by the organization.

The knowledge sets for each business functions are formulated. Then the as-Is analysis is done by categorizing the current knowledge level of the organization as High, medium and low. Many of the firms decide their current knowledge level based upon the knowledge level of their personnel's. The competitors are similarly rated as high, medium and low based upon the market surveys, market intelligent reports and the expert's opinion.

This enables the top management to take strategic decisions based upon the knowledge gap and thereby bridging the gap in future. The K-Gap analyzer as a tool serves as a reality check to decide whether the business strategy is practically feasible under the given knowledge base of the firm. The K-need analysis can also measure the staff skills and competency enhancement needs and opportunities for training and development, corporate knowledge culture-practices such as knowledge sharing attitude, collaboration, team spirit, rewards and recognitions & staff relationship with their superiors, peers and subordinates.

B. Knowledge Inventory Analysis (K-Inventory Analysis)

Knowledge inventory is a knowledge stock taking to identify and locate knowledge assets and resources throughout the entire organization. This process involves counting, indexing, and categorizing of corporate tacit and explicit knowledge.

Knowledge inventory analysis comprises of 2 entities: Physical (Explicit) Knowledge inventory and Corporate Experts (sources of tacit knowledge) inventory.

The K-inventory analysis may involve a series of surveys and interviews in order to get relevant answers to the above questions on both tacit and explicit knowledge that an organization may hold and have.

By making comparison between knowledge inventory and the earlier analysis of knowledge needs, an organization will be able to identify gaps in their organization's knowledge as well as areas of unnecessary duplication.

(C) Knowledge Flows Analysis (K-Flows Analysis)

Knowledge flow analysis look at knowledge resources move around the organization, from where it is to where it is needed. In other words, it is to determine how people in an organization find the knowledge they need, and how do they share the knowledge they have. The knowledge flow analysis looks at people, processes and systems:

- Analysis of people: examine their attitude towards, habits and behaviors concerning, and skills in knowledge sharing, use and dissemination.
- Analysis of process: examine how people go about their daily work activities and how knowledge seeking, sharing, use and dissemination form parts of those activities, existence of policies and practices concerning flow, sharing and usage of information and knowledge, for example, are there any existing policies such as on information handling, management of records, web publishing etc? Or are there other policies that exist that may directly or indirectly affect or relate to knowledge management, which may act as enablers or barriers to a good knowledge practice?
- Analysis of system: examine technical infrastructure: for example, information technology systems, portals, content management, accessibility and ease of use, and current level of usage.

8.5 ROAD MAP

This 10-step Knowledge Management road map will guide you through strategizing, designing, developing, and implementing a KM initiative that delivers business impact. Learn how to build an effective road map for developing an idiosyncratic knowledge strategy that is unique to your company.
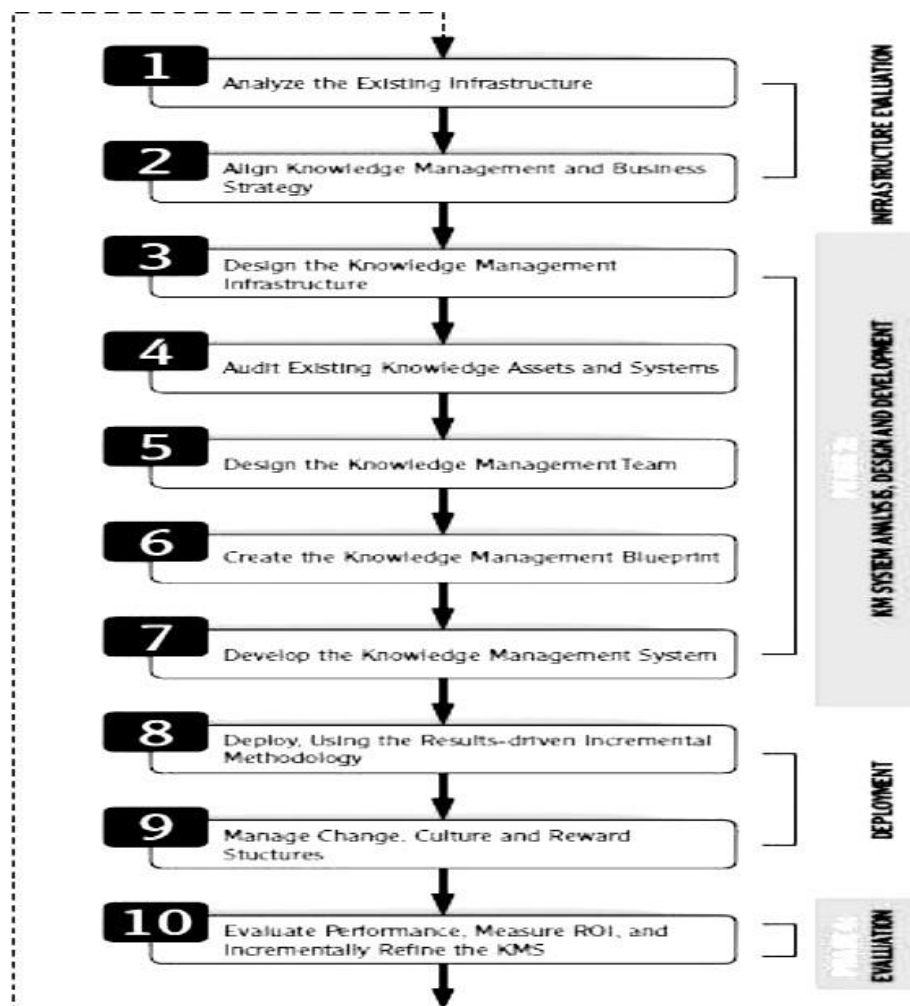
Understand the four phases constituting these 10 steps:
1. Infrastructural evaluation;
2. KM system analysis,
3. Design and development;
4. Deployment; and evaluation. Understand where each step takes you. Articulate a clear link between KM and business strategy.

Learn how to prioritize KM support for processes to maximize business impact.
Understand the key steps involved in knowledge auditing, knowledge mapping, strategic grounding, deployment methodology, teaming, changing management, and return-on-investment (ROI) metrics formulation. Use real-options analysis to guide your KM investments. To grasp the bigger picture, look at the four phases that the 10 steps of the road map comprise:
1. Infrastructural evaluation
2. KM system analysis, design, and development
3. System deployment
4. ROI and performance evaluation

Balance Score Card

(Adapted from Robert S. Kaplan and David P. Norton, "Using the Balanced Scorecard as a Strategic Management System," Harvard Business Review (January-February 1996)
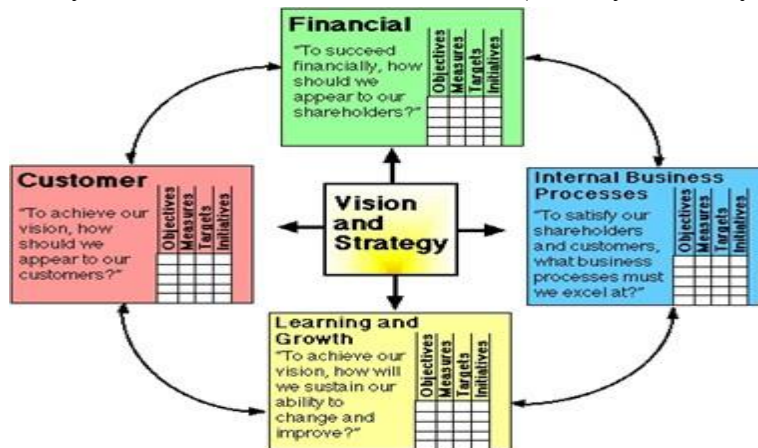
Tie in Employee

All the above 4 perspectives are, measured against each individual of the organization and the individual performance is evaluated before rewarding the knowledge workers. It evaluates the employee's performance in a detailed manner which is apt for the knowledge based organization where knowledge is asset for wealth generation.

Benefits of Balance Score Card Method

The entire organizational performance as well as individually performance is evaluated. The KRA's can be identified easily.
The employees are not rewarded based on partial view they are rewarded based upon the comprehensive view. This method integrated the performance of employees at all levels of the organization. The company can understand their capabilities and their weakness and methods can be devised to reduce their weakness and improve their capabilities. The firm can understand the performance indicators at all levels of the organization.

A Balanced Scorecard method (BSC) is a judgement and management system that enables enterprises to clarify their vision and strategy and which translates them into action. It offers feedback on both the internal business processes and external results in order to continuously improve strategic performance and results.

Balanced Scorecard is a conceptual framework for converting an organization's vision into a set of performance indicators distributed among four dimensions −

Financial Dimension − Involves measures such as operating income, return oncapital employed, and economic value added.

Customer Dimension − It is associated with such measures as customersatisfaction, retention, and market share in targeted segments.

> *Internal Business Processes* − Consists of measures such as cost, throughput,and quality.

> *Learning and Growth* − addresses measures such as worker's satisfaction,retention, and skill sets.

Through BSC, an enterprise can monitor both its current performance (finances, customer satisfaction, and business process results) and its efforts to improve processes, motivate and educate employees, and enhance information systems − its ability to learn and improve.

The balanced scorecard method is applicable to both profitable and non-profitable enterprises as well as to both private and public sector companies. It provides a number of significant advantages, including the translation of abstract goals into action items that can be continuously monitored. In addition, the balanced scorecard method provides objective measures of the current scenario, and helps initiate the changes required to move from the current to the desired future state of the company.

CONCLUSION

The knowledge strategy has various implications on the working of the organization. There is enough scope for introducing new measures in knowledge audit.

8.7 Exercise

1. Explain the importance of knowledge strategy and its implications to the organization.
2. Evaluate knowledge audit in your own words Suggest measures to improve knowledge audit. Critically evaluate balance score card

UNIT 9

9.1 Learning objectives
- To understand the concept of knowledge metrics
- To understand the various knowledge creation tools
- To develop an understanding of knowledge sharing and dissemination tools
- To have a detail understanding of knowledge acquisition and application tools

9.2 Metrics

"What can be measured is not always important and what is important cannot be always be measured"

- Albert Einstein

The term "Metric" is nothing but measurement of intangible assets like intellectual asset. The Financial ROI can be used to measure the intellectual capital or to measure the knowledge generated from a knowledge workers. So the metric are used to measure them. The Metrics can be classified unto two groups namely

(i) Traditional Metrics (ii) Modern Metrics

Traditional Metric – Tobin's

The Tobin's q is used to measure intangible assets for a long period time. In this they measure the ratio between the firm's marker valuation and its cost of replacing its physical assets.

Tobin's q = Firm's marker valuation / Cost of replacing its physical assets The

limitations of Tobin's q

- There is no identification for knowledge development strategy
- It measures the intellectual health if an organization only for a given point of time.
- It don't pin point where the firm goes wrong
- Tobin's q doesn't highlight the firm where to focus for growth
- It doesn't say how to prevent imitation.

Points to Remember While Selecting a Metric

The organizations must remember the following points before selecting a metric:

i) Don't use Many Metric

The organizations use many metrics to measure the past and present performance. They also use metric to evaluate the future opportunities available for them. The common mistake made by many organizations is that they focus too much on their past and quantity. But they really need to focus on the present and quality of the information rather than the quantity. It is general thumb rule that a company can use 20 metric, beyond that it is not advisable. We think that bys using some metric will be perfect, but in reality they are not so. Therefore a good metric must be precise, measure the right things and practically applicable.

ii) Metrics used for Long Term Evaluation

Generally companies have long term goals and they use metrics to evaluate them. In such areas, the long term objectives must b formulated in such a way that the employees reap short term benefits also.

By formulating in such a way employee will be motivated to achieve the long term objectives. The metric used must measure today and it must also predict the future outcomes.

iii) Metrics those are Easy to Control

Always select a metric that is easy to control rather than choosing a metric that is hared o control. Because those metrics seems good in theory but it is not possible in reality. They are metrics should be achievable rather than formulating for namesake.

iv) Don't Neglect the Soft Results

It is well known that organizations give importance to financial results or hard results. But they need to give equal importance to soft results related to suppliers, managing people, and customers. It is not advisable for the management to focus on hard results and expect low level managers to take care of the rest like financial success. This is due to the fact many research has proved that hard and soft measures go hand in hand for growth of the firm.

Measuring and Paying for Performance

Learning Objectives

- The important of relating kinds and levels of employer – provided rewards to kinds and levels of employee contributions.
- The problems related to measuring and rating employee performance.
- Motivation and its influence on employee workplace contributions and results.
- Merit pay and the critical need to relate pay to performance.
- The relationship between a number of critical government regulations and the measuring and rating of performance.
- The design of performance appraisal instruments.
- The development of a performance appraisal instrument(s) best suited for a particular organization

Pay for Performance in a Knowledge

Slightly more than a hundred years ago, large numbers of workers in the United States moved from agricultural jobs into industrial jobs. In the factories and mills, workers produced an easily observed and measured output by performing a limited number of actions, frequently repeated daily, if not hourly, on a sequential basis.

In these settings, industrial engineers were extremely successful in increasing output by relating employee pay to units produced. This factory work required limited database development and knowledge acquisition by workers, but placed significant demands on physical capabilities.

Now, in the first decade of the twenty – first century, factories and mills are providing employment for less than 20 percent of the U.S. workforce.

Many of the heavy physical jobs in these factories and mills have now been replaced by individuals operating keyboards that control computerized robots that do the heavy work and the repetitive exercises.

Although the great majority of workers are now finding employment in service – related organizations (banks; insurance companies; utilities; hospitals; transportation; food and lodging; local, state, and federal governments; schools),.

The differences between manufacturing and service industry jobs are becoming even more blurred because some of the most labor – intensive jobs today are found in service industries in which clerks sit at a terminal all day, entering data into a computer or manually reviewing, sorting, and filing forms. These data entry and analysis jobs in service - sector businesses may be the factory jobs of the twenty – first century.

The Knowledge – Directed Worker

In conjunction with this transition form a manufacturing workplace to an office or service related work environment, the nature and king of assignments performed by many workers have changed and still are changing.

The term knowledge – directed or gold – collar worker is often used to describe modern – day employees. Instead of using physical strength within a restrictive motion – and – time – directed work environment, these workers must make much greater use of their intellectual faculties within a problem- solving, rather than performing mechanistic, repetitive work assignments.

An effective, knowledge of more different kinds of activities in order to make the correct decisions required in the performance of job assignments.

Because so much of the work goes on inside the brains of these knowledge – directed workers, it is difficult to identify, recognize, or quantity through observation the quality of their contributions or outputs. It is also difficult to determine with any degree of precision how many workers are required to produce a specific output. These definitional problems place more emphasis than ever before on the work to be done by each employee.

Barriers to Pay for Performance

A number of barriers block the design of incentives for these kinds of jobs. Some of the more critical are these.

1. The work of individual employees can vary significantly from day to day.

2. It may be difficult to observe a complete work cycle.

3. A number of activities may be performed once a week, once a month, once a quarter, or upon the occurrence of a specific situation.179

4. The time required to perform an assignment might not be a good indicator of the importance of the assignment relative to all other assignments included within the jobs or of the knowledge and skills required of the jobholder.

5. An individual might interact with different employees or clients at different times to complete a work assignment, and the results achieved might depend directly on the cooperation and skill of the other employees or clients involved in the interaction.

These barriers limit the use of industrial engineering motion and time practices for designing pay – for performance programs for the knowledge – directed worker. Realizing this, by the 1950's, incentive plan designers began seeking assistance from behavioral scientist involved in developing motivation theories and concepts.

9.3 Knowledge Acquisition and Application

Knowledge acquisition is the process used to describe the rules and ideologies required for a knowledge-based system. It is the process of extracting knowledge from experts and structuring this knowledge into a readable form.

Expert systems were one of the first successful applications of artificial intelligence technology to real world business problems. Researchers at Stanford and other AI laboratories worked with doctors and other highly skilled experts to develop systems that could automate complex tasks such as medical diagnosis. Until this point computers had mostly been used to automate highly data intensive tasks but not for complex reasoning. Technologies such as inference engines allowed developers for the first time to tackle more complex problems.

As expert systems scaled up from demonstration prototypes to industrial strength applications it was soon realized that the acquisition of domain expert knowledge was one of if not the most critical task in the knowledge engineering process. This knowledge acquisition process became an intense area of research on its own.

One approach to knowledge acquisition investigated was to use natural language parsing and generation to facilitate knowledge acquisition. Natural language parsing could be performed on manuals and other expert documents and an initial first pass at the rules and objects could be developed automatically. Text generation was also extremely useful in generating explanations for system behavior. This greatly facilitated the development and maintenance of expert systems.

A more recent approach to knowledge acquisition is a re-use based approach. Knowledge can be developed in ontologies that conform to standards such as the Web Ontology Language (OWL). In this way knowledge can be standardized and shared across a broad community of knowledge workers. One example domain where this approach has been successful is bioinformatics.

Some techniques used in the process of extracting information are Interviewing, Observations, Protocol Analysis, and Brainstorming.

It is ideally driven by strategies − for example, an organization decides what knowledge is needed, what it has, and then fills in the gap by developing new knowledge or acquiring it. Knowledge acquisition has several applications that we will be discussed.

Codifying Explicit Knowledge

Converting unspoken knowledge to a categorical form by way of codifying, and to acquire this tacit knowledge as explicit meta-knowledge (knowledge about knowledge)

This is basically a directory which knows what and how to contact them. The aim of the codification is to make it easy to organize, locate, share, store, and use the knowledge. Common materials including codified knowledge are manuals, spreadsheets, decision support systems and procedures.

Anyhow, the codification process is generally expensive and it is difficult to code for universal understanding too.

Knowledge Application at Individual, Group And Organizational Level:

Knowledge application refers to actual use of knowledge that has been captured or created and put it into action.

Knowledge Application at the individual level:

Individual differences play a major role in a variety of behavioral science (Hicks and Tochtermann, 2001). Knowledge Worker vary with respect to their similarity to the subject matter of their personality and cognitive style. Cohen and Levinthal (1990) find that the variety is more likely to occur when relevant knowledge base before. A number of studies (eg, Ford et al, 2002; Kuhlthau, 1990; Spink et al, 2002) found a significant correlation between the perpetrators of online search and cognitive styles of learners.

On the other hand, the business world strongly favors the use of instruments such as Myer Briggs Type Indicator, (MBTI) personality assessment style (Myers et al, 1998).

To assess differences in personality styles, some penilitan have been made to correlate with the MBTI type of knowledge sharing behavior. Webb (1998)

In a study from consulting firm Price Waterhouse Coopers, Indicates that a strong outgoing personality is important to share knowledge regardless of the qualifications and previous experience.

Characteristics of individuals who seek to apply or re-use of knowledge may play a role in how effective he is in finding an understanding and use of the knowledge of the organization. The individual characteristics may include, for example, force of personality, individual preferences about how best they learn, how they prefer to receive their information, and how they can help to put that knowledge to work. It can range from a simple as asking and then accommodate the language users prefer to work more. Sophisticated modeling users in terms of their capabilities and their purpose, one good framework used here is Bloom's Taxonomy (Bloom, Mesia, and Krathwohl, 1964), which is designed to help teachers learn to set goals for the learning activities. Taxonomy can be adapted for the purposes of the application of knowledge for the purposes of the application of knowledge to every object in the repository of knowledge.

Knowledge Application at Group and Organizational Level

Feedback database - An organization may have a database of feedback from customers and employees and shares this feedback with their design and research and development departments. All members of the organization would be able to enter feedback into the database and an integrated approach would be taken to understanding the shared information.

Shared project files - An employee team can work collaboratively on a project. They have a system of shared files and information that allows everyone on the team to upload and comment on work performed by others.

Research files - A an organization developing a new product conducts research on their competitors and conducts focus groups to find out what is needed in their product or market niche. This information is entered into a database that contains objective data on market sales

potential and indicates what assets and processes the an organization has in place which can be used to meet this sales potential, meet customer needs and fill gaps within the marketplace.

- Communication for effective and smooth functioning among the groups and organization
- Coordination of all the activities in the organization
- Collaboration among user groups regarding creation, modification and dissemination of artifacts and products.

9.4 Knowledge Management Tools

Knowledge Creation: This process depends upon knowledge sharing (asdefined above), collaboration, and access to relevant information and data. Cook and Brown (1999) suggest that knowledge creation is an interplay between knowledge and knowing, or in other words, putting knowledge into practice. The role of management in this process was identified as:

Enabling knowledge sharing:

Creating suitable work related environments: The focus here is onunstructured work environments where experimentation, trial and error, and theory in use are promoted. Self-organizing, semi- or fully-autonomous project teams are identified as one useful tool in this endeavor.

Providing access to collaborative IT systems: Groupwareapplications can be used for this purpose. These must support and not interfere with the ideal work environment.

Providing access to relevant data and information: Frominformation systems, data warehouses, data mining, etc. These can act as building blocks in the knowledge creation process.

Knowledge Acquisition: The firm can acquire knowledge externally fromcustomers, suppliers, competitors, partners, and mergers. The role of KM varies in each process (as does the type of available knowledge), but at its core its function is to establish the right channels to transfer relevant knowledge from existing partnerships into the firm, and to integrate this knowledge as best as possible. To do so, KM can use a wide range of tools including:

- Common IT systems
- Common projects
- Interaction and socialization
- Involvement of partners in certain organizational processes (e.g. design)
- Cultural alignment (for mergers or joint ventures)
- Setting up the right incentive systems
- Identifying and protecting crucial knowledge assets: when such knowledge should not be shared with a partner

Knowledge retention involves capturing knowledge in the organization so that it can be used later. In a previous section on organizational memory, Walsh and Ungson (1991) defined five knowledge repositories, namely individuals, culture, transformations (i.e. procedures & formalized systems), structures (e.g. formal and informal networks), and external activities. This is where knowledge can exist or be retained in an organization. In this section, we are interested in the managerial side, so as to answer the question: How can management promote the retention of (crucial) knowledge?

Most often, one hears of knowledge retention in the context of losing key employees and using techniques such as exit interviews to try to capture their knowledge. In reality, knowledge retention should be integrated into how the organization operates and start well before a key employee is about to depart. Although it is considered crucial for long term organizational success, few organizations have formal knowledge retention strategies (Liebowitz 2011).

A knowledge retention strategy as a part of knowledge management (KM) will identify the knowledge resources that are at risk and must be retained, and then implement specific initiatives so as to keep these resources in the firm. Like most other KM-related processes and strategies, success depends upon successful knowledge sharing and having a knowledge sharing & learning organizational culture.

Apart from the more general knowledge sharing initiatives that a firm may use - e.g. support of formal & informal knowledge networks (social areas, social media, meetings, company functions, knowledge fairs, expertise locator, etc.), changing the organization culture, etc. - examples of tools & techniques which can be used specifically for knowledge retention include (adapted from Smith 2007, Liebowitz 2009, and Liebowitz 2011):

Implementing reward structures to encourage sharing of key knowledge. Use of project teams and cross-functional project teams.

After-action reviews. Storytelling,.Mentoring programs & job shadowing. Interviews & exit interviews. Job rotation.Company procedures/processes manuals.Taking advantage of the knowledge of retirees.

Knowledge Retention Strategy

Doan et al (2011) identify three basic questions that must be asked when considering knowledge retention:

1. What knowledge may be lost?
2. What are the organizational consequences of losing that knowledge?
3. What actions can be taken to retain that knowledge?

Expanding upon these questions, one can outline several concrete steps necessary in the formulation of a knowledge retention strategy:

1. Understanding your risk factor: Liebowitz (2011) identified
    a. The average age of your employees is high
    b. The company has placed insufficient focus on:
        i. knowledge capture
        ii. mentoring programs
        iii. employee training and development

   c. Information is difficult to find or is often misplaced.

   d. There is little informal communication in the organization.

   e. Many knowledgeable employees are leaving the organization.

2. Classifying your knowledge: Knowing the knowledge resources of the organization, including where they are and in what form they exist (something covered under knowledge organization and assessment).

3. Understanding which knowledge is most critical (also covered knowledge organization and assessment).

4. Understanding the pillars of knowledge retention (Liebowitz 2009 & 2011): Knowledge retention consists of a wide range of tools, some easy and some hard to implement. Liebowitz identifies four categories which encompass all the initiatives within knowledge retention. These are:

   a. Recognition and reward structure: Management has the choice to use either intrinsic motivators (i.e. which make the job itself more satisfying, such as praise or recognition) or extrinsic motivators (i.e. which offer benefits unrelated to the job, such as money) (Gamelgaard 2007). These must take organizational as well as national cultural factors into account (Gamelgaard 2007), but overall the most effective and longer lasting appear to be intrinsic motivators (Gamelgaard 2007 &Liebowitz 2009). However, a combination of both is usually the way to go.

   b. Bidirectional knowledge flow: Establishing a two-way system of knowledge capture, where knowledge is not only passed down from the senior employee to the junior employee, but also vice versa.

   c. Personalization and codification: Personalization refers to connecting people and includes tools such as mentoring, jon rotation, knowledge fairs, communities, and so on, while codification includes tools like after action reviews, various knowledge repositories, UNITs learned systems, etc. (Liebowitz 2009).

   d. The golden gem: Bringing back important retirees in various capacities. This includes rehire programs, consultancy, part-time work, temporary jobs, etc. (Corporate Executive Board 2005). Using a phased retirement system (e.g. leave of absence – part time work – casual rehire) can also help to slowly lose a key employee and to gradually transfer all his key knowledge to the organization (Corporate Executive Board 2005).

5. Understanding the success factors: Doan et al (2011), following a comprehensive review of knowledge retention literature, arrive at the following key success factors:

   a. Top management support

   b. Knowledge retention strategy

   c. Learning culture

   d. Human resource practices (since knowledge resides in people, knowledge retention is closely linked to HR practices including recruitment, education, rewards, and performance management)

   e. Information and communication technology tools

KM and Organizational Structures: Two types were defined: formal and informal.

- Formal structure: These will interfere with KM if very rigidly enforced. The choice of structure, and the physical division of the firm, will also affect knowledge flows. Studies seem to show that decentralized structures seem to be best for KM (Choi & Lee 2000, Claver-Cortés et al 2007, Chen & Huang 2007).
- Informal structures: The firm should be perceived as a community consisting of a collection of communities (Brown &Duguid 1992). Management can affect these through the use of project teams, teamwork, social functions, etc.

KM and Organizational Culture Change: This must be recognized and managed carefully and deliberately. By introducing anomalies that challenge the accepted premises of organizational culture, management can influence organizational members to abandon certain aspects in favor of others (Gardner 1997). Use of incentives and common vision and goals are also effective tools. One of the most important goals is to create a culture where knowledge sharing is perceived as beneficial rather than detrimental to the individual.

KM and Knowledge Retention: Knowledge retention is the part of KM that is concerned with making sure that important knowledge assets remain in the firm over time, e.g. when key employees leave the firm or retire. Formulating a knowledge retention strategy depends upon understanding which knowledge is important, which knowledge is at risk and what it takes to keep this knowledge in the organization. Depending upon its knowledge retention strategy a firm may choose to implement one of many initiatives and tools including reward structurers, mentoring, interviews, and utilizing knowledge from retirees.

KM and Core Competencies: The management of core competencies consists of four processes: identifying, sustaining, building, and unlearning. KM plays a key supporting role throughout this process by:

- Identifying what the firm knows, and what its main expertise is.
- Leveraging knowledge assets across the organization.
- Building the right know-how and expertise to match strategic requirements.
- Isolating and removing/changing obsolete knowledge.

KM and the External Network: As mentioned before, external knowledge sources include customers, suppliers, competitors, partners, mergers, etc. KM plays a role in the assessment of potential partners, by helping to determine what the organization knows, what it needs to know, and the best ways of getting that knowledge. It is also a key element during the cooperation process to ensure that the right knowledge is transferred and integrated into the organization.

KM and Knowledge Management Systems: This very ambiguous category of systems refers to most systems used in the sharing, discovery, and creation of knowledge. Failures are generally due to an over reliance on technology, a lack of understanding of the limitations of these systems, improper fit with organizational practices, lack of acceptance, etc. Proper implementation implies paying attention to:

- Organizational fit: Carry out internal assessment of needs and work practices, cost-benefit analysis, etc.

- Organizational acceptance: by involving the user in the design and implementation, through managerial and technical support, and with product champions, etc.

- Continued use: A function of perceived attractiveness factors and content management (Gamble and Blackwell 2001).

This concludes the summary of knowledge management best practices. KM is a process that spreads throughout the organization. Its scope is difficult to define and its effects are hard to measure - e.g. how do you determine the ROI on a discipline designed to subtly improve most aspects of the organization? Nonetheless, if properly implemented, it is a worthwhile investment that will promote efficiency, learning, innovation, and competitive advantage.

Knowledge management efforts typically focus on organizational objectives such as improved performance, competitive advantage, innovation, the sharing of UNITs learned, integration and continuous improvement of the organisation.KM efforts overlap with organizational and may be distinguished from that by a greater focus on the management of knowledge as a strategic asset and a focus on encouraging the sharing of knowledge. It is an enabler of organizational learning.

1. Acquisition
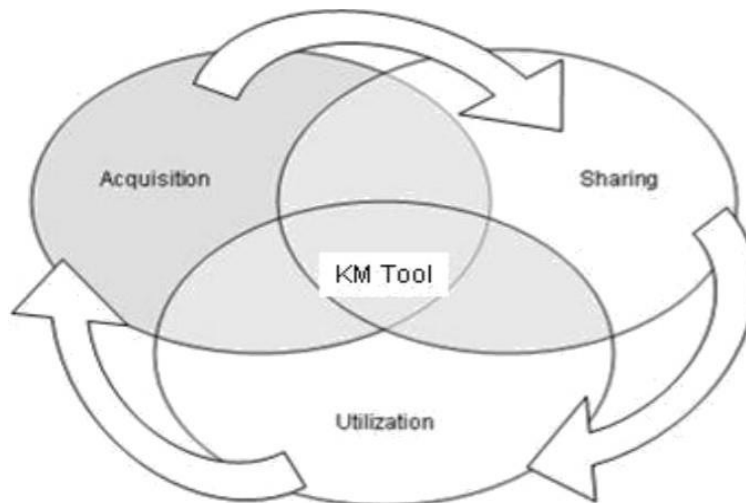
Strategy of buying and selling of various companies is to quickly grow a company.

2. Sharing

Sharing is the joint use of a resource or space. In its narrow sense, it refers to joint or alternating use of inherently finite goods, such as a common pasture or a shared residence.

3. Utilization

Utilization is the primary method by which asset performance is measured and business success determined. In basic terms it is a measure of the actual revenue earned by assets against the potential revenue they could have earned.

Tools

KM Strategy

Knowledge management strategy must be dependent on corporate strategy. The objective is to manage, share, and create relevant knowledge assets that will help meet tactical and strategic requirements.

Organizational Culture

The organizational culture influences the way people interact, the context within which knowledge is created, the resistance they will have towards certain changes, and ultimately the way they share knowledge.

Organizational Processes

The right processes, environments, and systems that enable KM to be implemented in the organization.

Management & Leadership

KM requires competent and experienced leadership at all levels. There are a wide variety of KM-related roles that an organization may or may not need to implement

Technology

The systems, tools, and technologies that fit the organization's requirements - properly designed and implemented.

Politics

The long-term support to implement and sustain initiatives that involve virtually all organizational functions, which may be costly to implement (both from the perspective of time and Money), and which often do not have a directly visible return on investment.

9.5 Creation of Tools

Knowledge creation is all about continuous transfer, combination, and conversion of the different types of knowledge, as users practice, interact, and learn. Content creation and management tools are essential to structure and organize knowledge content for each retrieval and maintenance. It consists of the following tools −

- Authoring Tools
- Annotation Tools

- Data Mining and Knowledge Discovery
- Templates
- Blogs

Authoring Tools

Authoring tools include the software that allow users to create web page or multimedia applications. These are tools by which various media elements are brought together to structure and flow.

Authoring tools align with the aim of capturing the author's tacit knowledge and helping structure that knowledge into an explicit form.

Annotation Tools

Annotation tools help in addition of explanatory comments to a document after it has been created. The comments can be public as well as private. Tools like track changes in MS Word is an example of annotation tools. This tool also helps with the goal of capturing tacit knowledge by allowing authors to connect their expertise to a certain document.

Data Mining and Knowledge Discovery

Data mining pioneers new or hidden patterns in data that resides in multiple databases. It includes statistical analysis to discover relations, correlation, and market related analysis.

Various analysis tools are approached in data mining such as statistical analysis tools e.g. SAS, data mining suites, and data visualization tools.

This tool accomplishes the goal of creating new knowledge by being able to analyze existing data and making something useful out of it. It also helps in predicting future occurrence and forecast expected outcomes.

Templates

It includes designing or patterning of an item that acts as a guide for designing or constructing similar items. This tool is helpful to organize knowledge in a systematic manner, by following an established design.

Blogs

These are webpages that typically focus on a specific subject. They can be like personal pages that are much like personal diaries which are periodically updated and accessible publicly. This web tool fits with the aim to elicit knowledge, by authors being able to express their unique ideas and opinions.

Knowledge acquisition refers to the knowledge that a firm can try to obtain from external sources. External knowledge sources are important and one should therefore take a holistic view of the value chain (Gamble & Blackwell 2001). Sources include suppliers, competitors, partners/alliances, customers, and external experts. Communities of practice can extend well outside the firm.

Knowledge acquisition is a topic that could fill books and extend well outside the knowledge management (KM) focus. For this reason, detailed descriptions of how to manage external relationships are beyond the scope of this topic. However, since KM is inextricably linked to corporate strategy, an overview of the options available to the organization will be helpful to understanding the full potential KM role.

This subsection will discuss the knowledge available from the different sources, and the managerial issues that must be considered. In the subsection titled "External Knowledge Network", I will tie this back to the overall strategic level and look at the process behind external knowledge acquisition.

The main sources are of knowledge acquisition are:

Customers

Customer knowledge comes in different forms. Gerbert et al (2002) identify three different types:

Knowledge for customer: The knowledge that the customers can gain inorder to satisfy their knowledge needs.. It can include product, market, and supplier knowledge. It can be sourced from our company or from other external sources like other customers and competitors (Zanjani 2008).

Knowledge about customer: The kind of knowledge that enables us to knowthe customer better, to understand their motivations, and to address them better. Includes requirements, expectations, and purchasing activities.

Knowledge from customer: The kind of knowledge that deals with products,suppliers, and markets. It can be used to improve our products and services.

These three categories apply to actual knowledge acquisition as well as to data and information, which can be processed and used to create knowledge (Zanjani 2008); e.g. data on purchasing habits could be analyzed to create knowledge that could improve marketing or design decisions.

Knowledge sharing is thus important, although it may take many different forms depending on the area of business. KM is particularly important for B2B relationships where the buyers are usually more prominent (i.e. either buy many products or buy expensive products)

and the products are more likely to be customized to the needs of the customer. This can, and often should result in a closer relationship with more detailed communication and feedback, where the customers are involved as partners when discussing modifications and improvements (Gerbert et al 2002).

Some possible KM initiatives thus include:1

Collecting feedback

Collecting and processing marketing related information Collecting suggestions

Involvement in development/design

Effective acquisition of customer knowledge is dependent on customer relationship management. IT can be used in this context both as a means of collecting feedback and enhancing communication and cooperation between partners (the principles of knowledge sharing apply here within the confines of the specific relationship). It is also useful as a way to gather data and information regarding sales, trends, feedback, and so on, which can then be used to create new knowledge within the organization.

Suppliers

Chan (2009) presents a classification for supplier knowledge based on the concepts outlined by Gerbert et al (2002) regarding customer knowledge. These are:

Knowledge for suppliers: This is the knowledge that suppliers require andincludes "production needs and forecasts, inventory, products, customers, and markets" (Chan 2009).

Knowledge about suppliers: This is knowledge that is used to understandhow the supplier can match the requirements of the organization; provide insight regarding quality, delivery, defects, financial risks etc.

> ***Knowledge from suppliers:*** This refers to the knowledge that suppliers havegathered from their dealings with the organization.

The KM initiatives and the role of IT are similar to the ones presented in the customer segment, with the organization now taking on the role of customer. Knowledge acquisition in this case also includes data and information which can be processed and used as building blocks for new knowledge creation.

Gamble and Blackwell (2001) refer to compatible goals, cultural alignment, and leadership commitment amongst the key factors for sustained, productive, long-term relationships.

Competitors

This deserves mention but it is a fairly straightforward aspect of KM. It simply involves collecting, organizing and presenting the data, information, and knowledge that the firm has acquired in such a way that one can search, retrieve, and analyze it. Some of this falls within the scope of information management, but it is particularly the process of using these components to create better decisions and new knowledge that is of interest here.

IT systems are very useful in this case, since the sources are largely explicit and presumably require frequent updating and manipulation. Data mining and analysis, document management systems with suitable search functions and expert systems are most relevant here.

Partners/alliances

Alliances intended to increase knowledge are a valuable potential resource. However these must be properly managed. Key success factors include fostering trust, learning from your partner, and effectively managing the creation of knowledge relevant to both parties. Knowledge transfer can be facilitated by personnel exchanges, common projects and other forms of regular interaction, technology sharing, etc. (Gamble & Blackwell 2001). Focusing on informal communication, collaboration, and socialization is of paramount importance for valuable tacit knowledge acquisition and for extending communities of practice beyond the firm's borders.

Chan (2009) once again formulates a set of knowledge types based around the work of Gerbert et al (2002):

Knowledge for partners: Knowledge which satisfies their needs, including"knowledge about products, markets, and suppliers" (Chan 2009).

Knowledge about partners: Knowledge acquisition focused onunderstanding the ability of partners to perform their role in the relationship. Includes distribution channels, products, services, etc.

> ***Knowledge from partners:*** The knowledge that partners have accumulatedfrom dealing with the organization.

IT can be used in this case very similarly to the way it is used inside the organization for knowledge sharing and knowledge creation (including data/information analysis) in other words supporting communication, collaboration, experimentation, expertise location, analysis tools, etc.

> The exact system has to fit the nature of the relationship and the business model.

What is of particular importance in this case is to safeguard the system so that only that knowledge which the firm is willing to share becomes available. In the 80s, joint ventures between American and Japanese firms often resulted in a lopsided endeavor favoring the latter, since the Japanese were far more willing to listen and the Americans were far more willing to talk. It is important to remember that the goal here is two way learning; that a relationship will not last forever; and that a partner today may be a competitor tomorrow. KM must therefore be very aware of what knowledge is being shared, and the IT systems must reflect this policy.

Merges & Acquisitions

This aspect deserves mention, but as a general discipline it is well beyond the scope of this paper. Dealing with mergers and acquisitions (M&A) is an extremely complex task that has led to numerous failures. Within the scope of knowledge acquisition, the area related to KM is how to pass on the most amount of relevant knowledge from the previous two organizations to the new, combined firm. Very broadly speaking there are a couple of roles where KM efforts should feature heavily once the target has been acquired:

To identify the valuable/redundant knowledge sources in the target organization: This is a very difficult process since it involves understanding of thetarget company's tacit and embedded knowledge locked within people, communities, processes, networks, procedures, etc. One of the major causes of failure in M&A is that during the restructuring process, key people are let go by mistake or key communities are disrupted. The old adage that the company should be seen more like a living organism than a machine holds very true here.

To combine this (relevant) knowledge with the organization's knowledge assets to achieve synergy: This is the essence of many M&A; the notion that the wholeshould be greater than the sum of its parts. Integrating acquired companies is a difficult task, heavy on people management and the creation of a common culture. It is hard to say how much of this falls within KM specifically, and there certainly are no universal rules on this topic. Fundamentally, the same principles on knowledge sharing, reuse, and creation apply here, with a particular focus on culture, networks, and incentives, within a different and potentially hostile environment.

Other expertise

This refers to the other sources of external knowledge available to a firm, and includes hiring new personnel or acquiring the services of consultants.

The role of KM in these cases is to make sure that the right knowledge is acquired. Essentially the process has two parts, on the one hand the strategic and tactical requirements of the firm must be taken into account, and on the other these must be compared to the knowledge assets of the organization.

If external services are acquired from consultants or other temporary service providers, KM must work together with strategic management to determine if this knowledge is worth integrating into the firm by assessing the need to reuse it in the future vs the cost of transferring it into the organization. If it is deemed as something that should be integrated, then the right learning situations must be established to transfer the knowledge into the firm. These could be mentoring relationships, use of project teams that include organizational members, courses and education, etc.

Sharing and Dissemination Tools The
Knowledge Sharing Cycle:

These are the processes associated with gathering and disseminating existing knowledge. For most KM programmes, this is the primary focus.

Create/collect: New knowledge is created or existing knowledge is gathered.Knowledge is a good technique for discovering what exists.

Organize/store: The knowledge is classified and stored, perhaps using acompany specific taxonomy. This makes subsequent retrieval easier.

Share/disseminate: Information may be 'pushed' to people as part of routinedissemination or it may be simply 'parked' in information repositories for individuals to access it when needed. For tacit knowledge, this part of the cycle involves knowledge transfer activities such as meetings.

Access: Individuals browse or search their organization's information anddocument repositories, typically via an intranet. Users 'pull' the information when they need it.

*Use/exploit***:** They use this knowledge to carry out specific tasks. As they useit the knowledge is evaluated, refined and improved. As a result new knowledge is created and the cycle repeats.

9.6 Knowledge dissemination

From the perspective of an MNC subsidiary, there are two knowledge sources. Knowledge may come from sources that are internal to the MNC and is transferred from other MNC units (i.e., other subsidiaries or the Center) or is developed in the subsidiary itself (e.g., through R&D, processes of routinization, etc.). Alternatively, knowledge sources may come from external partners (customers, suppliers, etc.) or other agents (e.g., high quality research institutions, etc.). Knowledge inputs into the process of building knowledge also differ across subsidiaries because subsidiaries confront different knowledge sources. Some subsidiaries may rely relatively more on internal knowledge sources, while others may rely more on external ones.

In turn, this will impact the knowledge that is built and also influence the costs and benefits of transferring such knowledge.

Knowledge that is based on internal knowledge sources may be transferable at low cost inside the MNC, particularly knowledge which is developed within the core of the MNC knowledge structure. It includes groupware and collaborative tools. These tools acts as enablers of knowledge flow and knowledge-sharing activities among personnel. Groupware invokes class of software (programs) that allows to work together while located remotely from each other.

Here, collaboration is mainly referred as groupware, or work group productivity software. For example − LAN (Local Area Network)

Typically, a groupware supports the following operations −

- Password Protection of document
- Schedule meeting and allocate resources
- File distribution
- Electronic newsletter
- Email (Electronic mail)
- Group Calendars
- Collaborative writing system
- Video Communication System
- Chat Systems
- Wikis

CONCLUSION

The various tools used in the process of knowledge management are very useful for effective working of the organization.

9.7 EXERCISE

- Critically evaluate the knowledge sharing and dissemination tools
- Critically evaluate the knowledge acquisition and application tools.
- Explain the nature and scope of knowledge management metrics

UNIT 10

10.1   Learning objectives

- To understand the concept of knowledge management team
- To understand the roles of the officials in the knowledge management team To understand the responsibilities of the knowledge management team
- To have a detail view of ethics in knowledge management
- To understand political perspective in knowledge management

10.2 KNOWLEDGE MANGEMENT TEAM

Managing Organizational Structures

This discussion deals with the physical and non-physical divisions and barriers that influence the way knowledge management (KM) operate. By "organizational structure", I refer to the layout of the company itself and also to the various bodies that exist within it.

It is important to note that many elements within this topic stretch well outside our focus, and volumes could be written on it alone. The focus here will be only on the general elements that are directly related to KM.

Types of Organizational Structures

Organizational structures deal with the way the firm is organized, and the way people relate to one another. Broadly speaking, there are two types of organizational structure, namely formal and informal. These two concepts are not independent, and the formal structure may greatly influence informal networks, both positively and negatively.

Formal: The official structure of the organization, which is normally displayed onan organizational chart, and which denotes the hierarchical relationships between members of the firm. It is beyond the scope of this site to offer a discussion on the various formal organizational structures. However, there are a few things that are relevant to KM:

- The formal organizational structure must not be so rigidly enforced so as to stifle informal structures such as communities of practice, where knowledge sharing and creation may take place. It is the knowledge manager's job to understand the knowledge dynamics of the organization and to recognize how the formal and informal structures coexist.

- The formal organizational structure, particularly in a larger firm with separate departments, will impact knowledge flows. There is no set structure that is best, since most have advantages and disadvantages depending upon the business type, firm size, etc. However, studies seem to indicate that flatter, decentralized structures are more effective for KM (Choi & Lee 2000, Claver-Cortés et al 2007, Chen & Huang 2007). This also makes sense logically, since knowledge flows would be less hindered in such a structure.

Implementing changes to formal structures can thus mean restructuring the organization, but it can also mean enforcing existing structures to a lesser or greater degree.

Informal: The unofficial organizational structures are the ones that are createdthrough informal networks, as a result of working within the organization. They represent the way people actually interact. Brown and Duguid (1992) advocated looking at the firm as a community of communities. Increasingly, the value of these informal structures is being understood, and the knowledge manager must learn to identify and support these networks. This process is closely related to KM, since knowledge flows and repositories (particularly tacit) are dependent upon these structures. KM therefore must play a central role in their management, including identification of the structures and the knowledge they hold, implementing changes, bridging gaps between communities, and so on. Unfortunately, implementing changes to informal social networks is difficult without running the risk of disrupting them. There are several ways that managers can influence social networks:

Generalists (sometimes referred to as gatekeepers) can be used to identify communities and their expert know-how, and to help coordinate activities such as cross-functional projects.

Project teams and other teamwork can serve as a means to bridge the gap between communities. Common physical meeting areas can allow communities to grow and flourish. Virtual socialization and people finders can support communities of practice. Common vision, goals, ideals, social gatherings etc. and a climate of trust can serve as a way to lessen the distance between organizational members and communities.

The skills required for a knowledge management team member ranges from business awareness to management skills, learning abilities, communication and interpersonal skills, as well as information management and information technology expertise.

KM professionals should be proficient in retrieving information, evaluating or assessing information, organizing and analyzing content, presenting content, ensuring the security of content, and collaborating around valuable content.

One of the best approaches for forming an effective Knowledge management team is to define different types of knowledge management professionals and the types of skills, attributes, and background they should ideally possess.

A KM dream team collectively possess skills of communication, leadership, expertise in KM methodology, processes, tools, negotiation followed by strategic planning, combined with the following attributes, i.e., know the organization, remain connected to the top, adopt a systems view, and be an intuitive risk taker.

Leadership and "The Learning Organization"

The term "learning organization", not to be confused with organizational learning, was popularized by Peter Senge. It describes an organization with an ideal learning environment, perfectly in tune with the organization's goals. Such an organization is a place "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 (reality) together." (Senge 1992).

This subsection will focus largely on the work of Peter Senge, and it will serve as a basis for understanding:

- The ideal organizational environment for learning, knowledge management (KM), innovation, etc, as described through the term "the learning organization".
- The leadership qualities necessary for promoting and encouraging this ideal environment.

The Learning Organization

According to Senge, the learning organization depends upon the mastery of five dimensions:

Systems thinking: The notion of treating the organization as a complex systemcomposed of smaller (often complex) systems. This requires an understanding of the whole, as well as the components, not unlike the way a doctor should understand the human body. Some of the key elements here are recognizing the complexity of the organization and having a long-term focus. Senge advocates the use of system maps that show how systems connect.

Personal mastery: Senge describes this as a process where an individual strives toenhance his vision and focus his energy, and to be in a constant state of learning.

Mental models: "Deeply ingrained assumptions, generalizations, or even picturesand images that influence how we understand the world and how we take action" (Senge 1990). These must be recognized and challenged so as to allow for new ideas and changes.

Building shared vision: Shared vision is a powerful motivator. A leader's visiondoes not necessarily become shared by those below him. The key here is to pass on a picture of the future. To influence by using dialogue, commitment, and enthusiasm rather than that to try to dictate. Storytelling is one possible tool that can be used here.

Team learning: The state where team members think together to achieve commongoals. It builds on shared vision, adding the element of collaboration.

The Role of Leadership

Senge emphasized the role of the leader in the creation of this learning organization. He defined three leadership roles (1990) that would reshape the old-fashioned approach to being the boss. These are:

Leader as Designer: Senge likens this to being the designer of a ship rather than itscaptain. He defined it in three ways:

> Creating a common vision with shared values and purpose.

- Determining the "policies, strategies, and structures that translate guiding ideas into business decisions."
- Creating effective learning processes which will allow for continuous improvement of the policies, strategies, and structures.

Leader as Teacher: The leader here is seen as a coach that works with the mentalmodels present in the organization. He must understand the (usually tacit) concepts of reality and restructure these views "to see beyond the superficial conditions and events [and] into the underlying causes of the problems."

Leader as Steward: This is the vaguest of the three and refers largely to the attitudeof the leader. He emphasizes the importance of a leader that feels he is part of something greater; whose desire is first and foremost not to lead, but to serve this greater purpose of building better organizations and reshaping the way businesses operate.

The first two roles outlined by Senge shed a lot of light into the requirements of effective KM and organizational learning.

KM and Core Competencies

The knowledge management definition presented earlier, involved the reuse and creation of relevant knowledge. The word relevant links knowledge management (KM) to the concept of organizational core competencies. Once again, the challenge here is to discuss this subject without diverging too much into related topics that are not directly relevant to KM.

Core competencies:

Definitions vary greatly. The term was originally coined by Pralahad and Hamel (1990) who defined it as "the collective learning of the organization, especially how to coordinate different production skills and integrate multiple streams of technologies". Since then it has been defined in multiple ways, but very generally, core competencies refer to the firm's primary expertise, which is a source of sustained competitive advantage. Arriving at a more precise definition is not necessary for our purpose here. Suffice it to say, that these are key capabilities, which, from the resource-based perspective of the firm, are the primary drivers of innovation and competitive advantage. Core competencies thus have a large knowledge component, and managing them is, in the very least, a product of corporate strategy working with KM and innovation management. This simplified model has strategy dictating the overall direction, KM managing the knowledge dynamics, and innovation management turning core competencies into profitable core products. To understand the role of KM let us look at a brief overview of how core competencies are managed:

- ***Identifying and assessing core competencies:*** The firm should map out its keycompetencies, possibly linking them directly to specific core products. Then, an evaluation must take place, assessing what one has vs. what one needs to have (as determined by strategy and the competitive environment). KM is responsible for identifying where the key knowledge is located, including the tacit expertise and knowledge embedded in products, routines, etc, as well as identifying knowledge gaps.

- ***Sustaining core competencies:*** Organizational core competencies, like allknowledge assets, have the virtue of improving rather than depreciating through use. Conversely, lack of use will lead to erosion of any skill set. The role of KM here is twofold, on the one hand, it must keep stock of the state of key knowledge assets and, on the other, it must leverage key knowledge assets across the organization.

- ***Building core competencies:*** Building new core competencies involves aninterplay between knowledge, practice, coordination, and refinement. Knowledge assets must be built, enhanced, combined, and coordinated in an environment that supports

experimentation and improvement. Building core competencies can be a complicated endeavor since sustained competitive advantage is derived from assets that are hard to imitate (Dierickx and Cool 1989). From a KM perspective, this implies the buildup of specific tacit knowledge and expertise (i.e. uncodified knowledge that is generally more valuable and inherently more difficult to copy and transfer), often across multiple departments or functions.

- *Unlearning core competencies:* Organizations have a habit of trying to keepdoing what they have always been doing. Unlearning a competency when it is no longer useful is one of the key aspects of a successful firm, and history is riddled with examples of companies that have failed to do so. In the process of unlearning, KM again plays an important role by identifying and managing the firm's knowledge assets in the right direction. This may be done through re-training, restructuring, creating new knowledge flows, external knowledge acquisition, outright removal, etc.

The specific dynamics of the processes of knowledge creation, knowledge acquisition, knowledge sharing, and knowledge reuse, which are central to the management of core competencies, have been discussed earlier. The purpose of this section is to emphasize that KM is not just a collection of individual initiatives. The buildup of skills and competencies, involving the coordination of multiple KM disciplines with other organizational functions, must often be managed according to long-term strategic goals and coordinated across the organization.

Knowledge Management Roles

The roles involved in knowledge management are quite distinct. These include following categories −

- *Knowledge leaders*, also introduced as **knowledge management champions**,who are responsible for promoting KM within the enterprise.
- *Knowledge managers* are accountable for the acquisition and management ofinternal and external knowledge.
- *Knowledge navigators* are accountable for knowing where knowledge can belocated, also called knowledge brokers.
- *Knowledge synthesizers* are accountable for providing the recording ofsignificant knowledge to organizational memory, also referred as knowledge stewards.
- *Content editors* are answerable for codifying and structuring content, alsoknown as content managers who deal with capturing and documenting knowledge researchers, writers, editors.

Knowledge Management − Roles & Responsibilities

The primary roles and responsibilities can be summarized as follows −

- *Designing Information Systems* − Includes designing, evaluating, orchoosing information content, database structures, indexing and knowledge representation, interfaces, networking, and technology.
- *Managing Information Systems* − Includes maintaining the integrity, quality, currency of the data, updating, modifying, improving the system, and operating the system.

- ***Managing Information Resources*** − Includes managing organizationalinformation resources to support organizational missions and for competitive advantage.
- ***Training*** − Includes coaching, mentoring, community of practice start-up andlife-cycle training support, and feed-back UNITs learnt, best practices into training content.
- ***Serving as Information Agency*** − Playing as information consultants orguides for clients: advising, training, guiding on information, information sources, information use, acting as agents on behalf of clients: gathering, evaluating, analyzing, synthesizing, and summarizing information for clients.
- ***Maintaining Healthy Relations*** − for information systems/technology.
- ***Designing and generating information services*** − and products publications,databases, information systems, multimedia products, and stories from storytelling
- ***Workshops*** − Can be leveraged for developing content for internalorganizational workshops.
- ***Offering Knowledge Journalists*** − The employees can offer their services byproviding insightful content based on their roles and responsibilities.

Knowledge Reuse

Markus (2001) identifies three major roles in the reuse of knowledge

- ***Knowledge Producer*** − The originaldesigner of the knowledge
- ***Knowledge Intermediary*** − The one who packages and prepares theknowledge so that it can be stored, retrieved, and shared. This include any number of functions like indexing, categorization, standardizing, publishing, mapping, etc.
- ***Knowledge Consumer*** − The person who is the receiver and end-user of theknowledge in question.

    The two very general types of knowledge reuse are −

- ***Internal*** − Here the knowledge producer uses his/her own knowledge at somefuture point.
- ***External*** − The knowledge worker uses someone else's knowledge.

Knowledge Repositories

A Knowledge repository is an online database that systematically absorbs, organizes, and categorizes knowledge-based information. They are basically the private databases that manage enterprise and proprietary information, but public repositories also exist to manage public domain intelligence. They are also known as digital learning repositories, Digital object repositories and Electronic performance support systems. It helps organizations connect people with information and expertise worldwide through online searchable libraries, discussion forums and other elements.

    The key features of an effective digital knowledge repository are −

- ***Centralization*** − A wide variety of digital courseware, and content curatedfrom multiple sources, can be stored in a central location where it can be tagged, shared and commented upon globally within one consistent interface.

- ***Content Management*** − The breadth of learning content includes audiovisual files, simulations, data, learning modules, articles, blogs, YouTube videos, best practices guidance, monitoring capabilities and contact information. Content can be searched by keywords, learning outcomes, and other vehicles.
- ***Cost Savings*** − Repositories can potentially reduce the cost of training andeducation by making affordable course materials accessible, reducing the need for classroom training and stimulating productive informal learning.
- ***Access Control*** − By restricting individual content pieces via passwordauthentication and other security functionality, curators can accomplish various goals. Access controls often involve safeguarding proprietary information and protecting intellectual property. Some, but not all, repositories employ Digital Rights Management (DRM) to protect and monetize intellectual property in the market.
- ***Record Management*** − Repositories can integrate with learning managementsystems to blend seamlessly into learning and talent management programs.

10.3 Knowledge and Role Related Issues

By implementing knowledge management in the organization, they can explore the opportunity available in the external environment and most importantly they provide ways to utilize the knowledge of their employees. The company which can encourage, store and capture the creativity and unleash them in the form of innovative products will be the market leaders as well as trend setters in the market.

The knowledge management also helps the organization to respond quickly to the ever changing dynamic business environment and international trade whereby they can respond faster and delivery goods as per the expectations of their clients. If the companies are not able to adapt them fast enough to this dynamic environment then will slowly lose their customers resulting either in bankrupt or merger & acquisitions with other firms. In spite of these benefits it also has some issues relating in successful implementation of knowledge management. According to Mr.Shermon the issues are listed below

Loss of Knowledge Workers

In knowledge management workers are considered as intellectual asset of the company. When these personnel arte transferred due to promotion or quit their job then their knowledge also moves with them which is a not a positive sign for the organization growth. In order to avoid such incident the organization must develop procedures to deposit or store the knowledge so that people can access them even though the knowledge personnel moves or transfer in to different branches or cross functional team.

Resistance to Share the Knowledge

In this era, the knowledge is power. So people are very resistance to share the knowledge with others. But to develop the firm it is very vital to develop an organization culture when people share their knowledge with others. This is possible only when the mental setup of the employees is changes. By rewarding the knowledge sharing employees it will help to minimise the resistance of sharing the knowledge with others.

Absence of Adequate Knowledge Management System

Generally in knowledge based organizations work in team structure, when a team works and completes a project there is no mechanism to store their experience and methods used by them to complete their work. If some other team engage in similar type of work they have to start fresh. If there is mechanism to store the knowledge and dissemination of information will help other to complete their work faster. Similarly they will help other workers to know how to handle a similar situation when it happens in the future.

Absence of Developing Learning Organizational Culture

There organizational culture has to encourage continuous learning. The company must need to set up some common knowledge domain where the experienced and the new employees of the organization can learn about the organization. The common knowledge domain may consists of PowerPoint presentation, training methods and suggestions, preliminary questions, research articles, Journal publications, effective knowledge managements systems and answers to the some common queries that may arise in the mindset of the employees.

Hurdles in Disseminating Knowledge

There are various departments and functional teams in the organization. The information from the knowledge centre must be communicated or disseminated properly to other departments like manufacturing, logistics and marketing departments.

10.4 ROLES AND RESPONSIBILITIES IN KM

The various roles and responsibility of knowledge management within the organization irrespective of private and public organization is listed below:

- *Designing information system*: This includes the selection, designing andevaluating of information systems. The designing of data structures, interfaces, networking technology.
- *Managing information system*: This role deals with maintaining theintegrity, quality, updating, modifying, currency of the data, improving the operations of the system.
- *Managing information resources:* In this we must devise methods tomanaging organizational information resources to support the organizational missions and formulating strategy to gain edge over competitors.
- *Training:* The activities like coaching, community of practice start up,mentoring, best practices, providing training support activities to improve the skill of knowledge workers. Serving as information agencies. The organization acts as information consultants, providing solutions to the problems faced by the customers, to give advice to their clients. They act on behalf of clients to gather and summarize the information providing competitive intelligence.
- *Maintaining customer relations for information systems:* They areintermediates between customer requirement and information system designers. They convert the customer requirements into a product / services.
- *Knowledge management analyst:* They act as an organizational informationand analyst in designing corporate, organizational information, Knowledge management policies, maintaining proprietary information and mapping corporate intellectual assets.

10.5   POLITICAL ISSUE IN KM

AN ORGANIZATIONAL POLITICS PERSPECTIVE

The classical organizational theorists and, to a lesser extent, those belonging to the cultural school, subscribe to the view that organizations are normally characterized by a "philosophy of sharing trust and care for others" (Kakabadse& Parker, 1984). Those of which this is not true tend to be regarded as dysfunctional. However, the power and politics school of organizational thinkers reject this assumption, insisting instead that "power is part of all organizational behaviour" and the effective use of it, which is a political act, "secures both organizational and personal goals in most (if not all) organizational action" (Fairholm, 1993). The power and political view pictures an organization as a collection of groups and individuals who are diverse in their aims, beliefs, interests, values, preferences and perceptions of their organizational world and, to this extent, is compatible with the cultural view. However, it also argues that differences of opinion are common, if not the norm, coalitions form and dissolve, and natural and inevitable part of organizational life. Nevertheless, as Ferris et al. (1989) say: Organizational scientists have had different notions of what constitutes political behaviour of the behavior of interest groups to use power focused on the self-serving and organizationally non- sanctioned nature of individual behaviour in organization still others have characterized with potentially functional or dysfunctional organizational consequences

Organizational politics involves those activities taken within organizations to acquire, develop, and use power and other resources to obtain one's preferred outcomes in a situation in which there is uncertainty about choices. As Sauer (1993) says, "power accrues to those who control resources which are important to others" and, as seen above, politics entails the use of power to achieve desired ends in the face of dissension. Furthermore, the sources of a particular research on the pre-existing social and organizational structure, which will largely determine who has what degree of control over which resources. All organizational sections are generally custodians of some form of information and knowledge resources. And the power people have through their control of resources is not just a matter of formally assigned or de facto ownership, but of consciously and actually having arbitrary control over their availability and use. Indeed, there is not only the matter of what information and knowledge individuals and groups in the organization actually own or have control over (and, they think, rightly so), but also what they think or "know" they should own or have control over but which in fact they do not. As can be imagined, this may constitute differing perceptions in this area.

In fact, as roles information people and groups hold and control, they will increasingly view that information as a source of power and importance for them, being more protective of its ownership, and being less inclined to share it or devolve responsibility for it. Arguably, the occurrence of power-based behavior and organizational politicking when trying to succeed, or even just cope, in a dynamic, interlinked and mutually dependent environment is less likely when those who need to cooperate communicate effectively. But the effectiveness of communication is highly dependent on the level of trust between the involved parties too.

10.6 ETHICS IN KM

A discipline dealing with Good and Evil and with Moral Duty

How do people decide WHAT is right or wrong?

- Philosophy

- Religion and values

- Conceptions of human nature (what people are like? what makes us human?)

However, ultimately people decide right and wrong based on personal opinions and societal standards.

A few ethical models consider:

Ethical Models	
Kant's Categorical Imperative	Do what is right, no matter the consequences
Utilitarianism	Act for the greatest benefit of the greatest number of people
Virtue Ethics	Identify the best virtues, and strive to live by them
Relativism (subjective, cultural)	There is no single rule, they depend on context
Divine Command	Follow a religion
Friedman's Stockholder Theory	(for a business) Maximize return
Servant-Leader	Be a servant before you are a leader

Ethics of KM study the impact of KM on society, the organization, and the individual, with a particular emphasis on the potentially damaging effects it might have.

Ethics in Knowledge Management

Ethical theories are divided into three general subject areas −

- *Meta Ethics* − Investigates where our ethical principles, standards come from and what they mean. Meta-ethical answers to questions on the issues related to universal truths, the will of God, the role of reason in ethical judgments, and the meaning of ethical terms themselves.

- *Normative Ethics* − It takes on a more practical task, which is to reach atmoral standards that regulate right and wrong conduct. This includes articulating the good habits that we should acquire, the duties that we should follow, or the consequences of our behavior for others.
- *Applied Ethics* − It involves examining precise controversial issues, likeenvironmental concerns and how whistleblowers will be treated.

Ethics in Knowledge Management comprises of valuing human beings. Ethics are also considered to be a simple matter, but that is a misconception. Much of ethics can be distilled down to boundaries that can help employees of an organization stay on the correct side of organizational policy and help clarify ethical issues.

Managing ethical liabilities involves four major processes −

- *Prevention*, using codes of conduct and standard operating practices,principles and providing landmarks, fences.
- *Detection*, using automated systems to accomplish and monitor ethicalcompliance and to verify appropriate use of company assets.
- *Reporting*, where employees are able to address unethical behaviors withoutsuffering any retaliation.
- *Investigation*, which often needs outside assistance in order to be thorough, fair and neutral.

CONCLUSION

The roles and responsibilities of various team members in the knowledge management are of special importance to the organization which cannot be ignored. Ethics in knowledge management can further modified for more improvement for effective functioning of knowledge management.

10.7 EXERCISE

- Critically evaluate ethics in knowledge management.
- Explain the role of a purchase manager working under knowledge management.
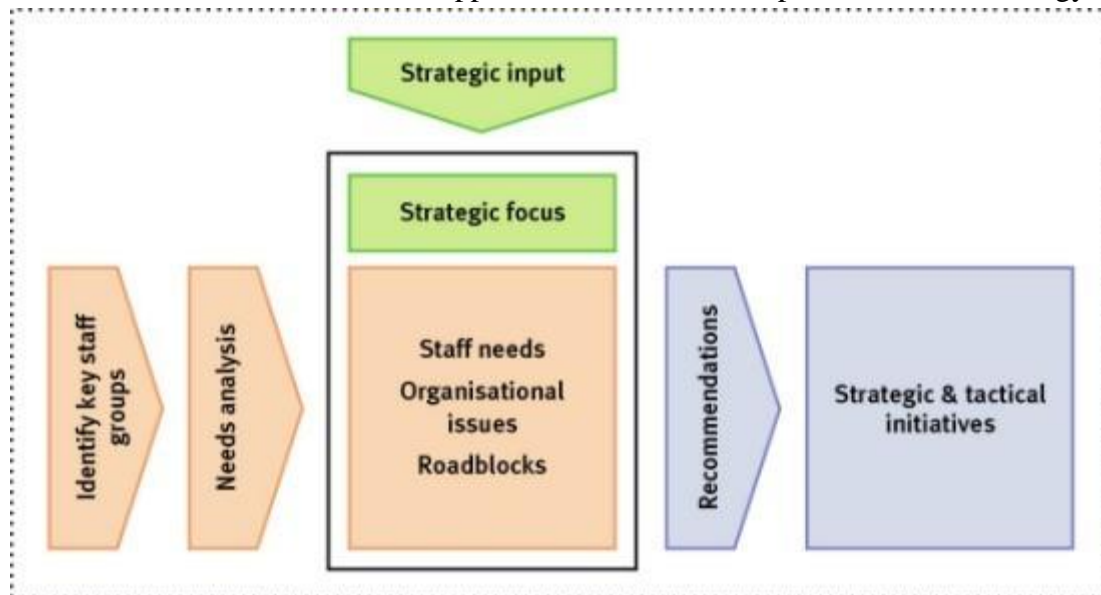- Explain the scope of political issues in knowledge management.

UNIT 11

11.1 Learning objectives

- To understand the concept of knowledge strategy To understand the strategic issues in KM
- To recognize the challenges of KM
- To have a detail view of future prospects of KM

11.2 DEVELOPING A KM STRATEGY

There are 2 main approaches to develop a KM strategy:

- Top-down: KM initiatives are based on the organization's overall strategic direction.
- Bottom-up: Research is conducted to identify key needs and issues. KM initiatives are developed based on these needs and issues.

Although each approach has its strengths and weaknesses, an effective KM program must encompass both (Robertson, 2004). If KM strategies are simply developed by top management without taking into account the staff's needs, there will be problems in getting the staff involved in the new processes. On the other hand, without management support, strategies will not be implemented successfully. According to Robertson (2004), the process of developing an effective *KM strategy is as followed*

First, the key staff groups, or those involved in the most important business activities, have to be identified.

Second, different information collecting techniques such as interviews, surveys, workplace observation, etc. are used to identify the needs and concerns of these groups.

An overall strategic focus must also be identified to provide a guide, or a framework for the KM project.

Based on the research findings, come up with a few alternatives, compare them and select the best alternative.
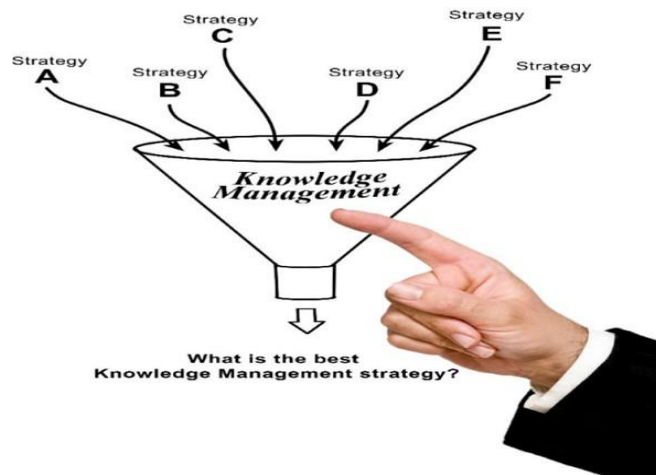
A good Knowledge Management strategy possesses the following components −

- *A Stated Business Strategy and Objectives* − It should have products orservices, target customers, referred distribution or delivery channels, characterization of regulatory environment, mission or vision statement.
- *A Description of Knowledge-Based Business Issues* − Need forcollaboration, need to level performance variance, need for innovation, and need to address information overload.
- *An Inventory of Available Knowledge Resources* − Knowledge capital,social capital, infrastructure capital.
- *An Analysis of Recommended Knowledge Leverage* − Points that briefswhat can be done with the above-identified knowledge and knowledge artifacts and lists Knowledge management projects that can be undertaken with the intent to maximize ROI and business value.

Collection / Overview of Knowledge Inventory

The knowledge inventory should list and connect all necessary information about the above mentioned: people, routines and procedures, content and technology. Thus, the knowledge inventory is a meta-information centre. Collecting and summarizing this knowledge inventory already is a critical first step where barriers will be encountered.

1. *Expert's Analysis*

The expert knowledge manager can be used to identify the first signs/avenues for enhance-ments – just from analyzing what is given in knowledge inventory. Considering that the successful implementation of KM can only be achieved when all players are properly involved in the process, the expert's external analysis is only an initial step in defining KM activities.

2. *Participatory Analysis*

Having the personnel aboard and giving them the space to reflect on their own situation, their own input and their own needs provides very valuable hints. In most cases, participation will

strengthen the process and the chances for a change. Participatory processes also help external advisors to understand how the organization 'functions' from within.

3. Proposal of Interventions

As a next step, personnel involved should work on creating ways to improve knowledge management in the future. Summarizing ideas that have been developed in a participatory manner, and proposing alternatives to resolve bottlenecks and realize enhancements, is one of the main tasks for a knowledge manager. These alternatives may consist of various approaches, like implementing new routines, collecting new information, using new technology, etc.

4. Conducting Selected Interventions

After – in best case: participatory – prioritization and decision on activities on how to enhance the management of knowledge, these activities should be implemented – thus creating a change in the inventory.

5. Knowledge Management System:

The formalized process of updating technologies, routines, organizational structures and personal skills would then be called 'Knowledge Management System'.

11.3 Challenges and Future of Knowledge Management

KM can be taken as a standalone discipline or as part of a broader education. KM courses and certifications exist at all levels, though it is usually taken as a graduate level subject. As with all subjects, the depth of the course will affect the kind of position that you are qualified for within the spectrum of KM-related positions (see "Knowledge Management Positions and Roles"). The types of educations that might include KM (but not mention it in the title) typically deal with subjects such as innovation, IM, technology management, intellectual capital, and so on.

Generally speaking, KM programs tend to have either a managerial/business or an IT focus. Since KM is now inextricably linked to technology at least to some degree, there will be a certain degree of overlap; however, the educational programs available in the various institutions do tend to have a "business school" or "IT school" focus. Similarly, positions in companies often reflect this. This means that some programs will focus more extensively on the details of KMS architecture, the design/implementation of expert systems or intranets, and so on, while others will focus more on the tacit nature of knowledge, on organizational culture issues, and on the management of people & teams.

Whichever kind of program you choose, it is important to remember that even though technology is an important part of KM today, it is never a solution in itself and it should be used carefully as part of a broader KM strategy.

In its basic form, knowledge management is about converting available raw data into understandable information. The information is then placed in a reusable repository for the benefit of any future need based on similar kinds of experiences. Knowledge management contributes towards streamlining the ideas problems, projects and deployment driving towards productivity. But, it more than just knows everything your organization knows, it's creating a synthesis between the people and the information to the point that the whole is more than the sum of the parts.

- *Security:* Providing the right level of security for knowledge management is key.Sensitive information should be shielded from most users, while allowing easy access to those with the proper credentials.

- *Getting people motivated:* Overcoming organizational culture challenges and developing a culture that embraces learning, sharing, changing, improving can't be done with technology. There is no use in launching a tool if there is no drive to share the knowledge.

- *Keeping up with technology:* Determining how knowledge should be dispensedand transferring it quickly and effectively is a huge challenge. Constantly changing structures mean learning how to be smart, quick, agile and responsive – all things a KM tool must be able to accomplish.

- *Measuring knowledge:* Knowledge is not something that can be easilyquantified, and is far more complex because it is derived out of human relationships and experience. The focus should be on shared purpose rather than results or efforts.

- *Overcoming shared leadership:* KM tools allow others to emerge as voices of power within an organization. Workers are given a "voice", which can sometimes cause internal conflict.

- *Keeping data accurate:* Valuable data generated by a group within anorganization may need to be validated before being harvested and distributed. Keeping information current by eliminating wrong or old ideas is a constant battle.

- *Interpreting data effectively:* Information derived by one group may need to bemapped or standardized in order to be meaningful to someone else in the organization.

- *Making sure information is relevant:* Data must support and truly answerquestions being asked by the user, and requires the appropriate meta-data to be able to find and reference. Data relevancy means avoiding overloading users with unnecessary data.

- *Determining where in the organization KM should reside:* Does KM fall underHR, IT, communications? This decision will determine what drives your knowledge sharing initiative and who will be responsible for maintaining the community.

- *Rewarding active users:* Recognizing the users who actively participate andcontribute to a knowledge database will not only encourage them to continue contributing, but will also encourage other users to join.

Some of major challenges faced by knowledge management function are as follows −

Security − Accommodating the right level of security for knowledgemanagement is key. Conscious information should be shielded from most users, while allowing easy access to those with the proper credentials.

Getting People Motivated − Overpowering organizationalculture challengesand developing a culture that embraces learning, sharing, changing, improving can't be done with technology.

Keeping up with Technology − Regulating how knowledge should bedispensed, transferring it quickly, and effectively is a huge challenge. Constantly changing structures mean learning how to be smart, quick, agile and responsive − all things a KM tool must be able to finish.

Measuring Knowledge − Knowledge is not something that can be easilyquantified, and is far more complex because it is copied out of human relationships and experience. The focus should be on distributed purpose rather than results or efforts.

Overpowering Shared Leadership − As a knowledge leader, the concernedperson has the responsibility to collaborate with fellow colleagues, persuade them to share their knowledge base for the benefit of the organization.

Keeping Accurate Data − It is also the basic function tokeep basic datawhich is accurate and authentic in nature.

11.4 The Future of Knowledge Management

In the much vaunted "hype cycle" of business trends and fads, knowledge management has already plumbed the depths of disillusionment. However as it edges towards maturity as a business discipline, it is spawning successors that are more relevant to our times, and that offer more direct business traction. The original premise of knowledge management was that if the most valuable resource of organisations is knowledge, then it should be leveraged and made more productive. This absolutely still holds. However the hype around knowledge management over the years has made what was always an amorphous and slippery concept even harder to grapple with and convert to business results. Today, managers need more focused frames, first to think about these issues, and then to take pointed action.

The rapid evolution of our intensely connected global economy means developing knowledge capabilities is a business imperative. The pioneers of knowledge management developed valuable tools and approaches. What they learned is now being applied in a range of emerging business disciplines. In the course of my travels and speaking and consulting engagements around the world, I have found that there are five key frames for leveraging knowledge in organisations that are emerging as the successors to knowledge management, and that executives find relevant, compelling, and actionable.

Social networks: Traditional organisational charts and business process mapstell you very little about how work is actually performed in an organisation. The reality is that work and knowledge flow in often highly informal patterns, based on who people actually communicate with in doing their work. Social network analysis is being applied by many leading companies around the world to gain insights into this "invisible organisation," and to design interventions that enhance the productivity and effectiveness of knowledge work.

Collaboration: In an economy based on highly specialised knowledge, collaboration is essential. Many of the approaches pioneered in knowledge management, such as communities of practice, are extremely relevant and useful. However what is critical now is a focus on fostering collaboration between individuals, teams, divisions, and organisations. Collaboration tools such

as video conferencing and web conferencing are becoming standard. Now companies are working as a top priority on developing the skills and culture that enable high-value collaboration.

However implementing a whole new set of businesses processes is also required to unlock the full potential of collaboration.

*Relevance***:** In a world of massive information overload, we want to see onlyinformation that is highly relevant to our work and interests. Among the many evolving technologies that support this, there are two key practices that will be central to enhancing information relevance. Implicit profiling learns from what we search for and look at, when, and for how long, to improve over time at understanding what we find useful. Collaborative filtering allows us to draw on the insights and discoveries of people who have similar profiles and interests to us. Amazon.com uses similar approaches in a basic form to point us to books and CDs we might like. The future lies in finding relevance for individuals from vast oceans of information.

Workflow: Knowledge work literally flows through an organisation. The nextdecade will see companies shifting their business processes to platforms that enable smooth and efficient workflow. Once this shift is made, you can reconfigure at will how work is done, and even allow clients and suppliers to participate in your processes, creating powerful lock-in. The emerging discipline of "workflow learning" integrates access to every type of learning-whether it is information, learning modules, or human experts-into the everyday flow of work, so these are available as and when they are needed.

*Knowledge-based relationships***:** In our global hyper-connected economy,the drive to commoditization is relentless. What this means is that an increasing proportion of business value resides in trusting, knowledge-based relationships, that allow companies to create value with clients, suppliers, and alliance partners in ways they could not do otherwise. Organizations are realizing that outsourcing and off shoring only work if there are effective flow of knowledge between companies. Professional firms are finding not only that client are increasingly demanding knowledge transfer, but also that engaging in knowledge-based relationships increases customer loyalty and profitability. Relationships are the future of society and business, and rich knowledge exchange will be at their heart.

CONCLUSION

There is vast scope of discussions and space for new strategic issues in knowledge management. The future of knowledge management is full of opportunities with few obstacles as well which needs due recognition to overcome it successfully.

11.5 EXERCISE

- Critically evaluate KM strategy
- Suggest measures for overcoming challenges in KM. Explain the future prospects of KM.