

# Knowledge Management and Competitive Advantage

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## Abstract

To have a sustainable competitive advantage, an organization should realize how to create, distribute and utilize knowledge through an organization and how attach it to organizational process. Another important thing is a manager should know what kind of knowledge they should seek to enhance organizational activity to get sustainable competitive advantage. In this paper, I go through literature review to investigate more the importance of knowledge management in the respect of competitive advantage. I start with an introduction and we will move on the next stage, which will be knowledge as a basis of competitive advantage. The third part would be the importance of knowledge management. Knowledge management and competitive advantage, knowledge strategies for survival, knowledge integration capabilities and IS support of organizational competencies would be other issues which will be considered in this paper.

**Keywords :** knowledge management , competitive advantages.

## 1 . Introduction

The importance of creating of competitive advantage over competitors is in the top of issues in strategic management issues. Therefore, there would be an extensive scope for scholars to investigate and research. Moreover, this enormous area has stimulated researcher to find out several theoretical perspectives, which influences on competitive advantages. Nowadays, integration of these perspectives is very crucial. A resource-based understanding of the organization and knowledge firm are two integrated perspective in the field of strategic management. Competitive advantage's argument has been improved by these two perspectives. Companies do not response to the competitive environment simply, but they try to create knowledge-based competitive advantage to combat with their competitors. Furthermore, there is overlap between these two because recently knowledge has come up as important administrative resources (Grant C, 1996; Nonaka F 1994; Spender E, 1996). Moreover, the knowledge permanence in the fundamental of analysis of the competitive advantage has been proven (Spender I, 1996). [1]

In economies which pace in to the high level of development, knowledge and information are the most important factors of value (Prahalad R and Hamel, 1991; Zuboff R, 1994), surpassing visible substructure and financial resources on their significance. More broadly, an intellectual capital (IC) or intangible asset including human capital, research and development, structural capital and relational section (Edvinsson F and Malone A, 1997; Stewart S, 1997; Sveiby B, 1997; Guthrie G and Petty Y, 2000) is perceived as a principal to the achievement of competitive advantage (Penrose F, 1959; Barney E, 1986; Spender G, 1994; Collis C and Montgomery E, 1995). Although intellectual capital or intangible asset has been improved, but there is lack of efficiency of intellectual capital or intangible asset management (Petty P and Guthrie G, 2000; Marr F, 2003; Andriessen D, 2004). Simultaneously, numerous prototypes have appeared which purpose to make clear the creation of value, which is the result of intangible assets (for instance, Baum B., 2000; Lev L, 2001; Fernstrom ., 2004; Marr ., 2004). In what manner to successfully accomplish and manage knowledge, which as a meaning, depicts the action of managing the objective, intangible asset (Petty B and Guthrie G, 2000, p.159), remains an extremely popular and serious subject for investigation.[5]

The knowledge-based interpretation thinks through knowledge, as a corporate is most significant strategic resource (Grant G, 1996a) because this kind of asset will generate possible competitive advantages. Companies, that have more knowledge, are surely successful, but companies that use their knowledge in the right way and know what is in terms of strategy significant to the organization could be successful (Bierly b et al., 2000, p. 596). Moreover, when knowledge creates new knowledge can create greater value as well. New knowledge and distribute it through the

company and incorporate it into goods and improvement of technology can cause a company to be successful (Nonaka N and Takeuchi T, 1995). However, although knowledge is an important factor of competitive advantage, having valuable knowledge assets somewhere through a company, firm, or organization cannot show that every place of organization can get the same advantage of the same knowledge (Szulanski S, 2000). Internal knowledge transfer should be considered in order to provide value for organization. [4]

## **2 . Knowledge as a fundamental principle of competitive advantage**

Recently the role of organizational knowledge as a fundamental principle of the competitive advantage has been emphasized in the field of strategic management. The primary definition of the competitive advantage relies more on putting the organization in the top the place of the industry and having power of economics of scale against competitors. (Dixit D, 1980; Shapiro S, 1989; Porter M, 1980). Organizations acquire sustainable competitive advantage through acquiring resource. Therefore, it should not be easy to imitate resources for competitors. (Lippman L nad Rumelt S, 1982). The principle source of competitive advantage is organizational knowledge that is difficult to imitate (Spender B and Grant G, 1996; Teece T, Pisano P, & Shuen S, 1997). [6]

## **3 . The importance of knowledge management**

Nowadays the success of enterprises in the competitive market place relies mostly on the quality of knowledge, which is applied by enterprises to their key business processes. Some causes that why knowledge management should be considered has been suggested by Macintosh (1998) as follow: [7]

- *Competition*: the market is an increasingly high competitive area and knowledge-based management has been developing day by day. Therefore, knowledge must be developed at an ever-faster rate.
- *Customer focus*: The focus aim of each enterprise is developing value for customers.
- *The challenge of a mobile employee*: employees have started to be retired sooner and the trend is increasing. This increasing mobility has led to loss of knowledge.
- *The global imperative*: because of globalization, enterprises have gotten foreign customers and supplier. Therefore, they need to create effective knowledge management as well to deal with other competitors.

## **4 . KM and competitive advantage**

To get sustainable competitive advantage, the significant role of knowledge management has been explored. Besides, knowledge management has caused companies' core competencies become stronger than before. Therefore, competitive advantage has been more sustainable. Also, the importance of an intangible asset which is based on knowledge management, brainpower, has been obvious (Eustace E, 2003, p. 590). Knowledge management is perceived as the development of organizing the intangible asset of a firm. The economic and production level of a company relies more on its brainpower, human capital and invisible competences than its physical assets". (Quinn Q, 1992, p. 241) It is gradually acknowledged the function of each business relies upon the knowledge of its human capital. Employees apply this knowledge in building infrastructure and relational activities to achieve sustainable competitive advantage. For example, through management of strategic, recently, the emphasis has been on the understanding of "what" and "how". In other words, currently, what the company knows? , what it should get in order to have strong intangible core competencies and how it can achieve it. (Grant, 1991; Zack, 1999a). Indeed, knowledge achievement, integration and distribution needs energetic project and it should spread through the firm (Teece T et al., 1997). As such, associations, partnerships and other forms of inter-firm connections have been recommended as effective selections for acquisition, leveraging, or increasing new capabilities and capitals (Kogut, K 1988; Westney W, 1988; Hagedoorn, 1993; Mowery, 1996). In related manner, an IT standpoint stresses the improvement of structure for a knowledge-based group. Better detention, loading, retrieval and share-documented knowledge are based on the IT applications of organization (Zack, 1999a). Specifically organizations are applying on line document systems repository, the support of decision and professional methods, intranet, DMS, the internet, and the internet tools in order to empower directors to guide, hand out data and organize knowledge (Zack, 1999b). Besides, due to being the most important part of organization, an employee has been taken attention by managers. Therefore, strategic HRM human resource management has been improved. Moreover, it is suggested that organization should declare the value of intellectual capital in their financial report which demonstrates organization's knowledge-based resources as well and make the management of IC easier (Guthrie G and Petty P, 2000; Mouritsen, M 2003; Mouritsen M, 2004). Generally, some management disciplines have come up to nurture

improvement and distribution knowledge. Some scholars such as Barney (1986) and Hamel (1990) have suggested that the knowledge can generate through numerous disciplines and the organization that have this area to produce special knowledge through the context of organization can have competitive advantage. According to this study they have explored the role of knowledge as a tools to be survived in competitive market as well [5].

Numerous scholars have suggested that knowledge has critical effect in intangible assets. Actually, knowledge has appeared in financial information as an intellectual capital. Furthermore, others such as Spender and Teece has described IC depend on obtaining sustainable competitive advantage that the organization could have gotten from IC. However, there should be differences between knowledge based on strategy and knowledge not based on strategy. In knowledge management, one of the research objectives has been recognizing the traits of strategic knowledge meaning that knowledge has important implications for achieving competitive advantages. This objective has considered strategic asset as a group of abilities and resources that very hard to imitate and commercialize because they are scarce. Four circumstances have been recognized in the resource-based view that provides assets with a strategic character: durability, imperfect mobility, difficulty of substitution, and the difficulty of imitation (Amit and Schoemaker, 1993; Barney, 1991; Dierickx and Cool, 1989; Grant, 1991; Peteraf, 1993). [4]

### **5. Tacit and explicit knowledge and competitive advantage**

One of the dimensions of knowledge management is differentiating explicit knowledge and tacit knowledge (Polanyi, 1966). Explicit knowledge can be transferred in systematic and formal language (Nonaka, 1991). By contrast, it is do difficult to transmit and formalize tacit knowledge because it has an individual element (Hill and Ende, 1994; Nonaka, 1991).

Tacit knowledge has positive correlation to competitive advantage. There is two important reasons for this relationship which tacit knowledge has been studied in pervious literature (Ambrosini and Bowman, 2001).

1. The fact that tacit knowledge has been very hard to transmit, to copy, to substitute; meaning that tacit knowledge depicts a strategic asset for the firm.
2. Tacit knowledge is hard to measure due to being an intangible asset

Furthermore, there are some challenges in terms of tacit knowledge: Stenmark (2001)

- It is difficult to explain in words
- Tacit knowledge is going to be destroyed when you make it explicit by express it in words.

#### *5-1 Degree of complexity*

Former studies have different perspective toward the definition of complexity:

- When the understanding of how a system works and generates outcome increases then complexity will come up.

On the other hands, other scholars mention to specific features of complexity. For instant,

Rogers (1983) suggests that complexity is as innovation which is difficult to understand and imitate. However, as a broader definition, Simonin (1999, p.600) has suggested that:

- The number of inter-reliant habits, individuals, technologies, and resources related to a specific knowledge or asset.

Furthermore, the complication of assets has diverse implications for competitive advantage,

deriving from how firms combine their resources and abilities, and these combinations may be a source of causal ambiguity and create barriers to imitation (Reed and DeFillippi, 1990). Thus, tacit and socially complex knowledge is a valuable competitive resource because it is harder for other firms to imitate (Barney, 1991). [4]

#### *5-2 Degree of specificity*

A specific asset has different implications if we analyze it from different theoretical perspectives. The resource-based view holds that asset specificity is a source of causal ambiguity. Causal ambiguity refers to the difficulty for competitors to understand how a firm creates a competitive advantage (Barney, 1991). This lack of understanding causes difficulty in imitation, and, for this reason, causal ambiguity is a characteristic of strategic resources (Amit and Schoemaker, 1993; Barney, 1986, 1991; Peteraf, 1993). Although causal ambiguity does not guarantee that a firm is able to maintain a competitive advantage, it at least creates barriers to imitation.[4]

## **6 . The sustainable competitive advantage from knowledge**

Abilities, which attached on management and employees, are not simply being categorized by function, hierarchy or position. An organization should remove any obstacles to achieving this competence and knowledge. It is necessary for an organization to develop its capabilities to manage to change and learn quickly. This will be improved by emphasizing attention on such profession as nimbleness, flexibility and speed. The organization will surpass through competitors by ability to generate, achieve and distribute knowledge through the organization and then utilize it to make core competencies stronger, which will not be imitated by rivals. This will help organization build competitive advantage against opponents in the market. This capability to produce knowledge and to learn from it can become a competitive advantage because innovative knowledge improved today will become the core knowledge of tomorrow (Zack, 1999). By connecting the processes in organizations, they can get competitive advantage as well, which make strength for organizations to deliver products and services, based on capabilities coming from the entire value chain (Thompson and Strickland, 2001; Long and Vickers-Koch. 1995).[2]

This focus on the process of the organization may help the organization to overcome the functional barriers and motivate the improvement of cross-functional groups that creates chances for knowledge and profession of each of group members to be utilized. Furthermore, it causes several ideas and knowledge of the members pool together and come up with even stronger idea to solve problems (Pfeffer, 1994; Foley, 2000).[2]

Zack (1999) has emphasized that the importance of focusing on the improvement of special and valuable competencies and capabilities, instead of concentrating attention on production and goods and services. With regard to goods, production, and services, the advantages would be temporary. Long and Vickers-Koch (1995) have argued that an organization can improve their performance if they improve underlying skills and know-how and connect this to process developments. To achieve these skills, organizations need to pay attention to some key issue like the selection of knowledgeable employee, training, motivation, empowerment, incentives, flexibility, culture, good databases and building up of these internal human capital related capabilities will result in competitive advantage that will be difficult to be copied. The more unobservable these competitive advantages, the more sustainable they will be and this particularly applies to competitive advantages which are based on developing and exchanging information and knowledge through the firm's human capital (McEvily and Zaheer, 1999). [2].

The major key to solving the crucial problem in organization such as the need to innovate and competitiveness is knowledge management (KM) (Wickramasinghe, 2003). A competitive advantage is as capability to generate profit more than average in the particular industry (Porter,1985). There are various ways to build sustainable competitive advantage such as economic of scale, accesses to resources, size (Ghemawat,1986), or even by simple chances (Barney, 1996). Utilizing KMS can support the organization's activities and makes more value for the organization's resources as well which will become harder to imitate for competitors. The organizational knowledge should have four characteristics: it should be valuable, poorly imitable and substitutable. Understanding and developing the infrastructure factors, which are required to support the management and achievement and distribution of tacit and explicit organizational knowledge would be the basic of the knowledge management system. Three areas should be emphasized in KM that will increase the value and create competitive advantage are people, process and technology. In addition, innovations that exploit a firm's assets are possible to enhance value to those resources, and the competitive advantage that would be created will be sustainable. [8]

## **7 . Knowledge strategies for survival**

This strategic evaluate the gap between organization and the industry in terms of knowledge that the organization should have to survive among competitors. To do so, an organization should identify what knowledge it has to compare itself with its counterparts in the particular industry to remove the gap existed between them. Thus, an organization should generate knowledge within itself by founding a supporting environment, which will foster employees through the organization to contribute their tacit knowledge with others to generate new integrate knowledge. If the gap analysis shows that there is a knowledge deficiency of organization toward rivals, then the organization should achieve that knowledge. On the other hand, if organization surpasses rivals in terms of knowledge then it should be an ideal situation to take advantage of this exceed to get sustainable competitive advantage.[2]

## **8. Knowledge management**

In the approximately every area of organizational survey, knowledge has been the issue of rigorous research. For instance, knowledge has been the key aims of the organizational learning efforts of organization in the general management literature (Sinkula, 1994; Sinkula et al., 1997). Furthermore, scholars have studied knowledge transfer's process and proposed that knowledge demonstrates the main objective of such organizational diagram (Inkpen and Dinur, 1998; Inkpen and Li, 1999; Kotabe and Swan, 1995). The knowledge reproductive mechanisms of groups and decision-making parts also, in the strategic decision making literature have been suggested (Eisenhardt and Brown, 1998; Eisenhardt and Zbaracki, 1992).

In marketing, the basic principle of the marketing concept will be built by knowledge. By having knowledge about our market and customers, market orientation, companies can take a right decision that is based on this information (Hurley and Hult, 1998; Jaworski and Kohli, 1993; Kohli and Jaworski, 1990). Finally, research on new products improvement shows the role of knowledge prominently (AtuaheneGima, 1996; Li and Calantone, 1998; Madhavan and Grover, 1998). Competitive advantage will be created and sustained by different knowledge pools and domain. For instance, organizational economics have proposed that competitive advantage is related to the competitive organizational structure in industry, the barrier to entry and the technological trend. In other words, if companies know how to build barriers to entry, how to achieve secure patent, how to exploit technological improvement, how to utilize first mover advantages then they will have sustainable competitive advantages.[1]

### **9 . Knowledge integration capabilities**

One of the facts that causes organization achieve sustainable competitive advantage is integrating individual specialized knowledge (Grant; 1996). Because knowledge brings up from the brain of each individual through organization, it should be integrated. Knowledge integration is ,for example, mixing a diversity of employee's skills to generate returns and combining personal and practical professions to make strategy to be dynamic (Eisenhardt and Martin, 2000). Two inter-related mechanisms that knowledge can be integrated through them are direction and organizational routines (Grant, 1996). The major application of sharing and exchanging knowledge between talented individuals is direction integration. The more complicated an activity, the greater the number of places in which that activity should be recreated and the more difficult to do activities, the more reliance on knowledge integration through knowledge (Grant, 1996). An organizational routine is a mechanism supports knowledge integration through efficient and effective communication of knowledge among individuals (Grant, 1996). This communication more based on informal communication. Knowledge transfers in informal mechanism highly dynamic compaers to formal mechanisms because relationships between individuals are not formally defined. The powers of informal relationships can easily disappear or determinedly persist in this kind of network. Informal role players who contribute to knowledge integration capabilities might affect competitive advantage by affecting the type of knowledge integration (Cross et al). Generally, the relationship between informal roles and knowledge integration through informal roles and getting sustainable competitive advantage are positive. [3]

### **10 . IS role in competitive advantage**

#### *Is support of input-based competencies*

Input-based competencies might be obtained from non-human and human resources (intangible and tangible) Lado. (1992). Firm's specific information and knowledge is the intangible assets, which have potential to produce economic return. Information system (IS) might be utilized to simplify the accumulation, gathering, improvement of important data by using its storage of data and communication abilities. The role of IS in the knowledge management and creating competitive advantage would be as follow:

- Simplifying collecting information from inside of the organization
- Simplifying collecting information from the outside of the organization
- Converting data to valuable information and knowledge

#### *IS support of transformation-based competencies*



Examples of transformation-based competencies (TBC) would be: operational excellence, lean manufacturing, and stock less inventory. This ability enables companies to get competitive advantage. What the TBC can do for companies are:

- Nurturing cross-functional integration (CFI).
- CFI explain the ability to merge and integrate two or more different processes to make the whole process to be efficient.
- Developing operational efficiency (OE).
- OE makes the converting input to output in very low cost. (Collis, 1994)
- Improving operational flexibility (OF).
- Adjustment of transformation of processes and stages will be performed very easily by operational flexibility.

With the aid of IS tools such as EDI (electronic data interchange) and CRM (customer relationship management) and SCM (supply change management) and IOS (inter-organizational system), a firm might improve excellent service and product image equity and high customer loyalty and also makes a strong relationship with a customer and supplier. (Cash and Konsynski, 1985; Konsynski and McFarlan, 1990; Reekers and Smithson S, 1994; Runge R and Earl E, 1988; Venkatraman V, 1994). In turn, this making strong relationship causes the information about customer and supplier become produced efficiently, which ultimately can create invisible asset or intangible asset for firms. Friends Provident (an insurance company), for instance, has used Information System to increase customer loyalty. This company has developed a videotext-based system (FRENTEL) for providing on-line quotation service, which allows brokers to obtain quotations and surrender values directly from the insurer's central computer (Runge and Earl, 1988). By supporting of customer intimacy and customer service, an information system can create reputation and customer loyalty for firms. (Treacy and Wiersema, 1993). Scholars have found how the companies can make strong relationship with their customer and suppliers with the aid of database management that they have already fulfilled. Companies will be enabled by database marketing and data mining to seek customer preferences to perform customer need. (Berry, 1994; Carmody, 1994; Francese, 1990; Grupe and Owrang, 1995; Hays, 1994).[8]

## 11 . Conclusion

In conclusion, all the background studies say that the relationship between knowledge management and sustainable competitive advantage is highly positive. In this paper, I mentioned knowledge as a fundamental principle of competitive advantage. In other words, with the knowledge of how to manage the resources of organizations to make value from them they can get sustainable competitive advantage. Furthermore, there have been some reasons to consider knowledge management as well some of them are competition, customer focus, the challenge of a mobile employee and the global imperative. Besides, knowledge management has caused companies' core competencies become stronger than before. Therefore, competitive advantage has been more sustainable. Therefore, competitive advantage has been more sustainable. In addition, the importance of knowledge has been obvious when the economic and production level of a company depends more on its brainpower, human capital, intellectual capital. Moreover, knowledge has been defined as a strategic asset, which a group of capabilities and resources that very hard to copy and commercialize because they are scarce. Because diversity of people are working in organization, their knowledge should be pooled and the organization should use is to build unique knowledge to enhance the organization's activities. Two ways that can integrate knowledge management of organization. After integration of knowledge, the organization should distribute the pooled knowledge into the organization and match its process with integrated knowledge, which will be viable competitive advantage for an organization. This focus into process of the organization may help an organization to overcome the functional obstacles and motivate the improvement of cross-functional groups that creates chances for knowledge and profession of each of group members to be utilized. Further, Proper knowledge strategies can help an organization to be survived through the industry. To do so, an organization should identify what knowledge it has to compare itself with its counterparts in the particular industry to remove the gap existed between them. Moreover, an information system, which is one of the knowledge management system (KMS) factors support organizational competencies. Overall, knowledge management and its application can support organizations to get viable advantages against competitors

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