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The Study and Investigation of KM System User Dissatisfaction

¹ Hosseinzadeh Nikouie Hamid, ² Azizi Saeed

¹ Human Resource expert in Qom electrical power company

² Chief of Fiscal group in Qom tax organization

¹ hosseinzadeh77@yahoo.com, ² s.aziizi@gmail.com

ABSTRACT

Rapid changes in today's environment lead organizations to adjust and update the knowledge they have to maintain their competitive advantage. The purpose of this study is to analyze the limitations of current KM systems and to propose an approach reforming of for KM structure. We analyzed the factors that affect KM system user dissatisfaction through a survey. We found that time/space limitation, inconvenience, search and integration were statistically significant limitation factors for system quality. On the other hand, incongruence and untrustworthiness of knowledge were not significant limitation factors for knowledge quality. Finally there are not significant limitation factors for User Dissatisfaction of KM system. We investigate correlation among the KM sub dimension and found that were statistically significant correlation between knowledge quality factors.

Keywords: *Knowledge management, Limitation factors, User Dissatisfaction*

1. INTRODUCTION

Many organizations recognize knowledge as a vital element in managing the production process because of its ability to determine an organization's failure or success. Hence, in today's business world, organizations are focusing on knowledge management (KM) as their main determinants for success[9]. Due to the fact that knowledge is a key strategic resource to create corporate value, enterprises strive to develop knowledge to the maximum in order to achieve corporate goals[17]. The concept of knowledge management emerged in the 1980s from the business world with the aim of retaining valuable knowledge within corporate enterprises and furthering business performance and competitiveness. The theory of knowledge management has been discussed by writers in both business and academia[1]. Lin et al. (2012) discerned a number of fundamental factors in KM activities, which include recognition, collection, selection, organization, implementation, sharing, and construction of knowledge. Knowledge sharing is considered as a critical step for successful knowledge management. In knowledge management, a critical problem is how to encourage people to engage in knowledge sharing with others[2]. Researchers always emphasized the importance of developing unique knowledge within firms to deliver new products/services and to distinguish it from competitors for achieving advantage[13]. KM is defined as an activity of helping an organization to create, capture, codify, store, share and apply knowledge effectively. KM in information system perspective refers to the effective tool to enable the knowledge management processes[11]. Knowledge management (KM) encompasses the entire spectrum of management concerns, from knowledge creation to knowledge diffusion and exploitation[6]. Rapid changes in today's environment lead organizations to adjust and update the knowledge they have to maintain their competitive advantage. Past research, however, has shown that this is not a simple task since most issues related to KM are multifaceted and require a holistic approach[12]. Maier (2005) defines KM as "the management function

responsible for regular selection, implementation and evaluation of knowledge strategies that aim at creating an environment to support work with knowledge internal and external to the organization in order to improve organizational performance" [13]. Knowledge Practices are the activities that generate usable knowledge, either in explicit or tacit forms[4]. Knowledge can be tacit or explicit. Managing both tacit and explicit knowledge is the challenge of knowledge management[11]. Knowledge management and learning processes have become a major factor for achieving long-term competitive advantage and for international success[5]. Knowledge is usually regarded as something that can be managed as a physical asset. Their success was also affected by several reasons related to tacit knowledge capture and tacit-to-explicit knowledge conversion[12]. Achieving and sustaining competitive advantage mostly depends on at what extent organizations leverage and manage individual employee's knowledge.[14] Organizational growth and survival, increased and more effective performance, sustained competitive advantage, and improved quality of service, are some of the benefits that successful handling of knowledge may bring, while the utilization of knowledge is key to production, power, and advancement[19]. In this direction, firms establish knowledge management system in which organizational structure, technology, and culture facilitate organizations to implement knowledge management process in the forms of acquisition, transfer, and application of knowledge[14]. Therefore the relationship between the KM and organizational innovation is becoming an important issue in academic and practical areas. The root of KM can be traced back to the extensive works in diverse domains, such as organization science, business management, cognitive science, computer science and expert systems[10]. KM scholars have also showcased that managing knowledge has positive association with organizational performance[13]. Knowledge management refers to a systematic and organizational specific framework to

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capture, acquire, organize, and communicate both tacit and explicit knowledge of employees so that other employees may utilize them to be more effective and productive in their work and maximize organization's knowledge[8].

According to Grant and Grant, the work done by many recognized experts in the field -both academics and practitioners- clearly show that the field of KM has significantly evolved over a very short period of time and it has been the focus of management attention. During this period, while there has been much debate about the nature of knowledge and the role of KM, there has been relatively less critical analysis of the foundational concepts underlying KM practices. Most of the outlined failure causes or criticism in relation to KM can be summarized in two main issues: KM as just a temporary fashion over focused on IT, and the lack of understanding true usefulness of KM models and knowledge itself[12]. Some of the common applications of knowledge management systems are: (1) organizing and sharing/transferring of internal benchmarks/best practices; (2) constructing corporate knowledge directories, such as corporate yellow pages, people information archive; (3) creating knowledge networks and knowledge maps; among many others[8]. Knowledge is of two types: (1) tacit knowledge- knowledge that is inimitable, valuable, underutilized, unarticulated, and residing in employees' brain; (2) explicit knowledge- knowledge that is distributable, easy to handle, documentable, and storable. Organizational knowledge is created by transforming these knowledge types into their form of knowledge, which is valuable, inimitable, and nontransferable by other firms. Thus, organizational knowledge becomes a source of sustainable competitive advantage[13]. While some organizational KM strategies have tended to revolve around the implementation of an IT-based system to manage organizational knowledge (see Plessis & Boon, 2004; Ravishankar & Pan 2008), others have emphasized a combination of IT and non-IT based arrangements (e.g., Lopez-Nicolas & Merono-Cerdan, 2011; Massey et al., 2002) to promote sharing and integration of knowledge between and across business units of an organization[15]. By knowledge, we mean the shared understanding in three core domains associated with IT enabled change projects: 1) Knowledge of the Technical Solution, 2) Knowledge of the Organizational Solution and 3) Knowledge of the Expected Business Value[3].

Early models and knowledge classifications (for example, Nonaka's tacit/explicit conversion processes) have been useful in helping to understand the nature of knowledge in organizations but do not show how to make effective use of knowledge[12]. New knowledge creation (or existing knowledge correction) requires interaction between organization and involved individuals. This interaction has many points of conflict: workload involved for workers to feed their knowledge into organizational repositories; loss of context that causes tacit knowledge explication, and the subsequent difficulty in interpreting

knowledge pieces that have been decontextualized[12]. Organizational knowledge creation is the capability of an organization as a whole to create new knowledge, disseminate it throughout the organization, and embody it in products, services, and systems Global [18]. gathering and information processing systems, control and revision procedures, and systems allowing the use of the stock of knowledge created. This structure allows gathering and transforming the relevant information and applying it for further operations, providing with a valuable feedback[5]. The extant literature has questioned the simple notion that knowledge sharing is good and sufficient for organizations. Whilst knowledge sharing is a necessary condition for achieving effective collaborative practices, it is more important that the shared knowledge be transformed to become an integrated part of a synergic solution, rather than being merely combined or even completely ignored [16].

Most of all previous works focused on success factors of information systems including KM systems (Delone & McLean, 1992; Delone & McLean, 2003; Kulkarni et al., 2007; Rai, Lang, & Welker, 2002; Seddon, 1997). There are a few studies on barriers or limitations to information systems (Bouwman, Carlsson, Molina-Castillo, & Walden, 2007; Chircu & Kauffman, 2000; Damodaran & Olphert, 2000; Evgeniou & Cartwright, 2005). Even though business value often originates from a KM system, it does not always improve organizational performance as a lag or discrepancy exists between innovation and performance (Damanpour & Evan, 1984). This indicates possible barriers or limitation factors between the KM system and business values. We classify barriers into two types: technological factors and social/cultural factors including people as described in Benbya, Passiante, and Belbaly (2004).

2. RESEARCH DESIGN

In this study, we focus on analyzing the technological limitations, rather than social and cultural limitations, of KM systems. We propose the research model shown in Fig. 1 by considering the characteristics of KM systems and also by referring to DeLone and McLean's IS success model. We apply the reverse perspective of their IS success model (Delone & McLean, 1992). They proposed system quality and information quality as important factors that affect user satisfaction and organizational performance Lee and Joo (2009).

There have been many studies on the relationship between IT and KM (Edwards & Collier, 2005; Holsapple, 2005; Tanriverdi, 2005; Tsui, 2005). Tyndale (2002) considered IT as a KM tool which supported such activities as creation, sharing and transfer of knowledge. IT improves business values by playing a role as an construct. We developed the measures by referring to the Adoption of the Semantic Web for overcoming technical limitations of knowledge management systems Lee and Joo (2009).



Fig 1: The research model

Table 1: Definitions of KM systems limitation factors

	Factor	Dissatisfaction	Definition	Items
User dissatisfaction	Limitation factors for system quality	Time and space	Time and space limitation in the KM system use and limitation of access methods	3
		Inconvenience	Degree of inconvenience of the KM system use resulting from slow response and instability	3
		Knowledge search	Limitations of keyword-based search as well as limited knowledge categorization	6
		Knowledge integration	Limitations in integration of heterogeneous systems as knowledge resources and integration of the existing KM system with Web resources	3
	Limitation factors for knowledge quality	Incongruence and incompleteness of knowledge	Degree of incongruence or incompleteness of knowledge offered by the KM system	4
		Untrustworthiness of knowledge	Degree of inaccuracy and untrustworthiness of knowledge offered by the KM system	6

3. RESULT AND DISCUSSION

A total of 136 responses were used for statistical analysis by a tool of the software package SPSS version 20. We conducted an t-test and Correlations between constructs. Cronbach's α was used to test for internal consistency.

Because of using certified questionnaire, its reliability is considerable. Cronbach's Alpha was calculated in each part of questionnaire. Cronbach's Alpha in two dimension (Limitation factors for system quality and Limitation factors for knowledge quality)are suitable.

Table 2: The results of Cronbach's α analysis

Dissatisfaction	Cronbach's α	Factors	Cronbach's α
Time and space	0.670	Limitation factors for system quality	0.898
Inconvenience	0.745		
Knowledge search	0.821		
Knowledge integration	0.731		
Incongruence and incompleteness of knowledge	0.924	Limitation factors for knowledge quality	0.923
Untrustworthiness of knowledge	0.926		

Respondents' descriptive statistics in dimensions of Limitation factors for system quality and Limitation factors for knowledge quality in the target society are as follows. As it is obvious, the score of all dimensions of

KM system user dissatisfaction are different. Also,

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Inconvenience limitation has the most score and Time/space limitation has least score. According to standard deviation, the least dissipation is related to

Search limitation and most dissipation to Inconvenience limitation.

Table 3: Descriptive statistics of KM systems limitation factors

Dissatisfaction/Factor	Minimum	Maximum	Mean	Std. Deviation
Time/space limitation	1.00	4.33	2.6318	.70624
Inconvenience limitation	1.67	5.00	3.4828	.72571
Search limitation	2.00	4.50	3.3515	.50741
Integration limitation	1.67	4.67	3.2811	.61560
Incongruence and incompleteness	2.00	4.50	3.1979	.62405
Untrustworthiness	1.67	4.50	2.8651	.64284
Limitation factors for system quality	2.00	4.25	3.1900	.41766
Limitation factors for knowledge quality	2.00	4.29	3.0315	.55066
User Dissatisfaction	2.08	4.19	3.1108	.41311

According to following table, the rate of significant level of sub dimension of Incongruence and incompleteness, Untrustworthiness are more than 0.01. Each of them has a suitable condition in level of 99%. Therefore Knowledge quality in telecommunication Company is suitable. Since, significant level of Time/space limitation, Inconvenience

Limitation, Search limitation, Integration limitation are less than 0.01%, sub dimensions can't have an appropriate condition in level of 99%; thus, system quality isn't in a suitable condition. Finally, User Dissatisfaction is not suitable, it means User Satisfaction is suitable

Table 4: One-Sample Test of KM systems limitation factors

Dissatisfaction/ Factor	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	99% Confidence Interval of the Difference	
					Lower	Upper
Time/space limitation	-4.267	132	.000	-.36816	-.5970	-.1393
Inconvenience limitation	5.487	134	.000	.48284	.2495	.7162
Search limitation	5.712	134	.000	.35147	.1883	.5146
Integration limitation	3.738	132	.000	.28109	.0816	.4806
Incongruence and incompleteness	2.537	126	.014	.19792	-.0093	.4051
Untrustworthiness	-1.679	126	.098	-.13490	-.3483	.0785
Limitation factors for system quality	3.752	134	.000	.19003	.0558	.3243
Limitation factors for knowledge quality	.458	126	.649	.03151	-.1513	.2143
User Dissatisfaction	2.213	134	.030	.11085	-.0220	.2437

As it is observed in the table, there is a significant relation in level of 0.01 between two sub dimensions of knowledge quality and there are not a

significant relation in level of 0.01 between all four sub dimensions of system quality.

Table 5: Correlations between constructs

Variables	Time/space limitation	Inconvenience	Search limitation	Integration limitation	Incongruence and incompleteness	Untrustworthiness
Time/space limitation	1					
Inconvenience	0.082	1				
Search limitation	0.179	0.431**	1			
Integration limitation	0.154	0.175	0.359**	1		
Incongruence and incompleteness	0.225	0.309*	0.331**	0.296*	1	
Untrustworthiness	0.272*	0.077	0.131	0.377**	0.511**	1

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4. CONCLUSION

The results show that there are some flaws and problems with KM system in this organization. The most serious problem is related to time/space limitation. The organization based on the required policies should provide the appropriate time for the employees' application of KM system. If the necessary planning and direction for the access to the appropriate time and time period for the employees is facilitated it leads to positive for the organization. We can also improve the place and space needed for the employees by using scientific placement and paste based on optimization principles resulting from operation research. Another flaw concerning KM system is the employees' untrustworthiness to that type of system. To solve the problem, before and during the use of KM system, organizational culture should be moved in the direction in which the employees can exchange knowledge and information with comfort and no insecurity and worry and act in accordance with organizational policies. To modify the employees' trust organizational culture should be riched and this will be achieved through the employees' participation and cooperation. Regarding integration limitation we can enhance coherence by organizing various job precedures and creating procedure unity among different aspects and as a result remove the employees' confusion. By providing an accurate and exact schedule we can have access to a comprehensive and coherent framework from different components. Another problem concerning implementation of KM system in each organization is incongruence and unadaptibility of that system or organization. Therefore, before the implementation KM system should be internalize organization and adapted with its desires and requirements. To do so, the organizational structure, top management support and effective communication should be reinforced. To solve the problem of search limitation, appropriate instrument, on time informing and desired procedure oriented system should be utilized. The problem of inconvenience emerges when the employees are not trained well. By holding suitable training courses for the employees and examing their effectiveness the problem of inconvenience may be removed.

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REFERENCES

- [1] A. Floyde , G. Lawson , S. Shalloe, R. Eastgate , M. D'Cruz, The design and implementation of knowledge management systems and e-learning for improved occupational health and safety in small to medium sized enterprises, *Safety Science* 60, 69–76, 2013
- [2] AlirezaTamjidyamcholo , MohdSapiyan Bin Baba, Nor LiyanaMohdShuib, Vala Ali Rohani, Evaluation model for knowledge sharing in information security professional virtual community, *computers & security* 43,19–34, 2014
- [3] Blaize Horner Reich a , Andrew Gemino,Chris Sauer, How knowledge management impacts performance in projects: An empirical study , *International Journal of Project Management*,2013
- [4] Blaize Horner Reich ,AndrewGemino, Chris Sauer, Knowledge management and project-based knowledge in it projects: A model and preliminary empirical results, *International Journal of Project Management* 30, 663 – 674, 2012
- [5] Cristina Villar ,Joaqu Barber-alP 'esoJ ,ergelA n ' , Exploring the role of knowledge management practices on exports: A dynamic capabilities view, *International Business Review* 23, 38–44, 2014
- [6] EunKyoung Yun, Predictors of attitude and intention to use knowledge management system among Korean nurses, *Nurse Education Today* 33, 1477– 1481, 2013
- [7] JaehunJoo , Sang M. Lee, Adoption of the Semantic Web for overcoming technical limitations of knowledge management systems, *Expert Systems with Applications* 36,7318–7327, 2009
- [8] Jun Xu, Mohammed Quaddus, Examining a model of knowledge management systems adoption and diffusion: A Partial Least Square approach, *Knowledge-Based Systems* 27, 18–28, 2012
- [9] Keng-Boon Ooi , TQM: A facilitator to enhance knowledge management? A structural analysis, *Expert Systems with Applications* 41,5167–5179, 2014
- [10] Lu Zhen , Lin Wang , Jian-Guo Li, A design of knowledge management tool for supporting product development, *Information Processing and Management* 49, 884–894, 2013
- [11] MagiswaryDorasamy ,Murali Raman, ManiamKaliannan, Knowledge management systems in support of disasters management: A two decade review, *Technological Forecasting & Social Change* 80, 1834– 1853, 2013
- [12] Mariel A. Ale, Carlos M. Toledo, Omar Chiotti, Maria R. Galli, A conceptual model and technological support for organizational knowledge management ,*Science of Computer Programming* , 2013
- [13] M. Birasnav, Knowledge management and organizational performance in the service industry: The role of transformational leadership beyond the

<http://www.ejournalofscience.org>

- effects of transactional leadership ,Journal of Business Research,2013
- [14] M. Birasnav , M. Albufalasa, Y. Bader, The role of transformational leadership and knowledge management processes on predicting product and process innovation: An empirical study developed in Kingdom of Bahrain, TÉKHNE - Review of Applied Management Studies 11, 64-75, 2013
- [15] M.N. Ravishankar, Shan L. Pan, Examining the influence of modularity and knowledge management (KM)on dynamic capabilities: Insights from a call center, International Journal of Information Management 33,147– 159, 2013
- [16] ShahlaGhobadi , John D’Ambra, Modeling High-Quality Knowledge Sharing in cross-functional software development teams, Information Processing and Management 49, 138–157, 2013
- [17] Shu-Mei Tseng, The impact of knowledge management capabilities and supplier relationship management on corporate performance, Int. J. Production Economics 154, 39 – 47, 2014
- [18] Siqing Shan, QiuHongZhao , Fan Hua, Impact of quality management practices on the knowledge creation process: The Chinese aviation firm perspective, Computers & Industrial Engineering 64,211–223, 2013
- [19] Milena M. Parent , Darlene MacDonald, Gabriel Goulet, The theory and practice of knowledge management and transfer: The case of the Olympic Games ,Sport Management Review ,2013