Analysis of the Role of Quality Management in Creating Knowledge Management Value Chain

Sanjar Salajeghe, Ph.D
Adel Soleimani Nejad, Ph.D
Samira Soleimani
Department of Management, Islamic Azad University,
Science and Research Campus, Kerman, Iran

Abstract

Nowadays, with expansion of knowledge in organizations, effective knowledge management in line with the goals of organizations has a special importance. Creation of knowledge management infrastructure to better control and monitor organizational knowledge is also considered very important.

This study takes a people-oriented approach to quality management and investigates the effects of three dimensions of senior management commitment and leadership; staff competency enhancement programs, and customer orientation on creation of knowledge management (KM) value chain.

The results indicated that in all three dimensions examined, there were significant relationship between quality management and creation of knowledge management infrastructure in organizations. Investigation of correlation between quality management variables and KM value chain showed a higher correlation between senior management's commitment and leadership and KM value chain. The importance of senior management's commitment and leadership in organizations is emphasized in the area of creating a knowledge management infrastructure. This study is an attempt to investigate the effects of quality management systems on creating organizational knowledge management infrastructure.

Keywords: Quality Management Systems, People-Oriented Approach, Km Value Chain, Knowledge Management Infrastructure

Introduction

In recent years, different organizations and companies have started to join the knowledge process and new concepts such as knowledge work, knowledge worker, knowledge management and knowledge organizations are indications of this trend. Using these new terms, Peter Drucker tells us about a new kind of organization in which the power of arm is replaced by the power of mind. According to this theory, only the societies that have more

knowledge can expect developments and progress. In other words, knowledge is more important than access to natural resources. Knowledge organizations achieve capabilities that can transfer a small force into an immense power (Alvani and Danaei Fard, 2001: 382). These organizations are faced with new challenges. Present conditions and the competitive environment of organizations are far more complex and variable than they were before. The atmosphere is rapidly changing, so that for many organizations, the speed of changes are higher than their ability to respond and adapt. Continuous changes of knowledge is another source of imbalance for organizations. The endless stream of knowledge has placed markets in a state of constant change and force organizations to change constantly (Moshabki and Zarei, 2003:39). With such changes in the sphere of knowledge, studying knowledge management and implementing knowledge infrastructure are inevitable for organizations to survive in the competitive business environment. Organizations that want to remain in this area should be diligent in their effort to implement knowledge management. Implementing knowledge management and motivating staff, as the main factors affecting knowledge management infrastructure, pose challenges for organizations. Knowledge is considered as a strategic asset and in order to guide staff towards creating knowledge infrastructure, organizations should use a series of motivational factors. A factor that can help organizations in this area is called quality management systems. Principles of quality management systems and the potential they create in organizations can be used for implementing knowledge management systems. This article examines the people-oriented dimensions of quality management systems and aspects of KM value chain. It investigates the effects of quality management systems in building KM value chain infrastructure (Amiran, 2002:55).

Review of literature
Among the studies examining the relationship between quality management systems and knowledge management, a series of studies investigate the mutual effect of the two systems to provide an integrated system of quality management and knowledge management. They stress the complementary nature of these two systems. Ju et al (2006) is an example. They refer to a series of key factors of TQM and investigate the role of each in the structure of knowledge management in organizations. The structure of knowledge management introduced in this paper is KM value chain resulted from four activities: creation, storage, distribution and application of knowledge. They state that since implementation of quality management as a management system is older than knowledge management, we can use the potentials it creates in organizations to establish and strengthen the knowledge management system. Moreover, the integration between the two systems adds to strategic competence of the organization.

They believe that basic elements of quality management can guide us through implementation of KM value chain activities. Among other studies carried out in this field are those that investigated various aspects of knowledge management separately and considered the role of quality management systems in various stages of the KM process. An example of such research can be an article by Molina et al (2007) on the *Relationship between quality management practices and knowledge transfer*, as one of the dimensions of value chain management. To them, knowledge distribution is done in three areas of supplier knowledge, HR knowledge and customer knowledge. This knowledge sharing and knowledge exchange in the organization improves knowledge transfer and as a result, enhances organizational performance.

The process of quality management in organizations includes a series of planning, organizing, coordinating and guiding activities aimed at customer satisfaction. Systems of quality management follow a general direction to secure the basic needs and expectations of customers as their biggest mission. Among trends governing quality management systems, human resources as the most important asset of organizations, have received particular attention. This includes attention to teamwork and public participation emphasized in all quality management systems.

According to Hoogervost et al (2005) quality management depends on effective management of human resources. Researchers and experts believe that cooperation between HRM activities have significant effects on the implementation of quality management. For example, Wilkinson (1991) believes that quality management has two soft and hard aspects. The soft aspect emphasizes on Human Resource Management. According to Evans and Lindsay (1996) a comprehensive quality system is composed of two distinct systems: the management system and the technical system. The management system is related to HRM issues. Gunasekaran (1999) presents a conceptual model for the implementation of TQM. This model includes seven important strategies in the successful implementation of TQM, six of which are in relation to HRM. A set of basic factors of success in quality management are called soft factors, which are also referred to as people-oriented factors. These factors can be divided into three groups (Cho, 1994 :

1) Senior management commitment and leadership
2) Staff enhancement programs
    - Staff participation
    - Staff empowerment
    - HR training and Development
    - Teamwork

Customer satisfaction

Factors such as continuous improvement and statistical process control are suggested in quality management systems, which are considered hard aspects of Quality Management. These are also called technical-oriented quality factors.

In this study, Quality management systems are studied using a people-oriented approach and their role in creating KM value chain is investigated.

1- Senior management commitment and leadership

One of the issues that represent the organization's approach to quality is the senior management leadership in the area of quality, which is considered as a basic part of quality management and is defined as continuous commitment and partnership of organizational management in all sectors. Senior management leadership refers to the ability of organization's senior executives in creating quality values and factors in the organization. They maintain these values to serve as a guide for the direction of the organization in the process of achieving Quality Excellence. Moreover, the ability to integrate the organization's different public responsibilities with quality activities and factors indicates the leadership power of senior management. Without quality leadership in organizations, we cannot expect improvement of quality (Cho, 1994: 74).

Senior Management should have constant presence in different areas and should show its commitment to the organization in various areas including determining the organization's philosophy, objectives, policies, priorities and executive behavior (Shetty, 1991: 45).

Quality management system will introduce a new style of leadership based on the idea that personal success results from the success of enterprise groups (Cho, 1994: 75). In fact, the idea of Total Quality Leadership (TQL) is based on the concept that when ordering subordinates, rather than simply transferring authority to them and then managing them, an appropriate communication should be established and attempt should be made to empower staff. TQL specifically stresses learning and communication because they provide a clear definition of roles, goals and responsibilities. Moreover, TQL can be called a transformational leadership which introduces changes that in turn change the organization's direction (Ibid, 76).

Effective and charismatic leadership is one of the requirements for the conduct of human resources in total quality system. Intelligent leaders are expected to inspire positive values that employees encounter with when working. Charismatic leaders create trust and self-confidence in their employees. As a result, their subordinates' performance improves and their enthusiasm and passion for their jobs is enhanced (Shamir et al, 1993: 13).

Previous research suggests that there is a positive relationship between charismatic leadership style and the effort and attitude of employees towards their jobs (De Groot et al, 2000: 360). In other words, we expect that the behavioral attractions of effective leadership is associated with employees' positive attitudes and passion to participate in the projects. Thus, we can say that in view of employees, the leadership style affects their job participation (Boon et al, 2007: 951).

2- Employee enhancement programs

Today, management of knowledgeable staff and learning organization is no simple task. Knowledge workers cannot be managed using traditional disciplines. Principles and fundamentals of managing knowledgeable people should be learned and implemented. Gaining competitive advantage depends on education and management of Human Resources in the organization. Via knowledge production, knowledge organizations can be created and developed. Educated staff can convert knowledge into products and services that enhance profitability of organizations. For proper management of human resources, knowledge, information and skills of staff should be upgraded and their capabilities should be established. Human resource development (HRD) does not come with a lot of training, but with planned and systematic attempts. Using a variety of tools to enhance the capabilities of employees can help organizations in this direction. Education is only part of the process. Tools such as employee participation, teamwork and empowerment can be used to increase competencies of employees. Organizations that take steps to improve their employees' competencies can achieve customer satisfaction, better business performance, greater profitability and higher productivity. Such companies have the ability to attract the best customers and employees and gain a competitive advantage. Staff in such companies have high motivation and job satisfaction, better job participation, and desirable morale and loyalty to the organization (Soltani, 2006:49). In this study, four factors of employees' participation, empowerment, human resource development and education; and teamwork are examined as necessary tools for promoting employees in an organization.

- **Employee participation**

One of the activities of human resource management is employee participation by which all employees in the organization play an important role to achieve quality goals. In other words, employee participation can be seen as a focal point for quality management (Broka & Broka, 1992: 10).

In fact, by employee participation, the responsibilities in relation to quality are shared by all employees throughout the organization. Several studies suggest that employee participation and commitment, participative management and employee motivation are key factors for implementation of total quality management. Comprehensive employee participation in the organization requires factors such as employee motivation, support from top management, sense of ownership for the job, reward, training, job rotation, communication and employee empowerment (Ibid, 12).

- **Employee empowerment**

Empowerment includes a shared vision of where the organization wants to go, based on which a culture is created in the organization in which all employees participate actively and creatively to achieve the set goals. Accordingly, empowerment means removing bureaucratic controls and creating a sense of freedom for employees, so that they can use their talents and energies to achieve common objectives (Pickering & Matson, 1992: 93).

In many organizations, empowerment has become a slogan for quality improvement. On the other hand, empowerment can be suggested as a behavioral component in quality management (Luthans & Waldersee, 1992:33).

Teamwork

Teamwork and establishment of organizational teams is another key factor in the success of quality management. Teamwork is considered as one of the most effective and most affordable ways to build partnerships and collaboration among employees (Johnson & Gunderson, 1991: 37). Different properties are suggested for teamwork, including cooperation, innovation, creativity, open communication among employees, commitment, conflict avoidance, job ownership and increased confidence and interest. Teamwork also includes some obstacles such as conflict of roles and responsibilities, unknown purposes, team leadership conflict, selection of unfit members and poor results (Brocka & Brocka, 1992: 13).

In addition, the role of Senior Management in creating effective teams in organizations is also very important. Managers should facilitate the formation of groups via systematic approach for quality improvement. Establishing special teams for specific topics, encouraging group behavior and efforts, and strengthening communication among group members in the organization are among other measures they can take (Cho, 1994: 83).

- **HR training and development**

Human resource training and development is considered as one of the underlying principles in the implementation of quality management systems and human resource management (Snape et al, 1995:45).

Benefits of HR training and development in organizations can include increasing employee contribution, upgrading skills, increasing a sense of belonging to the organization, increasing commitment to the organization and strengthening competitiveness (Acton & Goldon, 2002:9).

As Cherrington (1995) states, a successful training and development program leads to more favorable employee attitudes that in turn strengthens loyalty and help employees in their personal development and job participation. According to Zhang (1999) HR training and development result in continual updating and improvement and acting as a source of motivation at work and a factor for learning and developing one's self. Generally, learning reinforces human resources, because acquiring new knowledge and skills improve job participation. Empirical studies have shown that HR training and development has a positive

. effect on job participation of employees in the organization (Karia & Asaari, 2006: 36) Organization should use training programs to strengthen institutional knowledge of employees because total quality management stresses information sharing as a factor to gain .competitive advantage (Cho, 1994: 87)

3. Customer orientation

Customer orientation is a key principle for quality management with emphasis on customers. International Center for Quality Studies reported that three-quarters of the companies in the world considered customer satisfaction as the first important factor in their organizational strategic planning (Cho, 1994: 89).

Many researchers believe that product and service quality can be determined by assessing customers' opinions. Nowadays, customer satisfaction is considered as a dynamic goal for successful quality management. Generally, the organization's customers can be divided into two categories: internal and external customers. In fact, advanced and global organizations earn competitive advantages via satisfaction of their customers.

Different quality standards, especially ISO 9000 pay particular attention to customer satisfaction. IS0 9001:2000 introduces customer satisfaction as one of the instruments for monitoring, measuring and evaluating the performance of quality management systems. The standard emphasizes the point that organizations must collect information on customers' opinion about satisfaction of their needs. They should find ways to obtain and use this information (IS0 9001:2000, 44).

Knowledge management value chain

Knowledge management (KM) is a broad and complex concept, and this is why many experts have looked at it from different perspectives. KM is a process in which organizations gain skills in the area of learning (internalizing knowledge), encoding knowledge (externalizing knowledge) and transfer of knowledge. In other words, knowledge management includes creating processes for identifying and acquiring required data and knowledge from the internal and external environment and transfering them to the decision and actions of organizations and individuals (Abtahi and Salavati, 2006: 34). There are different perspectives about how knowledge is resulted from information as related to value chain in knowledge management. A group of researchers believes that knowledge is an objective truth, which has the ability to be stored and changed. In this view, once the accuracy of the information is determined or its usefulness for the organization is confirmed, it turns into practical knowledge for the organization and is stored. The second theory of knowledge considers it as a process in connection with the application of knowledge. Detailed procedures of application or applicability depend on the users' interpretative capabilities (Shin et al, 2001: 340).

However, "while there is debate as to whether knowledge itself is a cognitive state, a process, an object, the description of KM as a process, based on understanding organization as a knowledge system dominates" (Ibid, 341).

1- Knowledge Creation (creativity)

Creativity is the first stage in knowledge management. Creation of knowledge is associated with increasing or correcting knowledge. This phase includes activities associated with the arrival of new knowledge into the system, which includes developing, discovering and acquiring knowledge. Creation of knowledge can be examined in terms of personal knowledge and collective knowledge creation. The interaction between these two knowledge cycles results in organizational knowledge.

2- Knowledge storage

Knowledge storage is a process, which consists of two major activities associated with created knowledge or knowledge input to the organization. The process should be in a way that the knowledge that is stored and distributed in the organization be effective for the organization.

- Refinement of knowledge

The organization should refine knowledge created within itself or acquired from outside. But the question that arises is whether knowledge deserves entering and storing without knowing its results (Adli, 2005: 175). With respect to this question, organizations must resist the attractiveness of knowledge, and considering that all knowledge is not equally important for success, use logical mechanisms to prevent non- essential knowledge input and allow useful and applicable knowledge to enter and be stored in the organization. To realize this aim, the management team should use insight and organizational mission and goals to create a framework for assessment of knowledge.

Knowledge Organization

Another duty of managers in the area of knowledge storage is Knowledge Organization or Knowledge Configuration/Integration. In this part of the process of knowledge storage, the organization store and organize massive collection of knowledge after its entry. Knowledge organization occurs in different parts of the organization. According to Alavi (1997), these parts are: Organization Memory, Individuals, organizational culture, learning methods, perception, thinking, feeling, transition between members, processes and procedures, physical workplaces and archive (digital and paper).

According to the above list, the place where organizing knowledge takes place can be physical or non- physical. However, often physical places like databases are where formal structure and shape of knowledge determined. Activities associated with storing and organizing knowledge are important, because it is possible that despite the presence of knowledge in the organization, users will ask for new knowledge if they are not informed. The ultimate goal of this step is to help members in the decision-making process.

### 3. Knowledge Distribution

Another term used for the process of dissemination of knowledge is knowledge Distribution/Sharing. Distribution process includes distribution of knowledge to Points of Action and even beyond them outside the organization. In other words, transfer of organizational knowledge needs the whole organization and several factors can help the process. Among these factors, are facilitating communication and creating organizational culture. About communication facilities, one of the main purposes of KM is facilitating communication in the realm of organization so that members work together to identify challenges and hidden opportunities (Adli, 2005: 178). In new KM models, knowledge management is the transfer of message that includes a communication system. Based on this activity, knowledge management needs various tools and techniques to increase cooperation, establish relationship between organization members, and encourage members to exchange knowledge. The result of effective knowledge distribution is dissemination of knowledge among members and increased decision-making effectiveness. That is because knowledge is no longer limited to senior managers, but all members will have access to important strategic ideas. Knowledge, especially implicit knowledge, is distributed in a way that its appropriate culture is created. To create a culture for transfer and exchange of knowledge, managers should avoid Fear-Based Approaches so that people can easily share their knowledge (Ibid, 179).

4. Knowledge Application

Knowledge Application or enforcement is the last stage and, in view of most scholars, is the most important part of the KM process. They state that competitive advantage does not belong to organizations that have the best knowledge, but belongs to those that best apply their knowledge. Application of knowledge includes using resources that provide a competitive advantage for the organization. If knowledge does not change into practice and if organizational activities are not organized based on knowledge, all activities and processes of knowledge management will be sterile and barren. Therefore, the approach to be adopted by the organization is not a resource-based approach, but an action-oriented one. In this approach, action is based on knowledge. Applying knowledge fills the gap between knowing and acting. The leaders' effort towards creating a culture that encourages application of knowledge is an important factor in promoting the culture of knowledge application. They can use a variety of financial and social incentives to institutionalize this culture in their organizations. An interesting feature of the application process is its link with processes such as creation, storage and dissemination of knowledge. It other words, despite their separation, these processes act as links of a chain in creating a sustainable competitive advantage. Without creation, storage and dissemination of knowledge, its application would be impossible and without application, creation, storage and distribution of knowledge would be pointless. Thus, if these activities are coordinated, they can create synergy and have a profound impact on all organizational procedures. One of these effects is that economic measures affect demand and supply of knowledge. They can reduce organizations' operating costs and increase value added for customers by enhancing production quality.

The conceptual model of this study

After reviewing independent and dependent variables in the study, the following conceptual model is obtained (Figure 2). Based on this model, for final analysis of the relationship between quality management and KM value chain, three primary and four secondary hypotheses are presented.
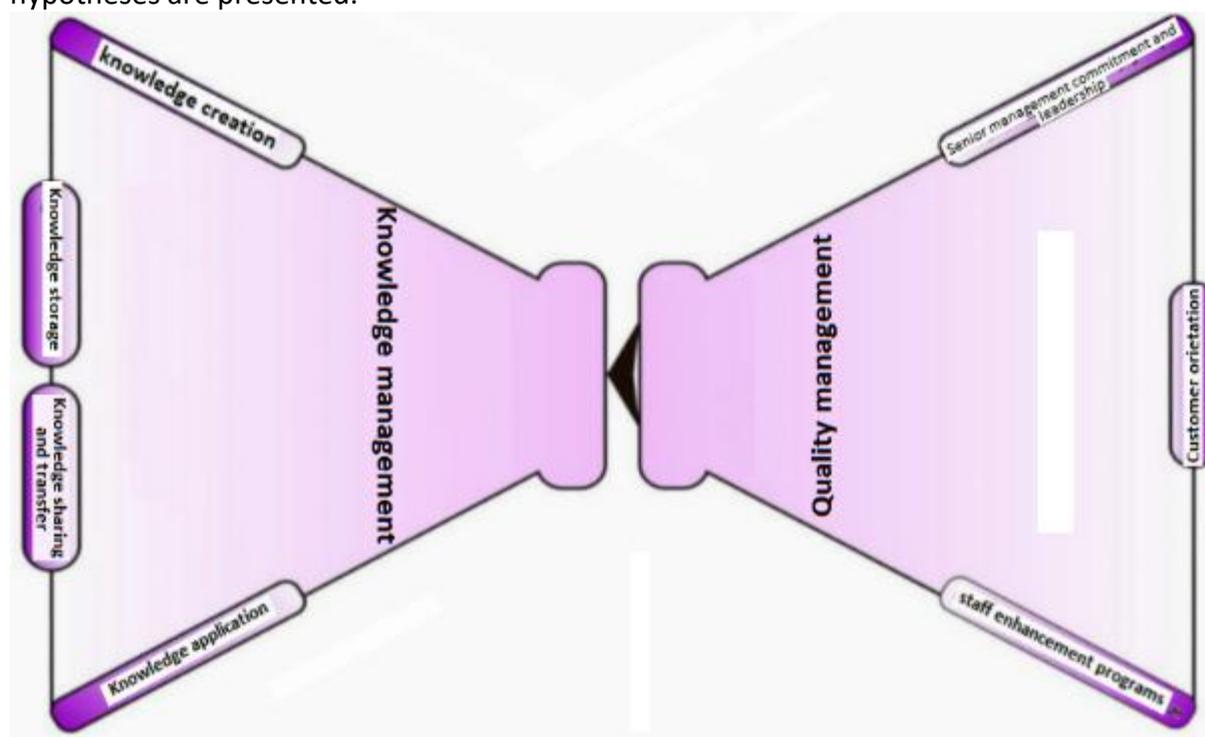
Research hypotheses

To investigate the relationship between independent and dependent variables based on the conceptual model presented, the following hypotheses are presented. Finally, the relationship between each independent variable and KM value chain as the dependent variable is evaluated. Therefore, to assess each variable, separately, four sub- hypotheses are proposed as follows:

1- There is a knowledge management value chain in the organization.
2- There is commitment and leadership of senior management in the organization.
3- Staff enhancement programs are implemented in the organization.
4- Customer orientation is considered in the organization.

After evaluating each of the variables, the relationship between each dimension of quality management and KM value chain was investigated using the following main hypotheses:

1- There is a relationship between senior management commitment and leadership and KM value chain in the organization.
2- There is a relationship between staff enhancement programs and creation of KM value chain in the organization.
3- There is a relationship between customer orientation and creation of KM value chain in the organization.

Materials and methods

For field study of findings from the literature review and testing the proposed hypotheses, a questionnaire was developed and administered in Ansar Bank branches in Isfahan province. Methods of data collection included a questionnaire and in-depth comprehensive interviews with staff of Ansar Bank of Isfahan Province.

Validity and reliability of research instruments

Content validity was used to validate the research questionnaire used in this study. Studying books, articles and thesis related to the effects of organizational quality systems on the structure of KM value chain, factors and dimensions were selected for evaluation. Comments by professors and experts of organizational issues were also used for expert judgment and opinion. In order to assess the validity of the questionnaire "validation through statistical parameters" were used. In this method, based on the consistency of respondents' performance from a question to another, standard deviation for items is calculated. For this purpose, Cronbach's alpha is suggested as follows (Homan, 1377: 73).

$$\alpha = \left(\frac{n}{n-1}\right)\left(\frac{S_t^{\,2} - \sum S_i^{\,2}}{S_t^{\,2}}\right)$$

where α is the reliability estimate, n the number of questions, Si standard deviation of items and St the standard deviation of the questionnaire. The alpha obtained for the questionnaire based on the above formula was 0.79, which indicates acceptable reliability.

Dimension tested	hypothesis	Z value	critical value (α=0.05)	Test result
KM value chain	First sub-hypothesis	2.795	±1.65	H0 rejected
Senior management commitment and leadership	Second sub-hypothesis	2.373	±1.65	H0 rejected

| Staff enhancement programs | Third sub-hypothesis | 2.345 | ±1.65 | H0 rejected |
| Customer orientation | Fourth sub-hypothesis | 2.377 | ±1.65 | H0 rejected |

After investigating the dependent and independent variables in the population, the main hypotheses of the study that examines the relationship between the independent variable (Quality Management) and the dependent variable (Knowledge Management Value Chain) are tested. To test the correlation between Quality Management and the Knowledge Management Value Chain, an independence test is used. The most common use of Chi - square is to test the independence between two criteria of data sets classification, if the criteria apply to the same class. If the distribution of one classification criterion occurs without regard to that of the other, we can say that the two criteria of classification are independent, otherwise they are dependent (Azar and Momeni, 2006, 245).

Dimension tested	hypothesis	the test statistic value ($\chi2$)	$\chi2$ value at significance level of 0.05	Test result
Senior management commitment and leadership and KM value chain	First main hypothesis	28.835	3.8414	H0 rejected
Staff enhancement programs and KM value chain	Second main hypothesis	20.148	3.8414	H0 rejected
Customer orientation and KM value chain	Third main hypothesis	19.212	3.8414	H0 rejected

Correlation coefficient
As the type of data in the study is ordinal, to test the correlation coefficient between the senior management commitment and leadership and KM value chain, the Spearman correlation coefficient is used.

The Spearman correlation coefficients is 0.65 between senior management commitment and leadership and KM value chain, 0.544 between staff enhancement programs and KM value chain, and 0.540 between customer orientation and KM value chain. Given the significant level which is less than 0.05, in is concluded that there is a significant positive correlation between the independent and dependent variables.

The highest correlation was that between senior management commitment and leadership and KM chain value. This shows its importance in KM value chain.
Results

Organizational quality systems and the principles governing it can be an appropriate and effective basis for KM in organizations. This can be tested when investigating variables and parameters of quality management. Particularly, the effect of factors of quality management in the area of human resources is important in creating KM value chain structure. Since human resources are in fact the organization's knowledge capitals, it can be said that the organization 's approach to knowledge management through factors affecting human resources and those that strengthen and develop staff in the organization, can be effective in the successful implementation of knowledge management. An important point about aspects of knowledge management is that employees are not comfortable with sharing their knowledge with others in their organizations. Therefore, encouraging staff to create the required knowledge or apply knowledge in line with organizational goals becomes difficult. In this regard, quality management can facilitate the process of encouraging them through various aspects of knowledge management. In other words, the basic elements of quality management can act as a practical guide when implementing KM value chain activities. In this study, the role of three people-oriented dimensions that constitute underlying principles of quality management in establishing a KM infrastructure called KM value chain were investigated. The results are discussed below.

1) Senior management commitment and leadership

The first step in the implementation of knowledge management in organizations should be taken by senior management. In other words, the idea of implementation of knowledge management should be adopted with the initial support of senior managers. That is because senior managers can provide resources needed for implementing the four stages of knowledge management. Leaders and senior executives of organizations can affect the dominant culture and atmosphere in the organizations; therefore, they play an important role in the creation and promotion of a belief that encourage staff to implement KM value chain phases. Without the support of senior management in the area of knowledge creation, storage, distribution and application in organizations, we cannot expect success for KM. The facilitating role of senior management in continuous progress of KM value chain is important. The most important roles of senior management in creation of KM value chain are considered in terms of the following dimensions:

1. Senior management support for:
   - creative activities and innovation as well as original ideas in organizations;
   - advanced information and knowledge storage systems in organizations;
   - knowledge distribution and knowledge sharing in organizations and creation of open and extensive communication channels; and
   - application of knowledge in line with organizational goals
2. Effective participation of senior management in each of the four activities of knowledge creation, storage, distribution and application in organizations.
3. Employee awareness of the importance of knowledge management and its aspects towards organizational excellence.
4. Effective leadership of senior managers in order to:
   - enhance employees' motivation to participate in the organization's knowledge management
   - encourage employees for creation of new knowledge and its storage, distribution and application in line with the goals of organization.

2) Staff enhancement programs

Staff enhancement programs examined in this study include four major aspects, which are most discussed in human resource management literature and have played a major role in development of staff. Training programs, employee participation enhancement, HR empowerment plans and emphasis on teamwork can help the development of KM process. Generally, the role of each staff enhancement dimension in creating knowledge management value chain can be discussed as follows.

- **Employee participation**
  - Increasing employee motivation to cooperate in each dimension of knowledge management;
  - benefiting from a suggestion system for uncovering innovative and original ideas of employees in the organization;
  - operationalizing creative ideas from the suggestion system;
  - appreciating contribution and cooperation of employees in the area of knowledge management; and
  - increasing employee commitment towards aspects of knowledge management

- **Staff empowerment**
  - creating the necessary context for realization of employees' potential talents
  - providing new knowledge required by employees
  - facilitating communication among staff
  - giving freedom of action to employees to take advantage of the knowledge
  - providing material and spiritual rewards to encourage employees to create knowledge management infrastructure

- **Group orientation**
  - promoting teamwork and team culture as a factor to increase distribution of knowledge among staff
  - increasing the level of cooperation among employees as a factor in creation of new knowledge

- **HR development**
  - using training and competency enhancement programs to enhance staff knowledge
  - taking advantage of training programs for distribution of new knowledge in the organization
  - promoting HR development programs in order to enhance customer knowledge

3) Customer orientation

Customer orientation is proposed as one of the key principles governing quality management systems. The role it can play in creation of KM value chain is important. Implementing KM value chain activities is consistent with the philosophy of customer satisfaction. Organizations often obtain customers' tacit knowledge through interaction with them. Through this interaction, customers' opinions are valued and can be implemented in the organization to achieve customer satisfaction. Reviewing customers' suggestions and complaints and interpreting the data to provide services they expect, can increase knowledge of the organization about its customers. In other words, during the process of KM value chain,

dimensions of knowledge creation, storage, distribution and application are implemented in order to meet customers' expectations.

Developing a customer-oriented culture in the organization changes the attitude of employees towards organizational tasks and increases application of knowledge in line with customers' expectations. Therefore, it helps a customer-oriented implementation of KM value chain in organizations. In other words, employees are guided towards acquisition or creation and application of knowledge in order to meet customer expectations. This indicates the essential role of customer orientation in creating KM value chain.

Suggestions for future research

The approach studied in this paper emphasizes people-oriented or the so called soft factors of quality management. The researchers used people-oriented factors of quality management in terms of human resources to investigate the effects of quality management systems on knowledge management structure in organizations. However, along the soft factors, hard factors of quality Management can also affect this area. Future research can investigate hard factors or technical-oriented factors of quality management and analyze their relationship with KM aspects. Another line of research can compare these two types of factors and their impact on various aspects of knowledge management.

References

Alvani, M. and Danaei Fard, H. (2001). The philosophy of government organization theories. Tehran. Saffar Publications. First Printing

Abtahi. H., Salvati, A. (2006) Knowledge management in organizations. Tehran : Peivand-e-Now Publications.

Amiran, H. (2002). The developmental process of quality management systems. Tadbir Monthly, No. 120.

Azar Adel and Momeni Mansour (2006) Statistics & its application in management. 2nd edition, Samt public Tehran, Iran.

Davenport, Thomas H**.;** Prusak, Laurence (2000). *Working Knowledge: How Organizations Manage What they Know*. Translated by Hussain Rahman Seresht. Tehran: SAPCO Publication. First printing.

Soltani, I. (2006). Employee development standard in human resource management. Tadbir Monthly, No. 177.

Adli, F. (2005). Knowledge Management moves beyond knowledge. Tehran: The Metacognitive Knowledge Publication.

International Institute for Standards (2000). ISO9001-2000. Translated by Fereydoun Faregh, Tehran: DQS Inc.

Moshabaki, A., Zarei, A. (2003). Knowledge management with a focus on innovation. Journal of Management Development. Number 16.

Hooman, H. A. (1998). Analysis of stratified data and log-linear models in scientific research. Tehran: Center for Public Management Education.

Alavi, M., 1997. Knowledge Management & Knowledge Management Systems. Available : http //:www.rhsmith.umd.edu

Acton,T,Golden,w,2002,Training:the way to retain valuable IT employees. Proceedings of the informing sience , crok,Ireland,June 19-21,pp1-12

Boon, O.K., Arumugam, V., Safa, M.S., Bakar, N.A.., (2007). HRM and TQM : association with job involvement, Personnel review, 36 (6), 939-962

Brocka, B., and Brocka, M.s., 1992. Quality Management: implementing the best ideas of the masters, Irwin .Inc, 3-14

Choo, A., Linderman, K., Schoeder, R., 2007. Method and context perspective on learning and knowledge creation in quality management. Journal of Operation Management. 25, pp 918-931

Cho, Kwansik., 1994. Impact of total quality management(TQM) on organizational performance in the U.S: An empirical investigation of critical success factors. Thesis(PHD).The university of Nebraska

Cherrington, D.J, 1995. The management of human resources, 4Th ed., Prentice-Hall, Englewood cliffs, NJ .,

De Groot, T., Kiker, D.s., Cross, T.C., 2000. A meta-analysis to review organizational outcomes related tocharismatic leadership" , Canadian Journal of the Administrative Science , 17 , 356-71

Evans, J.R, Lindsay, W.M., 1996. The management and control of quality, 3re Ed, West publishing company, New York. NY .,

Gunasekaran, A, 1999. Enablers of total quality management implementation in manufacturing : a case study, Total Quality Management, 10 (7), pp: 987-96

Hoogervost, J.A.P., Koopman, P.L., Vander Flier, H. 2005. Total Quality management: the need foe anemployee-centered, coherent appraisal. The TQM Magazine, 17 (1) .pp:92-106

Heskett,J.L., Sasser, W.E.,and Hart ,C.W., 1990. Service Breakthroughs,. Newyork, The free press pp:30-193

Johnson, R and Gunderson, R.L., 1991. The team approach to companywide change, . National Productivity Review, pp: 35-43

Ju, T., Lin, B., Lin, C., Kuo, H-J., 2006. TQM critical factors and KM value chain activities. Total QualityManagement. 17(3), pp 373-393

Karia, N., Asaari, M.H.A.H..2006. The effects of total quality management practices on employee's work related attitudes. The TQM Magazine. 18 (1), pp: 30-43 26.

Linderman, K., Schroeder, R.G., Zaheer, S., Liedtke, C., Choo, A., 2004. Integrating quality management practices with knowledge creation processes. Journal of Operation Management. 22, pp 589-607

Lin, C & Wu, C, 2005. Managing Knowledge contributed by ISO9001:2000. International journal of Quality & Reliability Management. 22(9). pp : 968-985

Luthans, F . & Waldersee, 1992. A micro management approach to quality service: Steps for implementing behavioral management. University of Nebraska-Lincoln, pp :12-42

McDermott, L.C and Emerson, M., 1991 Quality and service for internal customers," Training and Development Journal . 45 pp:61-64

Molina, L., Liorens-Montes, J., Ruiz-Moreno, A., 2007. Relationship between quality management practices and knowledge transfer. Journal of operation Management, 25, pp 682-701

Nonaka, I & Takeuchi., 1995. SECI Model. Available at : www.12manage.com/methods-nonaka-seci.html .

Pickering, J.W, Matson, R.E., 1992. Why Executive Development Programs(alone) don't work . Training and Development. 46,pp:91-5

Shetty,Y.K.,(1991) "Strategies for U.S.competitiveness :A survey of business leaders", Business Horizons,Vol34,pp:43-7

Snape, E., Wilkinson, A., Marchington, M., Redman, T., 1995, " Managing human resources for TQM : possibilities and pitfalls" , Employee Relations , Vol 17 No.3 pp:42-51

Shamir, B., House, R.J., Arthur, M.b. (1993). The motivational aspects of charismatic leadership : a selfconcept theory. Organizational Science, 4 pp:1-17

Shin, M , Holden, T, Schmidt, R., 2001. From Knowledge theory to management practice : towards an integrated approach. Information Processing and Management , 37, 335-355

Vouzas, F., (2007). Investigating the human resources context and content on TQM. Business Excellence , 11(3),pp:21-29

Wilkinson, A., Allen, O., Snape , E. 1991. TQM and the management of labour. Employee Relation, 13(1),pp: 24-31 .

Yang, C-ch., 2006. The impact of human resource management practices on the implementation of total quality management", The TQM Magazine, 18 (2) ,PP:162-173

Zhang, Z.H. 1999, Developing an instrument for measuring TQM implementation in a Chinese context, SOM Research Report . University of Groningen, Groningen. pp : 20- 35