Measuring the Role of Knowledge Management Processes in the Commercial Banks of Iran

Ehsan Rasoulinezhad University of Tehran, Iran

e.rasoli1984@yahoo.com

Abstract: In the current advanced era, knowledge and the applications of it are the essence of organizations for achieving competing advantage and defined as a new strategic approach to innovation and a potential element for creating larger market share. Understanding the knowledge management process in terms of banking sector will highlight how it influences organizational performance. In a developing country like Iran, it is also showing signs of competition and improved performance through knowledge management; however whether the knowledge management process is practiced in Iranian banks is still to be explored. In response to this need, this research explores the key processes and technologies of knowledge management being used in the commercial banks of Iran in order to give an insight for bankers and strategist to understand its importance.

Keywords: knowledge management, knowledge process, knowledge systems

1. Introduction

Knowledge is introduced as the most important property in the organization and knowledge management is generally known as a discipline for identification, collection, organization, storage, sharing and application of knowledge (Akhavan (2009)). In the current competitive environment, the factors leading to enterprise success are no longer simply in the investment of capital, labor and raw material, but in the ability of knowledge innovation from all the members of an organization. Knowledge management has secured an important position in this new era of competitive business environment. Because of this ever increasing global competition and change the traditional organizational management is no longer considered as an appropriate strategy. In 1993, Druker pointed out that the concept pf knowledge workers will have the most vital asset in a knowledge based economy and will the only source for competitive advantage. Meanwhile knowledge management has positive relationship with organizational culture (Aliakbar and et al (2011)). In this regard the KM helps in the management of information, knowledge and expertise through the KM process and using the KM systems to be applied for this process.

One of the key success factors of financial institutions (FIs) is the effective and efficient application and deployment of information and knowledge systems in the areas of operations, management, accounting and marketing. However, organizations must compete for their survival through continuous improvement and innovation to gain competitive advantage. The monetary value of such investments makes it critical for the FI's to use the right information system and knowledge management system. Not only in Iran, but through out the world, FI's are becoming more dependent on information system and technology. Information system has dramatically changed the core of operations of business especially the banking institutions. The growth of the knowledge management infrastructure has increased the competition among the banks which has lead to strategies for customer satisfaction and human resource management improving organizational performance. (Hubert Saint-Onge (quoted in Lamb (2001); Dzinkowski (2001); Prodromos & Vraimaki (2009))

In a developing country like Iran, it is also showing signs of competition and improved performance through knowledge systems; however whether the knowledge management is practiced in Iranian banks is still to be explored. It should be mentioned that surprisingly some Iranian bankers don't care about the power of knowledge in their banks and obviously it would be a vital mistake for their institutions.

1.1 Problem statement

To analyze the role of knowledge management processes on the performance of the commercial banks of Iran.

1.2 Research questions

The concept of knowledge is a critical ingredient for achieving competing advantage. Understanding the knowledge management systems in terms of banking sector will highlight how it influences organizational performance.

In response to this need, this research will focus on exploring the key processes and technologies of knowledge management systems being used in the commercial Banks of Iran. Following research questions have guided this study:

- What knowledge management tools are used in terms for knowledge management in banks of Iran?
- Is there any relationship of knowledge management processes with the performance of the banks?
- Which knowledge management processes is being used to manage the knowledge in the banks?

2. Literature review

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The wholesale capture and distribution of knowledge over the last thirty years has created an unprecedented need for organizations to manage their knowledge assets. Knowledge Management (KM) addresses this need by helping an organization to leverage its information resources and knowledge assets by "remembering" and applying its experience. KM involves the acquisition, storage, retrieval, application, generation, and review of the knowledge assets of an organization in a controlled way (Watson (2002), Stankosky (2005)) Businesses need knowledge management programs, because knowledge has become a strategic asset in today's competitive advantage (For instance Chong (2006) indicates that 58.5 percent of the Malaysian IT companies have made significant investments in KM). The knowledge management is embedded in and carried through multiple entities including organization culture and identity, routines, policies, systems, and documents, as well as individual. Technical resources, human resources and cultural, structural resources and the resources which builds KM capability that is related to competitive advantage Chuang (2004)

Organizational performance is affected by knowledge managment at different levels of management. A KM- process is further divided into three processes i.e., knowledge development, knowledge utilization and knowledge capitalization. Each process has its own importance (Kalling (2003), Mir Ghafori and et al (2010)). Organizational performance is also effected knowledge infrastructure capabilities and knowledge process capabilities (Gold and et al. (2001))

Due to these facts, an important source of competitive advantage is in the application of knowledge. Knowledge technology can be supportive in knowledge application, by inserting knowledge into organizations processes and procedure. Thus information technology can enhance and provide a positive influence by integration and application with facilitating the capture a, updating and accessibility of organizational directives (Alavi & Leinder (2001)). An important role in the success of knowledge management system is the sharing of both the implicit and the tacit knowledge in which the motivation and commitment of the people plays a significant role (Dyer & McDonough (2001), Kameli (2009)).

The essential factor in managing structural knowledge is creating an appropriate classification scheme to organize information into meaningful categories in a knowledge database that can be easily accessed by its employees. Well executed knowledge based projects have been known to produce extraordinary returns on investments, but they are difficult to measure (Blair & Wallman (2001)). Majority of knowledge management research has been on advanced technology and techniques used to facilitate knowledge sharing. A knowledge organization has been defined as an organization that realizes the importance of its knowledge, and applies techniques to maximize the use of this knowledge to its employees, shareholders and customers. However, any firm interested in making the transition to becoming a knowledge organization has to ensure that its culture is aligned with the requirements for KM success. As attractive as KM is for enhancing an organization's operations, many commonly agree that there is an important precondition as Davenport (1997) says that two thirds of a firm's KM efforts should focus upon organizational and cultural issues. The greatest challenge one needs to understand what the culture of the firm is, and one needs to understand whether or not this culture will enable KM or hinder KM.

2.1 Knowledge sharing in financial institutions

Managing knowledge is as important to banking institutions as it is for any other kind of organization. Despite the significance of implementing a knowledge management initiative, there are very few banking institutions formally engaged in a fully integrated KM programs (Prodromos & Vraimaki (2009)). The change in the global competitive business environment has compelled banks to rationalize their products and services and made them to look into knowledge management in order to improve their competitiveness and performance (Dzinkowski (2001) referred in Prodromos D. C. & Vraimaki. Banks to gain competitive advantage may reside in the ability to force knowledge (Hubert Saint-Onge (quoted in Lamb (2001)). Banks do not sell just services and but rather more specifically knowledge (Lamb (2001))

Ramona Dzinkowski (2001), explains the two basic categories of knowledge management initiatives in financial services companies one it is seen as an integral part of the overall corporate strategy which aims to grow, extract and exploit the company's knowledge to increase shareholder value. The second focuses on improving upon the knowledge necessary to carry out specific business processes and thereby improving efficiency. Organizational performance and growth depend heavily on how well managers understand customer needs and effectively use or exploit that knowledge to the benefit of the organization, however even the bankers a in some manner engaged in some form of knowledge management. (Piri and Asefzadeh (2006), Prodromos & Vraimaki (2009)).

The World Bank however, breaking new ground in the field, launched a knowledge sharing initiative in 1997 (Egan and Kim (2000)). The bank was determined to transform itself into a knowledge bank, while until that time thought itself mainly in traditional banking terms (Lee & Yang (2000); Laporte (2004). Laporte (2004) referred in Prodromos D. C. & Vraimaki, H. (2009)) reports that the World Bank till 2000 will have a range of knowledge-sharing programs in place: which would include communities of practices, tacit knowledge debriefings, helpdesk and advisory services, extensive knowledge collections using the internet and indigenous knowledge program,. Learning from the benefits these financial institutions have realized from implementing knowledge KM initiatives, financial institutions should recognize the importance of systematic management of knowledge."

2.2 The knowledge management processes

The knowledge management processes are in the literature mentioned as the knowledge management practices. KM practices are defined here as observable organizational activities that are related to knowledge management. It is an interrelated set of various business processes developed in an organization to create, store, transfer, and apply the knowledge. Knowledge management practices the first stage is knowledge acquisition, knowledge creation, knowledge storage, knowledge distribution, knowledge use, and knowledge maintaining (Patrick & Choi (2009))

Table 1: Knowledge management processes

	Knowledge management systems	Sources & type of knowledge
Acquisition	Corporate repositories, On line expert systems Discovering patterns Transactional processing systems	Internal & external knowledge
Storage	Creation of databases using Digitizing, tagging, indexing.	Structured Knowledge system
Dissemination	Portals E-mails Instant messaging Search engines Video Conferencing	Semi structured Knowledge systems
Applications	FAQ Repository Expert domains ERP (Enterprise resource Planning) CRM (Customer relationship management) SCM (Supply chain management)	Knowledge Network systems

Source: Kenneth C. Laudon & Jane P. Laudon (2007).

Sohrabi and et al (2010) have introduced a practical model for evaluating the maturity of KM in the software industry. They have showed the more that organizations have knowledge-intensive business processes, the more they need structured and realistic programs for acquiring and managing their knowledge as a strategic resource for future continuous improvements.

2.3 Types of knowledge management systems

There are mainly three major types of knowledge management systems (Laudon & Laudon, (2008))

- Enterprise –Wide knowledge management systems (EW-KMS)
- Knowledge work systems
- Intelligent techniques

2.3.1 Enterprise-wide knowledge management systems

This research will be analyzing the first type EW-KMS. These systems are integrated general purpose, an enterprise wide effort to collect, store, disseminate and use the knowledge for various organizations operations and strategies. The table (1) describes the various technologies and their capabilities for storing structured and unstructured data which later is used as expert data for knowledge purposes.

Today, without the use of capabilities of knowledge management systems, effective management of knowledge is hardly possible (Sepehri and Riahi (2011)). One of the fundamental questions in knowledge management is that of the appropriate role of knowledge management systems in organizations. The key focus of information systems has also changed from the management of information to that of knowledge management systems, (John and et al. (2005)).

Due to the emergence of personal networks and applications, knowledge sharing and capturing are becoming more on-demand and just-in-time, Also Knowledge management systems are being aligned to support process-based knowledge management activities (Tsui (2005)). According to Davenport and Prusak (1998), they describe KM as involving three issues which are organizational, human and technical issues. Among these three, the technical is the least important. Many researchers have analyzed about the use of various types of software in knowledge management systems, including Junnarkar and Brown (1997); Liebowitz (1998); Dieng et al. (1999); Alavi & Leidner (2001) and Earl (2001).

According to Edwards and et al. (2005), they have pointed out the forms of both Al-based and conventional software. Among the conventional based some are databases, data warehousing, decision support systems, discussion forums, e-mails, groupware and etc.

Cheuk (2011) has introduced Dervin's Sense-Making Methodology (SMM) as an approach to design knowledge sharing platform incorporating Web2.0 features which allow user-generated content and have a stronger emphasis on collaboration and interaction amongst users. SMM is a philosophically derived approach which allows knowledge management (KM) researchers and practitioners to more fully understand and listen to user's needs.

Koulikov(2011), surveys many of the recent critiques of formal mechanisms of knowledge sharing. It identifies a set of methods, structures and ethics of "informal" and unauthorized transfer of information, and suggests that these can offer valuable lessons for the further development of the study of knowledge sharing methods, practices and behaviors in all types of settings.

Rezaeian and Ghazinoori (2011) have presented the model for the role of ethics in success of KM systems. Paper explores the ethical principal of the entire general various functions and processes of knowledge management. For investigating in this area, conceptual model base on the literature of the subject and questionnaire tools made by researcher has been designed.

2.4 Organizational performance

More specifically it was found that knowledge managment practices are directly related to various intermediate measures of strategic organizational performance (namely, customer intimacy, product leadership, and operational excellence), and that those intermediate measures are, in turn,

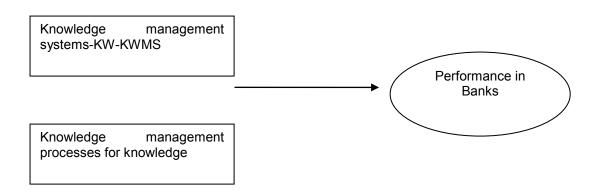
associated with financial performance. According to Tanriverdi (2005), KM has been linked with the financial performance measures but found to be a weak relationship. Gold and et al. (2001) found a strong and significant relationship between both knowledge infrastructure and knowledge processing with organizational effectiveness, using a broad set of non-financial outcomes. Additionally The results indicate that KM practices are positively associated with organizational performance

The measurement of organizational performance may take different forms, it could be based on financial performance or Intangibles such as customer satisfaction rate, new competencies and capabilities, end user satisfaction with knowledge managment implementation (Fernandez and Sabherwal (2001); Jo R. and et al. (2008)). However, as comprehensive financial data for empirical research may not be easily obtained, however, measures of perceptual organizational performance which correlates positively with objective measures of firm performance can be used Dollinger and Golden (1992); Delaney and Huselid (1996). In such approach the results and the measures are derived from questions asking participants' perception of the situation to assess organizational performance relative to the performance of industry competitors.

Performance expectancy variables can be used to measure organizational performance. In 2008, Suzana used. performance expectancy variables to measure organizational performance. Five variables that pertain to performance expectancy in terms of organizational performance were used and they were perceived usefulness, extrinsic and intrinsic motivation, job-fit, relative advantage, and outcome expectations.

3. Research design

3.1 Conceptual framework



Independent Variables

Dependent variables

3.2 Research methodology

A quantitative research methodology based on a survey using a questionnaire was used. The questionnaire developed by Patrick & Sonia (2009), was used with addition of questions related with gathering of data for the knowledge management systems. This modified questionnaire was pilot tested in one of the commercial banks. The questionnaire was sent to 200 officials of 6 commercial banks in Iran. Out of 150 received questionnaires, 90 were found complete and thus used for analysis.

3.3 Hypothesis

Hypothesis 1: The enterprise-wide knowledge management systems has no relationship with the performance of the banks

Hypothesis 2: Knowledge management processes has no relationship with the performance of the banks

4. Data analysis

4.1 Correlation analysis

Using the SPSS a correlation analysis was conducted among the dependent variable i.e. performance (DEP) with each processes of the knowledge management. The knowledge management processes namely are knowledge acquisition (KA), knowledge creation (KC), knowledge storage (KS), knowledge distribution (KD) and the knowledge utilization (UD). From table (2) knowledge utilization has shown a correlation of 0.58, whereas knowledge acquisition and knowledge distribution has shown a very weak correlation. The knowledge creation and storage has shown a negative correlation.

From table (3) the correlation value is 0.32 with the dependent variable and the independent variable knowledge management processes. However, the KMS indicates a negative correlation value with the dependent variable.

From table (3) the hypothesis 2 is rejected as the p-value is less than the level of significance 0.05. Therefore the knowledge management processes have a relationship with the performance of the organization of the banks.

However, the knowledge management systems have shown a p-value greater than the level of significance, which accepts the hypothesis 1, that there is no relationship with the performance of the banks.

Table 2: Correlation analysis of each process of KM

	Correlations			
		DEP		
Pearson Correlation				
	KA	0.15		
	KC	-0.10		
	KS	-0.41		
	KD	0.17		
	KU	0.58		
Sig. (1-tailed)		P-values		
-	KA	0.00		
	KC	0.17		
	KS	0.08		
	KD	0.05		
	KU	0.00		

Table 3: Correlation analysis of KM and KMS

		DEP
Pearson Correlation		
	KM	0.32
	KMS	-0.13
Sig. (1-tailed)		P-values
	KM	0.00
	KMS	0.12

In terms of performance the three dimensions were on three perspectives, organizational financial performance (OFP), organizational market performance and the organizational employee performance (OEP). From Table (4) the correlation analysis with these three with the dependent variable organizational performance reveals that OMP has the highest correlation which is 0.717, whereas the OFP is 0.628 and the OEP is 0.516.

Table 4: Correlation analysis of three dimensions of KM

Table 4		DEP
Pearson Correlation		
	OFP	0.63
	OMP	0.72
	OEP	0.52

4.2 Frequency analysis

Using the frequency statistics each knowledge management system tools was analyzed. The response frequency of the respondents response on the basis of Yes and No were analyzed. The results of their response in percentage are given in Table (5). The results indicate that Voice mails, digital pictures, video conferencing, data mining, are not used for knowledge or even in the daily operations. However, the FAO'S, messaging; electronic memos and databases are used in the banks, but for knowledge are not clear.

Table 5: Frequency analysis

Table 5	Response	
KMS	No	Yes
Voice mails	53%	47%
Digital Pictures	60%	21%
Video Conferencing	79%	21%
Data Mining	83%	17%
FAQ	17%	73%
Data Bases	12%	88%
Electronic Memos	28%	72%
Messaging	18%	82%

4.3 ANOVA

The analysis of variance is used for the testing whether the model is fit for prediction. In table (6) the results indicate that since the p0value is less than level of significance α = 0.05, therefore the null hypothesis that the model is not fit for prediction is rejected and the alternate hypothesis that the model is fit for prediction is accepted.

Table 6: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.390170516	2	0.195085	5.105725	0.008
	Residual	3.324193338	87	0.038209		
a. Predictors: (Constant), KMS, INDP	Total	3.714363855	89			
b. Dependent Variable: DEP		_				

4.4 Reliability analysis

The results from table (7) indicate the reliability value using Cronbach alpha of that there is an internal consistency of .78 indicting that there is an internal consistency among the questions asked for this research.

Table 7: Reliability analysis

Reliability Statistics			
Cronbach's Alpha	N of Items		
0.78	49		

5. Discussion and conclusion

5.1 General conclusions

Knowledge managment has been gaining ground in the management agenda since 1990's however it has gained more focus as western organizations have realized as a key source of competitive advantage. However, unfortunately in Iran this strategy or its usefulness is still not understood by most of the organizations including banks.

This can be largely attributed to the fact that organizations are merely preoccupied with technology infrastructure, failing to focus on the knowledge management practices or tools. In the light of knowledge management, the main purpose of this study was to develop an understanding of the main KM Processes and tolls being used in the commercial banks of Iran. The choice of the banking industry was based on the belief that KM is very important for financial institutions, as various literature sources have indicated. It should also be noted that the banking industry in Iran is growing fast, offering a wide range of new products and services ,besides the current slow pace due to recession.

One of the main contributions of this research is that it is probably this will be an attempt to explore knowledge-management environment in banks in Iran.

In this research we have used the performance expectancy variables to measure the dependent variable performance. The statistical results indicate that there is a relationship of processes of knowledge management with the performance of the banks but it is showing a very weak relationship. This could suggest that there is some relationship with the performance of the banks but not to the extent that it is directly affecting the performance. The results form table 2 further suggest that among the processes of knowledge management, that the knowledge is utilized as it could be due to the role if information systems or tools of knowledge that are being used in the banks. The other processes for knowledge acquisition and distribution are showing some relationship but a very weak in terms of knowledge management. The literature also confirms that KM has found a strong and significant relationship between both knowledge infrastructure and knowledge processing with organizational effectiveness, using a broad set of non-financial or financial outcomes.

The results indicate that KM practices are positively associated with organizational performance as generally suggested by the KM literature, Tayebi and et al. (2010), Nikpour and Salajegheh (2010)).

It could be attributed to the fact that information technology is used and there is some form of knowledge being acquired and distributed. But the results for knowledge creating and storing knowledge clearly indicate that there is no relationship in terms of knowledge management perspective. It can assumed that there is no specific knowledge management processes established for this purpose and the indication of relationship could be due to the role of information systems which are in some form used for knowledge management also.

The results for the knowledge management systems indicate that they have no relationship with the performance of the banks. However they are used which the statistical results have indicted but for the specific purpose for knowledge management is not clear among the employees. The literature suggests that KM tools have a competitive advantage and above all improve its overall organizational performance. However in this research it contradicts with the literature.

The tools mentioned are part of the information technology and mobile technology and it is possible that the respondents are using them for their operational activities.

5.2 Managerial implications

The literature supports that knowledge managment some relationship with organizational performance but to the extent that the employees understand the concept of KM. Although IT cannot, at any degree, substitute for personal communication, the establishment of an efficient KM system could enhance knowledge creating, storing, sharing and distributing. Moreover, organizations should focus on the creation of communities of practice within the workplace (McDermott and O'Dell, (2001)). However the statistical results in this study reveals that organizational market performance has a strong relationship with banks performance. Thus seems to be true as the banks main focus is

customer satisfaction and customer relationship marketing, therefore it has shown this strong relationship. The other two factors have also shown relation with the banks performance. But the main concern whether the employees are utilizing or understanding the role of KM is still ambiguous. The reason is maybe the employees are still in the statuesque of information technology and it could be that the role of information systems in Iran is playing some role in the overall performance of the banks.

The researcher believes that this study may provide a refined view of how knowledge management practices, and knowledge management systems are being used and how they should be used to improve the competencies and organizational performance of the Iranian commercial banks. This study presents empirical evidence on the relationship of knowledge management practices and organizational performance and could better understand the practices of knowledge management in organizations, and ways to apply it, the skills acquired or existing in the employees working in the banks. Organizations should be stressed that there is an increased need for organizations to include their knowledge sharing strategy into corporate strategy (Lin and Lee, (2004)).

Based on the findings in the study, there is a lack of knowledge management processes implementation and a lack of knowledge of knowledge management itself. This research indicates that there is some form of knowledge but due to the lack of understanding and knowledge about knowledge it is not utilized properly. Awareness if given to the management not only will improve their performance but also the productivity of organization, which could lead to a competitive advantage.

Knowledge management practices and tools provide a set of guidelines and practices integral to competitive advantage Overall, it is essential to take a more systematic approach in order to clarify the nature of links between knowledge management practices, knowledge management systems and organizational performance.

6. Limitations

Every study, no matter how well it is conducted, has some limitations. According to this fact, we have some limitations in this research too such as:

- Employees of banks in Iran are mostly unaware between the difference of KMS and information systems.
- Due to the guestions format seem to be lengthy
- Return rate is less and the sample size is small.
- Due to time constraint the generalization could not be established.

7. Recommendations

Some important recommendations from our research are presentable as follows. The future researchers can cover these issues in their paper:

- Larger sample size should be taken
- Other KMS technologies could be used to explore the role of KM
- KM models could be used to understand the situation of KM
- KM diagnostic models should be used to evaluate the situation for KM
- Other organizations should be explored

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