Factors Influencing Successful ERP Implementation

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Abstract – *The Process of implementing an enterprise solution is a complicated procedure. This procedure leads an organization to a difficult task of change in processes towards optimization, which in the end is beneficial for the organization. The key factor is to do it right the first time, this will prevent having to do it all over again.*

The focus of this paper is the strategies and steps that one must follow in order to make system implementation successful. All steps and strategies are gathered from discussion and interrogation of experienced ERP consultants and domain Experts.

Index Terms – *Success factors, ERP Model*

1. INTRODUCTION

More and more companies nowadays are seriously giving consideration towards buying a ready to use ERP solution to optimize their legacy systems and deficient processes, rather than do in house development of new systems.

Gartner Research estimated the size of the 2008 ERP market at $22.4 billion in total software revenue and, predicted that towards the end of 2012 it will be approximately $29.6 billion with annual growth rate of 8% [1].

ERP implementation can have vast benefits for an organization; similarly, it can be a total disaster for a company if one fails to implement it, as it involves enormous resources and cost.

2. METHODOLOGY

A case study research method was used to build our model. An experiment was undertaken for our model across some industries which were implementing ERP software. The organization's names have been changed. To select cases representing different industries and implementation strategies, theoretical sampling was used. This allowed us to add cases to the research sample until we obtained a general implementation model. Questions were asked about the company's legacy systems, implementation strategy, and project result. The model was revised as our theory developed. This model developed through the iterative process of case study research. We collected information by interviewing IT personnel, which included consultants, managers and users. Information was also gathered through various other resources.

A case study Rozak shows how strategic, tactical and operational factors affect the final project outcome.

3. CRITICAL SUCCESS MODEL

There are two main options for implementing an ERP solutions. The first is the 'Standard ERP Implementation' and the second is 'Industry-Specific ERP Solutions'.

Industry-specific solution is curved towards the industry to which the organization is associated.

The main problem while implementing ERP strategy from the company perspective i.e. the character of the ERP

implementation trouble includes strategic, organization, and
technical dimensions. ERP implementation involves Business Process Change (BPC), and software configuration to line up the software with the business processes.

A 'Critical Success Model' was developed, adopted from Holland and Light [4] which was derived from Pinto and Slevin [9]. This Model contains strategic and tactical factors that exist with an ERP implementation. CSF models have been applied in various project management problems, reengineering and manufacturing system implementation. We have organized these factors in such a

way that can ensure successful ERP project. Our research will assist top management to make decisions by identifying role and influence on each other and also on project outcome.

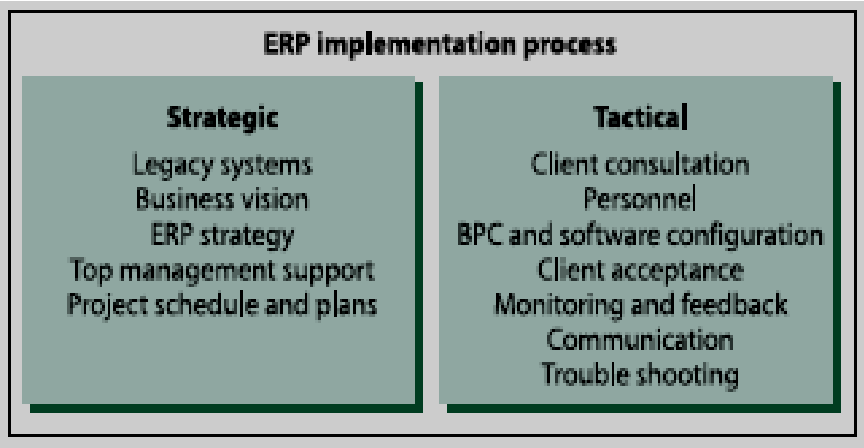

Figure1: Critical Success Model [14]

4. STRATEGIC FACTORS

Initially our approach for strategic factors was based on the P. Slevin and Jeffrey K. Pinto list, but it lacked few factors such as legacy systems, ERP strategy, and budget and implementation methodology.

We added these factors to make it a unique form of ERP implementation. These factors help in bringing focus on crucial ERP requirements.

4.1 Legacy Factors

The legacy system represents existing business processes, information technology, culture and organizational structure. Actually these systems define the how much optimization is required in your business processes to implement the ERP successfully.

By appraising the existing legacy system one can identify the nature and range of problems which will possibly appear along the way. The level of the legacy system will directly influence the ERP strategy which one will apply. If there are multiple legacy systems integrated together with different technologies then the percent of technical and organizational change will be greater [2].

4.2 ERE Strategy

An organization's tendency for change should influence the ERP strategy selection, e.g. a pilot version of the software package can be put into operation to begin with, and then a step by step approach can be taken to add extra functionality once the system is working and the users are familiar with it. The most important advantages of fast-track

implementations are rapidness and simplicity. Using this approach, the implementation of the ERP system across multiple sites can be achieved in a much shorter timeframe, this maintains the momentum of the project and also gives fewer opportunities for users to try and replicate their legacy systems onto the new ERP platform.

A faster strategy is to implement a system with full functionality in one go. There are diverse approaches to linking the legacy system, like the Big Bang approach which is to run everything in a single attempt. This attempt is rapid and it requires many resources as it is not easy to apply the Big Bang approach.

There is another effective approach which is to implement ERP phased by site which means that ERP will be implemented at one location and then replicated at another location after it.

Projects which are linked to multiple sites are more complex as implementing on multiple sites with different legacy systems running at each site is a complicated task.

Another important task in ERP implementation is to carry out custom development. If the company tends to change its business process for ERP then custom development is minimal but, if the company tends to mould ERP towards its business processes then, this will be a fairly large and complex task. Most companies ignore legacy systems while planning their strategy as this is quite a difficult task [3].

4.3 Top Management Support

ERP implementation is basically a top down decision and to successfully implement an ERP implementation it is very important to stick to the strategic business goal. Earlier studies have also proved that ERP is a top-down decision [15].

It is very important that the top management is committed until the project has been implemented successfully. In particular, the only most important factor for the successful ERP implementation is the support of the top management. This is very much critical to the project's life. Senior management must be involved, including the required people and adequate time in order to allocate valuable resources to the implementation effort [4].

4.4 Business Vision

Business vision is very much important in any project and ERP implementation is no different. Business vision tells you that what is required to achieve and at what point does one stand. Until a clear business vision is not presented, the whole process of achieving targets can fail. The vision can guide a company throughout its life; goals and targets are needed which will notify how much is achieved and what is remaining. If we don't have goals and targets achieved at some point, the team project may be hindered, as employees think they have achieved everything [5].

4.5 Project Schedule and Plan

The detailed project plan elaborates the tasks in the project, the team members performing the tasks, and the time available for the tasks. It also defines the staffing requirements, management responsibility, and resource allocation plans for the project [6].

The information in the project charter is critical for managing and completing the project. Therefore, the creation of the project charter requires a joint effort from all the major stakeholders in the project.

It is very important to have a proper schedule for all the tasks in a project and for each task, priorities must be set so that one can know which set of task needs to be done earlier. In ERP implementation it's very important to follow a project schedule as the ERP implementation is a lengthy process and not following a schedule for tasks can lead to long delays. Usually it takes 23 months to achieve an ERP implementation [7].

4.6 Business Process Reengineering

A process is a logical set of related activities which includes taking input, adding value through doing things, and creating an output. There are many sets of logical paths for a single process and judging which is the best path for to take is a crucial matter for a business. In BPR the goal is

to search for the best path to complete a job. It makes the processes optimized which can lead to huge profit throughout its existence. The factors on which a process is analyzed are cost, quality, service and speed [8-9].

In BPR all business processes are analyzed and corrected according to the standards. There are two ways of analyzing i.e. either mould the business processes to that suggested by the ERP, or to mould ERP in the way the processes are running. Mostly ERP processes are the way to go as these have been researched and optimized to be included in an ERP solution but all this depends on the industry specifications and which ERP package are being adopting [11].

5. TACTICAL FACTORS

Our tactical list of factors was also based on Slevin and Pinto's work [9], but we added BPR and effective project management. These additional factors allow us the critical role of aligning business processes to ERP software during implementation. Standard project management factors play a supporting role to BPC and software configuration. Organizations must understand the current business structure and processes associated with their existing IT systems, and be able to relate this to the business processes contained within the ERP system. Certain process modeling tools help organizations to align business processes with the standard package, e.g. the ERP tool "Movex Visual Enterprise" from Intentia has the capability to model business processes and automatically configure the software. Its repository of business processes can be referred to when reengineering current processes and designing the needed new ones. For every core and support process in the generic business process model, several alternative processes are available relating to best practices in different types of operations and business environments which can be modified [10-14].

5.1 User Resistance

User resistance is the most important factor to overcome in the ERP implementation. Some views regarding user resistance are listed below:

- Are at the root of many enterprise software project failures.
- Low ES return on investments is because of resistance.
- Still a significant amount of user resistance even after nine months of ERP integration testing.
- Resistance was the second most important contributor to time and budget overruns and was the fourth most important barrier to SAP implementation.
- Users' resistance can cause ES implementation failures.

6. OPERATIONAL FACTORS

Critical factors which are most important are education, training and user involvement.

6.1 Education and Training

In an ERP implementation process a number of ERP projects fail due to a very common but extremely important factor i.e. lack of proper training. Normally a year is enough for a user to get used to an ERP system.

A comprehensive training program is necessary to make the users become familiar with the system. The challenge is to assemble a plan appropriate for training the end-user. In most cases, consultants are included during the implementation process, and in that period all the aspects of the system should be explained and transferred to the end-users. The main goal of ERP training is that the users understand the various business processes behind the ERP application.

7. CASE STUDY ROZAK

The company which we will discuss here is Rozak. It is a textile firm that had legacy systems. There were over 8 separate accounting systems which were not even properly integrated at all. These integration issues and poor process affects the company's strategic vision hence a coordinated approach to the market. An integrated marketing system would result in a lot of benefits such as it will allow the company to focus on customer service across various manufacturing sites.

The senior management at Rozak recognized these problems and developed a new business model.

Improving the customer interface by linking all sales and marketing sites with manufacturing and distribution systems across the country were the main strategic

objectives. It was estimated that doing this will reduce the overhead costs by at least 17 percent. The ERP strategy was to roll out the SAP R/3 package over all the sites in the country. It was decided that full functionality of the system will be exploited immediately and the system will run in parallel with the existing systems.

The main aim of Rozak was to ensure that all the sites are running the same business process. In this matter immense corporation from the top management wing made it easier to be successful. Another aspect which contributed towards the success of this project was the pressure to reduce overhead costs in the company. This pushed senior directors to actively involve in the day-to-day execution of the project.

Project schedule to implement the ERP and to reengineer the processes were already available to everyone. This implementation process took three years though the idea for the project and changes and enhancements to the project's scope can be traced over six years. These changes were mainly due to change in project scope. Originally, only a few products were automated but later Rozak decided to automate the whole business. The design became very complex as there were a lot of products. Also a high turnover of external consultants contributed to the delay. By analyzing all these facts it was concluded that this has extended the project life from 40 – 50 % at least.

BPC and software configuration was managed by the project team, consultants, top internal staff and a change manager. Workshops were conducted on regular basis to facilitate client consultation and to examine the processing of business. Users were involved in system testing at major sites and then request was sent to them for feedback. This approved client acceptance. Troubleshooting was done by high level of communication. All the changes were communicated through the Change Manager.

7.1 Analysis of Case Study

Rozak's legacy system was very complex and its implementation was also very slow as its project included the entire business. This was the reason for slow pace even though the top-management had provided support and a clearly articulated business vision. Although implementation was successful but its cost increased five times the estimated cost.

8. CONCLUSION

A new ERP implementation plays an important role in an organization and it is critical to the infrastructure for a long time. Analysis of the Rozak case reveals that in addition to standard project management it is very important to look up to top management support, clear business vision, efficient BPR, ERP Strategy and user resistance. There are different strategies to implement ERP to full functionality. Some organizations manage to cope with legacy systems and the ERP systems. It has been observed that it is easier to mould the organization to the ERP software rather than vice versa.

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