



ICT in Knowledge Management Practices in Small and Medium Companies

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Abstract

This paper is concerned about information technology role on enhancement of knowledge management practices especially in Iranian small and medium enterprises (SMEs) as a leading Islamic country considering to the Iran 1404 plan for becoming first rank in Middle East in comprehensive advance. It is due to potential of SMEs with expecting about providing employment, generating innovation, creating wealth, reducing poverty, enhancing the standard of living and contributing to the areas in which they operate around the world. Beside, business landscape is changing rapidly and the competitive environment is no longer predictable. Survival and success depend entirely on the organization's ability to adjust to the dynamics of the business environment by making effective decision-making and proper utilization of skills and knowledge of employees. So, the Iranian SMEs must to learn how increase their knowledge management as an intangible asset by using IT tools for growing and surviving in the global competitive environment.

Keywords: Information Technology, Knowledge Management Practices, Small and Medium Enterprises (SMEs).

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Introduction

Nowadays, SMEs is drawing attention in developed and developing countries as well as in transition countries. It is generally recognized that SMEs play a key role in the revitalization and development of national economy in many countries and particularly in the context of Iran due to potential of SMEs for providing employment, generating innovation, creating wealth, reducing poverty, enhancing the standard of living and contributing to the areas in which they operate. It is encouraging the development of SMEs and the role that SMEs sector can play in promoting economic and social development by creating opportunities for employment.

On the other hand, Globalization of world economic and technological developments in the two decades of the twentieth century has transformed the majority of wealth creating work from physically based to knowledge based and has greatly enhanced the values of information to business organization by offering new business

opportunities. While, for the last two hundred years, economics have recognized only two factors of production: labor and capital, this is known to change. Information and knowledge are replacing capital and energy as the primary wealth creating assets. Information has become a critical resource, a priceless product and basic input to progress and development. Information has become synonymous with power. Therefore, accurate, rapid and relevant information are considered to be essential for SME (Berisha-Namani quoted from Combs, 1995). Hence, considering SMEs need to improve and increase the success of their competitive ability against the competitors acting; and knowledge as an intangible asset and superior can play the role of key driver by using IT in this process. Because survival and success depend entirely on the SMEs ability to adjust to the dynamics of the business environment by making effective decision-making and proper utilization of skills and knowledge of employees (Sodiya, Onashoga, Dansu, and Adeleye, 2006). Therefore, KM has gained

importance in the today's global knowledge economy. It is important not only for big firms, but for small and medium size enterprises (SMEs) also. The Iran SMEs sector is also one of the fastest growing sectors of Iran economy. So, it is very important for SMEs to know what their knowledge assets are, and how to manage and make best use of these assets to get maximum return, since without proper KM approaches, SMEs are likely to have more to lose than larger enterprises.

SMEs required tools for implementing knowledge management. One of the most important tools is IT. IT had a great impact on all aspects of life and the global economy is currently undergoing fundamental transformation. IT has a very real impact on most of industries and in all aspects of the economy, while businesses and enterprises continue to undergo considerable changes. Usage of these technologies is revolutionizing the rules of business, resulting in structural transformation of enterprises. Modern businesses are not possible without help of information technology, which is having a significant impact on the operations of Small and Medium Sized Enterprises (SME) and it is claimed to be essential for the survival and growth of economies in general. IT is only effective if used properly in data management. To allow knowledge sharing anytime anywhere, several types of technological tools are available. Mobile technology, portable hardware and software, networks, email, teleconferencing and intranets are some of the commonly used technologies for knowledge creation and sharing. Knowledge repositories and data warehouse are some of the technologies used for data retention.

This study is to develop the role of IT in enhancement of knowledge management practices in SMEs in Iran and will responding two important questions: first, SMEs are followed that how can improve the success of knowledge management initiatives to take action against competitors? and then, whether IT in implementing the knowledge management projects can be a cause for creating differentiation and superior competitive advantage toward to the competitors?

2. Problem Statement

Today's, knowledge management has been of great interest globally because the approaches based on new information technology are becoming an important factor in the future development of the SMEs. Therefore, the SMEs sector has been given concern to knowledge management because need to upgrade their customer service to a much higher plane in order to survive in this competitive environment. Researches in this field of study indicated that many research has been done about the concept of and processes of knowledge management. MEs are followed that how can

improve the success of knowledge management initiatives to take action against competitors? and whether IT in implementing the knowledge management projects can be a cause for creating differentiation and superior competitive advantage toward to the competitors? accordingly, research on the role of IT in the promotion of knowledge management with focus on different knowledge management processes such as creation and knowledge acquisition, knowledge retention, transfer and sharing of knowledge, use and application of knowledge as a bargaining chip in competitive environment seems necessary.

3. Knowledge Management (KM)

Knowledge Management was the renaissance of thinking, creating, sharing, leveraging and applying the knowledge, expertise and intellectual capital to retain knowledge before employees leave the organization. It was the cultural aspect of transforming individual-held tacit knowledge to organizational-shared explicit knowledge through technology platform to keep the knowledge pool vibrant. The environment of change, complexity, uncertainty; strong economic growth; rapid advancement in technology; increased competition; need for quick and efficient decision making; limitation of existing initiatives; need to strengthen relationships with customers had created the need of the management of knowledge assets in the organizations.

4. SMEs and Knowledge Management

The contribution of small and medium entrepreneurs in accelerating the pace of growth in the economy was well known and documented. The strength of SMEs lies in motivation, internal networking, tacit knowledge in unique skills, shorter informal communication, less bureaucracy and greater proximity to market. But in SMEs, there was resource, finance and skills scarcity and managers often do not have enough managerial expertise and organizational capabilities which imply poor strategic business planning and human resource management. Knowledge Management implementation was said to be the best way to overcome these problems and improve SMEs ability in innovation and Organizational Performance. Knowledge Management Practices in SMEs also help in overcoming lack of resources, peculiar management problems and high employee turnover rates. Knowledge Management provides the means for SMEs to overcome poor business environment and change the complex business environment to be manageable. Knowledge Management Practices helps to remove resource constraints, decrease cost of products and create innovative applications for mature

products that lead them to move ahead of their competitors.

5. Objectives of the Study

The main objectives of this knowledge management survey are:

- 1- To study the imperatives of KM practices in selected SMEs sector in Iran.
- 2- To identify the key enablers for implementation of KM practices in selected SMEs.
- 3- To analyze the penetration and performance of IT in KM practices across selected SMEs.
- 4- To study the relationship between demographic factors and adoption of IT enabled KM practices.

6. Hypotheses of the Study

The first and second hypotheses were generated to find out the imperatives of Knowledge Management Practices on selected SMEs. The 3, 4 and 5 hypotheses have been formulated to elucidate the second objective of the study (major enablers that effect the implementation of Knowledge Management Practices). To illustrate the third objective, sixth and seventh hypotheses have been formulated. The fourth objective of demonstrating the use of IT tools in Knowledge Management Practices by respondents of different demographics profile was studied through the eighth, ninth and tenth hypotheses.

H1: There is a significant positive correlation between Knowledge Management Practices and increased competitiveness, increased organizational performance and higher employee retention rate.

H2: There is a significant positive correlation between Knowledge Management Practices and innovation in SMEs.

H3: The involvement of top management has a positive effect on Knowledge Management implementation.

H4: Organization Culture positively influences the acceptance of Knowledge Management Practices.

H5: The supportive organizational Infrastructure is essential for implementation of Knowledge Management Practices.

H6: Information Technology is an indispensable part of Knowledge Management Practices.

H7: IT tools positively influence the performance of Knowledge Management Practices.

H8: There is no difference in usage of (**H8a:** Internet, **H8b:** KM Portals, **H8c:** DBMS/Knowledge Base System, **H8d:** Groupware, **H8e:** Data warehousing/mining, **H8f:** E- Document Management System, **H8g:** Dedicated KM software) among the males and the females with regard to Knowledge Management Practices.

H9: There is no difference in usage of (**H9a:** Internet, **H9b:** KM Portals, **H9c:** DBMS/Knowledge

Base System, **H9d:** Groupware, **H9e:** Data warehousing/mining, **H9f:** E- Document Management System, **H9g:** Dedicated KM software) among different age groups with regard to Knowledge Management Practices.

H10: There is no difference in usage of (**H10a:** Internet, **H10b:** KM Portals, **H10c:** DBMS/Knowledge Base System, **H10d:** Groupware, **H10e:** Data warehousing/mining, **H10f:** E-Document Management System, **H10g:** Dedicated KM software) among the respondents with different qualification with regard to Knowledge Management Practices.

7. Statistical Tools in the Study

Hypothesis 1: Factor Analysis and Spearman's Rank Order Correlation.

Hypothesis 2: Descriptive Statistics and Regression Analysis Technique ('Knowledge Management Practices' as an independent variable and the 'Innovation' as dependent variable in regression analysis technique).

Hypotheses 3, 4 and 5: Descriptive Statistics, Spearman's Rank Order Correlation and Stepwise Regression.

Hypothesis 6: Descriptive Statistics.

Hypotheses 7: Factor Analysis, Descriptive Statistics and Regression Analysis Technique.

Hypotheses 8, 9 and 10: Mann Whitney and Kruskal Wallis test.

Structural Equation Modeling (SEM) will be used for testing and estimating causal relations using a combination of statistical data and qualitative causal assumptions. In the study, three path models will be design. The first model will represent the impact of Knowledge Management Practices and processes on the organization performance, competitiveness, employee retention rate and innovation (the effect of five processes i.e. knowledge capturing (KC), knowledge sharing (KS), knowledge transfer (KT), knowledge storing (KS) and knowledge reuse (KR) on organization (IM) and innovation (IN). The second model, will be built to find the impact of three selected enablers 'top management involvement' (TP), 'Organizational Culture' (CF) and 'infrastructure' (IF) on Knowledge Management Practices (KM). The third path model will be develop to find the impact of IT Enabled KM Practices on 'process improvement' (PI), 'operational support' (OS) and 'strategic development' (SD).

8. Database and Research Methodology

The present study will be sampling the SMEs of select sectors and select states in Iran.

These states will be select in terms of production, size and number of SMEs and also these are the major hubs of the select industries. The sample of X respondents will be select on the basis of judgmental cum convenience sampling. Data will be collect with

the help of structured questionnaire. The top level managers like Chief Executives, Chief Knowledge Officers (CKO), Chief Information Officers (CIO), HR executives and other management experts of the organization will be asked to provide data.

The primary data will be collected through structured questionnaire comprising questions based on five point Likert scale ranging from strongly agree (5) to strongly disagree (1). The first part contains the questions relating to the demographic factors including name, gender, age, education of the respondent and turnover of the company. The second part of the questionnaire will be design on basis comprises the list of Knowledge Management Practices to indicate the practices used in their organization. In the third part, first question deals with the imperatives of implementing Knowledge Management Practices on organization. The second question will be asking the effect of Knowledge Management Practices on innovation. Cronbach's alpha, content validity, construct validity, convergent validity and discriminant validity will be used as reliability and validity test in this research. To assess convergent validity of the scale, construct loadings, average variance extracted (AVE) and reliability measures will be examined. To examine discriminant validity, correlations between factor scores for each construct will be calculate and then it will compare with the AVE from each factor.

9. Expected Result

The IT will have significant and positively role in the enhancement of knowledge management practices and KM implementation in small and medium enterprises (SMEs) in Iran.

10. Conclusion

The research gives a new dimension of SMEs destination. The conceptual paper can be the part of PhD research or research project on destination the role of information technology in enhancement of knowledge management practices in small and medium enterprises (SMEs) in Iran. The finding of this study hopefully will assist Iranian government and SMEs players' to attract more its knowledge management as an intangible asset and boost up the economic growth.

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