Comparative Factors for the Selection of Enterprise Resource Planning (ERP) Implementation Strategy

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ABSTRACT
Implementing an Enterprise Resource Planning (ERP) system project is a difficult and high cost proposition as it places tremendous demands on organization’s time and resources. The ERP implementation literature contains many case studies of organizations that have implemented ERP systems successfully. However, many organizations do not achieve success in their ERP implementation projects. Much has been written about implementation and the critical success factors for ERP implementation projects. In proposed paper we focused about how different strategies are used for ERP implementation. We also focused on the strategies of how to make the transition from a legacy system to a new ERP system. The selection of the transition strategy that is best suited for each organization is crucial as a wrong strategy can result in a failed or flawed implementation. We proposed comparison factors between strategies that will give a direction towards selection of best strategy for ERP implementation.

KEYWORDS
ERP, Implementation, Strategies, Comparison factors, big bang strategy, phased implementation.

1.0 INTRODUCTION
Enterprise resource planning (ERP) systems are computer-based information systems that enable integration of application programs for various business functions or processes such as sales, purchase, financial accounting, manufacturing, human resources etc [7]. The business environment is changing dramatically and in order to stay competitive in the market, Organizations must improve their business practices and procedures [17]. Organizations within all departments and functions upgrade their capability to generate and communicate accurate and timely information. The organizations which have successfully implemented the ERP systems are reaping the benefits of having integrating working environment, standardized process and operational benefits to the organization. Not all ERP implementations have been successful. There have been horror stories of ERP implementation and improper implementation has taken the companies to bankruptcy and in several cases organizations decided to abandon the ERP Implementation projects. The questions many academicians and researchers have asked what are the reasons of success and failure of ERP implementations. Some of the reasons cited in the literature are lack of support of top management support, resistance from employees, poor selection of ERP systems and vendor etc. In proposed paper we focused about how different strategies are used for ERP implementation. The selection of the transition strategy that is best suited for each organization is crucial as a wrong strategy can result in a failed or flawed implementation. We proposed comparison factors between strategies that will give a direction towards selection of best strategy for ERP implementation.

2.0 ERP STRATEGIES
The ERP strategy is concerned with the broad approach to the implementation process. For example, a skeleton version of the software package can be implemented initially, and extra functionality can then be added gradually once the system is operating and the users are familiar with it. A much more ambitious strategy is to implement a system that offers all the functionality that the organization requires in a single effort. Independently of the level of functionality chosen, there are different approaches to linking with the existing system ranging .From implementing one ERP module at a time and interfacing with the legacy system or going for a big bang approach. The single module approach can be done in parallel with the existing system or on its own. International projects add further complexity regarding the choice of country by country roll-out of the ERP system or parallel teams operating in different regions. It is clear that an organization’s propensity for change should influence the choice of ERP strategy. A further technical choice is whether to carry out be spoke development on the package software and how this will affect the organization when upgrading the system in the future. The amount of bespoke development depends on whether an organization is willing to change their business to fit the software, or whether they prefer to change the software to fit their business. However modifying the software to fit the business means that it is possible that the benefits from reengineering business processes will not be achieved. Once a decision has been made on the ERP strategy, issues surrounding how the project should be managed can be considered. The most important factor that decides the success of an ERP implementation is the three pillars: process, technology, and people.

The three pillars of ERP implementation

- Process
- Technology
- People
Process, people and technology support any ERP implementation. Failure to use one of these or failure to use it in the best possible manner can result in failure understanding the relationships of ERP transition strategies between the process, people and technology will assist the ERP implementers to better understand what type or combination of type or combination of types of ERP transition strategy, is best.

2.1 BIG BANG STRATEGY
In this strategy companies layout a grand plan for their ERP implementation. The installation of ERP systems of all modules happens across the entire organization at once. The big bang approach promised to reduce the integration cost in the condition of through and careful execution. This method dominated early ERP implementations method and it partially contributed to the higher rate of failure in ERP implantation. In the big bang Theory Company moves from the existing or legacy system to the new system ERP system on a specific date. All the business functions performed in the legacy system across the entire enterprise are simultaneously transferred to the new legacy system during a period of one day or a weekend. The big bang strategy is seldom used and often not recommended by ERP vendors, systems integrators and service providers. Many companies struggle to decide whether the big bang approach is the right choice for their company.

One of the reason not using given for not using the big bang approach is that it consumes too many resources to support the go live of the ERP system. High failure rates have been found using the big bang approach but high failure rates have also found using other strategies. Success in the using the big bang approach comes with careful preparation and planning prior to using big bang. It is not a question of whether the big bang is a good approach for ERP systems. The success big bang strategy depends on how well an organization plans and prepares prior implementation. Large scale scientific and technical projects requiring mass coordination are often successful when using careful preparation and sound planning. Large and complex projects like building very large structures such as bridges, satellites, ships etc have been undertaken successfully in the past and even now. In all these projects the success depended on the amount of planning that went into design and resource allocation of these projects and most of them far are more complex than implementing an ERP system in company.
2.2 PHASED IMPLEMENTATION
The phased implementation approach implements one functional module at a time, in sequential order. This approach also goes by the names of modular, functional and sequential. The method of modular implementation goes after one ERP module at a time. This limits the scope of implementation usually to one functional department or business units. Independent modules of ERP systems are installed in each unit, while integration of ERP modules is done at a later stage of the project. This has been the most commonly used methodology of ERP implementation. Each business unit may have its own instances of ERP and database. Modular implementation reduces the risk of installation; [2][6] customization and operation of ERP systems by reducing the scope of the implementation. The successful implementation of one module can benefit the overall success of an ERP project.

<table>
<thead>
<tr>
<th>Legacy system</th>
<th>New ERP system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past</td>
<td>Future</td>
</tr>
<tr>
<td>Finance</td>
<td>Finance</td>
</tr>
<tr>
<td>Manufacturing</td>
<td></td>
</tr>
<tr>
<td>Human Resource</td>
<td>Human</td>
</tr>
<tr>
<td>Material Management</td>
<td>Material Management</td>
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<tr>
<td>Quality Management</td>
<td>Quality Management</td>
</tr>
<tr>
<td>Marketing</td>
<td></td>
</tr>
<tr>
<td>Plant Maintenance</td>
<td>Plant Maintenance</td>
</tr>
</tbody>
</table>

Figure 3: Phased implementation

3.0 COMPARATIVE FACTORS
In big bang all new business processes are turned on in production at once. An advantage of this strategy is that it avoids the need to build short term or throw away interfaces to the legacy system no longer requires operational support. However, when all functionality for a system is turned on the same day, user training schedules must be compressed and help desk support must be fully available on day one. In a phased implementation support is focused on the new business processes for particular phase, so there are typically fewer business process and technical fail points. There are several challenges in dealing with a phased implementation. Phased implementation needs experienced staff for the project. [11][12][16]

Comparison table for big bang and phased implementation

<table>
<thead>
<tr>
<th>COMPARISON FACTORS</th>
<th>BIG BANG</th>
<th>PHASED IMPLEMENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used by small organization</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Time consuming</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Need experienced employees</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Feasible</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Expensive</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Shorter time implementation</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Through this table we can say that big bang needs less expenses during the ERP implementation and more feasible than phased implementation.

4.0 CONCLUSION
The primary contribution of this paper is to describe different strategies for ERP implementation. Secondary we suggested comparison factors for the usefulness of implementation strategies. As a result we found that Big bang strategy needs less experienced employees, not time consuming, not much so expensive and more feasible as compared to phased implementation strategy. Because of these reasons, Big bang strategy is widely accepted for ERP implementation in most of the organization.

5.0 FUTURE SCOPE
In this paper we have describe the different strategies used for the implementation of enterprise resource planning (ERP). We have presented Comparison factors for the selection of best ERP implementation strategy. Future work will focus on modifications in big bang strategy for making it more advantageous.

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Continued from Page No. 382


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