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Information technology and its relationship with dissemination of informal knowledge and organizational learning

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ABSTRACT

The purpose of this study is to investigate the relationship among information technology (IT), dissemination of informal knowledge and organizational learning. This article is implemented based on research findings described in firms with business areas of IT, and is formed as an analysis case in Taran Gostar Company. The literature was studied to develop a theoretical framework for the research model and after the library studies and exploratory interviews, investigate the relationship among IT, dissemination of informal knowledge and organizational learning were assessed through research surveys and questionnaires. Reliability and validity of the questionnaire was confirmed by experts and measured with Cronbach's alpha and also the value of 0.85 was obtained. The SPSS software was used to examine the relationships between the components of knowledge. Results showed a direct and significant correlation (positive) between elements of the research topic. Correlation coefficient between IT and informal knowledge is equal to 0.702 and the correlation between IT and organizational learning is equal to 0.804. In this study, the researcher used a questionnaire based on the range of 5 options. 170 questionnaires were distributed among company employees of Taran Gostar and 102 cases of them were applicable.

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Introduction

Due to the declining competitiveness of many companies in an emerging global market and the need to reconsider and reshape the institutional, organizational learning, the focus has been on the organizational survival. The organization's ability to learn is remembered as a core organizational capability, and the only source of sustainable competitive advantage, especially in knowledge-based businesses. Kanter (1989) has confirmed this and states that companies for being efficient in an uncertain environment require the application of existing knowledge and quickly creating new knowledge. An organization without the ability to learn is more willing to rebuild its solution than investing and spending time for change and improvement. Creating learning capability in the organization means achieving recovery. A key part in the organizational learning is expanding knowledge based on transfer and sharing of knowledge that is acquired individually. Transmission as an inner part is especially the conversation and communication between individuals. Work teams or staff meetings are the ideal conditions for spreading ideas freely (Khan Alizadeh et al, 2010). Tacit knowledge transfer and sharing can lead to synergy, both employees and enterprise can benefit from it. (Yuqin, Z., Guijun, W, 2012).

In today's world, we have witnessed many changes in the evolution of structure and organizational life. Major changes in the economic, social and cultural environment that has occurred as a result of globalization and technology have forced the organizations to adapt and survive in this new world to make important changes. In clear words, organizations must quickly learn and through recognizing and exploiting entrepreneurial opportunities arising from environmental changes not only survive but also ensure their growth (Yaghoobi et al, 2009).

In today's information-driven world, knowledge management and IT will play a vital role in organizations. The

scientific definition of knowledge management is surrounding the technology tools with routine organizational activities in the areas that overlap each other and the application of IT tools to facilitate, creation, storage, transfer and use of knowledge, transfer and application of organizational knowledge could to make a significant change in the knowledge management (Azadi 2009; Bargarun 2009).

Organizational learning is to improve the organization's ability to acquire, distribute, and use knowledge to adapt to the changing external environment and the process of conscious, purposeful, interactive, dynamic, continuous, persistent and growing that has continuous, quick and effective feedback at individual, group and organization and influenced by cognitive processes and underpinning knowledge or cultural resources used by those acts. This is provided through acquiring an informal knowledge between individuals and structural knowledge of the system and its documentation. Acquisition and distribution of informal knowledge is defined as voluntary activities for collecting and sharing indigenous knowledge.

Firms must continue to improve their skills and competencies by accumulating and sharing knowledge. (Liu, 2011). Knowledge sharing is an important activity that enhanced an individual capability to retrieve new data and resources for the purpose of learning, problem solving, and self-improvement. (Kuzu, O.K., Ozilhan, D., 2014)

To achieve this purpose, this study seeks to create quantities in order to be effective on exploring the role of informal knowledge processes along with the structural knowledge on the organizational learning (Hu and Mac Shin, 2010). In the present era, which is called the era of knowledge, organizations are witnessing environments which are dynamic and challenging by the day. Change is an integral part of today's world; in other words, it is the only constant component of the change. Today,

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intangible and spiritual assets, which are called the same knowledge, are viewed as a critical factor (Sobhani nejad et al, 2006). In recent years, various organizations and companies have begun to join the knowledge and new concepts such as knowledge work, knowledge workers, knowledge management and knowledge organization announced the process is intense.

Theoretical Background

Knowledge Management

Knowledge management requires consideration of three elements linked together which are people, processes and technology. Most of the activities that are centered on people or technology often lead to deleting (not taking into account) two other elements. However, without thinking about the process - methods of people, organizations and technology activity - any implementation of knowledge management initiative is at best dangerous and at worst doomed to failure. (John Edwards 2013). Implementing KM process in any kind of organizations is essential as it enhances learning capabilities of individual employees as well as group of employees. (Liao, S. H., & Wu, C. C. 2010)

The emergence of knowledge management:

1 – change of the industry's business model that the financial assets of an organization are essentially tangible (facilities, equipment, land, etc.) to organizations whose primary asset is intangible and they are knotted with the knowledge, expertise, capabilities and management for creative construction workers.

2 – Extraordinary increasing the size of the information, electronic storage, and generally increasing access to information has added to the value of knowledge because it is only through knowledge that this information is worth finding and knowledge will also have a high value as it is closer to the action. Data in itself does not make the decision, but converting data into knowledge-based human leads to the decision.

3 - The changes in the population age pyramid and demographic characteristics have been mentioned only in few resources. Many organizations have found that a vast amount of knowledge is in retirement. There is growing awareness that if the measured and appropriate action is not taken, the bulk of the knowledge and expertise will simply leave the organization.

4 - Becoming activities more specialized may also be at risk due to loss of institutional knowledge and expertise through transferring or dismissal of employees.

Information Technology

Organizations have long acknowledged that knowledge management is an important tool to gain competitive advantage and improve performance. Most of the growth in corporate knowledge management systems has been done through a formal procedure. A significant portion of the budget allocated to information and communications technology (ICT) for knowledge management is obvious. Many organizations believe that evolution (ICT) provides a powerful platform for knowledge management to facilitate business operations.

Development agenda of management information systems in small and medium companies of knowledge management are ignored as a part of the program. Several reasons can be outlined for delinquency, including budget constraints, lack of human resources, the rapid transactions of staff, lack of perception in the process of engaging in knowledge management, lack of understanding of the complexity and existence of variety of knowledge, lack of recognition of the delivery system benefits resulting from the appropriate application of knowledge management system. In recent years, researchers are concentrated on the practical implementation of knowledge

management in small and medium companies (Lee and Lan, 2011)

Informal Knowledge

Knowledge is divided into two main groups: formal and informal. Formal knowledge is production of the systems and structures created by a human being and informal knowledge is production in the human brain. The main function of formal information is praising informal information in increasing the understanding a subject and decision-making process. (Khosropour, 2012).

Informal knowledge of individuals in a company will be considered in procedures and methods of data bases, etc. from time to time. To maximize the use of internal knowledge, the knowledge must be shared among individuals or teams. (Chang, K.-c, Yen, H.-W, 2013)

Organizational Learning

In a time not so long ago, organizations lived in the stable environments. Gradually changes related to science and technology, economy, politics and culture quickly impressed the organizations.

Today, managers and leaders in organizations have found to look at learning as a worthy phenomenon worthy and to succeed in creating a better future, they should foster an organization that is effective and sustainable to learn and they must be coordinated with the changes for survival.

From the standpoint of the individual, learning is the access to the information, its understanding and skill acquisition. From an organizational standpoint, learning is concentrated on gaining traditions, visions, strategies and transfer of knowledge. Of course in both perspectives, learning is along with innovation, recognition, creativity, discovery and production of new knowledge.

In order to assess the validity of data collection tool, use content validity and with surveys and experts Validity of questionnaires have been approved, in order to measure the reliability of the questionnaire, Cronbach's alpha model is used. Cronbach's alpha coefficients range from zero, means the absence of relation up to positive one, means complete relationship and the more Cronbach's alpha obtained of questions to be closer to number one, the more the reliability of the questionnaire will be. Successful and effective teamwork stems from the collaborative behaviors of the team members, for example, knowledge sharing. (Carmeli, 2011). Knowledge sharing has become a key determinant of a firm's competitive advantage. (Chen S-S., Chuang, Y-W, 1012)

Background of the research

As noted above, this article tries to explain the role of IT in the implementation of knowledge management, therefore, it is necessary initially deal with the theoretical foundations related to the three issues of knowledge management, organizational learning and IT.

The scientific definition of knowledge management defined as surrounding technology tools with the routine organizational activities in the overlapping areas. In this regard Rudy Ragelz, one of the scientific and intellectual pioneers of knowledge management collected and provided its components on the following topics:

- Production and making alive the knowledge.
- Using accessible knowledge in decision-making process.
- Embed knowledge in processes, products and services.
- Equipment for knowledge growth among culture and incentive factors.
- Transfer of dynamic and alive knowledge across sectors in an organization.

- Measuring the value of knowledge as an asset with an emphasis on knowledge management. (Department of Management, Journal of Management Development, 2003).

Nowadays, IT is a central aspect of an organization's competitive strategy, placing its IT projects and personnel center stage. (Sauer, C., & Reich, B. H. ,2009; Koriat,N.,Gelbard, R. (2014)).

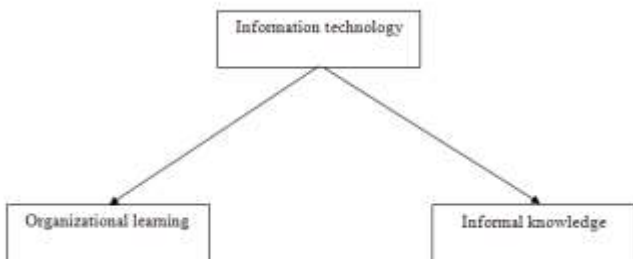
In the age of IT, the link of new technologies with unique skills and experience of the staff created a source of energy that will move knowledge management dramatically. (Ghani zadeh, 2006) One of the issues influencing knowledge management is wonderful and stunning developments of information that occurs one after another. This has led to considerable attention and investment of organizations in this sector. (Sabbaghi and Shamsi, 2010) As noted earlier, IT plays an important role in knowledge management and can be effective in enhancing and expanding organizational memory, therefore investigated IT in the following. By definition of Information Technology Association of America, IT means the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware. (Proctor, 2011).

In 2011, Lee and Lan conducted a study as knowledge management model for small and medium Companies conducted. Results of the study showed that the application of knowledge management depends on the basis of harmonious integration and process capabilities including technology, culture and organizational structure. The results of the analysis emphasized in government's role in Necessary help for small and medium companies for knowledge management in organizations.

According to Hans (1999) ((reservoirs of IT)), collects content from various data sources and provides a single access point and thereby reduce the cost knowledge searching.

Mir Esmaili in 2007 in his article titled "Evaluation and comparison of knowledge management and organizational learning" has done in Tehran schools deals with the examination of variables (knowledge acquisition, knowledge sharing, shared vision) on organizational learning. Results obtained from this study indicate a positive effect of all variables on organizational learning.

Conceptual Model



Research methodology

This article is the result of research that in term of purpose is practical and in terms of gathering information is practical and descriptive and through interview, observation and study. The research activities include several procedures that specific details of this procedure is largely determined by research method, that each of these methods to respond to one type of problem may be appropriate. Taran Gostar a Company based on IT that has been the place for the implementation of this study due to the small study population; from total population of available used for statistical analysis.

In this study, the main tool of assessment is questionnaire that serves as a common research tool, and is considered as a

direct method to obtain research data. Questionnaire used in this study was composed of three parts. The first part of the questionnaire included a brief explanation of how to complete the questionnaire and to establish more clearly the respondents, the second part of the questionnaire included demographic questions (age, education and work experience), and the third section is a specialized questions. This questionnaire consisted from 30 questions using a Likert spectrum (five spectra) is designed as desired scale.

The questionnaire validity, its content validity, was approved by experts and critics. The Cronbach alpha method that is one of the most important and most common methods was used to measure the reliability of the test. The value of alpha varies from zero to 1 and higher values of alpha are more desirable. The results are shown in Table1.

Table 1: Cronbach alpha

Cronbach alpha	N of Items
0.818	30

Statistical population

In this research, statistical population is all managers and employees of Taran Gostar Company. 170 questionnaires were distributed among company employees of Taran Gostar and 102 cases of them were applicable. According to Cochran formula, the number of response is acceptable.

Normality test

Kolmogorov–Smirnov (K-S) is used for examine the normality of dimension of knowledge management. The results are shown in table 2.

Table 2: Normality test

Dimension	Level significance	of Error	Conclusion
Information technology	0.751	0.5	Normal
Organizational learning	0.452	0.5	Normal
Informal knowledge	0.617	0.5	Normal

Analysis of data

Describing collected data from statistical sample of, descriptive information of respondents to the questionnaire of the survey examined in terms of employment status, education level and work experience.

27/27percent of respondents have associate degree, according to the frequency of education 52/27 percent have a bachelor degree and 15/91 percent have a master degree, 4/55 percent have a doctorate degree indicating that a large volume of statistical sample have associate degree, bachelor and master degree, and it can be deduced that subjects with more knowledge and awareness filled relevant questionnaire.

In this part dealt with review and analysis of research questions. For this purpose Pearson coefficient correlation is used. Pearson coefficient correlation is a coefficient used to assess the existence of relationship, and correlation and relationship between the two variables with ordinal scale.

The first question: Is information technology associated with dissemination of informal knowledge?

Table 3: Pearson's correlation coefficient between IT and informal knowledge

items		Information Technology	Informal knowledge
Information Technology	correlation coefficient	1	0.702
	Sig		0.035
Informal knowledge	correlation coefficient	0.702	1
	Sig	0.035	

As can be seen in Table 3, at the level 0.05, there is significant relationship between IT and informal knowledge. The relationship between these two factors is direct and its amount is equal to 702/0, which It can be concluded that with increasing the use of IT, the level of informal knowledge in Taran Gostar company grows. In other words, the more the use of IT in organizations spread, the more dissemination of informal knowledge will be, and with the same ratio knowledge management is done better.

The second question: Is information technology associated with organizational learning?

Table 4: Pearson's correlation coefficient between IT and organizational learning

items		Information Technology	Organizational learning
Information Technology	correlation coefficient	1	0.804
	Sig		0.021
Organizational learning	correlation coefficient	0.804	1
	Sig	0.021	

As can be seen in Table 4, at the level of 0.05, there is a significant relationship between IT and organizational learning. The relationship between these two factors is direct and its amount is equal to 804/0 which it can be concluded that with increasing the amount of use of IT, the amount of organizational learning in Taran Gostar Company will be increases. In other words, the more the use of IT in organizations spread, the more organizational learning will be, and with the same ratio knowledge management is done better.

Conclusions and recommendations

According to a survey conducted in Relevance with the relationship between dissemination of informal knowledge with IT and organizational learning, the above results are obtained that in the following can proposed following items as conclusions and suggestion.

To increase the dissemination of informal knowledge and organizational learning need to be expanded contexts and processes of IT in organizations. Also, with an expansion of this process can implement a proper knowledge management system in organizations. For this, tools and information systems and knowledge needed as follows.

Tools based on the internal network: Internet is a suitable environment for subscription dynamic and interconnected information that its Hypertext structure will facilitate data review. Low cost web technology and technology-based development attracted many organizations.

Electronic document management: systems of electronic document management are important tool in document sharing which are known by name of content management tools.

Group applications: This soft ware's designed to assist a group of people who are not located in a similar location, but need to work together. Such software with a flexible structure can be adapted to changing environments and also to create more freedom in the exchange of ideas between people.

Knowledge-based system: intelligent systems and neural networks are systems that use artificial intelligence techniques. Such systems often contain a knowledge base and the inference mechanism to change this database and interface to enter new data.

System of Knowledge Map: This group includes soft ware's that are designed specifically for knowledge management. In fact, knowledge map, offers an intelligent location finder which help to the users in finding expert solution for problems.

Innovation support tools: tools to support innovation defined as application of new ideas in the various areas. These are software tools for knowledge production with process to product design collaborations.

Application of IT in dissemination of informal knowledge and organizational learning is very high and in fact, these factors have an interactive relationship with each other. In any organization for the realization of knowledge management, and establish a proper relationship between the variables included in this study should be initiated knowledge strategy with a good architecture, because the lack of a strategy and framework for knowledge management and a model for management of information, will only cause confusion. Given the tremendous advances in IT, this technology has become an integral part of any strategy for knowledge management.

Dissemination of Informal knowledge and organizational learning that is of components and factors of knowledge management with a proper strategy to create the correct flow of information in organizations cause enhancement and maintenance the intellectual capital of the organization.

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