The Role of Knowledge Management Processes in ERP Implementation Success

Saeid Rouhani, IT Management Department, University of Tehran, Tehran, Iran
Somayeh Hosseini, Mehrabzor University, IT Management Department, Tehran, Iran
Mehdi Shami Zanjani, IT Management Department, University of Tehran, Tehran, Iran.

ABSTRACT

Due to response to the business goals, organizations need to implement enterprise resource planning systems. But the risk of failure in the implementation project of these systems is so high, therefore paying close attention to the effective factors of implementation is very necessary. One of the effective factors is knowledge management (KM). In this study, the role of Knowledge management processes in implementation of enterprise resource planning systems is studied and the existence of knowledge management as a required factor will be emphasized. Research data, in the questionnaire format have been gathered from experts in the field of enterprise resource planning system in Iranian companies. Some of the studied organizations have implemented this system and others were in the implementing phase. Data analysis with structural equation modeling (SEM) methodology by Lisrel software shows positive relation between knowledge management processes and Success of enterprise resource planning system implementation.

KEYWORDS

Enterprise Resource Planning (ERP) Systems, Knowledge Management (KM), Structural Equation Modeling (SEM), Success

INTRODUCTION

For responding to the changing competitive environment in global market, organizations need to utilize enterprise resource planning systems as an information system to achieve integrity in business processes, information and knowledge flow. Using this type of system could bring advantages such as advanced technology, effectiveness, integration, reporting capabilities, right access to data, improved customer service, effective communication and security (Roman, 2009).

Despite the increasing desire to implement this type of information systems in organizations, fear of failure leads to stop or delay in project implementation. In other words, with the high failure rate estimated up to 61% (Ghosh, 2012), it can be critical for organizations to identify success factors of the implementing project.

Also, if the implementation projects have been done successfully it wouldn’t be guaranteed the success of this precious system continually. Because during the use of system, change in business environment, personal factors, customer requirement and many other factors can inevitably affect business processes and change them widely. So the enterprise resource planning system wouldn’t be effective in organization if it doesn’t match to changes.

Hence, successful implementation doesn’t ensure the performance of the system certainly acceptable for a long time and also, variety of factors are responsible for positive continues effects

DOI: 10.4018/IJKBO.2017070102

Copyright © 2017, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.
of the system. Knowledge management is one of them that according to literature proposed to have positive effect on successful implementation of enterprise resource planning system (Arun, 2015).

Therefore, in regard to the necessity of enterprise resource planning system for organizations, knowledge management seems as a critical success factor in implementation project. In this paper the role of knowledge management process in implementing project will be studied and we are trying to reduce failure rate of this expensive and complicated project by extracting and applying effective knowledge related to successful implementation.

Two fundamental research questions will be proposed in this study:

1. Is there any significant relation between knowledge management readiness and successful implementation in organizations or not?
2. Does the use of knowledge management processes have noticeable effect on successful implementation of enterprise resource planning systems or not?

In regard to above questions, the research hypothesis will be defined as below:

There is a meaningful connection between knowledge management and successful implementation of enterprise resource planning systems.

Besides, with decomposition of knowledge management to its processes, we can introduce many other questions. In other words, by supposing that knowledge management is built up processes such as, knowledge creation, knowledge organization and integrity, knowledge sharing and knowledge use we can analyses the effect of them on the results of information system implementation in the fields of finance, learning and growth, customer and internal business processes.

THEORETICAL BACKGROUND

Enterprise Resource Planning System (ERP)

ERP systems are software which manages business processes by means of modules. It supports organizational processes, such as planning, production, sales and marketing, distribution, accounting, finance, human resource management, project management, inventory management, maintenance, transportation and e-commerce. This system has been designed to solve the problems of separate information departments in organizations as is called: “Information Islands” (Muscatello, Small, & Chen, 2003). Enterprise resource planning systems emphasizes efficiency of business processes in enterprises. To achieve this goal, they maintain mechanism for data/information consistency through high degrees of standardization, formalization, and specialization (Azhdari, MousaviMadani, & Zarebahramabadi, 2012).

Successful Implementation of Enterprise Resource Planning Systems

Despite interest to enterprise resource planning system implementation, the project failure rate is estimated between 67% and 90% (Calogero, 2000; Shore, 2005). In literature, the critical factors for project success and failure have been reported (Amid, Moalagh, & Zare Ravasan, 2012; Liaquat, Patrick, & Rashid, 2002). In this paper we calculate enterprise resource planning system success by using balanced scoured card model (Batada, 2012). The proposed model is categorized into 4 dimensions as finance, Customer, internal business process and finally learning and growth. In financial dimension, the project is examined from some point of view such as investigating, predicted budget and spending money. In customer dimension, the focus is on external customer persons who are using the system indirectly and the elimination of bottlenecks and customer service are the goals. In internal business process, internal condition of the organization is focused and the desired result is increment in functional capacity of system and elimination its weakness through to user requirement (Gibbs, 2014). In learning and growth dimension, the main focus is on impressive use of the system and improvement in system by means of increasing learning and creativity skills.
Knowledge Management

Knowledge management can be defined as combination of external and internal information into practical/applicable knowledge by means of technical infrastructures. In fact, knowledge management is a process which the implementation is occurred during the time and in this implementing process, information technology, business process and human communications is extremely emphasized (Benjamins, Fensel, & Gomes Perez, 2012). Davenport and Prusak (2005), supposed that Knowledge management contents are related to using and expanding organizational knowledge assessment with knowledge increasing aspect. Regard to literature we can explain process-oriented definition for knowledge management. In this new definition, knowledge management is the systematic management of any processes and activities which are related to create, organize, storage, sharing and finally using knowledge in organizations (Zaim, 2006).

Knowledge Management Processes

Based on researchers point of view and various categorizes, knowledge management processes or in the other word, knowledge management cycle are explained in many ways. In this study, knowledge management is composed of four phases as follow: knowledge creation, knowledge organization and integrity, knowledge sharing and knowledge using (Sedera & Gable, 2010).

Knowledge creation is defined as continuous production of knowledge with the goal of expanding organizational knowledge storage (Davenport & Prusak, 2005). The second process is knowledge organization and integrity that is considered as coding, categorizing, shaping in right format, organizing and storage for a long time (Argote, McEvily, & Reagans, 2003; Bhatt, 2001).

The third process in knowledge management cycle is to distribute knowledge between two persons which, one of them is knowledge distributer and the other is knowledge absorber. The focus on knowledge sharing is on human assessment and communications. It is said that we can’t share knowledge in a specific way because knowledge sharing is related to the way of thinking and people’s approaches. Everyone will interpret knowledge base of his/her point of view and then share that with others (Paulin and Suneson 2012). The last process in knowledge management cycle is knowledge application. At the first time, when knowledge is created, organized and distributed people in organizations start to communicate with each other by means of that knowledge. It is clear that in any organizations, competitive advantage is not underlying in knowledge lonely but it is latent in effective use of knowledge (Markus, 2001).

RELATED WORKS

In Table 1, some researches in relation between knowledge management and successful implementation of enterprise resource planning systems are explained. Based on the literatures in Table 1, the effect of knowledge management on successful implemenetation is obvious. But in detailed survey we can founded that one of the research gaps in this educational field is neglecting to knowledge management processes and their role in successful implementation. In the other word, it seems that it is hard to find researches those analysis knowledge management connections with ERP implementation success directly. So, this study aims to response to this research gap.

THE RESEARCH MODEL

Regard to literature the existence of positive, significant and meaningful relation between knowledge management and successful implementation project is clear (Davenport, 1996; Markus, Axline, Petrie & Tanis, 2000; Sedera & Gable,2010). Sedera, Gable and others (2003) in their research examine this positive and meaningful connection.
Table 1. Related work in the field of knowledge management and successful enterprise resource planning system

<table>
<thead>
<tr>
<th>Results</th>
<th>Research name</th>
<th>Year</th>
<th>Researchers’ name</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>This research focuses on combination of enterprise resource planning system implementation phases with knowledge management processes for achieving to continuous improvement and avoiding the failure of system after startup.</td>
<td>Rethinking ERP success: A new perspective from knowledge management and continues improvement</td>
<td>(2007)</td>
<td>(McGinnis &amp; Huang)</td>
<td>1</td>
</tr>
<tr>
<td>This research focuses on existence of positive relation between knowledge and enterprise resource planning systems in Australian organizations.</td>
<td>Knowledge management for ERP success</td>
<td>(2003)</td>
<td>(Sedera, Gable, &amp; Chan)</td>
<td>2</td>
</tr>
<tr>
<td>The man idea of this research is based on the effect of knowledge management as an element for coordination between enterprise resource planning system and business processes. Also in this research knowledge sharing is one of the most important process in knowledge management cycle and has effective role in implementing project</td>
<td>Knowledge management in ERP system implementation</td>
<td>(2009)</td>
<td>(Sudzina, Kirchner, &amp; Razmerita)</td>
<td>3</td>
</tr>
<tr>
<td>This research is examining the role of knowledge management as a factor to cancelation the dependency to knowledge workers in the enterprise resource planning system implementation phase.</td>
<td>Designing ERP systems with knowledge management capacity.</td>
<td>(2006)</td>
<td>(Li, Chaudhry, &amp; Zhao)</td>
<td>4</td>
</tr>
<tr>
<td>The subject of this research is transferring knowledge from consultants to clients. Hence consultants’ skills and personnel’s absorbent skill are two important factors in enterprise resource planning system implementation phase.</td>
<td>Improving enterprise resource planning (ERP) fit to organizational process through knowledge management transfer.</td>
<td>(2007)</td>
<td>(Wang, Lin, Jiang, &amp; Klein)</td>
<td>5</td>
</tr>
<tr>
<td>In this study the focus is on investigating on using knowledge management with the goal of supporting enterprise resource planning system life cycle during phases such as choosing, implementing and using system.</td>
<td>Enterprise resource planning system: Systems, life cycle, electronic commerce, and risk</td>
<td>(2000)</td>
<td>(O’Leary)</td>
<td>6</td>
</tr>
<tr>
<td>In this research notions such as knowledge transferring from developers, consultants- anyone who has a role in implementation of organizational systems- to users is explained. The considerable point in this study is attention to gathering variety of operational groups for easily communications between people and as a result easily knowledge transferring</td>
<td>Enterprise systems, knowledge transfer and power users.</td>
<td>(2004)</td>
<td>(Volkoff, Elmes, &amp; Strong)</td>
<td>7</td>
</tr>
<tr>
<td>This research provides success factors in enterprise resource planning implementation project, examines the role of knowledge management as an improver and reinforcing knowledge resource between team members, reduce costs, strategic advantages, examining role of knowledge management as an effective agent on some critical success factors of implementation project just like change management, cooperativeness and training.</td>
<td>The role of knowledge management in ERP implementation: a case study in Aker KVv Aernr</td>
<td>(2006)</td>
<td>(Leknes &amp; Munkvold)</td>
<td>8</td>
</tr>
<tr>
<td>The concentration in this research is on implicit knowledge and process-oriented nature of organizational knowledge in organizational memory point of view. And explain the important of implicit Knowledge in enterprise resource planning successful implementation.</td>
<td>The role of knowledge management in successful ERP implementation project.</td>
<td>(2008)</td>
<td>(Vandai)</td>
<td>9</td>
</tr>
<tr>
<td>In this research focus is on knowledge management role as an intermediate, to save and share data between decision makers in organization, for right performance of organizations in business fields and finally for effecting on successful performance of ERP system.</td>
<td>beyond ERP implementation: The moderating effect of knowledge management</td>
<td>(2011)</td>
<td>(Tsai, Li, Lee, &amp; Tung)</td>
<td>10</td>
</tr>
</tbody>
</table>
From their point of view knowledge (and also knowledge management) is one of the functional concepts in enterprise resource planning system implementation. Their analysis shows positive and strong relation between knowledge and successful implementation. In the research done by Huang and Cheng (2005), knowledge management performance composed of four processes, resulted in success and easiness in enterprise system implementation. So, based on literatures it can be concluded that in enterprise resource planning system lifecycle the existence of knowledge management is one of the necessities (Bancroft, 1996; Rosemann & Chan, 2000; Scott, 1999).

In explaining the conceptual model (Figure 1) for this research we use result of Zaim, (2006). In that research he proved that there is a positive relation between knowledge management processes and knowledge management performance in organization. Since knowledge management performance is affected by knowledge management processes, it can be concluded that upper performing level in the field of processes will lead to upper performing level in the field of knowledge management. In second section, the relation between knowledge management and successful implementation has been analyzed. In this section for calculating the organization performance, balanced score card model have been used (Kaplan & Norton, 1996). Finally, the research hypothesis will be as follow:

Research basic hypothesis: “knowledge management competence and performance has positive effect on successful resource planning system implementation”

RESEARCH METHOD

This research is based on functional/practical research categories and based on goals of research perspective this research will be categorized in descriptive survey researches. From the data gathering point of view, we have used questionnaire and the approach is structured. The reliability of questioners is examined by the retest reliability of unique questioner during two ten day’s intervals. The questioner has sent to seven members of statistical population and the reliability factor the SPSS is over than 0/7 that means that the questioner reliability is acceptable. In order to validity test, we have used standard questioner which had been used by Lee et al. (2005) and Batada (2012), so the content validity will be accepted.

About face and translate validity we have used the opinion of some experts in information systems field. The research questioner is composed of 54 questions which is divided into three sections. Section 1 is about profile of respondents’ section 2 is about assessment of knowledge management competence and finally section 3 will check success/failure of enterprise resource planning system. The questioner is based on Likert scale with five points. The 150 questioners have been sent to 14 companies which have implemented enterprise resource planning system and the respondents were managers and experts in ERP field. The 122 completed questioners have been received. The list of companies is adapted from Informatics Society of Iran (ISI). The chosen companies are divided into two service-based (22%) and production-based (78%) categories. In this list, we have studied on oil, gas and petrochemical industry, steel industry, ceramic and tiles industry, carpeting and synthetic fibers, automobiles, turbine blade engineering, wires and cables industries, e-banking and insurance.

DATA ANALYSIS

In this research data analysis is based on factor analysis and is composed of three phases. At first by knowledge management processes factor analysis we can examine the competence of knowledge management in organizations, in second phase success/failure of enterprise resource planning system will assess by factor analysis and finally factor analysis of relation between knowledge management and ERP system implementation will be calculated. And after that by using fit indexes we will study research hypothesis. In Table 2, the results of factor analysis and T-Value of research model is shown. It should be noted that the calculation of some of the questions did not provide acceptable values and we have removed them and the analysis of these other questions have done again.
Factor Analysis

In Table 2, the value of factor analysis and T-value of knowledge management process and successful implementation perspectives of ERP systems are showed. Regard to Table 2, we can see that there is a positive relation between knowledge management and successful implementation of enterprise resource planning. The results show that in knowledge management processes, except than knowledge creation process the other processes have reached to acceptable value. Values much more than 0.4 confirmed a strong correlation between the factors in the analysis. As shown in the Table 2, knowledge use and knowledge organization and integration have meaningful effect on knowledge management competence in organization and any change in these processes can at first affect knowledge management and after that, regard to positive relation between knowledge management and successful implementation of enterprise resource planning, it can affect information system. In study of factor analysis (Table 3), the value of internal business process is 0/87. This means that in information system implementation this process is more important than other processes. This greater rate than other variables shows that in this research people who are questioned have perceived more improvement in process after information system implementation. As shown in Figure 1, by changing the variables on the left (especially variable with greater load), the variables on the right (especially variable with greater load) will be changed.  

In Table 4, research model fit has been shown. In fitness assessment, the observed covariance variance matrix will be compared with predicted covariance variance matrix and this comparison will show if the values are similar or no. In the other words, we want to know if the model is fit or not. Whatever values in the matrixes are close together, the model is more fitting.  

The research hypothesis is expressed as: knowledge management competence in organization has positive effect on successful implementation of enterprise resource planning system. Therefore, by above definition, the null and alternative hypothesizes are as below:

- **H0**: Knowledge management competence doesn’t have positive effect on ERP implementation.
- **H1**: Knowledge management competence have positive effect on ERP implementation.

According to estimated standard load between Knowledge management processes and successful implementation perspectives and with respect to T=6/65 and R² =0/86 it can be concluded that in the significance level P<0/009, there is a meaningful correlation between knowledge management and successful implementation of enterprise resource planning system.
Table 2. The result of factor analysis based on information gathered from questionnaire

<table>
<thead>
<tr>
<th>T-Value</th>
<th>F.A</th>
<th>Variable</th>
<th>T-Value</th>
<th>F.A</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.74</td>
<td>0.89</td>
<td>Q.2: If the acceptance and usage of new knowledge is necessary there is readiness in organization to use the new knowledge.</td>
<td>5.46</td>
<td>0.53</td>
<td>Q.1: Required information for duties can be gathered from different knowledge sources.</td>
</tr>
<tr>
<td>6.21</td>
<td>0.60</td>
<td>Q.4: Useful information and suggestions can be gain without any time wasting by brainstorming.</td>
<td>5.47</td>
<td>0.53</td>
<td>Q.3: Every one informs the next one about related duties properly.</td>
</tr>
</tbody>
</table>

Knowledge organization and integration

<table>
<thead>
<tr>
<th>T-Value</th>
<th>F.A</th>
<th>Variable</th>
<th>T-Value</th>
<th>F.A</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.37</td>
<td>0.92</td>
<td>Q.6: During designing and building new tasks, skills and expertise of them will be stored.</td>
<td>11.25</td>
<td>0.86</td>
<td>Q.5: People usually refer to organizational database.</td>
</tr>
<tr>
<td>5.02</td>
<td>0.45</td>
<td>Q.8: Knowledge required for running a task is usually documented.</td>
<td>9.08</td>
<td>0.74</td>
<td>Q.7: For doing and performing a task related policies and procedures will be usually produced.</td>
</tr>
</tbody>
</table>

Knowledge sharing

<table>
<thead>
<tr>
<th>T-Value</th>
<th>F.A</th>
<th>Variable</th>
<th>T-Value</th>
<th>F.A</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.36</td>
<td>0.81</td>
<td>Q.10: By sharing knowledge and information, efficiency will be increased in organization.</td>
<td>7.36</td>
<td>0.66</td>
<td>Q.9: Necessary knowledge and information will be shared and distributed for doing tasks.</td>
</tr>
<tr>
<td>7.33</td>
<td>0.66</td>
<td>Q.12: By cooperation and teamwork, knowledge and information will be distributed in organization.</td>
<td>7.03</td>
<td>0.64</td>
<td>Q.11: By creating information systems like internet and electronic bulletin knowledge and information will be distributed in organizations.</td>
</tr>
</tbody>
</table>

Knowledge use

<table>
<thead>
<tr>
<th>T-Value</th>
<th>F.A</th>
<th>Variable</th>
<th>T-Value</th>
<th>F.A</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.05</td>
<td>0.95</td>
<td>Q.14: In organization flowcharts are required and used for performing tasks.</td>
<td>15.06</td>
<td>0.99</td>
<td>Q.13: There are educational and investigative programs in organization.</td>
</tr>
<tr>
<td>10.01</td>
<td>0.77</td>
<td>Q.16: The culture of knowledge sharing and distributing is encouraged in organization.</td>
<td>6.83</td>
<td>0.57</td>
<td>Q.15: For new suggestions in the field of knowledge usage, there are useful policies and procedures.</td>
</tr>
</tbody>
</table>

Learn and growth perspective

<table>
<thead>
<tr>
<th>T-Value</th>
<th>F.A</th>
<th>Variable</th>
<th>T-Value</th>
<th>F.A</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.63</td>
<td>0.86</td>
<td>Q.21: Required information can be gained from enterprise resource planning system sufficiently and in real time.</td>
<td>8.92</td>
<td>0.72</td>
<td>Q.20: Enterprise resource planning systems always offers up to date information.</td>
</tr>
<tr>
<td>6.02</td>
<td>0.53</td>
<td>Q.23: There is a powerful information system department in organization.</td>
<td>10.54</td>
<td>0.81</td>
<td>Q.22: Information which was used before by other departments, are now available by implementing new system.</td>
</tr>
<tr>
<td>11.08</td>
<td>0.84</td>
<td>Q.25: People have comprehensive recognition and perception of enterprise resource planning content.</td>
<td>8.77</td>
<td>0.72</td>
<td>Q.24: Rich and elegant educational programs are held in organization.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Q.26: There are reliable infrastructures in information technology field in organization</td>
</tr>
</tbody>
</table>

Internal business process perspective

<table>
<thead>
<tr>
<th>T-Value</th>
<th>F.A</th>
<th>Variable</th>
<th>T-Value</th>
<th>F.A</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.50</td>
<td>0.41</td>
<td>Q.28: Enterprise resource planning system are so helpful in decision making process.</td>
<td>7.51</td>
<td>0.64</td>
<td>Q.27: Enterprise resource planning system is beneficial and advantageous.</td>
</tr>
<tr>
<td>9.35</td>
<td>0.75</td>
<td>Q.30: Enterprise resource planning system facilitates task and reduces workload.</td>
<td>6.91</td>
<td>0.60</td>
<td>Q.29: People will receive technical support, related to enterprise resource planning system.</td>
</tr>
<tr>
<td>7.72</td>
<td>0.65</td>
<td>Q.33: By implementing enterprise resource planning system in organization, paper works reduced significantly.</td>
<td>5.63</td>
<td>0.53</td>
<td>Q.32: Enterprise resource planning system will feed people in required information in decision making process.</td>
</tr>
</tbody>
</table>

DISCUSSION

In factor analysis, we can accept/refuse hypothesis about relations between factors. Due to standard loadings in Tables 2 and 3, we can study potency/weakness of the relations. The value of factor loading between knowledge management and enterprise resource planning is equal to 0.73. This value shows a strong relation between these two factors. So, by changing in knowledge management
<table>
<thead>
<tr>
<th>Variables</th>
<th>T-Value</th>
<th>Factor Analysis</th>
<th>Factor Analysis</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprise resource planning system</td>
<td>8/96</td>
<td>0/76</td>
<td>3.43</td>
<td>Knowledge management</td>
</tr>
<tr>
<td>Learn &amp; growth perspective</td>
<td></td>
<td></td>
<td></td>
<td>Knowledge Creation</td>
</tr>
<tr>
<td>Internal business process perspective</td>
<td>10/01</td>
<td>0/87</td>
<td>8/38</td>
<td>Knowledge organization and integration</td>
</tr>
<tr>
<td>Financial perspective</td>
<td>6/92</td>
<td>0/63</td>
<td>6/77</td>
<td>Knowledge sharing</td>
</tr>
<tr>
<td>The effect of knowledge management on successful implementation of ERP</td>
<td>8/01</td>
<td>0/72</td>
<td>9/01</td>
<td>Knowledge use</td>
</tr>
<tr>
<td></td>
<td>6/65</td>
<td>0/73</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3. The result of factor analysis of final model

competency in organization, especially the processes that have higher loadings we can affect the quality of information system implementation. It should be noted that the processes measuring successful implementation with higher loadings, are much more sensitive to changes. In other words, by changing the processes with higher loadings we can change the result of implementation. According to Table 3, in this research, knowledge creation has the lower loading than other processes. This value is lower than acceptable range (loading standards must be more than 0/4).

Knowledge creation is one of the important processes in knowledge management lifecycle, and so this value is not acceptable. One of the reasons for this result is the lack of awareness about this
process between personals in studied organizations. Against, according to the data gathered in this study knowledge use is the most important process than other process in knowledge management lifecycle. The standard loading equal to 0/77 means that this process is determinative one. And by changing this process we can have significant effect on knowledge management competency. If we reinforce knowledge use in organization and perform it completely, we can expect that the enterprise resource planning system implementation especially in internal business process (with standard loading equal to 0/87) operates capably. Similarly, based on the obtained results, we can study the impact of other processes and improve the research hypothesis.

**COMPARISON WITH RELATED WORKS**

According to literature, McGinnis and Huang (2007), in their research; “Rethinking ERP success: A new perspective from knowledge management and continues improvement”, studied the combination of the four processes of knowledge management with enterprise resource planning phases and concluded that knowledge management as a generator can lead to continues improvement and as a result can prevent form enterprise resource planning system halt. While in this research we study the role of knowledge management after information system implementation. In the research presented by Leknes and Munkvold (2006), the existent of knowledge in enterprise resource planning system lifecycle -especially on implementation phase- has been studied. Their findings show that, the usage of knowledge management, through improvement in knowledge based resources between practitioners involving in implementation project, can promotes system responses to information system and decreases costs.

While in our research, knowledge management in organization has been included by default and is studied as a key success factor in information system successful implementation. According to the data gathered in our research, knowledge creation process didn’t get acceptable value, while in research presented by Leknes and Munkvold (2006), this process has been approved mainly. Also, in our research we use balanced scoured card model for checking successful implementation. And examine the success from four perfectives. These perspectives are related to finance, customer, internal business processes and learn and growth but Leknes and Munkvold (2006), emphasis on costs reduction and strategic advantages. One of the similar researches in this field is presented by Tsai, Li and others (2011). They believe that knowledge management is like an interface which is used in information technology. The role of this interface is related to enterprise resource planning system maintenance and the main emphasis is on maintenance of information produced by system. In other words, they figure on knowledge management from information technology viewpoint and focus on software aspects. But in our research, knowledge management is defined as an innovative process in organization and by facilitating knowledge flow in organization and strengthening the interaction between people will eliminate internal complexities.
CONCLUSION

Since enterprise resource planning system are difficult and complicated solutions, so their implementation free from risk and failure is usually considered by researchers. Developing readiness in organization through knowledge management processes is mentioned by expertise in this area. Knowledge management is composed of processes which can create, organize, share and use knowledge in organizations. In this research, we study if knowledge management can develop condition through its processes for successful information system implementation. The results empathize on direct and positive effects of knowledge management on enterprise resource planning system implementation.

This study proposed the following research implication: First, our findings indicates that in studied organizations knowledge creation hasn’t any significant effect on knowledge management competency. But on the contrary the other processes as knowledge sharing, knowledge organization and integration and knowledge use, have remarkable roles in flowing knowledge management in organizations. Since the referred processes improved and mentioned in organizations, knowledge management competency would be enriched and according to the intense relation between knowledge management and enterprise resource planning system, we can have successful implementation. In the other words, by successful sharing and using of knowledge in organization, employees from different departments can utilize their knowledge more effectively and can reach to the same alignment with team members. As well as the members of implementation team with various knowledge can develop and solve their problems through sharing of knowledge with the help of other employees and also, can transmit the total knowledge of project to the employees with reducing the levels of dependency to external consultants. In addition, knowledge sharing and knowledge using, enables personals to adapt their skills, opinions and assumption to the way that have maximum potential for organization.

In this study knowledge management is referred to as an innovative process with the goal of resolving internal complexity by smoothing knowledge flow and reinforcement of interaction between employees and enterprise resource planning team members. This study emphasized the role of knowledge sharing and using in continues improvement which is an important factor in preventing information system form any interruptions. Second, Enterprise resource planning system implementation is a complicated process and by using knowledge through implementing team we can be sure that team members could update what they know and create new creative knowledge. Our findings confirmed that successful implementation of enterprise resource planning system could be measured through four perspectives. In this research, the main perspective is internal business process perspective. This study highlights that in successful implementation, internal processes such as, those processes and activities that deliver critical services to customer and can result to appropriate level of productivity, accuracy, cycle time, core competencies and effectiveness should be mentioned.

One of the limitations of this research is that we only study four processes of knowledge management and due to literature; researchers define knowledge management processes in different ways. So, for future research we suggest to examine other processes. The other limitation in this research: difficult access to organizations which have implemented enterprise resource planning system. The lack of a clear and uniform definition of knowledge management processes in organizations, the lack of rigorous evaluation system to evaluate the performance of enterprise resource planning system, limited sample/population in Iranian organization and limited industries are the limitation of this research. The following are recommended for future researchers. One of the readiness programs for enterprise resource planning system define as institutionalization of knowledge management projects. Also, knowledge has been applied in implementation team and external consultants (internal and external knowledge) through knowledge management processes such as collect, store, record, share and use. Finally, we suggest that, failed organizations in enterprise resource planning system area use knowledge management processes and improve their flaws and weaknesses. And notice to the role of knowledge management as a key factor in development of continues improvement.
REFERENCES


Saeed Rouhani obtained a B.S. degree in Industrial Engineering from Iran University of Science and Technology, Tehran, Iran, in 2003, and an M.A. in Information Technology Management from Allameh Tabatabai University, Tehran, Iran, in 2005. He received a Ph.D. degree in Systems Engineering from Iran University of Science and Technology in 2011. Dr. Rouhani is currently Assistant Professor in Faculty of Management, University of Tehran, Iran. His research interests include enterprise resource planning systems, business intelligence and big data analytics. He has published ten books and presented more than 30 papers at different conferences and in acclaimed journals.

Somayeh Hosseini has a B.S. in Industrial engineering from Science and Technology University (Iran), an M.S. in IT management from department of Information Technology, Mehrabzor University, Tehran, Iran. Her research interests include big data, Knowledge management and enterprise resource planning system (ERP).

Mehdi Shami Zanjani is an Associate Professor in the IT Management department faculty of management, University of Tehran, Tehran, Iran.