Knowledge Management Approaches and Knowledge Gaps in Organizations

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ABSTRACT

Nowadays, knowledge has been recognized as an indispensable strategic resource in organizations. Therefore organization` s capability in acquiring, developing, sharing and applying knowledge is expected to lead to their sustainable competitive advantage. It seems that the first step to be taken in order to enter the world of knowledge management is to analyze different approaches that exist in the field. Then it would be essential to identify knowledge management gaps. Organization` s inability to identify and fill these gaps before implementing knowledge management programs will obviously have unwanted effects on implementation stage. This paper is aimed firstly at a review of knowledge management history from 1700 A.D till now. Then its approaches (Mechanistic, systematic, core competencies and behavioral-cultural) are reviewed and two models of knowledge management gaps are studied. The inefficiencies due to the implementation of knowledge management systems and also an investigation into the context of knowledge growth in Iran are correspondingly represented. It also encompasses a contrast between some developed and developing countries including United States of America, Japan, United Kingdom, Germany, France, India, Turkey and Pakistan denoting the criteria of their economic status and knowledge growth. In conclusion, the priority to adopt systematic, behavioral/cultural and core competencies approaches in contrast to traditional mechanistic approach will be emphasized. The first model of knowledge gaps which will be presented in this paper is based on individuals` socio-economic status and situation- specific factors. In the second model of knowledge management gaps, six gaps have been recognized due to perception, strategic, planning and implementation aspects. It will also be mentioned that the first model is appropriate to be applied at macro level whereas it will be appropriate to apply the second model at micro level.

Keywords: Knowledge management, knowledge gaps, Systematic approach, Behavioral/cultural approach, Core competencies approach

1. INTRODUCTION

Today, knowledge has been recognized as an indispensable strategic resource in organizations. Therefore organizations` capability in acquiring, developing, sharing and applying knowledge is expected to lead to their sustainable competitive advantage. The organizations which are equipped with knowledge resources are able to deliver superior value to customers by combining traditional resources in the new ways.

In fact, it is the organizations` knowledge that enables them to develop their resources and processes, to reinforce their core capabilities and to create sustainable competitive advantages.(sharkie, 2005)

Knowledge management systems, both from their strategic core capability point of view and also as vital resources, have gained increasing importance in organizations. (Ahn and Chang, 2004)

In order to exploit knowledge workers as organizations` intellectual assets and disseminate knowledge to promote organizational learning, decisions` effectiveness and improve their competitive position, many organizations have implemented knowledge systems and processes. (Rao, Muati and Bryson, 2006)

Of course, in this époque, the most important opportunity for organizations is the availability of new and web-based information technology and mobile communication services that enable organizations to overcome geographical and organizational barriers to communicate and transfer knowledge in discrete networks. (Corso, Martini & Pellegrini, 2006)

In the present article, short descriptions of knowledge management history and knowledge management approaches have been discussed and finally a review on existing models of knowledge management gaps in organizations have been developed.

With emergence of service society after the 2nd world war, the importance of the role of the employees` knowledge and innovation has increased. (Malhotra, 2000, p.5)

At present, in the era of globalization, collective learning, knowledge sharing and creating institutionalized networks beyond country borders, has become as an important subject for politicians, managers and citizens. (Zhu, 2004, pp.76)

These days, economy has become global and knowledge- intensive. In this economy, what a company knows is more important than traditional resources of economic power such as land, factory, equipment and workforce. Though, availability of natural resources does not lead to competitive advantages. In fact, prosperous companies are the ones who are able to perceive and organize their knowledge. Today, corporates` success is due to their ability to acquire, encode and transfer knowledge more efficiently than their competitors. It has been widely acknowledged by experts that during the last fifty years, developing companies have evolved so that knowledge. (Davenport, De Long, 1997)

Based on the results of the survey conducted by Darroch (Darroch,2003),the organizations which have developed behaviors and procedures of knowledge management, in contrast to other countries present more innovation and higher levels of performance. (Darroch, 2003, pp.52)

In fact, this organizational phenomenon complete and reinforce other organizational procedures such as TQM, process reengineering and collective learning by focusing on sustaining organizational competitive advantage. (Sharma, 2004)

2. KNOWLEDGE MANAGEMENT AND THE NECESSITY OF ITS IMPLEMENTATION

Some definitions of knowledge management developed by some scholars are as follows:

"Knowledge management is the process of knowledge creation and dissemination to effectively implement it in organizations." (Hoffman, Hoelschler and Sherif, 2005)

"Knowledge management is the conscious design of processes, tools, structures and etc… to increase, renew, disseminate and improve the utilization of structural, human and social knowledge."

Results of different researches and surveys demonstrate that nations which have superseded others in creating knowledge even have higher ranks according to competitive growth and economic power. Also, companies that suffer from inappropriate economic situation do lack appropriate knowledge infrastructures.

The following table demonstrates the significance of this debate.

Table1. Situation of knowledge in some countries

	U.S.A	Japan	U.K	Germany	France	India	Turkey	Pakistan
Rank (GCI)*	2	9	11	13	27	55	66	91**
Number of Scientific Products (2004)	450287	84395	90443	84266	57774	23748	14107	1048
Number of Knowledge Products (per one billion GNP)	41.14	19.22	53.84	40.43	39.05	41.67	71.32	13.51***
GDP per capita	39820	36205	36042	32862	30713	640	6700	2100****

**Growth Competitiveness Index*
*** These figures are related to GCI ranking (2004)*
****www.iranknowledge.irandoc.ac.ir*
*****World Bank Group(2004)*

In the table above, Growth Competitiveness Index (GCI) is measured by criteria such as quality of economic macro environment, conditions of public administrations and level of country's preparation to acquire technology. All the figures refer to the year 2004.

Scientific products refer to registered records in Information Science Institute, USA in any document or language.

In order to compare statistics, figures from five developed countries (U.S.A., Japan, France and Germany) and three developing countries (Pakistan, Turkey and India) have been acquired.

Also, according to relevant literature review, the quantity of scientific products and the quantity of knowledge production per 1 billion $ GNP, are amongst the index to measure knowledge development in different nations. (www. iranknowledge. irandoc.ac.ir)

In organizational context, the importance of knowledge management augments (Increases) when according to global competition; organizations are in excessive need to acquire knowledge about their potential business competitors in present and future, their clients and scientific and technological progresses which could be replaced by their goods and services.

It could be claimed that one of the reasons of existing problems and weaknesses in all levels of Iranian organizations, is the lack of systematic processes of knowledge management that leads to creating, sustaining and transferring knowledge. In case an organization lacks such processes, there will occur an extensive gap between its existing and required knowledge. Therefore, consequences such as occurrence of frequent errors, repetitive processes, increased costs, decline in the quality of goods and products, dissatisfaction of internal and external customers and lack of competitive power in national and international levels. Also, lack of systematic processes of knowledge management and emergence of knowledge gaps will lead to disappearance and devaluation of the great part of the organizational knowledge and automatically, a great deal of this valuable stock which has been acquired by allocating valuable resources of time and money, will be ignored and no solutions will be thought of.

3. HISTORICAL BACKGROUND OF KNOWLEDGE MANAGEMENT

As Ferdowsi (Ferdowsi, 940) – the Persian well-known poet- has introduced knowledge and wisdom in his well-known poem As the foundation of power, also Francis Bacon in his well-known statement , " Knowledge is power" has gained global fame. In his first publication, "In praise of knowledge"(1592), even defined the individual by his/her knowledge.

Nguen, quoting Peter Drucker in his well-known publication "The post-capitalist Industry" has described the historical trends of knowledge management. He believes that the social intentions of knowledge have evolved in three phases:

- Firstly, it has taken place before 1700 A.D. and the attitude of knowledge for knowledge, wisdom and enlightment has been pursued.
- Secondly, it has occurred during 1700 and 1800 A.D. In this era, by stressing on technology creation, knowledge has shifted to organized, systematic and goal-oriented entity.
- Thirdly, it has commenced from 1800 A.D. and has reached the peak by Fredrick Taylor's principles of scientific management. Scientific management was to make some attempts to formulate the skills and experiences of its employees to the scientific and goal-oriented knowledge which reflects the era of applying knowledge for knowledge.(Nguen,2002)

Although, Islamic Republic of Iran has no place among 117 countries of the world according to GCI, based on other statistics , Iran ranks 11 among sixteen countries including U.S.A. , U.K., Japan, Germany, China, France, Canada, South Korea, India, Turkey, Iran, Egypt, U.A.E, Kuwait and Iraq and its knowledge production percentage is 0.19 % (Ensafi,2006).

Therefore, all these figures demonstrate that in contrast to other developing and developed countries, Iran has a long way to effectively manage the knowledge and in order to be able to compete with its competitors; it has to acquire systematic techniques to manage knowledge and bridge the existing gaps between present knowledge and required knowledge.

In the relevant literature, poverty does not only signify the lack of economic resources, but also it includes lack of hygienic facilities, knowledge capabilities and appropriate management skills.

Before shifting to the knowledge-based economy in the post-modernist perspective, the major sources of economic value creation has been tangible assets namely factory, land, tools, machinery and raw material (which are identified as structural, physical and hard capital), whereas in knowledge-based economy, intangible resources are the strategic resources of value creation. Intangible assets include the informal knowledge embedded in organizational structures, processes, systems, work teams such as communities of practice, innovative networks and competencies. (Corson, Ranzjin & Mardsen, 2004)

It could be acknowledged that the historical origins of knowledge management are as follows:

1. Religion and philosophy to comprehend the nature and role of knowledge
2. Psychology to comprehend the role of knowledge in organizational behavior
3. Economics and social sciences to outline the role of knowledge in society
4. The business theory to conceive the role of knowledge in work and its organization(Wiig,1999)

4. KNOWLEDGE MANAGEMENT APPROACHES

In this article, four approaches of knowledge management, the mechanistic approach, the systematic approach, the core capability approach and the cultural /behavioral approach have been discussed. (Sharma, 2004)

4.1 The Mechanistic Approach

The mechanistic and hard approach to knowledge management involves applying technology and resources to do more of the same better. The main assumptions of this approach include:

Better accessibility to information is a key, including enhanced methods of access and reuse of documents.

4.2 The Systematic Approach

The systematic approach involves the systematic practices in order to disseminate knowledge and information among appropriate people in appropriate time, to create value.

A Knowledge management system involves the representation, acquisition, creation, usage and evolution of knowledge in its many forms and the modeling, analysis and design of technical systems for supporting all facets of knowledge management.

Some key assumptions of this approach are as follows:

The most important thing is to achieve sustainable outcomes but not the processes, technologies or definitions people present. Managing a resource without being modeled is not possible. However, many aspects of organizational knowledge could be modeled as an explicit and observable resource. Also, solutions could be found in a wide range of disciplines and technologies. It is also possible to re-investigate the nature of knowledge work and to solve knowledge problems by applying the traditional methods of analysis. Therefore cultural issues are important but their analysis should be done systematically. This probability exists that some changes occur among employees but definitely, policies and procedures require changes. It is also possible to successfully apply technology to resolve knowledge problems.

4.3 Core Competency Approach

One way to manage knowledge-based organizations is developing knowledge competencies. Core performance capability and core knowledge capability are two distinct concepts, though complementary but each of them is a component of organizational identity.

Core competencies approach is a mechanism to convert core knowledge capabilities to goods and services. Core performance capabilities are processes that enable organizations to deliver goods and services with high quality, speed and efficiency to customers. These capabilities include high-speed delivery of new products to markets, product customization for customers, optimal management of logistics, employing qualified employees, learning and vision dissemination and are regarded as a key for organization success.

4.4 Cultural/ Behavioral Approach

This approach which has its origins in change management and business process re-engineering, regards knowledge as a managerial issue. Based on this approach, although technology is necessary for the management of explicit knowledge resources, it is not the only solution for knowledge management. Based on this approach, focus is more on innovation, creativity and learning organization rather than focusing on manipulating explicit resources or knowledge creation.

The dissemination and sharing of knowledge is embedded in interactions and networks among people and their institutionalized groupings e.g. teams, organizations and etc… that enable us to access the diverse resources of intelligence.

The key assumptions of this approach are as follows:

In information-intensive environments where organizations are losing their efficiency and effectiveness according to the business objectives, implementing changes in organization's culture and behavior seems to be vital.

Organizational culture and behavior involves changes while traditional technologies and solutions have reached their boundaries of effectiveness.

At present, cultural factors which have an important role in organizational change, have been devaluated, therefore implementation of cultural/ behavioral factors will probably lead to profitability for organizations. (Sharma, 2004)

5. INCONVENIENCIES OF KNOWLEDGE MANAGEMENT SYSTEMS

After investing large amounts of money on implementation of knowledge management systems in organizations, they face inconsistencies between these systems and managerial and cultural philosophies and business processes. Therefore they feel being conceived. Some of these problems include:

- In most cases, the Idealist designers and implementers of knowledge management systems are isolated from the rest of the organization and instead of designing the systems, taking account of the priorities and organizational characteristics and processes; they design them according to their own perceptions and personal beliefs.
- Most of the knowledge management systems have unrealistic capabilities that in fact cause users to become annoyed and upset.
- Instead of focusing on business needs and opportunities, they regard knowledge management as a general capability and do neglect the value creation for organizations.
- Many attempts in the field of knowledge management lead to failure because of the allocation of inappropriate employees and other resources.

In the era of knowledge-based economy, organizations have realized that a key factor in their success is the application of appropriate knowledge management approaches.

Based on a survey conducted by Chong et al (chong, 2002) in twenty-five international corporations, it was revealed that the majority of the senior managers of the so-called organizations believed that they had lost many opportunities in business according to the adoption of weak and inefficient practices of knowledge management (Guang, 2006).

6. KNOWLEDGE MANAGEMENT GAPS

Knowledge gap is defined as the difference between the corporate`s present capability and the required capability in the field of knowledge management. (Hall & Andriani, 2002)

Various studies have been conducted to define knowledge gaps as " the difference between the corporate`s present capability and the required capability in the field of knowledge management." Lovrich and Pierce have identified two gaps namely: socio-economic factors and socio-specific situation that will be discussed later.

Tiwani (Tiwani, 2001) has also introduced some infrastructural gaps which hinder the creation of knowledge management systems.

Hall and Andriani (Hall and Andriani, 2002) have also identified the existing gaps between the current knowledge possessed by organization and the required knowledge while introducing new products and services.

Wild (Wild, 2002) has introduced knowledge gap as the qualitative and quantative difference between the existing and the required knowledge.

Also, a model has been introduced by Lin, Yeh and Tseng (Lin, Yeh and Tseng, 2005) to represent six gaps in strategic, planning, implementation and perception levels.

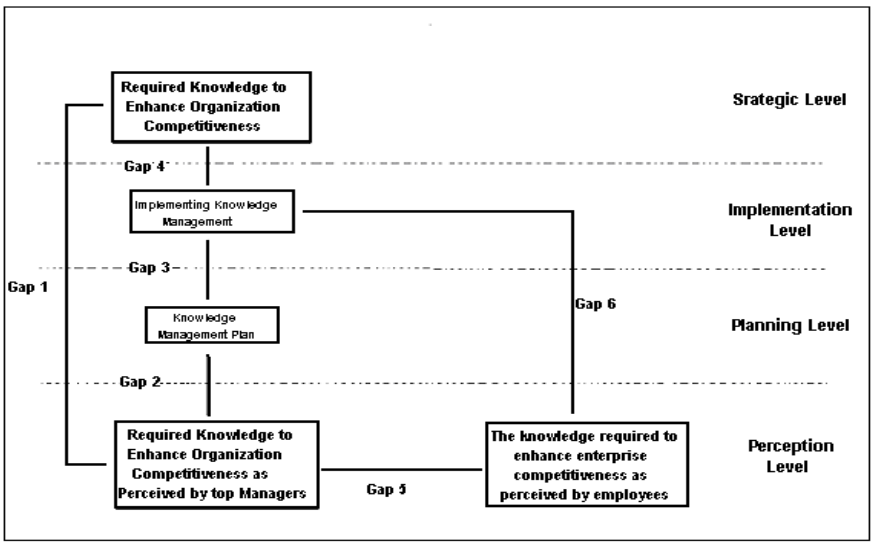
It is necessary to mention that any failure in identification and bridging knowledge gaps before implementing them will have unwanted effects on implementation stage, therefore actions such as knowledge requirements analysis, knowledge management systems assessment and the identification of obstacles seems to be essential. (Lin, Yeh, Tseng, 2005)

7. KNOWLEDGE MANAGEMENT MODELS

7.1 The First Model

Literature on the distribution of public affairs knowledge among citizens identifies a "knowledge gap" separating persons of higher and lowers socioeconomic status (SES). More precisely, lower SES persons typically exhibit lower levels of policy-relevant information. They also usually respond more slowly to mass media-infused attempts to increase the public's knowledge.

Figure 1. The model of the KM gap (Source: Lin,Yeh,Tseng,2005)



Ettema and Kline (1977) identify two types of explanations for the knowledge gap. One is rooted in "trans situational "conditions associated with living at lower SES levels. One of these conditions is a hypothesized lack of communication skills on the part of lower SES persons. In contrast to transsituational explanations, some scholars advance a situation-specific theory. This view suggests that gaps widen in those circumstances in which lower SES persons are less motivated to acquire the information or in which the information is less functional for them.

These two rival theories focus attention on the respective roles of SES and individual motivation in explaining individual holding of information. (Lovrich,Pierce,1984)

7.2 The Second Model

This model has been developed based on knowledge value chain (Holsapple and Singh, 2001) and knowledge spiral (Nonaka, 1991) to demonstrate the managerial gaps occurring during the implementation of knowledge management systems. As depicted in figure no….. , there are six gaps in this model that could be identified from four perspectives:

7.2.1 Strategic Perspective

In order to increase organizations` competitiveness, organizations must continuously scan their internal and external environment. Failure in doing so, will probably lead to the gap between the knowledge required to increase organization`s competitiveness (as perceived by top managers) and the real knowledge required to increase organization`s competitiveness. (Gap 1)

Failure to evaluate knowledge management processes leads to the creation of gaps between the outcomes of the implementation of knowledge management systems and the perceived outcomes of top managers.

7.2.2 Perception Perspective

It is probable that top managers do not have sufficient capability to identify the knowledge, organization requires to enhance its competitiveness therefore a gap appears between the top manager`s perception of the appropriate knowledge management plans and the existing knowledge management plans in the organization (Gap 2).

Also, in an organization, due to the differences between the role, position and the knowledge of top managers and employees, some differences may exist between their perceptions (Gap 5).

It is also possible that a gap exists between the organization`s required knowledge for enhancing competitiveness and employee's perceptions of the required knowledge while implementing knowledge management systems (Gap 6).

7.2.3 Planning Perspective

The appropriate internal and external environmental perception of top managers causes to plan appropriate programs for knowledge management. If top managers can not apply this acquired knowledge from environment during knowledge management systems implementation, gap 2 appears. If employees fail to comprehend knowledge management plans while facing them, gap 3 appears.

7.2.4 Implementation Perspective

If implementations of knowledge management systems are not congruent with its plans, gap 3 occurs. Also, it is essential that employees gain appropriate perception of the required knowledge to enhance organization`s competitiveness otherwise gap 4 appears.

7.3 Knowledge Gap Definitions

Generally speaking knowledge gap is defined as the difference between organization`s current capability and its required capability to manage knowledge. (Hall and Andriani, 2002)

The definitions of knowledge gaps according to the second model are as follows:

Gap 1: The gap between top manager`s perception of the required knowledge to enhance competitiveness and the real knowledge required.
Gap 2: The gap between top manager`s perception of the required knowledge to enhance competitiveness and knowledge management plans.
Gap 3: The gap between top manager`s proposed plans and the progress of knowledge management plans.
Gap 4: The gap between the acquired knowledge after implementing knowledge management systems and the required knowledge to enhance organization`s competitiveness.
Gap 5: The gap between top manager`s perception of the required knowledge to enhance organization`s competitiveness and employee's perception of this subject.

Gap 6: The gap between top manager`s perception of the required knowledge to enhance organization`s competitiveness and the acquired knowledge after implementing knowledge management systems.

8. CONCLUSION

In this paper, after a short review on the historical background of knowledge management, four knowledge management approaches including mechanistic approach, systematic approach, core competencies approach and cultural/behavioral approach have been discussed. It seems that in knowledge era, mechanistic approach that only focuses on physical tools and information technology infrastructures is not sufficient. In other word, it is better to adopt an integrated approach based on the systematic, core competencies and cultural / behavioral approaches in order to be able to take into account the people, physical and core knowledge competencies aspects of knowledge at the same time.

According to knowledge gap models, the 1st model is applicable in macro and country level regarding the socio-technical factors and people` s motivation to acquire knowledge and the 2nd model is applicable in organizational level regarding 6 knowledge gaps in strategic, planning, perception and implementation levels.

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