Managing Worldwide Operations & Communications with Information Technology

Exploring Change and Knowledge Management in Developing Countries: The Case of Iranian SMEs

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ABSTRACT
The main target of this research is to discuss two important strategic management disciplines in some Iranian SMEs. Change management and knowledge management will be discussed simultaneously for taking insight into the topic. Based on review of recent literature, this paper has identified major factors of both knowledge and change management disciplines in the field. For the research methodology, a structured survey has been implemented by the authors. The outcome of the research can be implemented as a guideline for change management during KM programs. This study provides an integrated perspective of critical issues for both knowledge and change disciplines in the organizations especially in SMEs of developing countries. It gives invaluable information and guidelines which hopefully will help the leaders to manage essential changes for accomplishing knowledge management through their organizations.

Keywords: Knowledge management, Change management, SME, Iran.

INTRODUCTION
If there is an even more ubiquitous topic writing about change, whether it is books, practitioner or academic journals, the topic of change is sure to be one of the most researched and well-published subjects (Washington and Hacker, 2005).

Attempts to impose order on what Weick and Quinn (1999) call “the sheer sprawl of the change management literature” have led to attempts at classification of change as either “discontinuous and episodic” or “continuous and emergent” (Treleaven and Sykes, 2005).

If there is one constant in the real business world, it is surely the change. Some researchers such as Attaran (2000) have declared that nearly 75 percent of all American corporations have gone through some type of systemic change program.

The concept of societal transformation today has also come to be associated primarily with the changes underway in former socialist countries. The process has been described in many different ways, such as “deep metamorphosis”, “paradigm crisis”, “crisis of working society,” and “crisis of organized modernity” (Thurow, 1999).

In such a landscape, it is not surprising that knowledge and information management has emerged as one of the most popular strategic change management approaches in the dawn of the 21st century (Davenport and Prusak, 1998). Its supporters argue that organizations may achieve significant competitive advantages by analyzing the data and information that often remain unexploited in organizational systems and by transforming them into useful and actionable knowledge (Giaglis, 2002).

Adoption of knowledge management system in the organization may face with some challenges which is usually understood. This subject requires a specific change management program to lead knowledge management efforts in the organization.

It is necessary to say that we are now changing gradually from an information age to a knowledge age, where knowledge has been recognized as the most important aspect in human life. Individuals and organizations are starting to understand and appreciate knowledge as the most valuable asset in the emerging competitive environment. Knowledge is a powerful tool that can make changes to the world. It is now considered as the main intangible ingredient in the melting pot that makes innovation possible (Syed-Ikhsan and Rowland, 2004).

Bergeron (2003) defines knowledge management in this way: “Knowledge management is a deliberate, systematic business optimization strategy that selects, distills stores, organizes, packages, and communicates information essentials to the business of a company in a manner that improves employee’s performance and corporate competitiveness.”

Knowledge management is the process of managing knowledge and expertise in the organization in a way that facilitates identification, capture, codification, storage and sharing the knowledge which accelerates knowledge creation towards the strategies of the organization.

Change and knowledge retention affect a firm's knowledge production. Tradeoffs in the amount of resources dedicated to these activities influences the development and distribution of knowledge within firms across time (March, 1991). For instance, a firm that preserves the past via retention may dedicate fewer resources to creating knowledge through variation activity and to acquiring tacit knowledge and skills, or human capital. On the other hand, a firm may import more knowledge via inflows of human capital when it trades off exploiting the past for increasing knowledge creation or variation (change) activity. As a consequence, a general concern of studies examining learning and adaptation is the balance between a firm’s variation and retention activities (Madsen and McKelvey, 1996).

Knowledge-based approach is a useful framework which is needed to give the depth to the study of discursive change processes. This framework focuses on both the emergent nature of change itself and on the reforms and recreations of knowledge produced in terms of organizational knowledge. It also offers an understanding towards change processes and covers the tensions generated during the process. Such re-conceptualizing of organizational change to address multi-vocality opens up new ways of researching which shows how organizing and re-organizing processes in organizations produce intended and unintended effects.

In this paper, we are supposed to discuss change management during knowledge management establishing program in some Iranian small and medium size enterprises (SME). This study will explore change efforts and KM programs simultaneously. It is important to say that knowledge management adoption in an organization requires some changes. The succession of KM program is dependent on the way changes are managed. If the changes are not implemented in a suitable way, the knowledge management program will face the failure. In this way, knowledge management programs have a close relationship with the related changes. That’s why the authors are to discuss knowledge management and change management simultaneously in this research.

WHAT ARE SMES IN THE REAL WORLD?
The result of the knowledge revolution is represented by the new economy or the knowledge-based economy, which is radically different from the previous economy types known by mankind. Essentially, the knowledge-based economy is characterized by the conversion of knowledge into essential raw material, capital, products, production factors of the economy and through economic processes within which such activities as generating, selling, buying, learning, storing, developing, sharing and protecting the knowledge become a predominant and decisive condition.
SMES IN IRAN

As above discussed, until the middle seventies, SMEs had a minor role in the debate about economic development due to the dominance of the mass production paradigm in industry. After this period, this paradigm was increasingly challenged, leading to large firms’ fragmentation, unemployment growth and creation of new SMEs (ACS, 1992).

Nevertheless, the most SMEs in Iran are still traditional and their school of thought is belonged to last few decades. The today’s dance of changes is dictating a new regional and national markets; the diversification of demands on local, regional, national and international markets; the externalization of an important part of the activities for the big companies, state and public institutions; the extension of home work and tele-work for the companies; the development of the organizational and technical networking structured on branches and/or territorially and so on.

Niosi and Rivard (1990) reported that ‘SMEs, as niche producers with a smaller range of technologies to offer, may provide easier learning opportunities to industrial firms in developing countries’. In addition, Gomes-Casseres and Kohn (1997) concluded that the competitive advantages of smaller US firms, which derived mostly from their technological leadership, allowed them to adapt and evolve with changes in the international economy, particularly in the industrializing parts of the world.

A SME offers two advantages in initiating research on knowledge management. As Davidson and Griffin (2003) comment, small businesses have contributed many innovative ideas and technological breakthroughs to our society. Further, decisions in a SME are often enacted within a shorter time frame than in larger organizations.

As Delahaye (2005) points out, it was once held that the two most basic resources available to an organisation were money and time and that one could be exchanged for the other. Unfortunately, though, there is no simple exchange equation between money and time, on the one hand, and knowledge on the other, as knowledge has to be created, learned and maintained not simply purchased and maintained (Delahaye, 2005). Further, knowledge is the primary resource for individuals, organisations and the economy (Drucker, 1995).

RESEARCH METHODOLOGY AND DATA COLLECTION

For the research methodology, the authors implemented a structured survey. At first, the main areas of the research domain were questioned from some experts that had sophistications in SME topic and also had some academic research in related domains. After that, a questionnaire was designed based on the feedbacks taken from the experts. The content of the questions has been summarized for better readability.
The employees accompany with changes

Criteria
Learning is positively related with interactive participation of employees in SMEs
Knowledge management is positively related with organizational size
The hold sessions were effective for change programs
The changes are necessary for KM adoption in the organization
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Table 1. The 20 questions on KM and CM

<table>
<thead>
<tr>
<th>No.</th>
<th>Criteria</th>
</tr>
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<tbody>
<tr>
<td>Q1</td>
<td>Knowledge management is positively related with organizational size</td>
</tr>
<tr>
<td>Q2</td>
<td>Knowledge management is positively related with organizational mission</td>
</tr>
<tr>
<td>Q3</td>
<td>Knowledge is tacit rather than explicit in SMEs</td>
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<td>Q4</td>
<td>Knowledge sharing is done face to face rather than IT deployment in SMEs</td>
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<tr>
<td>Q5</td>
<td>Learning is done experimental rather than applying the documents</td>
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<tr>
<td>Q6</td>
<td>CEO support and commitment is positively related with KM adoption in SMEs</td>
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<tr>
<td>Q7</td>
<td>Learning is positively related with training in SMEs</td>
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<tr>
<td>Q8</td>
<td>Learning is positively related with interactive participation of employees in SMEs</td>
</tr>
<tr>
<td>Q9</td>
<td>Learning is positively related with CEO support and commitment in SMEs</td>
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<tr>
<td>Q10</td>
<td>Learning is positively related with flat structures in SMEs</td>
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<tr>
<td>Q11</td>
<td>The changes are necessary for KM adoption in the organization</td>
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<td>Q12</td>
<td>The process are appropriate for knowledge management</td>
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<tr>
<td>Q13</td>
<td>There is a transeptual atmosphere in the organization</td>
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<tr>
<td>Q14</td>
<td>Confidence about job security</td>
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<tr>
<td>Q15</td>
<td>Confidence about salaries and rewards</td>
</tr>
<tr>
<td>Q16</td>
<td>Confidence about organizational job position</td>
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<tr>
<td>Q17</td>
<td>The hold sessions were effective for change programs</td>
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<tr>
<td>Q18</td>
<td>Motivation systems are very important for change and KM adoption</td>
</tr>
<tr>
<td>Q19</td>
<td>The employees accompany with changes</td>
</tr>
<tr>
<td>Q20</td>
<td>Reach to knowledge objectives in KM area after the changes</td>
</tr>
</tbody>
</table>

as listed in table 1. The selected response can be strongly disagree, disagree, no opinion, agree, or strongly agree that is evaluated by a Likert Scale.

The main sampling targets were senior managers and department managers who were involved in change and knowledge efforts in the organization.

The research targets were members of 31 SMEs in Iran, specializing and working in IT, communication and electronic domain including hardware and software, electronic and communication circuit design and implementation, ICT consulting and ICT services.

The questionnaire consists of two main parts; the first part was the questions related to knowledge management analysis in organization, and the other part was due to the change factors. The questions were asked in a unit questionnaire. The KM part had asked about knowledge, learning, and their relations with some important organizational features such as their job security, salaries and rewards, and organizational position. If the agree rate of answers in these questions are high, it shows that the change program has not been successful and in this way, we should expect vulnerability in our KM programs. The other section of questionnaire change part analyses the necessity about the changes for KM adoption in the organization. The respondents are questioned about the fitness of available processes, structures, and totally, the current situation of the organization and the necessity of the changes.

Finally, the degree of reaching to knowledge objectives has been asked from the employees in order to understand the rate of success in our programs. Table 1 summarizes the content of the 20 questions.

DISCUSSION

After the reliability test, the questionnaires were analyzed by some statistical methods as follows. With reliability analysis, you can get an overall index of the repeatability or internal consistency of the measurement scale as a whole, and you can identify problem items that should be excluded from the scale. The Cronbach’s alpha is a model of internal consistency, based on the average inter-item correlation. The Cronbach’s alpha (Likert & Rensis, 1974) calculated from the variables of this research was 0.928, which showed high reliability for designed measurement scale. The selected response can be strongly disagree, disagree, no opinion, agree, or strongly agree that is evaluated by a Likert Scale as discussed.

CEO support and commitment is the important and common factor of every system that should be implemented or established in the organization (Akhavan et al., 2006). The analysis also showed that this factor is so important in the selected SMEs for KM adoption. This factor is also positively related with learning in the organization, which has been confirmed by questionnaire analysis through selected SMEs. It is because we can trace a consensus as much as 89 percent on the positive rate of respondents to the related question (number 9) showing the positive relation between CEO support and learning.

It is important to say that learning itself is the main element of a learning organization, and for moving towards learning organization, the requirements should be considered. CEO support can act as an enabler for the necessities of the learning process for moving towards learning organization.

On the other hand, the analysis showed that knowledge management is positively related to organizational mission. It means that the organizations with knowledge based missions need knowledge management more. As a matter of fact, we have a lot of SMEs in Iran which are playing important roles in Iranian industries and Iranian economics as a sensitive node in Iranian industrial network. Therefore, their missions are more important and sensitive because of the role they are playing in succeeding the Iranian industrial and economical missions. For example, those who are working in information technology, ICT, electronic, computer (hardware and software), and etc. are playing more important role in development and knowledge era. Therefore, we can say that they are the SMEs with the main frame of knowledge and modern technology.

The technological/ high-tech organizations are highly dependent to their intellectual capital rather than physical assets. As most of the SMEs in this research have been selected from technologic ones including IT firms, and communication and electronic industries, they highly agree that the more advanced and strategic mission for the organization require strong necessity for knowledge management adoption in the organization.

The statistical analysis results showed that there is no relationship between knowledge management and the size of the organization. This may be resulted because of the nature of knowledge and the necessity of its management, free from the usual organizational features. Knowledge management can be established and implemented in every part of the organization including all departments and sub departments; and even it can be considered and generalized from micro level in the organization to a macro level in a country, that can facilitates knowledge based development (Akhavan et al., 2006).

It is important to say that the nature of SMEs supports tacit knowledge rather than explicit knowledge. The analysis also showed that the selected Iranian SMEs matter to tacit knowledge rather than explicit and believe that knowledge is tacit rather than explicit in the SMEs.

Meanwhile, the selected SMEs were limited from the geographical point of view, and because of their size, the skills and experiences of employees play an important role in the organizations. Also, as the work places are near to each other, the employees prefer to share their knowledge face to face rather than applying information technology. The analysis also confirms this opinion and the respondents in the selected SMEs prefer not to use IT for knowledge sharing. The respondents also believe that learning is also done through experience sharing between the employees and not through the documents. This may be because of the lack of an integrated documentation system or because of the previous explanations about fact to face knowledge sharing.

The questionnaire analysis also showed that learning is positively related with interactive participation of employees and flat structures in the SMEs. It is important to say that participation of employees in decision making process is dependent to flatness of the organization. Flat structures encourage employees to take part in decision making and management process by removing middle management layers.

The results also showed that learning is positively related with training. Training process can facilitate knowledge efforts and learning, because there are some skills that may be transferred by educations and training.

On the other hand, the results showed that the employees believe the nature of change and agree and accompany with it. It is also clear from the answers that the respondents believe that the current processes and structures of the organization are inappropriate and should be changed.

The analysis showed that motivation systems play an important role in change programs for KM adoption. The respondents also showed that the change program has been successful in conquering against the important factor of “resistance against the change” because the employees were confident about relevant factors such as their job security, their salaries and rewards, and their organizational job.
Fig. 1. Agree percent of the questions

position. It may be because of the sessions and trainings held for employees to get familiar with KM foundations and its benefits which helped the acceptance of change programs so much and it is also clear from the answers.

Finally the analysis showed that we have reached many of our knowledge objectives through the change program while most of the respondents were agree with it. Figure 1 shows the agree percent of answers for each question.

CONCLUSION

Nowadays, knowledge is known as a vital and the most important property of the organizations and knowledge management is playing undeniable role in existence of an organization. It gives the ability and power of competitiveness to the organizations. The most valuable thing in today’s market is also knowledge and the most valuable organizations are those who can manage their valuable asset called knowledge. Having a successful knowledge management in an organization, is the result of different changes in the firm which should be managed completely.

This article enlightened the relationships between the changes which are necessary for KM adoption in the organizations and knowledge management itself in order to have a successful knowledge management in some Iranian SMEs. Furthermore, this research was designed in order to analyze change management during knowledge management adoption in those Iranian SMEs as the SMEs play an important role in the economies. We are experiencing a new kind of economy in the recent era that is known as knowledge economy which considers the knowledge as the main resource of the organization for innovation and competitiveness. Considering the SMEs as the micro element of the society and a part of macro economy, knowledge management is crucial for driving them towards sustainable competitiveness.

In this paper we explored knowledge management in some Iranian SMEs through a change program. A structured survey was designed and implemented. The findings showed that although the research was implemented in some SMEs, but the results showed that there is no relationship between organizational size and the need for knowledge management. Knowledge management can be considered as the need and requirement of an organization at any size. The results also showed that CEO support and commitment plays a vital role in knowledge management adoption and learning process. Learning itself was confirmed to be positively associated with some factors such as training, employee’s participation, and flat structures.

Findings also showed that IT doesn’t have an important role in knowledge management in selected Iranian SMEs. It may be resulted because of the level of IT deployment in Iran as a developing country. Although IT is being expanded widely in Iran, but it seems that the Iranian SMEs look at it as a tool for facilitating some of their works and processes and not as a strong tool and important enabler for knowledge management.

The analysis also showed that the change program has conquered against the “resistance against the change” factor and it has been successful in reaching the knowledge objectives as the respondents reached to consensus to the related questions. The answers showed that some related factors such as confidence about job security, confidence about salaries and rewards, and confidence about organizational job position reached consensus. These factors are directly showing the resistance against the change and the analysis showed that the employees are confident about them (job security, salaries and rewards, job position) which may be the result of different sessions and trainings and the motivation systems in the organization.

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