

Survey of ERP Systems Implementation

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Abstract— ERP is the latest and the most effective programming tool for the whole enterprise resources and has a different look toward all activities of the companies and take them from the task-oriented look to process-oriented status. Nowadays the implementation of this system faces many problems in the world. In this paper, we discuss the factors that caused the crisis in Iranian organizations information systems, challenges of ERP implementation, and recommendations for reducing those problems.

Keywords— ERP implementation, information systems crisis, ERP failure factors

I. INTRODUCTION

As the competition among the organizations and the companies to present their products goes to globalized path, they now are to take part in the global markets. One of the information technology and communication tools that play important role in the information structure in the organizations and the one which is the basic step in taking part in global markets is the Enterprise Resource Planning (ERP). The system includes a comprehensive information, engineering and management system which meets all needs of the organization through process perspective (to reach the organization needs).

Now, 70% of the organizations and the companies all over America and Europe, are able to use the most important information technology and communication tools like enterprise resource planning systems in different stages of providing the resources and marketing, production, distribution and the guarantee services all at once or separately in a wide area or virtual offices [1]. The costs and the time needed for ERP implementation are very high and it also leads to problems and challenges in the many parts of organizations with fundamental changes in process and if the organizations do not pay the needed attention to them, many obstacles will come forward the implementation of the ERP which will end in the failure of the implementation. According to lack of official researches about this subject 'If we analyze the last decade experiments related to the ERP systems implementing in Iran industry, we can understand the problems of implementation of ERP and find new true ways for implementation of it.

II. CHALLENGES OF IMPLEMENTATION OF ERP IN IRAN

Many seminars and meetings are formed annually in Iran to introduce ERP and also to talk about its advantages but nothing has done to take use of the researches. Identifying the critical points and factors in information systems of Iran

organizations, [2] and clarifying the ERP implementation challenges, the possibility of failure reduces and the system success increases. According to the experiment of IRICO Company about implementation of ERP and the experiment of the writer as the consultant and researcher in ERP, and also according to what the big organizations consultants say about the problems of implementation and execution of the systems [2,3], the challenges of using ERP systems in Iran are as follows:

1- *The technology is imported with no need and is not used right.*

The need to the technology is not clear in organizations and the big companies, but technology has entered them with no limit. The responsibility of technology is not clear in the old processes of the companies and the organizations, even some of the organizations have not studied or analyzed the power of the technology or their own systems, and sometimes the technology is imported just for advertisement. In such organizations, the head masters who even don't know how to do jobs by the help of the computers can't understand the power of the system in the organization. Even now there is no needing felt for planning systems, but there are some which understand the needs. But it is just possible to form the teams for the organizations who understand the need by the experts, IT group and the related specialized people to implement ERP.

2- *What is changed is the transformation of existing system to the mechanized ones and not the true processes.*

In the last decade all of the organizations just had mechanized the old systems and provided software for doing the job on nodes or the whole network.

The experiments show that if data enter the system from many gates, there would be deep differences between the reports and then anomaly will be seen in data.

In fact the organizations did not provide systems according to the optimal technology or the processes and just provided software for the old systems and so nothing has done to improve the system.

3- *The costs of implementation of the system are high and the capital return time is long.*

As the implementation costs of ERP system is high, almost all the implementing organizations expect to get back the investigated capital in form of advantages to the organization and also expect the decrease in the costs after

that, but this is not possible very soon and it takes time after implementation to see the improvements in the system.

In many big organizations in Iran, lack of existing a true system for programming causes the system not to be able to calculate the total value of the products and the services and finally sometimes they sell the services with no identified value and sometimes they do not benefit their activities.

4- *The working structure of the organizations is inflexible in most cases.*

ERP is a process centered system and this is in contrary to the activities of most of the Iranian organizations and the companies. The process centered perspective in the products of a company sometimes leads to changes in the basic structure of the organization and causes challenges which face the workers or even the head masters. So the successful organization is the one which can make changes in its structure.

5- *The existing processes are not compatible to the optimum ERP processes.*

If the analysis about ERP acceptance possibility in big organizations in Iran say that buying a system is more advantageous than constructing it, then we should analyze either the existing software of the organization is compatible to the ERP software? If they are not compatible, the implementation process of ERP will be corrupted which can cause failure of ERP. So there are 3 points to be taken into consideration:

a- The organization or the company should change its own processes and make them compatible with the ERP system. In this case basic changes will happen in the organization and in positions of the workers and their job and it is necessary for the organization to be engineered again and if an organization intends implementation of ERP, it must decrease the failure risk and then try to implement the ERP.

b- The software package must be changed according to the conditions existing in the company. So, the possibility of problems in system grows and problems will come about updating the software because the new versions must be produces on demand.

c- ERP and organization processes must work for same end goals to decrease the compatibility distances. Experiments show that if the organizations try to use the continuous improvement methods and also want to change their own processes and the ERP systems according their needs, they both will be badly affected [1].

6- *Data transformation is one of the big problems in ERP implementation.*

Export of the data from the old septate systems to ERP, is so delicate and expensive for ERP which usually leads to failure of the project, because there is not a continuous database for the system and among the ERP elements, and there are lots of differences in software structure of the old systems and ERP. Some data do not fit the new structure and

some places stay empty in the new system and the reports will not be true which cause the organizations have many problems. It is clear at this stage that masters are not satisfied [2] and if the problems stay undone, the project will end. To prevent such problems, it is necessary to form a strong team of the IT experts and the other related experts to make the right decision about the method of importing the data.

7- *The sub costs in ERP implementation are very high.*

The costs are as follows:

a) Educating costs:

As ERP acts as a unique system, and also the operators of it act as one, so it is necessary to have a deep understanding of the activities. Operators must be educated in a way that can understand the fact that each data they enter the system will affect the whole system. So the relationship among the different sectors of the company must be described by this way. It is experienced that if people understand the operation method by themselves, it will badly affect the system, so there must be ideal classes for identification and introduction of the system and certificates must be issued at the end of the period.

b) The costs of testing the software:

Testing the system in a large scale is a step in implementation of it which takes 20% of the whole time of the system lifetime [1]. So to be sure of the right process, the relationship between ERP systems with each other and maybe other software must be taken into consideration.

c) The costs of producing the software on demand:

If one or more factors of ERP could not be compatible to the existing processes, it must be restructured based on the needs of the system of the company. It is experienced if we break ERP into 4 sectors like production, business, human resources and financial resources [4]; production sector will be the special sector of the company basically and will need the most correction which will be on demand of the employer.

8- *Workers are the most general factor in failure of ERP implementation.*

Experiences show that if the workers do not get the right instructions about using the system and if they are not able to change the old processes to the newer ones, ERP implementation will face serious problems. If the head master of the organization do not directly support the implementers, and pass the work to the others in the organization, the project will completely be failure. The researches show that the unsuccessful end of the half of the ERP projects is because that the masters do not follow the work themselves[2]. The best suggestion to reduce the resist of the workers is to make them take part in the change process.

9- *Vast studies on the ERP feasibility evaluation in organizations before execution of it is not taken into consideration :*

As the execution of such project is time consuming and also expensive, there must complete studies and analysis be done before execution.

It must be considered that if the implementation is successful, it will totally benefit the company and if not, it will be the end of the company. So, consider the following in feasibility studies of ERP: [2, 3, 5]

- Studying the hardware and network infrastructures suitable for ERP and studying if the organization is ready to totally investigate the project in to aspects: business and technology?

- How much is the system reliable to the re-engineering of the processes?

- The old system are separate and do not have a unique hard and software infrastructure to come up with the problems in customer relation management or chain management.

- Providing the software and making relationship among the sections, re entering data to the systems in many places, the risk of not saving the information in organization in a safe database and the lack of the affective relationship in organization units are the points in feasibility studies.

- Executing or not executing ERP for the operating workers is not important, and they don't want to change their method. This is somehow right as the operator has the finite accessibility. The operator enters data in that level. The reports are not important for the operator. The headmasters should take into consideration the changes in the system the operating workers are the important level of implementation.

- The headmasters do not risk just with the conferences or the seminars to introduce ERP. So they must find ways to show the digits to make them understand the system. Experiments show that if there is a good implementation group in a company for a while, the test is opera tingly done. This is the best method to accept the elementary steps of the system [2,5].

III. APPLICATION OF THE CRITICAL FACTORS IN ERP IMPLEMENTATION

Lately Iranian companies and organizations welcome ERP systems but they are waiting the result of the implementation of companies that have accepted this major risk. The structure and process of the organizations is aimed with ERP implementation so the organizations which are flexible against changes in organizational structure and business processes, will be successful in this field.

According to research conducted on affecting factors of ERP implementation readiness in the four groups (organization - strategic), (organizational - technical), (strategic) and (technical) after using the opinions of IT and ERP experts, this result was obtained that all of this four groups are effective on the organization's readiness for ERP implementation but Organizational factors are more effective than technical factors [2]. As a result, managerial and organizational dimensions of this system is more than the,

technical dimensions. And pay attention to the organizational and managerial aspects can reduce the risk of system implementation failure in an organization.

With regard to the fact that has been recommended "Spider model" as a compatible model with Iranian organizations [1], These organizations can use the above framework , and Special focus on the problems in Section (II) identify the existing situation to minimize the ERP implementation challenges in the organization and with definition of improvement projects in all organizational dimensions (strategy, human resources, organizational structure, processes improve, etc.) and the technology dimension , pay to increase organizational capabilities and the acceptability. Then according to a periodic audit program, do feasibility and evaluation projects to reassessment to organizational readiness improve and the new institutional status in the same dimension. And continue this cycle to the extent so that all we can say frankly and with courage:

- 1- All organizational dimensions have readiness to use ERP capabilities successfully.
- 2- IT department is fully prepared to launch and support of ERP.

IV. CONCLUSION

Looking optimistically, we can claim that perhaps the organizations IT department can do support of ERP, but the structure and context of large organizations and companies is formed so hardly will reach to feasibility of accepting of ERP package, that be able to provide conditions in all aspects of the organization (strategy, human resources, organizational structure, processes improve, etc.) to implement ERP. Therefore this dose not mean that we are waiting for a miracle to all systems of a volunteer organization to ERP implementation, be integrated overnight, but lack of an integrated system for all of organizational resource planning appreciably in recent decades it has hurt all organizations, therefore, Despite Iranian organizations and companies considerable welcomed to ERP implementation , and in return, the high cost of this systems implementation, pay attention to the factors that caused crisis in information systems is Iranian organizations, Will lead to implementation failure rate is reduced, and will help Success in this work considerably.

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