THE IMPORTANCE OF KNOWLEDGE MANAGEMENT TO ACHIEVE SUSTAINABLE COMPETITIVE ADVANTAGE

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ABSTRACT: The aim of this study is to clarify the knowledge management concept and to indicate the strategical importance of the knowledge management activities for organizations to achieve sustainable competitive advantage.

Today a new economic fact has been experienced and the main characteristics of this new context are globalization, rapid changes of the products and markets, and an aggressive competition among the organizations. The new economic era is defined as the “Knowledge Economy”, because of the fact that knowledge is the main strategic resource for the organizations to achieve sustainable competitive advantage in the national and global markets, today. The reason of why knowledge is the most important strategic resource is that organizations have to acquire, assimilate, use, assess and create knowledge to overcome the rapid changes and the aggressive competition around them. In order to make use of the knowledge strategically, organizations should manage it. Managing knowledge includes two main approaches behind. The first approach is a process approach. Knowledge management is accepted as a process of acquiring, assimilating, sharing, using, assessing and creating knowledge. The second approach is a system approach. Knowledge management is accepted as a system of knowledge strategies, knowledge plans, implementation of these plans and knowledge management performance itself. There are also other approaches in the literature. But whatever approach it is, the aim of managing knowledge is to enable higher organizational performance and by this mean to help the organization to achieve sustainable competitive advantage. Therefore knowledge management has been considered as a new and an important topic in the strategic management literature.

Key Words: Knowledge Economy, Knowledge, Knowledge Management, Knowledge Management Approaches, Competitive Advantage.

Introduction

During the history, three social phases followed each other. These were the society of agriculture, the industrial society, and the last phase, which has still been lasting, is the knowledge society. The main factor, which started the every other new phase, was and has still been the technological development. Every new technology caused a new social structure and forced the social relations and the organizational structures to change and shift. Within this context, the knowledge society has distinctive production relationships, technologies, systems of the values and new principles of organization as compared to the industrial society [1].

Knowledge society is a society of defining social, economic and cultural improvements by the ability of creating new knowledge and applying it effectively. In the knowledge society, the primary values are creating new knowledge and innovation [2]. In fact, the knowledge society is a reflective process of a new economic, social, political and cultural era, which is called as the globalization [3]. In the context of globalization, a new economic era, “Knowledge Economy” has emerged.

The Knowledge Economy is the result of the important role of the knowledge and the knowledge technologies in the economic activities. The unique characteristic of the Knowledge Economy is the use of communication and information technologies and the consequences of them [4]. It is also related with the capability of the knowledge to create economic value. The Knowledge Economy is critically different from the Industrial Economy; because of the fact that in this new era, the resources of creating wealth have been the intangible assets, which are based on knowledge, rather than the traditional tangible
assets. The intellectual capital is at least as valuable as the capital. The value of the capital has increasingly depended on the knowledge. [5]

In the Knowledge Economy, there is a strong uncertainty and a rapid change all over the global economy. In such an economic environment, innovation, creativity, speed and costs are becoming important issues for the firms in order to deal with the global competition and the knowledge becomes a strategic resource for the firms, as well as a new factor of production among the traditional factors-land, capital, machine and the labour. Managing the knowledge effectively is a requirement for the firms to face the rivalry and to achieve a competitive advantage [4].

**Knowledge Hierarchy**

It is a requirement to define the terms of data, information and knowledge in order to provide a common terminology about the concept of knowledge management and to clarify it [6, 7].

Within the process of creating knowledge, firstly, data is captured from images; than information is captured from data, and eventually knowledge is captured from information [8]. Data is the objective facts and the numbers about the events and it isn’t organized, processed and connected [6,7,9]. In the context of an organization, operations are recorded in a structured form and maintained in the technological settings [7]. If data is not converted to information, it doesn’t have any value [9].

Information is the data that is organized for a specific aim and that gains meaning [9]. It is a written, verbal or visible message, which aims to change the receiver’s perception and to effect his/her judgement [7]. Data gains context, relationship, aim and meaning, and is converted to information [9].

Knowledge is the personalized and meaningful information- that is regarding the events, facts, processes, concepts, ideas, interpretations, observations and judgements- as a result of a cognitive process [6, 9].

Briefly; information is seperated from the data by being organized, and the knowledge is seperated from the information by being interpreted [9].

**Taxonomy of Knowledge**

The mostly used taxonomy of knowledge is the taxonomy of Polanyi (1967) [9,10]. Later, Nonaka improved this taxonomy and classified knowledge in two categories, explicit and tacit knowledge [6].

Explicit knowledge is represented in words and numbers. It can be easily communicated with others formally and systematically [11]. It is structured and objective and can be acquired by any organization easily [8,9].

Tacit knowledge is subjective, situational and proper. It is embedded in actions and experiences and it includes the ideals, values and the emotions of the person [6,9, 11]. It is more difficult to share tacit knowledge than explicit knowledge [8].

Nonaka and Konno(1998) expresses two dimensions of tacit knowledge. These are the cognitive dimension and the technical dimension. Cognitive dimension includes the beliefs, ideals, values and the mental models of the individual, and it determines the individual’s perception of life [11]. Technical dimension includes experiences, accumulation, competences and skills of the individual [6,9].

According to Polanyi, there is not a certain distinction between explicit and tacit knowledge. Even if the knowledge is explicit, it can only be understood and applied tacitly. In this context, explicit and tacit knowledge shouldn’t be considered as opposite to each other. Instead they should be taken as the two facets of the same whole. In order to effectively implement knowledge management, both facets of the knowledge should be considered [9].

Knowledge is also classified as; personal knowledge and organizational knowledge. Personal knowledge is created by individuals and includes personal information, skills and competences. Organizational knowledge is created by the group and it is embedded in the group’s activities [6]. It is the knowledge, that the entire organization possesses [9].

Organizational knowledge occurs as a result of the synergistic interactions among the individuals, technologies and the techniques in the organization. It is more than the sum of the knowledge that individuals have. It is also imitable. So, it is more valuable a strategic resource than the personal knowledge. Therefore, it is very important to convert the tacit personal knowledge to the organizational knowledge [9].

Since the concept of knowledge and the categories of it form the theoretical background of the knowledge management implementations, it is very important to clarify the distinction among the knowledge types. Also, knowledge taxonomy can help the design of knowledge
management systems by taking the necessity of supporting the knowledge types and the flow among them into the firm’s consideration [6].

**Importance of Knowledge**

In the Knowledge Society, the creation of knowledge is more important than the production of physical products [12]. The organizations are reorganized at the basis of knowledge. So, knowledge has an importance for the organizations [8]. In the Knowledge Age, knowledge is the primary factor for the firms to succeed. Many firms today believe that they have to be a knowledge organization, as well as a learning organization, to achieve a sustainable competitive advantage [13].

According to Davenport and Prusak; in the global economy, relevant and efficient knowledge is the primary competitive tool. In order to make rational, objective and right decisions; knowledge should be provided to the right person at the right time and place in a right form. Facing the changing conditions of the market and the uncertain environment, the firms have to manage knowledge to deal with the competition [14].

The knowledge, that products and services include, also increases their value [14]. Knowledge was also taken to assess the value of the products and the services in the industrial age, but in the Knowledge Economy it is more general to assess the value by knowledge. Today the success of a firm depends on the intellectual capital and system capacity of it, rather than its physical resources. [4]

Knowledge determines the behaviours of the people and the organizations and creates value by the decisions and actions it leads [4,15]. In order to create value from knowledge; it has to be right, relevant, complete, accessible, understandable, reliable, timely and its benefit should be at least equal to its cost [4, 12].

**Strategic Value of Knowledge**

Organizations acquire knowledge from both external and internal resources, and use it with the aims of competitiveness, innovation, creativity and productivity. In the competitive environment, innovation, creativity and strategies are more important. Knowledge is connected to strategies and these strategies are implemented by the firms so that they can exist in this environment [8].

Today the competitive strategies built on products are inefficient, since the lifetime of a product is dramatically shorter. On the other hand strategies built on core competences are more efficient, because of the fact that they ensure to produce new products continuously and help to achieve competitive advantage. The core competence organizations possess today is the knowledge that has a strategic value [4].

The basic superiority, which distinguishes the organizations from each other, is called as the organizational competence. With the help of organizational competence, products and services of high quality are produced by spending less time and resource, with a lower cost and therefore, core competence is the basic resource for profitability. In this context, the specific knowledge of an organization is more likely to be a core competence. The physical resources used by an organization can also be obtained and used by the other organizations and they can’t distinguish a firm from another. However, the specific knowledge, which organizations apply to the process of utilizing physical resources, is the basic reason for the success of organizations. Owing to the fact that organization-specific knowledge is the organizational competence, it can provide long-term sustainable competitive advantage. But not every piece of knowledge has a strategic value. Knowledge should be proper to the organization, couldn’t be easily transferred, acquired and disseminated [4].

**Knowledge-Based Firm Theory**

In the literature of the strategic management; resource-based view of firm, leads to the knowledge-based theory of firm. According to the resource-based view; the particular resources and competences are the primary sources of the competitive advantage. This view later led to the knowledge-based firm theory. According to the KBV; the competences related with the organizational knowledge are the primary source of the competitive advantage [10]. Under the same conditions of the market, the ability of exploiting the existing knowledge and creating new knowledge give firms competitive advantage [16].

In RBV, the unique resources which provide a firm strategic advantage are defined as core competences. Core competences include technical and managerial competences, as well as the competences of implementing strategies and change. As these competences are utilized, they increase instead of decreasing and become insti-
tutionalized over time. The institutionalized core competencies become a part of the system of organizational knowledge creation [10]. Firms provide the resources, which they need from the factor market. As it is easy to find a traditional resource in the factor market, it is highly difficult to find knowledge in a ready-to-use form in the factor market. Therefore, a real inimitable and unique resource of a firm is the knowledge. As the traditional resources and competences are combined and coordinated by superior knowledge, firms provide value from even if those traditional resources are not unique [17].

According to the KBV, the tangible resources are in fact combined and utilized by means of tacit knowledge [6]. The context-specific tacit knowledge is embedded in the organizational routines and the experiences. It is likely to be unique and inimitable. Contrary to many traditional resources, it is not in a ready-to-use form in the factor market. In order to acquire the similar knowledge, firms have to have similar experiences. However, gaining tacit knowledge by the experiences may take time and this is a disadvantage for the firms to compete [18].

In order to sustain the knowledge-based competitive advantage, it is better for a firm to know about many things, because learning opportunities are more valuable for a firm, which already has a superiority of knowledge. Also existing organizational knowledge, that complements the newly acquired knowledge in a unique manner provides sustainability, since this complementation provides a knowledge synergy, that the competitors don’t have. New knowledge is integrated with the existing knowledge in a way that allows to provide unique insights and even to create new knowledge [18].

Knowledge Management in Organizations

The American Productivity and Quality Center defines the knowledge management as a conscious strategy, that is developed to ensure that right information is provided to the right person timely; and that is developed to help people share knowledge and apply so that organizational performance improves [19].

According to Malhotra (1997); knowledge management provides the organizations the necessary qualities to adapt and to survive in a discontinuous and changing environment. It is a synergistic combination of the processing capacity of data and knowledge, and the innovation and creativity capacity of the people [7].

It is the process of acquiring, creating, organizing, maintaining, transferring, sharing and applying the relevant knowledge to enable the organizational activities. In fact it is management of the processes through which knowledge flows and brings into action, rather than management of the knowledge itself [4].

KM includes the definition and development of the organizational knowledge to enhance the competitiveness of the organization [6]. It is a conscious management approach of utilizing knowledge in the production of products and services to improve the organizational performance [4]. It is the whole of the strategies and processes of creating, finding, acquiring and applying knowledge to enhance the competitiveness of the firm [15].

The academic studies about the knowledge management focus on managerial and social issues, organizational learning and the role of the information technologies [16]. KM can’t be explained clearly if it is only evaluated by either the technology or the management dimension. KM includes many components—structural, managerial, cultural and technological—and should be assessed in a conceptual framework that represents all of the components [10].

In the Knowledge Society, organizations, that discovers their intellectual resources and use them effectively, are more successful and have a stronger competitive advantage. It is important to use knowledge effectively and to create value from it, as well as identifying it. KM aims this [15].

Strategic Aspect of Knowledge Management

In the Knowledge Economy, the products and services differentiate by means of the knowledge they include. The high quality of the intellectual capital and knowledge increases the profitability of an organization. Having high qualified knowledge and managing it effectively, give a global competitive advantage to organizations [4].

Organizations consider knowledge as the most valuable strategic resource and the core competence to overcome the problems and to benefit from the opportunities. They realize the importance of managing their intellectual resources and capabilities to sustain their competitiveness. Therefore, many firms have knowledge management projects and programmes. Most of
them try to utilize new information technologies to digitally capture, store, reuse and distribute knowledge. However, less of them think that the most valuable knowledge is the tacit knowledge that is shared and increases through the interactions and social relations [18]. In this context, the strategic management of knowledge should be thought as managing the important relations in the organization and a result of the skills and capacities of knowledge workers; rather than considering the impacts of external factors [4].

In order to enhance the possibility of gaining a strategic advantage from knowledge management; a link between the knowledge management and the business strategy of the firm should be formed. Although there is an agreement on the importance of integrating the social and technical dimensions of KM; it is ignored to create a link between KM and the business strategy [17].

If a piece of knowledge creates or sustains a competitive advantage by enabling to formalize and to execute its business strategy then, it is a strategic resource. If this strategic knowledge is being managed, knowledge management is directly supporting the business strategy and therefore it’s strategic [17].

In the processes of strategic knowledge management; the business strategy and the knowledge management strategy are integrated. However, some firms take the KM strategy as an independent business strategy. A KM strategy, that is a business strategy, focuses on the creating, storing, organizing, renewing, sharing and applying knowledge so as to provide the organization the relevant knowledge, required for any activity [14]. According to Hansen et al. (2001) KM strategy should depend on the competitive strategy of the firm and should represent it. According to Carneiro (2000) knowledge is a critical factor to formalize the business strategy. Firms have to determine the relevant knowledge to formalize their business strategy and have to create the link between the strategy and knowledge [14].

The importance of knowledge as a strategic resource has led the executives to realize the benefits of KM strategies. The appropriate KM strategies ensure the processes of KM. Therefore, many firms give importance to them. KM strategies can be classified in two dimensions. These are KM focus and KM source dimensions [20].

KM focus strategies are explicit-oriented and tacit-oriented strategies. Explicit-oriented strategy aims to enhance the organizational performance through codifying and reusing knowledge by the help of information technologies. Tacit-oriented strategy includes the communication processes of tacit knowledge through personal contact and socialization [20].

KM source strategies depend on the knowledge that is the core source. These are internal-oriented and external-oriented strategies. External-oriented strategy includes providing and transferring knowledge from the external sources, by acquiring or imitating it. Internal-oriented strategy focuses on creating and sharing knowledge inside the organizations [20].

The social, economic, cultural and ecological circumstances have increasingly been complex and organizations require knowledge and the value it creates, more than they required in the industrial age. The main reason of why organizations heavily require knowledge is their necessity to connect the past, the present and the future to each other. Organizations require knowledge and knowledge management in order to analyze the past experiences, to monitor today’s events and to make plans for the future [4].

Knowledge Management Processes

KM in organizations is implemented through four socially connected processes. These are; the process of acquiring and creating, storing and organizing, transferring and sharing; and applying knowledge [6, 21].

Acquiring and Creating Knowledge

In the uncertain and rapidly changing economic environment, firms have to continuously innovate and to adapt to the environmental changes in order to survive. This makes them create new knowledge [21].

Nonaka and Takeuchi (1991-1995) claimed the knowledge spiral model at the basis of the proposition that knowledge is created through the interactive relations between the explicit and tacit knowledge [10].

The knowledge spiral describes the process of the creation of organizational knowledge. This model explains the four modes which emerge during the interaction between explicit and tacit knowledge. These are; socialization, externalization, combination and internalization [11].

Socialization is the conversion of tacit knowledge to tacit knowledge. It is the process of sharing the tacit knowledge with people in the organization. This tacit knowledge is shared by joint activities such as spending time together...
and working at the same place. Externalization is the conversion of tacit knowledge to explicit knowledge. It includes the expression of the tacit knowledge and a comprehensive explanation of it so as the others can understand it. Combination is conversion of explicit knowledge to explicit knowledge. The new knowledge created by externalization is transferred to the group. Internalization is the conversion of explicit knowledge to tacit knowledge. The newly created knowledge is converted into the organizational knowledge [11, 22].

According to Nonaka and Takeuchi, knowledge can only be created by individuals. But through the knowledge conversions, the new knowledge created by the individuals disseminates the group, the organization and the other organizations. The important point is that the personal knowledge should disseminate the entire organization and should become the organizational knowledge. The type and the content of the knowledge in each phase of the knowledge spiral is different from the other. Collective knowledge is created through socialization, whereas conceptual knowledge is created through externalization. Through combination, systematic knowledge is created, and eventually functional knowledge is created through internalization [10].

According to Nonaka, externalization and internalization are the important phases of the conversion, because both of two require commitment to the organization [13].

The conversions of the knowledge occurs through the “knowledge-flow cycle” and KM is managing the environment, allowing knowledge flow through the four phases of the life cycle into the organization [16].

Storing and Organizing Knowledge

Knowledge is organized at the basis of its type, its aim of use and its alignment with the organizational targets and it is stored so it can be used in the future [21]. Thus, knowledge can be used by the right person in the right form timely; and this is the eventual aim of knowledge management [23].

Organization of knowledge includes collecting, identifying, describing knowledge and forming it to be available to store and to apply. The aim of storing knowledge is to have access to the knowledge most widely and most rapidly [23].

Regarding storing and organizing knowledge, there is a distinction between personal memory and organizational memory. The personal memory depends on the personal observations, experiences and actions. The organizational memory is beyond the personal memory and it includes the culture, production and work processes, organizational structure, physical conditions of the workplace and both the internal and external archives of the information [6]. Organizational memory is an essential part of knowledge management.

Transferring and Sharing Knowledge

Transfer and sharing of the knowledge include the systems, practices and processes that provide people access to the required knowledge timely [21]. The amount of knowledge increases as it is continuously transferred and shared and new knowledge may be created. Therefore, maximizing the benefits from the knowledge potential of the organization through sharing knowledge among the people and the teams, and eventually the organization is a basic aim of knowledge management [23].

Regarding the sharing of explicit and tacit knowledge, there are two different knowledge management strategies in the literature. First one is the codification strategy that includes collecting information, maintaining it in the databases and providing it in a codified and explicit form. Second is the personalization strategy, which includes transferring, communicating and exchanging knowledge through knowledge networks [13].

Knowledge is transferred through various levels in the organization. It is transferred between the people, from people to the teams, between teams, throughout the teams and from teams to the entire organization. The enablers of this transfer are the processes of communication and the flow of information [6].

Applying Knowledge

Although the first three processes are also important, knowledge adds value if only it is applied. When it is applied, it turns into organizational behaviours that create value to the organization. Also according to the knowledge-based firm theory, the real resource of competitive advantage is the use of knowledge rather than the knowledge itself. Therefore a successful knowledge management depends on the effective use of knowledge and applying it into the products, processes, behaviours, policies, etc. [6, 23]
As an organizational capability, knowledge can be applied with the help of three means. First of them are the directives. Those include a specific set of rules, standards, procedures and instructions. Directives are generated through the conversion of specialists’ tacit knowledge to the explicit and integrated knowledge. Second are the organizational routines. They may be simpler, as well as be more complex. Through the routines people apply and integrate their expertise knowledge into their own tasks, being not to have to explain and communicate it to the other people. Third are the self-contained teams. When there is an uncertainty and complexity regarding the task; the directives and routines can’t help apply knowledge effectively. For solving such a problem, self-contained teams are created, including the members who have the required knowledge and expertise [6].

Conclusions

Knowledge Economy is an era, when there has been uncertainty, rapid change and intensive competition. In order to deal with these challenges, organizations have been increasingly reorganized on the basis of knowledge. Organizations let the flow of external information into their body and utilize their internal capabilities, so that they can adapt to the continuously changing environment.

Knowledge integrates into the organizational processes, by orienting the decisions, practices and behaviours and contributes to the productive operations. Highly qualified knowledge, that is included in the products and services, increases their value; thus organizations create value to their customers. The result is the increasing profitability of the organizations.

Since knowledge is more unique than the traditional resources, organizations have to consider it as a strategic resource. It should be considered as a core competence, and organizations should compete on it.

Knowledge management appears to be a requirement for the organizations, because of the economic and strategic value of knowledge. In fact, KM isn’t management of the knowledge itself. It is management of the specific processes. These processes provide the flow and use of knowledge, allowing the organization to effectively manage its intangible resources and also to adapt to the environment.

If strategic knowledge is utilized to formalize and to execute the business strategy, then managing this knowledge also contributes to the strategy and to the strategic advantage. The proposition of this approach is the link between the business strategy and knowledge management. If an analysis of the knowledge requirements of a business strategy is supported by a knowledge management solution, it is going to be formalized more effectively.

Since knowledge has become the main strategic resource, the implementation of knowledge management to utilize this unique resource certainly creates and sustains the competitive advantages for the organizations.

Sustainability comes from the knowledge as long as it is used and it is managed through the knowledge management processes.

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