

# The relationship of tactical factors of knowledge management with competitive advantage

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## ABSTRACT

**Objective:** This article investigates the relationship of tactical factors of knowledge management and the indicators of gaining competitive advantage in the organizations. **Methodology:** To do that, 4 tactical factor of knowledge management (Knowledge acquisition, knowledge sharing, knowledge management, learning and application of knowledge) and five indicators of gaining competitive advantage (timely delivery of products) have been investigated and their relationship has been studied. **Results:** The statistical findings of the study confirm the relationship between factors of tactical knowledge management and gaining competitive advantage. Also, the statistical findings of the research show that to achieve competitive advantage through the implementation of knowledge management requires that the process of knowledge management be executed with scientific methods and using the help of experts this knowledge to be implemented and the required infrastructures and culture for this issue seems necessary. **Conclusion:** Knowledge Management to become the competitive advantage required the correct pattern for implementation and execution. In addition and according to the strengthening and infrastructures are important factors in implementing knowledge management. These factors also should be considered prior to execution of the process.

## 1. Introduction

### 1.1 Statement of the problem

Competition and creating ways to gain competitive advantage has long been of interest to organizations and producers of goods and services so that from the time of slavery until now different factors has led to gain competitive advantages. Today, the knowledge has the main role in creating, developing and maintaining a sustainable competitive advantage in developed and developing countries and is the most important variable in the full development of organizations. Today, it is believed that the knowledge (especially knowledge based on information) can be a powerful and strategic weapon in organizations. Knowledge is an organizational strategic asset that enables it to achieve the important competitive and significant advantages (Hiscock, 2004).

### 1.2 Literature Review

#### 1.2.1 The definition of knowledge management

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Knowledge management is a multi-disciplinary approach, to achieve the goals of the organization, by creating the best way of using knowledge which includes creating the design, review, and implementation of both technical and social processes to improve the application of knowledge (for the benefit of all people) (Parikh, 2001).

### 1.2.2 The definition of American Productivity and Quality Center

Knowledge management is a systematic strategy which includes the process of identifying, acquire, transfer and applying knowledge and information and individuals and organizations implement it to innovation, competition and improve productivity.

### 1.2.3 The model of APQC

As previously stated, productivity and quality Institute of America (Apqc), by Bukowitz and Williams (1999) has developed a seven step model for knowledge management, since the basis of the knowledge management process in this research is based on this model, will be examined in detail.

Bukowitz and Williams have divided the knowledge management process into two parts of the strategic and tactical. According to these researchers, tactical aspects, including steps to gain required knowledge (information) for activities, to apply the knowledge to create value, learning of knowledge management, exchange and sharing available knowledge between individuals. In the strategic process of knowledge management, to determine the strategy and goals of the organization, the used knowledge in future will be evaluated, used, created and determined (Comb, 2004).

### 1.2.4 Competitive Advantage

The first articles about competition, are dealing with development and progress "sustainable competitive advantage". In 1973, Alderson referred to an important aspect of sustainable competitive advantage (SCA) that is the specialization of products, to meet the various needs of customers, satisfy them and thus a competitive advantage. Jang et al., (2002) was one of the first people who understand that the companies to attract consumers and having excellence to the competitors should have unique features. According to him, this distinction should be achieved through reducing prices, advertising, innovation and product development.

More than a decade later, Hunt and Robert (1996) have proved that to excel in competition organizations must have unique features. These issues form the basis of competitive advantage.

Hoffman, (2005) have studied the issue that organizations must learn how to create new advantages to take them a step ahead of competitors. Alderson with the idea that the companies should be looking for ways to differentiate to the competitors, thought ahead of his time (Denisi et al., 2005). The idea of sustainable competitive advantage was created in 1984 when Day raised a variety of strategies to help design a competitive advantage, the term of sustainable competitive advantage was created in 1985 when Michael Porter introduced the main types of competitive strategies necessary for the companies. It is interesting to know that in the debates of Porter does not provide any official and conceptual definition of this term (Hoffman, 2005).

### 1.2.5 Competitive advantage with source-based approach

The Resource Based view originated firstly from the works of Lam, (2000) who claimed that the heterogeneity of the organization is an important source of competitive advantage. "Chamberlain," says the organization's competitive advantage, is the asset and the ability of managers to work together. He also believes that the heterogeneous characteristics of organizations lead to partial competition and this allows them to enjoy a multilateral competition. These multilateral competitions give the organizations, the ability to achieve competitive advantage and involve good financial performance for a specified period of time (Besanko et al., 2000).

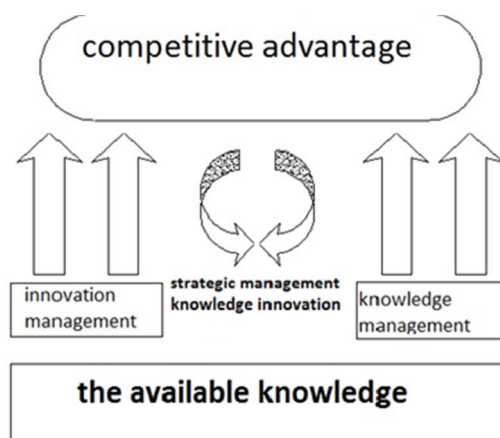
Maier considered the role of knowledge management (apart from its implicit or explicit) as an internal and strategic source to acquire a competitive advantage, so that the activities of knowledge management support institutional competencies and finally lead to the development of competitive advantages (figure2). The competitive environment and internal environment are also factors that affect organizational competency (Ghalbi, 2004).

### 1.2.6 Strategies for creating competitive advantages

As stated in the definition of competitive advantage, authors have introduced different factors to measure the competitive advantage that most known of them are five factors of Lee and Chol (2003). In this study, the same factors that are used to evaluate the competitive advantage

1. The timely delivery of product
2. Product innovation
3. Reduce the price of the product
4. Increasing product market share
5. Increase product quality

### 1.2.7 Knowledge Management and



*Competitive Advantage*

**Figure 1. The relationship between knowledge management and innovation management with a competitive advantage**

Figure 1 shows how innovation in knowledge management can be used in a specialized and targeted way. This figure shows a combination of innovation management and knowledge management to create a sustainable competitive advantage (Goh, 2004). The innovation also comes from new knowledge, because innovations in the knowledge lead to innovation in production.

Creating new knowledge innovation in the products obtaining, competitive advantage.

## 2. Materials and methods

### 2.1 A view based on knowledge management source and competitive advantage

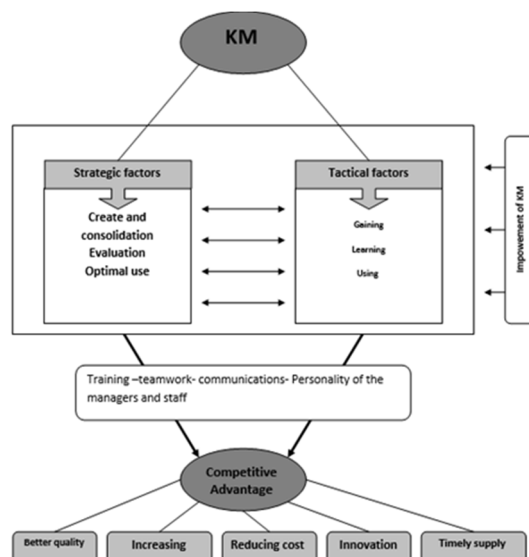
Pan and Scarborough have been classified the important source of knowledge management as follows:

1. Technical resources of knowledge management, which forming the combination of infrastructures of information technology and the capabilities of knowledge management
2. Social resources that make up the combination of structural, cultural, human and knowledge management capabilities

Technical resources of knowledge management: information technology is a technical source that indicates which of the information and communication technologies, as infrastructure can share the knowledge, or to be used as the database (Gold et al., 2001).

Presenting a conceptual model (with regard to the relationship between knowledge management and competitive advantage)

According to the purposes of research and studies in this area, we can say that implementation of knowledge management processes with the aid of enabling instruments (culture, strategy, people, and structure) and with the positive presence of confounding variables such as education, teamwork, communication and personality of employees and managers, will lead to competitive advantage (Lee and Kim, 2001). The positive presence of confounding variables means that horizontal and comprehensive communications, pluralistic and extroversion characters of employees and managers, as well as the presence of participatory culture among them, are the important factors of knowledge management success and thereby gain competitive advantage (figure 2).



**Figure 2. The relationship between knowledge management and competitive advantage**

## 2.2 Research objectives

The objective of this research is introducing the knowledge management and recognizing the theoretical framework of research and comparison of tactical indexes of knowledge management and the indicators of gaining competitive advantage in the organizations under study and finally assess the relationship of tactical factors and ultimately knowledge management and indexes gaining competitive advantage (Call, 2006).

## 2.3 Research questions

According to the above, this study seeks to answer the following questions:

- Is there any difference between tactical indices of knowledge management in two Cement factories of Darab and Estehban?
- Is there any difference between gaining competitive advantage in two Cement factories of Darab and Estehban?
- Is there any difference between tactical indices of knowledge management and gaining competitive advantage in the Cement factory of Darab?
- Is there any difference between tactical indices of knowledge management and gaining competitive advantage in the Cement factory of Estehban?

## 2.4 Research Methodology

The most common method of this study is surveying method that its data collected by questionnaire. The statistical population included all managers, deputies, and experts of two cement factories of Darab and Esteban. Among the reasons for choosing these organizations to study were running the same model (one of the models of knowledge management), the same products and their competition (Drew and Roger, 2002). The distributed questionnaire consisted of two parts, the first part, four tactical factors of knowledge management and the second part consists of five indicators to gain competitive advantage. Respondents were asked to specify their organization's compliance with any means of questionnaire expressed on a Likert scale (from strongly disagree=5 to strongly disagree =-5). 99% of the questionnaires were collected successfully and their responses were analyzed. Descriptive and inferential statistics were used to analyze the data. To identify the tactical factors of knowledge management the associated responses of each stage were calculated and these-these factors were ranked from highest to lowest average. The averages of gaining competitive advantage, in the same way, was ranked and calculated. To assess the validity and reliability of the posed questions to each tactical element of the knowledge management, indexes internal consistency coefficient alpha method was used to gain competitive advantage. The validity and reliability of all factors and indicators confirmed (Coyen, 1999).

# 3. Discussion and results

## 3.1 Data analysis

Table 1 shows the mean score of tactical factors of knowledge management in the cement factories of Darab and Eetehban. As it can be seen, the average value of tactical knowledge management of the cement factory of Darab (at a significance level of 0.50) is higher than Eetehban cement factory.

Table 2 Average shows the score of indexes of gaining competitive advantage in two factories. The Indicators of competitive advantage in both factories are at the same level.

Table 3, indicates the correlation between the tactical factors of knowledge management, and the indicators of gaining competitive advantage in the cement factory of Darab. With regard to the obtained values, it can be said there is a direct and meaningful correlation between all tactical indexes of knowledge management and competitive advantage indexes. Based on Table 4 the factors that their correlation coefficient is greater than 0.255, are enjoying a significant and direct correlation. An asterisk that exists beside on the values represents a relatively strong correlation and two asterisks represent a very intense correlation (Table 1 and 2)

Table 5 indicates the value of predicting the power of tactical factors of knowledge management to obtain a competitive advantage in the cement factory of Darab. According to the values and determination coefficient can be said the learning factors from the process of knowledge management, knowledge sharing and use of knowledge have the power of prediction to gain competitive advantage.

Table 6 shows the amount of predicting the power of tactical factors of knowledge management to acquire competitive advantage in the cement factory of Estehban. In this factory, only the factor of knowledge sharing has the predicting power to gain competitive advantage.

## 3.2 Conclusion

As noted, the present study sought to examine the relationship between tactical factors of knowledge management and the indicators of competitive advantage. This study showed that there is a positive correlation between knowledge management and gaining competitive advantage and the higher the mean score of tactical factors in an organization, these factors will have more predicting power for factors of competitive advantage. One of the most important points that in the implementation of knowledge management as a source of competitive advantage must be noted, creating the right culture and the availability of infrastructures such as information technology; it can safely be said that provided if all the infrastructure and enablers of knowledge management be ready and does not exist a culture, implementation of knowledge management will fail it should before running this process change the culture of acceptance and willingness of employees to use technologies to be created and show the advantages of knowledge sharing and after their collaboration in the implementation of knowledge management encourage their knowledge. Perhaps the most important result of this study is that the knowledge management for Iranian organizations should be localized and performed parallel with its culture and structure.

**Table 1. The mean score of tactical knowledge management, in the cement factory of Darab cement and cement factory of Estehban**

The assessed factor	Statistical population	The average of the score factor	SD	T value	Degree freedom	Significance level
Acquire knowledge	Darab	27.36	4.309	2.552	99	0.004
	Etehbhan	24.17	6.485			
Knowledge sharing	Darab	19.04	2.502	1.997	99	0.049
	Etehbhan	18.00	2.708			
Learning	Darab	26.95	4.002	3.026	99	0.003
	Etehbhan	24.09	5.472			
Using knowledge	Darab	23.69	4.337	2.669	99	0.009
	Etehbhan	21.37	4.373			

**Table 2. The mean score of indexes of gaining competitive advantage, in the cement factory of Darab cement and cement factory of Estehban**

The assessed factor	Statistical population	The average of the score factor	SD	T value	Degree freedom	Significance level
Timely supply	Darab	15.62	2.468	1.248	99	0.315
	Etehbhan	14.96	2.859			
Innovation	Darab	15.82	2.237	0.660	99	0.511
	Etehbhan	15.48	2.934			
Cost reduction	Darab	16.16	2.448	1.054	99	0.294
	Etehbhan	15.57	3.250			
Increase market share	Darab	15.69	2.645	0.670	99	0.5040
	Etehbhan	15.30	3.154			
Best quality	Darab	16.36	2.643	0.822	99	0.413
	Etehbhan	15.96	2.716			

**Table 3. The value of Pearson correlation between indicators of tactical knowledge management and competitive advantage in the factory cement of Darab**

Tactical factors of knowledge management The indexes of competitive advantage	Acquire knowledge	Knowledge Sharing	Learning	Using knowledge
Timely supply of products	R= *0.278 Sig=0.04 N=55	R= *0.278 Sig=0.04 N=55	R=*0.337 Sig=0.012 N=55	R=0.266 Sig=0.05 N=55
Innovation in products	R=0.222 Sig=0.103 N=55	R= *0.273 Sig=0.044 N=55	R=**0.371 Sig=0.005 N=55	R=0.219 Sig=0.108 N=55
Reducing the cost of products	R=0.082 Sig=0.552 N=55	R=*0.326 Sig=0.015 N=55	R=**0.373 Sig=0.005 N=55	R=0.232 Sig=0.089 N=55
Increasing product market share	R=0.215 Sig=0.115 N=55	R=0.254 Sig=0.062 N=55	R=**0.448 Sig=0.001 N=55	R=0.234 Sig=0.086 N=55
The better quality of products	R=0.229 Sig=0.092 N=55	R=0.240 Sig=0.078 N=55	R=**0.350 Sig=0.009 N=55	R=**0.359 Sig=0.007 N=55

**Table 4. The value of the Pearson coefficient between tactical factors of knowledge management and the indexes of acquiring competitive advantage in the cement factory of Estehban**

Tactical factors of knowledge management The indexes of competitive advantage	Acquire knowledge	Knowledge Sharing	Learning	Using knowledge
Timely supply of products	R= *0.324 Sig=0.028 N=46	R= **0.382 Sig=0.009 N=46	R=0.227 Sig=0.128 N=46	R=*0.401 Sig=0.006 N=46
Innovation in products	R=0.229 Sig=0.126 N=46	R= 0.509 Sig=0.000 N=46	R= 0.264 Sig=0.077 N=46	R= 0.211 Sig=0.159 N=46
Reducing the cost of products	R=0.106 Sig=0.482 N=46	R=**0.0381 Sig=0.009 N=46	R=0.182 Sig=0.226 N=46	R=0.020 Sig=0.897 N=46
Increasing product market share	R= 0.147 Sig=0.329 N=46	R= **0.507 Sig=0.000 N=46	R=0.258 Sig=0.083 N=46	R=0.112 Sig=0.457 N=46
The better quality of products	R=0.105 Sig=0.487 N=46	R=*0.314 Sig=0.033 N=46	R=0.102 Sig=0.500 N=46	R=0.004 Sig=0.987 N=46

**Table 5. The value of regression between tactical factors of knowledge management and gaining competitive advantage, in Darab cement factory**

The variable	R	R <sup>2</sup>	Standard error	B coefficient	Beta	Value t	F	Sig
Learning	0.426	0.182	0.331	1.148	0.426	11.784	3.433	0.001
Knowledge share	0.314	0.099	0.557	1.34	0.314	5.793	2.407	0.02
Using knowledge	0.294	0.087	0.323	0.294	0.294	5.030	2.243	0.029
Acquiring knowledge	0.231	0.054	0.331	0.231	0.231	2.999	1.732	0.089

**Table 6. The value of regression between tactical factors of knowledge management and gaining competitive advantage, in Estehban cement factory**

The variable	R	R <sup>2</sup>	Standard error	B coefficient	Beta	Value t	F	Sig
Learning	0.470	0.221	2.318	0.470	3.535	12.498	12.498	0.001
Knowledge share	0.233	0.358	0.568	0.233	1.587	2.520	2.520	0.120
Using knowledge	0.202	0.304	0.415	0.202	1.366	1.867	1.867	0.179
Acquiring knowledge	0.153	0.455	0.468	0.153	1.029	1.058	1.058	0.309

#### 4. Conclusion

Knowledge Management to become the competitive advantage required the correct pattern for implementation and execution. In addition and according to the strengthening and infrastructures are important factors in implementing knowledge management. These factors also should be considered prior to execution of the process. One of the most important enablers of knowledge management is organizational culture. If an organization wants to develop learning culture required that its staff learns the necessary skills. Creating a learning culture among staff is essential.

When managers and employees to reach a common understanding of the concept of knowledge management, that is a proper time to execute the process of knowledge management this is a process which would enable the organization to achieve the continuous improvement of process and products, and gain a competitive advantage. Existing teams in execution the process of knowledge management for acquiring knowledge in order to discuss and effective debates among the staff is essential. Another important factor to acquire the knowledge is a feedback that is provided by internal customers to the external staff, this feedback is very useful to improve business processes and innovation in the perform daily tasks. This factor and effective interaction

and communication among the staff lead to facilitate and using the knowledge. Knowledge-sharing is so important that today the slogan of knowledge is power has converted to sharing knowledge is power. Knowledge sharing cause to create organizational knowledge. Create knowledge base and access to the Internet and Intranet, are among the important sources of knowledge sharing. An enterprise that is knowledge-centered its workers easily transfer their knowledge to knowledge bases. These staff completion of the projects and review them also helps greatly to creating and sharing knowledge. To learn from the process of knowledge management, the organization must support the learning from the experience of its members and provide sufficient opportunities to continually how the sufficiently responsive to the changes. Workers who ended their service are important sources of knowledge that the managers before leaving them from the organization store their knowledge and apply it as an important organizational source to gain competitive advantage. Using knowledge is the most important step of the knowledge management process for competitive advantage. The use of knowledge in the production process lead to improve organizational changes and ultimately gain competitive advantage.

As noted, the present study sought to examine the relationship between tactical factors of knowledge management and the indicators of competitive advantage. This study showed that there is a positive correlation between knowledge management and gaining competitive advantage and the higher the mean score of tactical factors in an organization, these factors will have more predicting power for factors of competitive advantage. One of the most important points that in the implementation of knowledge management as a source of competitive advantage must be noted, creating the right culture and the availability of infrastructures such as information technology; it can safely be said that provided if all the infrastructure and enablers of knowledge management be ready and does not exist a culture, implementation of knowledge management will fail it should before running this process change the culture of acceptance and willingness of employees to use technologies to be created and show the advantages of knowledge sharing and after their collaboration in the implementation of knowledge management encourage their knowledge. Perhaps the most important result of this study is that the knowledge management for Iranian organizations should be localized and performed parallel with its culture and structure.

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