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BASIC FACTORS OF KNOWLEDGE MANAGEMENT

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Abstract

The aim of this study was to become acquainted with some of the basic factors of knowledge management. Knowledge management is a field that regards knowledge as the most important resource of an organization. Internationalization, development in technology and changes in the way organizations are managed require know-how and ways to increase it. Knowledge management is the key to competition in the future. Today there are numerous descriptions and definitions of knowledge management. Knowing what to manage as knowledge is a critical issue.

Discussion of knowledge management often begins with the definition of data, information and knowledge. The wide-based knowledge definitions highlight that there are two forms of knowledge: tacit and explicit. Tacit knowledge is linked to personal perspectives, intuition, emotions, beliefs, know-how, experiences and values. Explicit knowledge has a tangible dimension that can be more easily captured, codified and communicated.

Knowledge has always been managed, at least implicitly. The main point in managing knowledge is to understand how knowledge is formed and how people and organizations learn to use it. The interplay of tacit and explicit knowledge is a critical factor in organizational learning. Consequently, knowledge and learning are closely intertwined. A clear strategy helps to increase awareness and understanding of good knowledge management practice.

Knowledge creation is a natural phenomenon and the creation of new knowledge is essential to the survival of almost all businesses. Building a knowledge sharing culture is a key element of knowledge management.

Keywords		
Knowledge, knowledge management, learning organization.		
Note		

CONTENTS

1 INTRODUCTION

The field of knowledge management emerged in the early 1990s. Since then, knowledge management has been a popular issue; important and discussed amongst all disciplines at all levels, including the business, service, private and governmental sectors as well as libraries and information centres. (Jain 2009.)

Since the publishing of seminal books in the 1990s, e.g. by Ikujiiro Nonaka and Hirotaka Takeuchi, Thomas Davenport and Larry Prusak and others there has been a slew of academic papers and practitioner reports following. Each of these has attempted to push the limits of what is known about knowledge management in and around organizations.

Not enough is known considering the time invested in research and development. The furthermost limits have not been reached. Nevertheless, interest has increased rapidly during the last decade and shows no signs of abating. Knowledge management remains as a new field, or at least new things are yet to be articulated and identified about how organizations can better engage their knowledge assets. (Desouza 2005, 2,5.)

Large organizations know a lot of things, but they are not always aware what they know. Indeed, large global or even small geographically dispersed organizations do not know what they know. This kind of problems are faced by thousands of organizations — thousands of times a day — and it is the reason for the development of a concept known as knowledge management. (Burk 1999.)

Organisations are told that they will not survive in the modern knowledge era unless they have a strategy for managing and leveraging value from their intellectual assets. However, it has become clear that the term knowledge management has been applied to a very broad spectrum of activities designed to manage, exchange and create or enhance intellectual assets within an organization, and that there is no widespread agreement on what knowledge management actually is. (Haggie & Kingston 2003.)

Knowledge in the organization can be applied to all levels of management (strategic, tactical and operational), policies, company culture, and human resources. Knowledge, in the area of marketing, can be related to markets, competition, customers, sales, distribution channels and target groups. In a free market economy

environment, knowledge is the factor with which entrepreneurs can distinguish themselves from their competitors. (Papoutsakis 2009.) Consequently, the importance of knowledge for the competitiveness of companies, organizations and even economies is widely accepted nowadays.

As we enter the knowledge society, ownership of knowledge and information, as a source of competitive advantage is becoming increasingly important. However, information is only raw material; knowledge, upon which actions are based, is the value added and in the knowledge based company the value added comes from the members of the organization. Some firms have more information than others, and turning this into knowledge gives them an advantage in ascertaining market inefficiencies, putting them in a better position to innovate. (Johannessen et al 1999, 123.) Knowledge and information have become the medium in which business problems occur. As a result, managing knowledge represents the primary opportunity for achieving substantial savings, significant improvements in human performance, and competitive advantage.

Indeed, knowledge and information are becoming crucial core assets for businesses, who have to learn to handle these assets in new ways. Organizations now find that they have to share information internally more efficiently and learn to adapt more quickly to external circumstances in order to retain their competitive advantage. (Hovland 2003, 3.)

Learning in organizations requires individual personal knowledge to be transformed into information that other members of the organization can use. Knowledge management refers to the process in which organizations assess the data and information that exist within them and it is a response to the concern that people must be able to translate their learning into usable knowledge. During the knowledge management process the knowledge goes through different changes and there are also knowledge losses, both desirable and undesirable, where undesirable losses should be minimised as much as possible. The need for organizations to become learning organizations grows. To be a learning organization requires knowledge management, which in turn is dependent of a learning organization. In future work this model aims to be a basis for developing guidelines for how to introduce a learning organization and knowledge management. (Aggestam 2006, 295-296.)

Knowledge-based organizations will not be limited by the physical constraints of an office environment operating between traditional working hours. Information technology will facilitate the relaxation of these physical constraints. The "office on the move" will become a reality. (Klein & Methlie 1990, 446.)

Today's expectation is that everyone is "on" all the time – as evidenced by the various messages expressing annoyance when voicemails are not responded promptly or e-mails are not acknowledged. Knowledge management represents one response to the challenge of trying to manage this complex, information-overloaded work environment. Furthermore, we are doing more and we are doing faster, but we also need to work smarter as knowledge workers, adopting an increased pace and workload. Today's work environment is more complex because we now need to attend daily to the increase number of subjective knowledge items.

Thus each organization should define knowledge management in terms of its own business objectives. One way of accomplishing this is concept analysis. Knowledge management is all about applying knowledge in new, previously unencumbered or novel situations. The knowledge management generation to date have focused first on containers, next on communities and finally on the content itself. Finally, knowing what to manage as knowledge is a critical issue.

Due to a changing business environment of today, organizations are facing challenges of global competitiveness. Furthermore, organizations are confronted with issues such as fast technological changes, product lifecycle shortenings, downsizing and high market volatility. In order to cope with these challenges, organizations need to be able to manage knowledge.

Understanding knowledge is the first step to managing it effectively. It is also important to understand how knowledge is formed, and how people and organizations learn to use it.

The work of Nonaka and Takeuchi (1995) is well-known and it is concerned with the management of knowledge that focuses on generation and creation of knowledge. There is a major environmental context associated with this knowledge and an appropriate definition of knowledge is that it is information embedded in

environmental context so that the information can be used successfully for decision related purposes.

Tacit and explicit knowledge are each critical factors of the Nonaka and Takeuchi theory of organizational knowledge creation. The interaction of tacit and explicit knowledge forms the four stages of knowledge conversion (socialization, externalization, combination, and internalization) identified by these authors and which result in different knowledge content. Individual and group knowledge are not distinct here, but are captured in the theory as the ontological dimension that relates to the knowledge creation entities.

Knowledge management is a discipline which considers knowledge as the most important resource of an organization. It also considers knowledge as a strategy, which objective is to collect, manage and put knowledge in action, so that it circulates and develops continuously.

Knowledge management is a current issue, and according to literature, in the future knowledge management might have many applications in an organization's practical working life. There is not a theoretical and united model of knowledge management, which makes it difficult to explore the concept in practice. Therefore, the aims of this study are:

1. To define the concept "knowledge management".
2. To clarify other concepts closely related to knowledge management.
3. To examine the strategic basis of knowledge management.

This thesis is based on literature and on earlier researches and the reader will get an overview about knowledge management and other concepts that are associated and linked with it. First, in the second chapter, the key term, knowledge management, is defined and on the next chapter, other basic concepts i.e. data, information and knowledge are identified. The fourth chapter is devoted to learning organization and the fifth chapter is concerned with the steps that need to be taken while acquiring a knowledge management strategy and among other things it presents the Nonaka and Takeuchi knowledge spiral. The sixth chapter is about conceptualizing knowledge management and it introduces techniques to manage knowledge. The final, seventh, chapter concludes the thesis and e.g. proposes one approach on how the effects of knowledge management could be tested in a real environment.

The reason that I chose the topic "Basic factors of knowledge management" for my thesis is that e.g. internationalization, development in technology and changes in the way organizations are managed, require know-how and ways to increase it. Knowledge management is a contemporary topic here in Finland and everywhere else in the world. I wanted to find out what factors are related to knowledge management, as it is the key to competition in the future.

2 KNOWLEDGE MANAGEMENT

The world we live in today, and the one that awaits us in the future, can be characterized as insecure and uncertain. Organizations must employ in protecting and managing their most valuable resource – knowledge. (Desouza & Vanapalli 2005, 97.)

Knowledge management can be a problematic term because it means different things to different people. There is no universal definition of knowledge management, just as there is no agreement on what constitutes knowledge in the first place. Nevertheless, knowledge management is by no means an exact science and it makes little sense to prescribe activities tightly from a theoretical standpoint for people who often in widely differing environments are striving to come in terms with the practicalities of knowledge management.

A key aspect of knowledge management is that knowledge within an organization is treated as a key asset. A simple phrase that encapsulates a core aspect of knowledge management is getting the right knowledge to the right people at the right time in the right format. Consequently, knowledge management refers to a multi-disciplined approach in achieving organizational objectives by making the best use on knowledge. Knowledge management focuses on processes such as acquiring, creating and sharing knowledge and the cultural and technical foundations that support them.

Knowledge management is in a state of high growth, especially among the business world. As the performance metrics of early adopters are documenting the substantial benefits of knowledge management, more organizations are recognizing the value of leveraging organizational knowledge. Still the term knowledge management is not easy to define. Today there are numerous descriptions and definitions of knowledge management.

As an answer to the question what knowledge management is Sveiby (2001) answers that to him knowledge management is the art of creating value from intangible assets. He underlines that the realization and the key in unlocking the value of knowledge is people. The issues that he calls people-tracks are about how to maximize the ability of the people in an organization to create new knowledge and how to build environments conducive to knowledge sharing. The questions are how do we maximize the

knowledge created by our people and how do we create innovation enhancing environments. Investment along the people-track involves investing in people, recruitment, the office environment etc. The bandwidth of human infrastructure is the trust between people and between management and employees. The human infrastructure requires investment. Human infrastructure investment means money spent on people meeting each other in person, spending time on proper dialogue, creating environment without fear etc. (Sveiby 2001.)

According to Gill (2006, 227-228) knowledge management is concerned with people, learning, communication, using knowledge from various sources and developing a culture of knowledge sharing. Whereas Aggestam (2006, 295) describes that knowledge management is about managing knowledge.

McShane and Von Glinow (2005) regard that knowledge management is much more than the organization's stock of knowledge. It is a process that develops an organization's capacity to acquire, share, and use knowledge more effectively. This process is often called organizational learning because companies must continuously learn about their various environments in order to survive and succeed through adaptation. The capacity to acquire, share, and use knowledge means that companies have established systems, structures, and organizational values that support the knowledge management process. (McShane & Von Glinow 2005, 23-24.)

Hariharan (2005) states that while knowledge management has many definitions, for most business organizations, knowledge management is what knowledge management does – for business results and for creating an organizational culture of uninhibited sharing and replication of knowledge. Hariharan continues that knowledge management is a tool to achieve business objectives better and faster through an integrated set of initiatives, systems and behavioral interventions – aimed at promoting smooth flow and sharing of knowledge relevant to business, and elimination of re-invention.

Burk (1999) considers knowledge management to be the process of capturing and sharing a community's collective expertise in order to fulfil its mission. Knowledge management takes advantage of an organization's most valuable asset - the collective expertise of its employees and partners. (Burk 1999.)

According to Newman (1991) knowledge management is the collection of processes that govern the creation, dissemination and utilization of knowledge. Knowledge management is neither a technology thing nor a computer thing. If we accept the premise that knowledge management is concerned with the entire process of discovery and creation of knowledge, dissemination of knowledge, and the utilization of knowledge, we are strongly driven to accept that knowledge management is much more than a technology thing and that elements of it exist in each of our jobs. (Newman 1991.)

Barclay and Murray (2000) define knowledge management as a business activity with two primary aspects. The first one is to treat the knowledge component of business activities as an explicit concern of business reflected in strategy, policy, and practice at all levels of the organization. The second one is to make a direct connection between an organization's intellectual assets — both explicit, recorded, and tacit, personal know-how — and positive business results. In practice, knowledge management often encompasses identifying and mapping intellectual assets within the organization, generating new knowledge for competitive advantage within an organization, making vast amounts of corporate information accessible, sharing of best practices, and technology that enables all of the above — including groupware and intranets. (Barclay & Murray 2000.)

Davenport et al (1998) conclude that effective knowledge management is neither panacea nor bromide. It is one of the various components of good management. Sound planning, savvy marketing, high quality products and services, attention to customers, the efficient structuring of work and the thoughtful management of an organization's resources are not diminished in importance by the acknowledgement that knowledge is critical to success and needs to be managed. At the margin, however, when a business faces competitors that perform well on those other dimensions, the difference between success and failure may well turn on how effectively it manages its knowledge. (Davenport et al 1998, 56.)

Above all, knowledge management provides benefits for individual employees, for communities of practice and for the organization itself. Knowledge management helps people to do their jobs and save time through better decision making and problem solving. Knowledge management also helps in avoiding and repeating past mistakes. Additionally, knowledge management helps people to compare experiences and draw

out common issues and challenges. Knowledge management influences policy and strategic thinking by rooting them in experience. In particular, knowledge management improves the cost and quality of existing products or services and it strengthens and extends current competencies through intellectual asset management. Knowledge management improves and accelerates the dissemination of knowledge throughout the organization. Furthermore, knowledge management can help in developing strong networks among people. It also highlights good practices to be replicated elsewhere. Thus, there are many reasons why an effective system of knowledge management is important.

There are as many definitions of knowledge management as there are ways to use it but there is no consensus on what knowledge management is. Indeed knowledge management is hard to define precisely and simply. It is a broad concept that addresses the full range of processes by which an organization deploys knowledge - involving the acquisition, retention, storage, distribution and use of knowledge. Thus, knowledge management should simply be one of many cooperating means to an end, not the end in itself.

3 BASIC CONCEPTS AND TERMS

The force behind the origin of knowledge management was the information explosion. Typically, for example, every organization generates large amounts of data and information. Without effective management it is difficult to identify and locate the information required in a specific situation. As the next step, knowledge management appeared as a strategy to develop organizational knowledge and capacity to derive relevant knowledge from information. That is the reason knowledge is portrayed as the transformation of information: information is a building block of knowledge which is the refined, relevant and actionable output of information. (Jain 2009.)

Discussion of knowledge management often begins with definition of data, information and knowledge and because those terms are often used interchangeably by business world it is now necessary to distinguish between data, information and knowledge.

Knowledge is built up from data and information as well as from prior knowledge. Data has no meaning or significance on its own whereas information is data which has meaning because of a relational connection. In other words, information is data which have been processed to be useful. Information aims at providing answers to the questions who, what, where and when. It is worth noting that although information is intended to be useful, it is not necessarily so. Merely aggregating data and identifying relationships between variables do not guarantee utility. Knowledge aims to answer the question how. Developing new knowledge from what already exists to answer the question why may be defined as understanding. However, while knowledge is a necessary prerequisite for understanding, the availability of appropriate knowledge does not guarantee understanding. (Sensky 2002.)

3.1 Data

Data is the transduced outputs of sensors. For published technical text, data is the text representations of inputs to the human mind from experiments, theoretical studies, computer studies, and internally generated ideas. The human mind becomes the transducer, deciding what data to represent as text, and how the data will be represented. (Kostoff 2005, 12.)

Data is considered as a coded resource of operations, it is transformed into information when it is integrated into a relevant context. It gains relevance and meaning relative to an integrating system. (Fuchs 2004.)

Data is a meaningless point in space and time without reference to neither. It is like an event or a word out of context, the key concept being out of context. And since it is out of context, it is without a meaningful relation to anything else. The pieces of data may represent information, yet whether or not it is information depends on the understanding of the one perceiving the data. Information is quite simply understanding the relationships between pieces of data or between pieces of data and other information. While information entails an understanding of the relations between data, it generally does not provide a foundation for why the data is what it is, nor an indication to how the data is likely to change over time. Information has a tendency to be relatively static in time and linear in nature. Information is the relation between data and, quite simply, is what it is, with great dependence on context for its meaning and with little implication for the future. Furthermore, in an organizational context, data represents facts or values of results and relations between data and other relations have the capacity to represent information. Patterns of relations of data and information and other patterns have the capacity to represent knowledge. For the representation to be of any utility it must be understood and when understood the representation is information or knowledge to the one that understands. (Bellinger 2004.)

3.2 Information

Information is the fusion of data - the creation of the network that "connects the dots" that data represent - and it incorporates both the data and the relationship among data. For textual data, information incorporates the patterns and quantitative relationships among words, phrases and grammatical structures. (Kostoff 2005, 12.)

The most important aspect of information is not whether it is complex or simple, or produced quickly or slowly, or gained or lost over time, or whether there is a great or a small amount of it. All of these are undoubtedly important, but the most important aspect of information is whether its influence on behaviour enhances the ability of the system using it to adapt. And this ability to adapt, in turn, is most likely to be

enhanced if the information itself actually corresponds to the reality of the system's environment. (Firestone & McElroy 2004.)

Information can be anything that can be digitised, while knowledge is the capacity to act effectively. Knowledge is much more than information and knowledge sharing is not information sharing. Considering the knowledge creation as an act of human being, knowledge management systems must involve people and encourage them to think together and to take time to articulate and share information and insights that will be useful to others in their community. (Gümüs & Hamarat 2004.) Thus, knowing is a human act whereas information is an object that can be field, stored and moved around.

Information focuses on the collection, structuring and processing of data. Reliable and timely data is important for knowledge management, but it is only one part of the picture. Knowledge management may be derived from information, but it also implies an analysis of the information and data and most of all, an understanding of that analysis. It also enables the application of that understanding in future practice.

Information is transformed into knowledge when it is integrated into a context of experience. Knowledge is information embedded into experience. Information is a general concept that can be found in all self-organizing physical, biological and social systems. In knowledge management information is confined to the social realm and this is a narrow concept of information. In a human living system, data is a manifestation of information, when it is interpreted and integrated into the cognitive system it is transformed into knowledge and that is embedded into practical experienced situations is transformed into practical knowledge. The triad is not data-information-knowledge, but data-knowledge-practical knowledge as a manifestation of information in the human realm. (Fuchs 2004.)

3.3 Knowledge

There is no easy way to usefully define a concept as complex as knowledge. Nickols (2003) points out that if claims are being made that knowledge can be managed and if the term knowledge management is to have any meaning and credence at all, we must be clear about what we mean by the knowledge in knowledge management.

Knowledge is derived from information but it is richer and more meaningful than information. Knowledge includes familiarity, awareness and understanding gained

through experience or study, and results from making comparisons, identifying consequences and making connections.

Firestone and McElroy (2004) describe knowledge as a tested, evaluated and surviving structure of information - for example DNA instructions, synaptic structures, beliefs or claims - that may help the living system that developed it to adapt.

Fuchs (2004) postulates that knowledge is a manifestation of information in the human social realm. Knowledge does not exist in nature as such but it is a human and cultural product. The author continues that knowledge exists both in the human brain and in social structure and artefacts. It has subjective and objective aspects that are mutually connected. Subjective and objective knowledge is constituted in social practices of active, knowledgeable human beings; knowledge is related to human practice. (Fuchs 2004.)

Davenport et al (1998) regard knowledge as information combined with experience, context, interpretation and reflection. It is a high-value form of information that can be applied to decisions and actions. Knowledge and information may be difficult to distinguish at times; both are more valuable and involve more human participation than the raw data on which we have lavished computerization during the past forty years. Given the importance of such an asset, it is not surprising that organizations everywhere are paying attention to knowledge - exploring what it is and how to create, transfer and use it more effectively. Knowledge management, in particular, has recently blossomed. (Davenport et al 1998, 43.)

Kostoff (2005) regards knowledge as the placement of information in its larger context. It is a necessary condition for understanding; without context, there is little understanding. For technical text, knowledge allows the text patterns and quantitative relationships to be interpreted within the context of the over-arching technical issues. (Kostoff 2005, 12.)

According to Wilson (2002) knowledge is defined as what we know. Knowledge involves the mental processes of comprehension, understanding and learning that go on in the mind and only in the mind, however much they involve interaction with the world outside the mind and interaction with others. Whenever we wish to express

what we know, we can only do so by uttering messages of one kind or another - oral, written, graphic, gestural or even through body language. Such messages do not carry knowledge, they constitute information, which a knowing mind may assimilate, understand, comprehend and incorporate into its own knowledge structures. These structures are not identical for the person uttering the message and the receiver, because each person's knowledge structures are biographically determined. Therefore, the knowledge built from the messages can never be exactly the same as the knowledge base from which the messages were uttered. (Wilson 2002.)

Gundry and Metes (1996) regard knowledge as a human capability rather than a property of an inanimate object such as a book or computer record. The authors consider knowledge as a personal capability like a skill, experience or intelligence, like a capability to do or to judge something, now or in the future. This capability can be acquired by an individual as a result of reading, seeing, listening to or feeling physically or emotionally something. But what is read, seen, heard or felt is not the knowledge, rather it is the medium through which knowledge may be transferred. The authors recognize that knowledge is the result of a personal transform. (Gundry & Metes 1996.)

Marchand (1998) (cited in Hovland 2003) argues that while knowledge is personal and resides in people, information is embodied in written documents and verbal messages. Information always encompasses an act of transfer between people. It is through information that we develop new knowledge. Once this relationship between knowledge and information has been established, Marchand suggests that the processes of conversion from information to knowledge and vice versa ought to be key parts of any business strategy. (Hovland 2003, 38-39.)

Weiss and Prusak (2005, 41,49) state that knowledge visualization means showing or displaying knowledge in ways that help people to navigate better in a knowledge environment and act on it. Visualizing knowledge is especially important in a world where it is increasingly difficult to recognize patterns because knowledge is more and more complex and interrelated. Knowledge visualization is an important future direction for companies looking to derive greater value from both their information and knowledge assets. (Weiss & Prusak 2005, 41,49.)

Grey (1996) summarizes his views on knowledge by saying that knowledge is the full utilization of information and data, coupled with the potential of people's skills, competencies, ideas, intuitions, commitments and motivations. Grey continues that in today's economy, knowledge is people, money, leverage, learning, flexibility, power and competitive advantage. Knowledge is more relevant to sustained business than capital, labor or land. Nevertheless, knowledge remains as the most neglected asset. Knowledge is more than justified true belief and it is essential for action, performance and adaption. Knowledge provides the ability to respond to novel situations. The author emphasizes that knowledge is action, focused on innovation, pooled expertise, special relationships and alliances. Knowledge is value-added behaviour and activities. For knowledge to be valuable it must be focused, current, tested and shared. (Grey 1996.)

According to Wiig (1996) knowledge - the insights, understandings and practical know-how that we possess - is the fundamental resource that allows us to function intelligently. Over time, considerable knowledge is also transformed to other manifestations - such as books, technology, practices and traditions- within organizations of all kinds and in society in general. These transformations result in cumulated expertise and when used appropriately, increased effectiveness. Knowledge is one, if not the, principal factor that makes personal, organizational and societal intelligent behaviour possible. (Wiig 1996.)

In World Bank report, named World Development Report 1998/99, (cited in Hovland 2003) knowledge is seen like light. Weightless and intangible, it can easily travel the world, enlightening the lives of people everywhere. Knowledge also illuminates every economic transaction, revealing preferences, giving clarity to exchanges, informing markets. And it is the lack of knowledge that causes markets to collapse, or never to come into being. (Hovland 2003, 57.)

4 LEARNING ORGANIZATION

Knowledge and learning are closely intertwined. Challenges and advantages of knowledge management are naturally related to challenges and advantages in learning organizations.

A learning organization is concerned with the whole organization which in turn is a part of the world. As a subsystem of the world the organization must interact with other subsystems of the world and also manage external factors outside the organization, e.g. competitors and customers. This is necessary for survival. Knowledge management which is performed in an organization is a subsystem of the organization. Knowledge management is therefore more focused on internal factors inside the organization. (Aggestam 2006, 298.)

Learning is the process of finding or inventing patterns from chaos. If we start with an ordered understanding we can not learn, because we already know the patterns and relationships. Thus, when people complain about the chaos and lack of structure in a free-form intranet, one should not think of it as a problem, but as a fertile base of materials for organizational learning. Knowledge, on the other hand, is the repository of what we already have learned. It may be explicit, as in books or intranet content or it may be implicit as in relationships and processes that may not be documented. Learning and knowledge are not organizational functions as they happen to and through individual people. An organization only learns when an individual is able to impart the understanding or change the behavior of the organization as a whole. Thus a learning organization must encourage and support this type of effect from its individual learners. If the individual is learning, insights or experiences are explicitly captured in a way they can be shared with the rest of the organization, and then it becomes part of the organizational knowledge base. One point worth mentioning is that unlike a personal knowledge base, an organizational knowledge base requires explicitly captured information to be shared. In learning organizations, as in biology, the largest source of learning is recombination. (Telleen 1997.)

Learning is essential for open systems thinking and knowledge management because the organization's survival and success depend on employees learning about the external environment. People acquire skills and knowledge through learning

opportunities, which gives them the competencies to perform tasks more effectively. Learning clarifies role perceptions and employees develop a better understanding of their tasks and relative importance of work activities. Learning also motivates employees. Employees are more motivated to perform certain tasks because they learn that their effort will result in desired performance. When employees learn, they acquire both explicit and tacit knowledge. (McShane & Von Glinow 2005, 93.)

The true value of knowledge can only be realized when it is integrated into learning by individual, a team or an organization. Learning organizations possess two characteristics. Firstly, the organization is skilled at creating, acquiring and transferring knowledge and secondly, it can demonstrate changes in its behaviour in the light of new knowledge. The same two sets of characteristics apply equally to learning individuals or teams. Of these characteristics, the absolute prerequisite is the potential to show change in behaviour. Learning can be exhibited without effective knowledge management, but then it is likely to be haphazard. (Sensky 2002.)

An organization is a group of individuals. A group has evolved a culture, with the strength of that culture dependent on the length of group's existence, the stability of the memberships of individuals in the group, and the emotional intensity of the actual historical experiences they have shared. Consequently, it takes time to foster a new culture, e.g. a learning one. A learning organization has a culture that supports learning and innovations both by individuals and by the organization itself. The environment promotes a culture of learning, a community of learners, and it ensures that individual learning enriches and enhances the organization as a whole. The process of learning must ultimately be made part of the culture, not just be a solution to a given problem. (Aggestam 2006, 296.)

The work of Peter Senge, especially his book The Fifth Discipline has been widely referred to by, for example by Goldsmith 1996, Hovland 2003, Ghalib 2004, Aggestam 2006. Senge has focused on the learning organization and brought a cultural dimension to managing knowledge. He has outlined five disciplines of practice that organizations need to engage with in order to become generative learning organizations. Those are personal mastery, mental models, shared vision, team learning and systems thinking.

The first discipline is personal mastery. Senge (1990) (cited in Hovland 2003) uses this term to refer to institutionalised conditions for personal learning within an organization. It is related to issues such as staff empowerment and the development of staff potentials. The second discipline is mental models. In an organization, people will usually have different internal pictures of the world and how their organization ought to operate. Senge draws a distinction between tacit and explicit knowledge, and argues that it is important for people to make their mental models explicit so that they can be discussed openly and modified. The third discipline is shared vision. This discipline states that there is a need for a certain degree of consensus within an organization and at the same time the need for inspiration and motivation. Senge suggests that both these concerns can be addressed through developing a shared vision. The fourth discipline is team learning. In organizations today teams are becoming increasingly important actors. Senge states that teams, not individuals, are the fundamental learning units in modern organizations. Unless the team can learn the organization cannot learn. This requires improved interpersonal communication between team members, a reduction in defensive behaviour, and openness to creative thinking. Finally, the fifth discipline is systems thinking. It is the most important of these disciplines. This is the key to Senge's model of organizational learning. He suggests that it is crucial to examine the interrelationships between parts of an organisation rather than the parts themselves. While a focus on individual parts would only obscure the need for larger change, a focus on the whole system makes it possible to identify how organisational change might be brought about. (Hovland 2003, 51.)

O'Malley and O'Donoghue (2001) (cited in Hovland 2003) underline that the fifth discipline, systems thinking, encourages all members of an organization to incorporate a systemic view into everything they do – i.e. to reflect on how their knowledge and actions interact with other activities in the organisation. (Hovland 2003, 47.) Ghalib (2004) describes that the system according to Senge is bound by invisible fabrics of interrelated actions and can be understood only by contemplating the whole and not just any individual part of the pattern. The author continues that Senge describes systems thinking as a conceptual framework, a body of knowledge and tools that has been developed to make the patterns clearer and to help us see how to change them effectively. (Ghalib 2004.)

Senge´s five disciplines are integral components in a learning organization, providing tools and methods that are applicable and useful in the process of organizational learning. Each of the five disciplines can be thought of on three levels: practices, principles and essences. A learning organization can be regarded as the system, which includes the subsystem knowledge management. This is in accordance with Senge's idea that systems thinking must be the conceptual cornerstone. Consequently, a change in knowledge management affects the organization, and a change in the organization, e.g. the culture, affects knowledge management. (Aggestam 2006, 296,298.)

In essence, a learning organization is one that values knowledge and recognises it as central to organizational development. Individuals' knowledge is nurtured, but it is understood that the organization should be able to develop this into corporate knowledge. (Sensky 2002.) Aggestam (2006) suggests that in a simplistic way we can say that learning organization and knowledge management are concerned with the same thing, but have different aims and are on different levels. Namely, learning implies changes in knowledge.

The interplay of tacit and explicit knowledge is a critical factor in a learning organization. It is the role of the managers to contribute to this interplay of tacit and explicit knowledge and to act as knowledge brokers within the organization. The primary task of the managers is the conversion of tacit, human capital into explicit, structural capital. (Irick 2007.) Goldsmith (1996, 231) underlines that the learning organization will need to be led by people who model continuous learning in their own day-to-day behaviour. Furthermore Aggestam (2006) emphasizes that learning organizations demand a new view of leadership, leader as a designer. The author also states that learning organization literature discusses mainly leadership and knowledge management literature discusses management. Leadership creates and changes culture and management acts within a culture. (Aggestam 2006, 296, 298.)

As stated by Hailey and James (2002) (cited in Hovland, 2003) at the heart of a learning organization is a learning leader. Leaders are, of course, particularly influential members of an organization and their opinions and moods are quickly picked up by other members. Their views therefore permeate most organizational processes. The most important characteristics of the learning leader is the ability to

understand and work within a changing and complex environment. (Hovland 2003, 30-31.)

McShane and von Glinow (2005, 103) highlight that learning is an important part of knowledge management and it influences ability, role perceptions and motivation. Moreover, Aggestam (2006) says that a learning organization needs to manage knowledge effectively and effective knowledge management is what needs to be done in order to fulfil this requirement. Knowledge management aims at supporting the distribution of knowledge, of course in turn aiming to support learning. Learning organization requires knowledge management and knowledge management assumes a learning organization. (Aggestam 2006, 299.)

Specifically, the organizations that will excel in the future will be the ones that discover how to tap people's commitment and capacity to learn at levels in an organization. Organizational culture plays a critical role in creation of a learning atmosphere with eventually proves to be highly instrumental in creating and distributing knowledge.

5 TOWARDS A KNOWLEDGE MANAGEMENT STRATEGY: TACIT VS. EXPLICIT KNOWLEDGE

Nonaka and Takeuchi describe differences in how Westerners and Japanese often view knowledge. They state that Japanese view knowledge as being primarily tacit, something that is not easily seen or expressible. Western culture, on the other hand, has a strong focus on explicit knowledge, which can be expressed in words and numbers and is more easily communicated than tacit knowledge. They describe that the contrast between these perceptions on knowledge is being rooted in culture. In the Western culture, there has been a long history of separating knowledge from the knower, but this is not the situation in Japanese traditions. Nonaka and Takeuchi adopt a traditional definition of knowledge being a justified personal belief. Belief is critical to the concept of knowledge because it is closely tied to an individual's or group's values and beliefs. Knowledge derives, from this perspective, in the minds and bodies of individuals. Very important to the concept of knowledge is knowing. Knowing and learning capture the dynamic aspects of knowledge. A knower, one who knows, can be said to possess actionable knowledge. (Nonaka & Takeuchi 1995.)

Knowledge management owes its inspiration to the work of the philosopher Michael Polanyi and the Japanese organization learning expert Ikijuro Nonaka. Both theorists argue that knowledge has two forms. First one being the kind that is reflected in a person's internal state as well as in that same person's capacity for action and the second one being the kind that has been articulated and frequently recorded. This brings us to the concepts of explicit and tacit knowledge.

5.1 Tacit vs. explicit knowledge

Explicit knowledge is the part of our knowledge base which can be easily communicated to others as information. Explicit knowledge can be objective and intersubjective. (Johannessen et al 1999, 129.)

Nonaka and Takeuchi refer to explicit knowledge as formal and systematic and offer product specifications, scientific formulas and computer programs as examples. Another example of explicit knowledge that everyone is familiar with is the formula for finding the area of a rectangle i.e., length, time, width etc. Other examples of explicit knowledge include documented best practices, the formalized standards by

which an insurance claim is adjudicated and the official expectations for performance set forth in written work objectives. (Nonaka & Takeuchi 1995.)

Explicit knowledge is organized and can be communicated from one person to another. The information one receives during a lecture is mainly explicit knowledge because the instructor packages and consciously transfers it. Explicit knowledge can be written down and given to others. However, explicit knowledge is really only the tip of knowledge iceberg. Majority of what we know is tacit knowledge. It is common that a person says to another that "I can't tell you how to do this, but I can show you". (McShane & Von Glinow 2005, 93-94.)

Nickols (2003) argues that explicit knowledge is knowledge that has been articulated and more often than not captured in the form of text, tables, diagrams, product specifications and so on. Papoutsakis (2009) describes that explicit knowledge is the obvious knowledge found in manuals, documentation, files and other accessible sources.

In turn, Irick (2007) argues that tacit knowledge has been defined as one's personal, internal or interior knowledge as opposed to the external and physical knowledge that has been written down or recorded as an artefact.

Tacit knowledge is the practical knowledge used while performing a task. Tacit knowledge is in the business context practical, action oriented, experience-based, contextual linked and personal, but not subjective or relative. It is objective, i.e. empirically testable and checkable, in the sense that it is objective in its consequences. This means that the work done with the use of tacit knowledge can be tested for quality, durability, reliability and for reductions in the cost of production. Tacit knowledge is as real as explicit knowledge, but the processes to get this kind of knowledge, i.e. tacit knowledge, rely on awareness of details we cannot specify or test in any scientific way. Tacit knowledge is embedded in the practical matrix and it expresses itself through practical knowledge, reflected over time through experience in the same context. The practical matrix is interwoven to a pattern which combines tacit knowledge to action, i.e. the integration and indwelling of experience with formal knowledge, so that it is attainable but not easily comprehensible. (Johannessen et al 1999, 127,129.)

Tacit knowledge is not documented; rather it is action-oriented and known below the level of consciousness. Some writers suggest that tacit knowledge also includes the organization's culture and the implicit norms of team's. People know these values and rules exist, but they are difficult to describe and document. Tacit knowledge is acquired through observation and direct experiences. For example, airline pilots learn to operate commercial jets more by watching experts and practicing on flight simulators than through lectures. They acquire tacit knowledge by directly experiencing the complex interaction of behaviour with the machine's response. (McShane & Von Glinow 2005, 94.)

Tacit knowledge is found in the heads of organization's employees but it is more difficult to access and use (Papoutsakis 2009). Tacit knowledge includes skills, experiences, insight, intuition and judgement, relationships, norms, values and standard operating procedures. Because tacit knowledge is much harder to detail, copy, and distribute, it can be a sustainable source of competitive advantage. What increasingly differentiates success and failure is how well you locate, leverage and blend available explicit knowledge with internally generated tacit knowledge. Inaccessible from explicit expositions, tacit knowledge is protected from competitors unless key individuals are hired away.

Therefore, compared with explicit knowledge, tacit knowledge is more difficult to articulate or write down and so it tends to be shared between people thorough, for example, discussions, stories and personal interactions. Further, tacit knowledge cannot be reduced entirely to words; it is quite possible to acquire tacit knowledge through means other than verbal descriptions. Tacit knowledge, as opposed to explicit knowledge, is far less tangible and is embedded into an organization's operating practices.

It is commonly assumed that in order to use or otherwise manage knowledge, it must be converted, where necessary from tacit to explicit. This conversion is a major challenge for organizations, especially for those where the expert knowledge is carried out by individuals. (Sensky 2002.) Irick (2007) concludes that it is the role of the managers to encourage and support the creation and exchange of tacit knowledge.

5.2 Knowledge creation

One of the most widely accepted and widely quoted approaches to classifying knowledge from a knowledge management perspective is Nonaka's and Takeuchi's . Nonaka and Takeuchi model the process of organizational knowledge creation as a spiral in which knowledge is amplified through four modes of knowledge conversion. It also considers that the knowledge becomes crystallized within the organization at higher levels moving from the individuals through the group to organizational and inter-organizational levels. Nonaka and Takeuchi propose corresponding knowledge processes that transform knowledge from one form to another: from tacit knowledge to tacit knowledge, from tacit to explicit, from explicit to explicit and from explicit to tacit. (Nonaka & Takeuchi 1995.)

Nonaka and Takeuchi represent the four models of knowledge conversion that are created when tacit and explicit knowledge interact with each other. These four modes – socialization, externalization, combination, and internalization – constitute the engine of the entire knowledge-creation process. These modes are individual experiences and they are also the mechanisms by which individual knowledge gets articulated and amplified into and throughout the organization. The assumption that knowledge is created through the interaction between tacit and explicit knowledge allows the authors to postulate four modes of knowledge conversion (Figure 1). They are as follows: 1. from tacit knowledge to tacit knowledge, called socialization 2. from tacit knowledge to explicit knowledge, called externalization 3. from explicit knowledge to explicit knowledge, called combination and 4. from explicit knowledge to tacit knowledge, called internalization. (Nonaka & Takeuchi 1995, 57,62.)

	Tacit knowledge To Explicit knowledge	
Tacit knowledge From	Socialization	Externalization
Explicit knowledge	Internalization	Combination

Figure 1. *Four modes of knowledge conversion (Nonaka & Takeuchi 1995, 62).*

Socialization is a process of sharing experiences and thereby creating tacit knowledge such as shared mental models and technical skills. In the business setting, on-the-job training uses basically the same principle. (Nonaka & Takeuchi 1995, 62-63.) Fundamentally, socialization is the world where individuals share feelings, emotions, experiences and mental models.

Externalization is a process of articulating tacit knowledge into explicit concepts. It is a quintessential knowledge-creation process during what tacit knowledge becomes explicit, taking the shapes of metaphors, analogies, concepts, hypotheses, or models. (Nonaka & Takeuchi 1995, 64.) In other words, externalisation requires the expression of tacit knowledge and its translation into comprehensible forms that can be understood by others.

Combination is a process of systemizing concepts into a knowledge system. This mode of knowledge conversion involves combining different bodies of explicit knowledge. Individuals exchange and combine knowledge through medias such as documents, meetings, telephone conversations, or computerized communication networks. Reconfiguration of existing information through sorting, adding, combining, and categorizing of explicit knowledge can lead to new knowledge. Knowledge creation carried out in formal education and training at schools usually takes this form. An MBA education is one of the best examples of this kind. In the business context, the combination mode of knowledge conversion is most often seen when middle managers break down and operationalize corporate visions, business concepts, or product concepts. Middle management plays a critical role in the creation of new concepts through networking of codified information and knowledge. Creative uses of computerized communication networks and large-scale databases facilitate this mode of knowledge conversion. (Nonaka & Takeuchi 1995, 67-68.) Specifically, combination involves the conversion of explicit knowledge into more complex sets of explicit knowledge. In this stage, the key issues are communication and diffusion processes and the systemisation of knowledge.

According to Nonaka and Takeuchi (1995) internalization is a process of embodying explicit knowledge into tacit knowledge. It is closely related to learning by doing. When experiences through socialization, externalization, and combination are internalized into individuals' tacit knowledge bases in the form of shared mental

models or technical know-how, they become valuable assets. (Nonaka & Takeuchi 1995, 69.) Moreover, internalization of newly created knowledge is the conversion of explicit knowledge into the organisation's tacit knowledge.

5.3 The Nonaka and Takeuchi knowledge spiral

Organizational knowledge creation is a continuous and dynamic interaction between tacit and explicit knowledge. This interaction is shaped by shifts between different modes of knowledge conversion, which are in turn induced by several triggers (Figure 2). Firstly, the socialization mode usually starts with building a field of interaction. The field facilitates the sharing of members' experiences and mental models. Secondly, the externalization mode is triggered by meaningful dialogue or collective reflection, during which the usage of appropriate metaphors or analogies helps team members to articulate hidden tacit knowledge that is otherwise hard to communicate. Thirdly, the combination mode is triggered by networking newly created knowledge and existing knowledge from other sections of the organization, thereby crystallizing them into a new product, service, or managerial system. Finally, learning by doing triggers internalization. Tacit knowledge of individuals is the basis for organizational knowledge creation. The organization has to mobilize tacit knowledge created and accumulated at the individual level. The mobilized tacit knowledge is organizationally amplified through four modes of knowledge conversion and crystallized at higher ontological levels. Nonaka and Takeuchi call this a knowledge spiral, in which the interaction between tacit knowledge and explicit knowledge will become larger in scale as it moves up the ontological levels. Four modes of knowledge conversion describe the requirements of knowledge creation. The authors attempt to describe the individual inside the dynamic process when transforming tacit into explicit knowledge as individuals become amplified and part of the knowledge network. (Nonaka & Takeuchi, 1995, 70-72.)
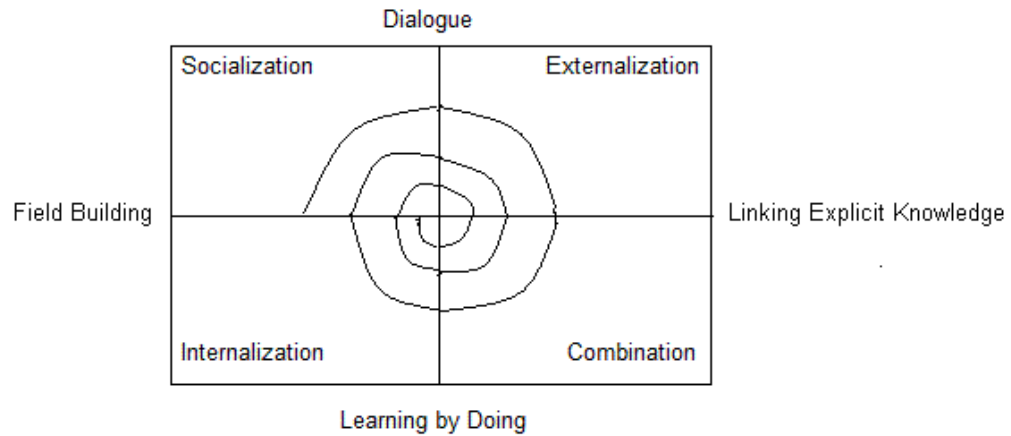
Figure 2. *The Nonaka and Takeuchi Knowledge Spiral (Nonaka & Takeuchi 1995, 71*

The Nonaka and Takeuchi knowledge management model allows everyone to understand how knowledge may be dealt with, transforming tacit knowledge into more explicit forms. Their knowledge management model, knowledge spiral, focuses on knowledge spirals that explain the transformation of tacit knowledge into explicit knowledge and then back again as the basis for individual, group and organizational innovation and learning.

As noted above, Nonaka and Takeuchi present a theory of knowledge creation that consists of four knowledge conversion phases: socialization, externalization, combination, and internalization. The conversion phase takes place in five steps: sharing of tacit knowledge, creating concepts, justifying concepts, building an archetype and cross-levelling knowledge. Critical to this theory is the concept of knowledge levels: individual, group, organizational, and inter-organization. Knowledge sharing primarily occurs during the socialization, externalization and combination phases. It does not generally occur during internalization. The importance of sharing in the creation of knowledge is captured in the concept of redundancy. Those concepts created by an individual or group will often need to be shared by other individuals who may not need the concept initially or immediately. During the socialization stage, sharing occurs primarily at the individual and group levels. In the externalization stage knowledge is codified and shared at the group and organizational levels. In the cross-levelling knowledge phase enterprises share knowledge both intra-organizationally and inter-organizationally. Knowledge creation is a natural phenomenon. However, within the context of an enterprise, there are often practices that are embedded in organizational culture, processes and strategies that

inhibit this process. In addition, there may be insufficient technological support to enable knowledge sharing, even when other organizational support is present, although this would represent an uncommon occurrence.

6 KNOWLEDGE MANAGEMENT STRATEGY

Knowledge management strategy practices should be closely linked to own assets, needs, mandate, mission, and goals, taking into account own values and ways of working. In fact, understanding these elements should be the starting point for any knowledge management strategy.

Indeed, a knowledge management strategy is simply a plan that describes how an organization will share and apply its knowledge and expertise. Knowledge management initiatives can begin - in reality begin - before there is a strategy. And the strategy is a way of consolidating, improving and systematizing existing activities.

One fact that does seem to be agreed on is that different situations require different knowledge management strategies. But the range of different knowledge management strategies can be bewildering and it is often unclear where to begin in choosing a strategy for a particular situation. (Haggie & Kingston 2003.) However, a clear strategy helps to increase awareness and understanding of good knowledge management practice.

Organizations are facing ever-increasing challenges, brought on by marketplace pressures or the nature of workplace. Many organizations are now looking at knowledge management to address these challenges. Such initiatives are often started with the development of a knowledge management strategy. To be successful, a knowledge management strategy must do more than just outline high-level goals such as become a knowledge-enabled organisation. (Robertson 2004.) Johannessen et al (1999, 121-122) describe that even though this seems simple and obvious, in reality many find implementation of good knowledge-based practices difficult. The authors conclude that it is not a quick fix, but rather a journey of different way of doing business.

The more that one firm's strategy resembles another firm's strategy the more two firms compete (Kotler & Armstrong 2004, 569). A strategy is not usually a goal or an objective or target. It is not a vision or mission or statement of purpose. It is about being different from rivals in some important way. (Rosenzweig 2007, 144.) And that it is also question in a knowledge management strategy. Namely, a winning strategy

must accurately designate what the organization will do better than anyone else in order to be the customer's choice (Bardwick 1996, 135).

The knowledge-based view of the firm focuses on an organization's ability to acquire, develop and share knowledge resources to formulate and execute its strategy. The knowledge-positions view suggests that organizations face opportunities and threats based on how their knowledge driving strategy compares with that of their competitors. Firms that take knowledge seriously treat it as a strategic resource. They recognize that knowledge can drive strategy and provide a basis for competitive advantage. By starting with a strategic analysis of knowledge resources, organizations can best identify which knowledge is most important to their competitive viability and direct their knowledge management and learning efforts in that direction. This will increase the chances of realizing long-term strategic value from those initiatives. However, until executives and knowledge management practitioners can engage in a conversation about knowledge from a strategic perspective, realizing long-term value will be more difficult. (Zack 2002, 9-10.)

A knowledge management strategy must answer three key questions: where are we now, where do we want to be, and how do we get there. A good knowledge management strategy can help organizations gain a communicable plan, first about where are we now, e.g. including the following questions: what kinds of knowledge do we produce, gather or store. What outputs have we created and how do we manage knowledge? How do our organization's culture and systems serve or hinder sound knowledge management? Secondly, where do we want to be, including also questions how do we plan to get there. In five years' time, how will a sound knowledge management strategy change our organization? So, that is an outline of what knowledge management will do for team or office and how it will help to meet their objectives. And finally, the third key question is how do we get there? What specific tools and practices will we use and how will we motivate people to change their practices? We must describe the specific actions that needs be taken to get to where you want to be. An action plan should cover the three elements of people, process and technology. (The RM Knowledge Translation Toolkit: A Resource for Researchers 2008.)

6.1 Methods to conceptualize knowledge management

Thus, a useful way to conceptualize knowledge management strategy is through people, processes, and technology. After all, it is people – human resources – who are the ones that create, share and use knowledge. Without taking into account the role people play in generating and sharing knowledge, knowledge management strategies are likely to fail. (The RM Knowledge Translation Toolkit: A Resource for Researchers 2008.)

Ghalib (2004) underlines that first, as already said above, knowledge roots from people and they are the ones that form the basis for newly created knowledge. Without people, there will be no knowledge. (Ghalib 2004.) In a knowledge management strategy one can ask how people can be motivated to change their practices and realign organizational culture towards a knowledge-friendly one. How does one increase the ability of an individual in the organization to influence others with their knowledge?

Furthermore, another useful way to conceptualize knowledge management strategy is processes. Their approach varies from organization to organization. There is no limit on the number of processes. One can ask what specific knowledge management tools and processes will be used. As Ghalib (2004) points out the capture, distillation, validation, transfer and dissemination of knowledge throughout the organisation are completed by applying certain processes and procedures.

And finally, third useful way to conceptualize knowledge management strategy is technology. Technology is a standardized and consistent reliable technological infrastructure that is able to support the appropriate tools on an organization-wide scale (Ghalib 2004). How will you develop the supporting technological infrastructure? Technology needs to be chosen only after all the requirements of a knowledge management initiatives have been established. Albers (2009) argues that technology infrastructure needs to have the appropriate capabilities to support business processes with knowledge dissemination.

All three elements, people, processes and technology, are not only necessary but also complementary to one another since knowledge management is an area, where all three elements overlap. In other words, to manage knowledge successfully a cultural,

organizational and technical infrastructure that enables knowledge process take place is required. (Ghalib 2004.)

Strategic architecture is of little value if it is not widely debated and ultimately understood by all employees (Hamel & Prahalad 1994, 122-123). Ståhle and Grönroos (2000, 226) also emphasize the same thing by saying that the strategy, if anything, must be shared and clearly communicated to the entire staff. Senge (1996, 41) underlines that no significant change will occur unless it is driven from the top. And he continues that there is no point in starting unless the CEO is on board, nothing will happen without top-management involvement.

Within the new competitive situation, one critical issue that companies are facing, is how to manage an unpredictable and unstable future. Since the future is basically unpredictable, evoking images, rather than established facts, will serve as our main guidance when venturing into the unknown. The more unpredictable and uncertain the world is, the more companies must rely on creative initiatives from employees to be able to create the desired future. There is no crystal ball which companies may use to look into the future, but there are creative ways they can use that may help to bring it about by actively pursuing their visions. It may or may not stand at the top, but it will always be a strategic responsibility to create and maintain visions to provide leadership functions in the turbo economy. (Johannessen et al 1999, 123.) So the question for top managers is, according to Hamel and Prahalad (1994, 35), how do they orchestrate all the resources of the firm to create the future?

Thus a successful knowledge management strategy requires a change in an organization's culture and behaviour. At the heart of this change would be recognizing the centrality of knowledge and how the organization must improve its means for creating, capturing, sharing and using it.

6.2 Techniques to manage knowledge

The knowledge modelling techniques that exist to support the use of the knowledge, along with traditional business management techniques, provide a starting point for managing the knowledge assets within a company. Techniques, which are often used for managing knowledge within an organization are for example SWOT (strengths,

weaknesses, opportunities, threats) analysis and The Balanced Scorecard (BSC) method of Kaplan and Norton.

Typically, a SWOT analysis is an instrumental framework for auditing an organization and its environment. The SWOT analysis is a tool for analyzing the internal strengths and weaknesses of a firm as well as the external opportunities and threats. The SWOT analysis provides information that is helpful in matching the firm's resources and capabilities to the competitive environment in which it operates.

The Balanced Score Card (BSC) has continued to increase its popularity. The Balanced Score Card places emphasis on the measurement of change within the four elements. Thus the Balanced Scorecard (BSC) method of Kaplan and Norton is a strategic approach and performance management system that enables organizations to translate a company's vision and strategy into implementation of working from four perspectives: financial (the strategy for growth, profitability and risk, viewed from the shareholder's perspective), customer (the strategy for creating value and differentiation from the customer's perspective), business processes (the strategic priorities for various business processes that create customer and shareholder satisfaction) and learning and growth perspective (the priorities to create a climate the supports organizational change, innovation and growth). (Gill 2006, 183.)

The balanced scorecard advocates a top-down approach to business performance management, starting with business strategic intent expressed through the organization down to operationally relevant targets. The focus with Balanced Scorecard approach is on the link and/or influences between its various components, which include business strategy, perspectives, objectives, measures, initiatives and milestones as well as softer contextual information.

A SWOT analysis is perhaps the most well known approach to define strategy. Performing a SWOT analysis involves describing and analyzing a firm's internal capabilities - its strengths and weaknesses - relative to the opportunities and threats of its competitive environment. Organizations are advised to take strategic actions to preserve or sustain strengths, offset weaknesses, avert or mitigate threats and capitalize on opportunities. Strategy can be seen as the balancing act performed by the firm as it straddles the high wire strung between the external environment,

opportunities and threats, and the internal capabilities of the firm, strengths and weaknesses. (Zack 2002, 2.)

Companies that are successful over the long term are those who align their knowledge management processes with their strategy. The true knowledge-based organization thinks of its strategy - its means for competing and surviving over the long term - in terms of knowledge. It recognizes that knowledge is a key strategic resource, and asks the following questions: first, what do we need to know to formulate and to execute our desired strategy. Secondly, what strategies we can successfully execute given what we do know. Thirdly, what do we currently know and finally, what do our competitors know? Knowledge management must address two key knowledge gaps. They are the internal strategic knowledge gap and the external strategic knowledge gap. The internal strategic knowledge gap is the gap between where the organization's knowledge is now and where it needs to be in order to execute its strategy. The internal knowledge gap is analogous to the strengths and weaknesses side of a SWOT. It represents the knowledge strengths and weaknesses (SW) of a Knowledge-SWOT. The external strategic knowledge gap is the gap between the organization's knowledge and that of its competitors, now and in the future. The external knowledge gap is analogous to the opportunities side of a SWOT and it represents the knowledge opportunities and threats (OT) of a Knowledge-SWOT. Organizations must focus their knowledge management efforts on their internal and external strategic knowledge gaps, today and in the future. They must also be able to close those gaps via effective organizational learning faster and more effectively than competitors. (Zack 2002, 2003.)

According to Albers (2009) the starting point for knowledge management is to understand organization's business strategies. Albers agrees with Zack that the traditional strengths, weaknesses, opportunities and threats (SWOT) framework provides a basis for a knowledge management strategy. Albers emphasizes that organizations need to perform a knowledge-based SWOT analysis to understand better their points of advantage and weakness. After mapping the firm's competitive position, an organization can perform a gap analysis. The gap between what a firm must do to compete and what the firm is doing represents a strategic gap. The gap between what a firm must know and what the firm does know is the knowledge gap. The organization needs to identify the extent to which its existing knowledge is in alignment with its strategic requirements. Finally, from this analysis an organization

can determine knowledge that should be developed or acquired. The knowledge requirements will define where to focus knowledge management. (Albers 2009.)

Once a satisfactory working or operational definition of knowledge management has been formulated, knowledge management strategy can be confidently tackled. Knowledge management strategy provides an opportunity to gain a greater understanding of the way the organization operates, and the challenges that confront it.

7 DISCUSSION

Knowledge is increasingly seen as the most valuable asset of a modern organization, and it is a most valuable strategic resource that requires renewal constantly. Furthermore, knowledge itself is a perishable, increasingly short-lived and if it is not used it rapidly loses its value. And more specifically, knowledge is always changing. Even though, it is usually agreed that there is no common definition of knowledge, the wide-based knowledge definitions highlight that there are two forms of knowledge: tacit and explicit.

Tacit knowledge is linked to personal perspectives, intuition, emotions, beliefs, know-how, experiences and values. Tacit knowledge is unspoken and hidden; it is the expertise and assumptions that individuals develop over the years that may never have been recorded or documented (McInerney 2002, 1011). Tacit knowledge is intangible and not easy to articulate making it difficult to share with others, so it tends to be shared between people through discussion, stories and personal interactions through direct eye-to-eye contact. Furthermore, tacit knowledge is practical knowledge that is the key of getting things done. (Borghoff & Pareschi 1997, 836.)

In contrast, explicit knowledge has a tangible dimension that can be more easily captured, codified and communicated. Explicit knowledge is knowledge that has been explained, recorded or documented (McInerney 2002, 1012). Explicit knowledge can be shared through discussion or by writing it down and it can be stored into repositories, documents, notes, articles, manuals, video, sound and so on. Explicit knowledge defines the identity, the competencies and the intellectual assets of an organization independently of its employees. (Borghoff & Pareschi 1997, 836.)

Nonaka and Takeuchi further elaborate that these two versions of knowledge, tacit and explicit, can interact when the knowledge conversion occurs. The authors believe that the knowledge creation process is a spiral and the interaction of tacit and explicit knowledge produces four modes of knowledge conversion, namely socialization (from tacit to tacit), externalization (from tacit to explicit), combination (from explicit to explicit) and internalization (from explicit to tacit). Based on these four modes of knowledge conversion, it can be said that knowledge management is any mechanism that can support systematically all these modes of knowledge conversion whether in

identifying, managing or sharing two types of these organizational knowledge, that is tacit and explicit. (Nonaka & Takeuchi 1995.)

Existing tacit knowledge can be expanded through socialization in communities of interest and of practice, and new tacit knowledge can be generated through the internalization of explicit knowledge by learning and training. New explicit knowledge can be generated through the externalization of tacit knowledge. Existing explicit knowledge can be combined to support problem-solving and decision-making, for instance through the application of data mining techniques to identify meaningful data relationships inside corporate databases. (Borghoff & Pareschi 1997, 837.)

In reality, knowledge has always been managed, at least implicitly. Now when knowledge has become increasingly important in businesses, and has emerged as a strategically significant resource of the firm, managers need to reflect on knowledge as an organizational phenomenon. In fact, there is a world wide agreement (see e.g. Nonaka and Takeuchi 1995) that knowledge is the competitive strength needed for successful companies.

Managing knowledge is not an easy task. The reason for that is that knowledge is human-based, dynamic and involves many cultural issues that need to be addressed. However, to gain competitive advantage in the knowledge-based economy, organizations must recognize the need to introduce processes and technology as one of knowledge management enablers that aim to convert employee's knowledge into organizational knowledge.

Knowledge management approaches should be designed in collaboration with different stakeholders and knowledge management should demonstrate how contributions can benefit from knowledge management. Furthermore, effective knowledge management requires a combination of many organizational elements, for example, technology, human resource practices, organizational structure and culture - in order to ensure that the right knowledge is brought to bear at the right time. The efficiency and value of knowledge management depends much on the active participation of each employee. Consequently, significant efforts need to be done to determine the contexts and methods through which knowledge management will have the most impact on returns. It is potentially a valid tool for that deserves further utilization and attention.

The point at which both knowledge management and strategy come together is in understanding the strategic nature of knowledge itself (Zack 2002, 2). Thus developing a knowledge management strategy provides an unique opportunity to gain a greater understanding of the way the organization operates and of the challenges that confront it. Training or education for executives through an organization on what is knowledge management and its potential value to the organization would be very helpful.

Consequently, knowledge management is an emerging set of principles, processes, organizational structures and technology applications that help people share and leverage their knowledge to meet their business objectives. Fundamentally, it is also about sharing knowledge and putting that knowledge to use. All of this puts focus and responsibility on the individual, the knowledge worker, and on the holistic nature of knowledge management. Knowledge management is not an end in itself.

Today, the creation and application of new knowledge are essential for the survival of almost all businesses because ideas, processes and information are taking a growing share of global trade from the traditional, tangible goods of the manufacturing economy. And people do not take a job for life any more. When someone leaves an organisation their knowledge walks out of the door with them. Davenport (1996) postulates that the tasks of knowledge management are never-ending. Like human resource management or financial management, there is never a time when knowledge is fully managed. One reason that knowledge management never ends is that the categories of required knowledge are always changing. New technologies, management approaches, regulatory issues and customer concerns are always emerging. Furthermore, companies change their strategies, organizational structures and product and service emphases. New managers and professionals have new needs for knowledge. (Davenport 1996.)

Knowledge sharing is a key component of knowledge management, but knowledge sharing among different organizations is not an easy task. Therefore, an important area of knowledge management is how to encourage people to share what they know. There is not one right way to get people to share but many different ways depending on the values and style of the organization. If people would understand that sharing

knowledge can help them to do their jobs more effectively and help them in their personal development, and that it also could help them to retain their jobs, then knowledge sharing would become a reality. Therefore, part of enhancing the knowledge environment is making clear that a win-win situation will be the result both for the organization and for the individual.

Knowledge can grow exponentially when it is shared and the required cultural change can be achieved through the combination of specific training for management and staff, as well as the development of a knowledge sharing incentive structure. One key source of successful knowledge sharing is an organizational ability to learn and acquire the needed knowledge from other organizations. Training, guiding - preparation of manuals and guidelines - and equipping staff with computer-based tools that support knowledge sharing in a user-friendly manner are required. Positive attitude toward knowledge sharing will lead to positive intention to share knowledge. Culture does play an important role in the success of a knowledge sharing effort. As Ghalib (2004) underlines organizational culture plays a critical role in creating a learning atmosphere, which eventually proves to be highly instrumental in creating and disseminating knowledge (cf. Aggestam 2006).

Organization's culture is an important part of the organizational knowledge sharing because it provides the context into which organizational members create, acquire, share and manage knowledge. Shared, acquired and exchanged knowledge generates new knowledge. Knowledge sharing in organization is based on an understanding of knowledge creation and knowledge transfer.

In particular, knowledge management and knowledge sharing are in the essence of organizational principle, which lays the foundation for capturing the potentials of the possessed knowledge within an organization. To make the most of the organizations resources and enhance knowledge sharing it is important to acknowledge that it is about managing both technology and people in order to provide a beneficial knowledge sharing environment.

The focus of knowledge management is connecting people, processes and technology for the purpose of leveraging corporate knowledge. The database professionals of today may be the knowledge managers of the future and they will play an integral role

in making these connections possible. And those are the leaders that are bridges that connect people to the future (Farren & Kay 1996, 187).

Specifically, leadership plays a key role in ensuring success in almost any initiatives within an organization. Nothing makes greater impact on an organization than when the leaders model the behaviour they are trying to promote among employees. According to Albers (2009) it is essential to have strong leadership support for knowledge management to be successful. Leaders need to define a clear direction for the organization and set the tone for creating an environment for knowledge sharing. Idea leaders serve as knowledge champions and change agents for the firm's knowledge management program. Having a clear strategic direction and intent for the organization is fundamental for good knowledge management. (Albers 2009.)

Lew Plat, CEO, Hewlett-Packard Company (cited in Ståhle and Grönroos 2000, 264) has pointed out his view on knowledge management in the following way: Knowledge management is all there is in our company. We live and die on our intellectual property... acquiring knowledge quickly... moving it around the company very quickly... it's all about knowledge transfer...

When managed properly, knowledge management offers an opportunity for business management to have an effect on the result of the company. The value of knowledge could be tested in a real environment for example so, that two comparable companies that work on the same business field would be chosen. The other company would make a knowledge management strategy and dismount it, whereas the other company would not take these measures. Later, the intervention company would measure how aware middle management and/or staff are about the knowledge management strategy. The profitability of knowledge management could be evaluated by measuring the know-how and the field of know-how of the staff in both companies. The result should demonstrate an advantage for the intervention company. The final empirical proof about the usability of the knowledge management strategy would, naturally, be the progress in sales and profit. If the result of the company that had the knowledge management strategy would develop better, it would be a strong evidence of the positive influence of knowledge management.

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