Chapter – 4

ERP IMPLEMENTATION

ERP Implementation -- Introduction

- An **Enterprise systems implementation** takes many years to complete and requires a large amount of IT investment and their effectiveness is hard to evaluate.
- **Today organizations** of any magnitude have implemented or in the process of implementing enterprise system in order to reap the benefits of integration and to remain competitive in the market.
- **To achieve all of this,** companies have realized the necessity to implement Enterprise systems software to achieve integration of business activities.
- The **commitment of top management** has been recognized as one of the most important elements in the successful implementation of enterprise system
- Since the primary responsibility of top management is to provide sufficient financial support and adequate resources for building a successful system

ERP Implementation -- Introduction

- **Implementing an enterprise system package** is a complex and costly undertaking
  - so it's essential to choose
    - the appropriate vendor
    - adequate scalability features
    - suitability of H/W and
    - user friendliness of product depending on the size and structure of an organization

- In whole world, SMEs are the backbone of the economy
- SMEs too are moving towards Enterprise systems. **They need to adopt a proactive approach towards Enterprise systems** and consider it as a business solution rather than a mere IT solution.

ERP Implementation -- Introduction

- **Project Management related factors** like
  - Clear goal and objective , Effective project management
  - Reasonable expectation, Other dept. participation
  - Change request, Implementation strategy,
  - Data conversion, Clear & effective communication

are very critical for a successful enterprise system implementation.

ERP Implementation

- The nature of the ERP implementation is such that it is best handled within a project management context.
- The organization of the project team that is best for managing the implementation tasks the following format:

1. The CEO leads the steering committee and sponsors the project.
2. The person who manages the implementation is the project Manager.
3. The project manager reports to a steering committee, Who reviews progress and resolves any territorial, resource or policy disputes.
4. The project mangers has the implementation teams reporting to him.

Objectives of ERP Implementation

Objectives are the major high-level characteristics that can have a great impact upon the success of an ERP project.

1. **Speed:-** The speed of the project is how much time the company would like to take in implementing the system.
2. **Scope:-** The scope of the project includes all of the functional and technical characteristics that the company wants to implement.
3. **Resources:-** Resources are everything that is needed to support the project including people, h/w systems, s/w systems, technical support and consultants.
4. **Risk:-** The risk of a project is a factor that impacts the overall success of the ERP implementation.
5. **Complexity:-** Complexity is the degree of difficulty of implementing, operating and maintaining the ERP system.
6. **Benefits:-** Benefits are the extent to which the company will utilize functionality of the ERP system for s/w development, maintenance and other support activities.

Phases of ERP Implementation

Like other project, ERP implementation project also to go through different phases.

1. **Pre-evaluation screening**:- the purpose of this phase is to eliminate those packages that are not at all suitable for the company's business processes.
2. **Package evaluation:-** In this phase the ERP package that is best suited for the organization is selected.
3. **Project planning phase:-** In this phase the details of how to go about the implementation are decided. In this phase the time schedules, deadlines, etc., for the project, are arrived at.
4. **Gap analysis:-** This is the process through which companies create a complete model of where they are now and where they want to be headed.
5. **Reengineering:-** this phase takes human factors are taken into account.
6. **Customization:-** In this phase, the ERP package is modified to suit the business process of the organization.
7. **Implementation team training**:- where the company trains its employees to implement and later run the system.

Phases of ERP Implementation

8. **Testing:-** This is the phase were the system that is being implemented is tested for any problems, bugs, errors, etc.,
9. **Going live:-** This is the phase where ERP is made available to the entire organization.
10. **End-user training:-** This is the phase where the actual users of the system will be given training on how to use the system.
11. **Post implementation**:- This is the phase where the ERP system is used for conducting the business.

Why do many ERP implementations fail?

Some of the most common reasons for failed implementations are:

1. Lack of top management buy-in, commitment and support
2. Improper planning and budgeting.
3. Use of wrong ERP tool
4. Lack of training
5. Work culture of the organization

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Phases of ERP Implementation

- Before implementing an ERP system in an organization or project, it is very crucial that the implementation process be planned.
- The implementation plan documents the who, what, why, where, when, and how of the project. It is the outcome of discussions with affected people and involves negotiations over resources, timescales and costs and their agreement.
- The most basic plan will identify all the activities, those doing them and the time frame.
- A project plan will enumerate the major tasks, the estimated duration (usually specified in months), resources required and people who will be doing the tasks.
- The project plan can be handwritten, prepared using a spreadsheet or using specialized project management software.

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- A project plan will enumerate the major tasks, plan can be handwritten, prepared using a specialized project management software.
- There are two types of planes – high level plan and detailed plan.
  1. The high-level plan will give an overview of the project and can be used by the top management for monitoring the project.
  2. The project manager will develop a detailed project plan, where the high-level plan is broken down into a lot more detail with the time windows being week or days rather than months.

ERP Implementation Project

- An ERP implementation project is complex in nature, involves a lot of people, requires the coordinated effort of a number of groups, involves a lot of money and has a long completion period (typically 10–18 months).
- To successfully implement an ERP system is a very difficult task and requires huge efforts from all the stakeholders backed by efficient project management and monitoring.
- The major problem areas for the ERP implementation project are:
  1. Employee resistance and non-cooperation
  2. Project size
  3. Employee turnover
  4. Risk management
  5. Unrealistic deadlines
  6. Inadequate funding and resources
  7. Organizational politics
  8. Organizational culture
  9. Scope creep
  10. Unexpected gaps

ERP Project Manager

- The one person who shoulders the maximum responsibility in an ERP implementation project is the project manager.
- Qualities of project manager:
  1. Team player
  2. Should recognize individuals and their efforts
  3. Ability to inspire trust and communicate the vision
  4. Excellent technical expertise
  5. Computer skills
  6. Good communication skills
  7. Leadership qualities
  8. Positive attitude
  9. Capability to anticipate the problems and resolve them
  10. Good listener
  11. Leads by example
  12. Excellent organizational knowledge
  13. Ready to accept blame for his mistakes
  14. Should trust his subordinates and delegate work effectively
- The project manager is the key decision-maker in the ERP implementation.

ERP Implementation—Hidden costs

- Although different companies find different hurdles and traps in the budgeting process, those who have implemented ERP packages agree that some costs are more commonly overlooked or underestimated than others.
- The hidden costs of ERP implementation are:
  1. Training
  2. Customization
  3. Integration and testing
  4. Data conversion
  5. Data analysis
  6. Consultants
  7. Brain drain (employee turnover)
  8. Continuing maintenance
- To avoid getting blindsided by unexpected expenses, veterans recommend assembling cross-functional teams to identify the costs up-front.

ERP Implementation Methodologies by Vendors and Consultants

- A methodology is a roadmap to an implementation. The purpose of a methodology is to deliver an implementation on time, according to specifications and within budget.
- Most vendors, especially in the software industry, have developed their own methodologies. Consulting companies also developed their own methodologies in relation to a product.
- Some of the ERP implementation methodologies by vendors and consultants are:
  1. Accelerated SAP (ASAP) from SAP
  2. The Total Solution from Ernst & Young LLP
  3. Fast Track Workplan from Deloitte & Touché
- Methodologies are expensive and even though methodologies are customized, they are still roadmaps.
- An experienced project manager must manage the projects so that he can use the methodology to implement the ERP system in the best possible way and in the best interests of the organization.

ERP Implementation Strategies

- An ERP implementation strategy determines how the ERP system will be installed. The implementation strategies are also called transition strategies.
- The implementation strategy focus on 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.
- 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 types of ERP transition strategy is best.
- The different ERP implementation strategies are:
  1. Big bang
  2. Phased
  3. Parallel
  4. Process line
  5. Hybrid

Big Bang Strategy

- In this strategy, the installation of ERP systems of all modules happens across the entire organization at once.
- In the big bang strategy the company moves from the existing or legacy system to the new ERP system on a specific date.
- The success of the big bang strategy depends on how well an organization plans and prepares itself prior to implementation.
- Some of the advantages of big bang strategy are low overall implementation cost, faster return on investments, elimination of complex integration issues, etc.
- The main disadvantages of this strategy are high amount of time and effort for pre-implementation planning, high failure rates, 'do-it-right-the-first-time' nature, etc.
- The big bang strategy have several variants like mini big bang, mega big bang and multi big bang.
  1. The mini big bang strategy applies the big bang approach to one or two business modules at a time.
  2. The mega big bang strategy refers to a large company, with multiple sites, all going live at the same time using the big bang strategy.
  3. The multi big bang strategy uses multiple big bangs sequenced in order for different geographical facilities.

Phased Implementation

- The phased approach implements one functional module at a time, in sequential order. The phased approach is also know as modular, functional and sequential approaches.
- In the modular approach only one ERP module is implemented at a time. This limits the scope of implementation usually to one functional department.
- One of major requirement of this approach are interface programs. The interface programs are required to bridge the gap between the legacy ERP system and the new ERP system until the new ERP system becomes fully functional.
- The advantages of phased approach are less risk, step-by-step approach, low resource commitment, etc.
- The disadvantages of this approach are large amount of technical resources for creating the interface programs, high overall cost, lengthy implementations, etc.
- A variant of the phased approach is the mini phased approach. In this approach, two or more functional modules are combined into one sub-implementation for one single go-live date.

Parallel and Process Line Strategies

- **Parallel approach** keeps both the legacy system and the new ERP system active simultaneously for a length of time.
- The main advantage of the parallel approach is that it has good recovery options in case something goes wrong.
- The parallel approach consumes considerably more resources than other techniques during the transition as all functional interaction with the legacy system must also be duplicated exactly in the new ERP system.
- **Process line strategy** breaks the implementation strategy to manage parallel business process flows or product lines.
- Using the process line strategy, the first product line and all related resources go first in making the transition from the legacy system to the new ERP system. Once this is completed the other product lines are moved to the new system in sequence.
- The advantages of the process line approach are high success rates, low resource commitment, opportunity to learn from the mistakes, etc.
- The disadvantages include high overall coast, lengthy implementations, etc.

Which Strategy?

- Big bang strategy is ideal in situations where an immediate ERP solution is needed. It is better suited for smaller companies where all the critical resources of the project can fall within the immediate control of a project manager. It is also suited to any situation where a limited amount of time is available combined with an immovable go-live date.
- The phased approach suits companies that do not share many common processes across departments or business units.
- The parallel approach is ideally suited for mission critical situations that cannot survive a major malfunction of an ERP system. It also works well for business environments that require the utmost in stability of an ERP system such as financial, pharmaceutical or medical companies.
- Process line approach is ideal for companies that have many product lines. In such cases, the organization can implement the ERP systems to the different product lines in a phased manner.
- Hybrid strategy which is a combination of all the above strategies can be used in organizations where the inter-departmental communication is excellent and where the is a strong leadership to manage the project.

Vanilla Implementation

- A vanilla implementation is when the company chooses not to modify or customize the system, but instead to change business practices to fit the system.

- Reasons to consider Vanilla Implementation.
  - Businesses with relatively straightforward business practices that are not unique
  - Businesses that are not skilled or experienced at building or changing systems
  - For a company using a purchased ERP system where the financial component is critical for reporting
  - All of a company's branches are running the same system in a single instance, and entering and retrieving data in a similar fashion
  - For a competitive advantage, it is important to know the ability of what and where things are around the world with the business.

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ERP Implementation Challenges

- The main challenges faced by ERP implementations are:
  1. Inadequate requirements definition
  2. Resistance to change
  3. Inability to achieve organizational understanding
  4. Inadequate resources
  5. Lack of top management support
  6. Lack of organizational readiness
  7. Inadequate training and education
  8. Unrealistic expectations
  9. Poor package selection
  10. Poor project management
  11. Customization issues
  12. Long payback period
  13. Poor communication and co-operation
  14. Data quality costs
  15. Hidden implementation costs
  16. Improper integration
  17. Improper operation/ use

ERP Implementation Challenges (contd.)

- Inadequate requirements definition – Inadequate requirements definition will result in the selection of the wrong ERP package, unnecessary customization, lack of employee retraining and so on, all of which can result in the failure of the ERP implementation
- Resistance to change - Implementing an ERP system is a change and it is human nature to resist change and if not properly handled can result in a failed or flawed implementation.
- Inability to achieve organizational understanding – Lack of a good understanding of how the organization works and the various business functions and processes are performed is a must for implementation success.
- Inadequate resources - ERP implementation is a very costly affair that requires a variety of resources—money, people, software, hardware and so on. Any inadequacy in any of these resources can negatively affect the ERP implementation.
- Lack of top management support – Trying to implement the ERP system without solid backing from top management is a sure recipe for disaster.
- Lack of organizational readiness - The organization, the work processes and the employees should be prepared (through training and education) to adapt to the ERP system.
- Inadequate training and education – This is one of the most important reasons of ERP failures. Lack of training and education about the new system will create fear and employee resistance.

ERP Implementation Challenges (contd.)

- Unrealistic expectations - The cost of implementing and the time required to implement are underestimated while the benefits and ROI about the system are overestimated creating frustration and failure.
- Poor package selection - Choosing the right ERP packaged software that best matches the organizational information needs and processes is critical to ensure minimal modification and successful implementation and use.
- Poor project management – ERP implementation is a very complex project with a large scope and long duration. Managing such complex projects is a challenging task. Poor project management is a sure recipe for failure.
- Customization issues - Most organizations approach the customization/ tailoring decision without the proper information required to reach a good decision and often result in failed implementations.
- Long payback period – The long payback period and higher ROI can make many organizations doubt the success of the ERP systems and thereby discontinuing the support for the systems.
- Poor communication and co-operation - ERP potential cannot be leveraged without strong coordination of effort and goals across business and IT personnel.
- Data quality costs - Poor quality data input can be fatal to ERP projects. The users of the ERP system will lose their confidence in the system if they get bad data out of the system.

ERP Implementation Challenges (contd.)

- Hidden implementation costs – Many items are forgotten or under-budgeted during the planning phase and if there is not enough money when these tasks are to be performed the implementation will suffer.
- Improper integration - The benefits of an ERP application are limited unless it is seamlessly integrated with other information systems. The success of ERP implementation is the success of ERP integration. There are three areas where integration has to succeed—integration of ERP modules, integration of e-business applications and integration with legacy systems.
- Improper operation/ use - Even with the best ERP solution, if its resources are not utilized to the fullest or if the end-user are using it improperly, the whole initiative goes to waste.

How to Successfully Implement ERP Systems ?

- Some of the things that an organization can to do to ensure the success of an ERP implementation are:
  1. A well-defined project organization structure that details the project planning, execution and monitoring mechanism
  2. An attitude that stresses on business transformation instead of process automation
  3. An approach that brings about the proper integration of people, process and technology through effective management of change
- Some other things that will ensure success are:
  1. A well thought out, comprehensive process to help plan, guide and control the entire ERP implementation effort.
  2. Evaluating the ERP plan before you commit to software acquisition and installation.
  3. Ensuring that the resources required for the implementation are in place
  4. Constant monitoring and management
  5. Top management participation and support
  6. Reviews and corrective actions

Success Factors of ERP Implementation

The main success factors of the ERP implementation project are:

1. Realistic project planning
2. Align the organization on the true destination
3. Choice of the architectural design, middleware, interface software and programming languages
4. Accepting the factor that transition of project roles to a way of life
5. Appropriate level of data requirements is critical for an ERP to interact with other applications
6. Applying planning and program management practices throughout the program life cycle
7. Achieving balanced people, process and technology changes across all areas
8. ERP must be driven by a business case and the work must be directed toward improving specific business metrics: improved cash flow, faster hiring, reduced costs and accelerated shipments.
9. Active executive direction throughout the implementation process
10. Focus on implementing the capabilities and benefits of the system, not just going live
11. Make ERP-related decisions quickly
12. Put the very best people on the implementation team
13. Break an ERP project down to manageable pieces by setting up pilot programs and short-term milestones.
14. Manage the data conversion successfully
15. The commitment and smooth coordination from all parties is the key to the success
16. Creating a partnership between your software vendor (and implementation partners) and your stakeholders

Success Factors of ERP Implementation (contd.)

17. Sell, sell, and continue to sell the ERP to your stakeholders
18. Build and leverage process expertise
19. Adequately resource the project (especially in the functional areas)
20. Define metrics and manage them
21. Communicate and manage expectations at go-live
22. Extend capabilities beyond the ERP foundation
23. Ensure the project has sufficient budget
24. Encourage functional ownership of the project
25. Develop dependency-driven project schedules that can be tracked and managed to provide early warnings and help avoid crises
26. Implement pre-project readiness assessment and overall project planning
27. Implement aggressive project management processes
28. Create a project organization structure to provide planning and quick response for decision-making and issues management
29. Make the best use of the external consultants and experts
30. Teach the organization to use new capabilities
31. Implementation review must be performed after users are competent with the system
32. Assign clear ownership of benefits

Failure Factors of ERP Implementation

- The main failure factors of the ERP implementation project are:
  1. Ignoring people issues
  2. Employee resistance
  3. Lack of top management commitment
  4. Inadequate Training and education
  5. Inadequate requirements definition
  6. Inadequate resources
  7. A poor fit between the software and users procedures
  8. Unrealistic expectations of the benefits and the ROI
  9. Poor ERP package selection
  10. Extensive customization
  11. Lack of proper change management
  12. Failure of accommodating evolution of business processes
  13. Lack of user acceptance
  14. Ending the project after going live
  15. Companies failing to anticipate a temporary dip in performance after going live

Importance of Employees

- ERP implementation is not a technology or process project—it is a people project.
- To succeed during and after implementation, the ERP system needs full and complete support of all the end-users of the system.
- With the implementation of the ERP system the old job descriptions will change and the nature of the job will undergo drastic transformation.
- So, there will be fear of the system replacing existing jobs, as many functions will be automated.
- Also people will be afraid of the amount of training they have to undergo and learning they have to do in order to use the new system.
- If these fears are not addressed and the fears alleviated well in advance, then it will be asking for trouble.
- While the ERP systems eliminate many existing jobs, it creates many new ones—ones with more responsibilities and value addition.
- If the company can succeed in making its employees accept the fact that ERP is good and even after switching to the ERP system the jobs will be there and the management will do everything to train the employees and make the transformation easy, then employee resistance can be eliminated.

Reasons for Employee Resistance

- Implementing an ERP system is a change and it is human nature to resist change.
- All ERP implementations will face some amount of resistance. The main reason for this resistance is fear—fear and uncertainty about what will happen.
- ERP systems introduces new procedures, automates existing one and brings about changes of sweeping magnitude.
- In the case of ERP implementations, change is happening faster that most people care to think about. In fact, change is happening faster that most people care to accept.
- It is human nature to resist change and fear the unknown.
- The main reasons for the resistance towards change are fear of failure, fear of being redundant and fear about the uncertain future.

1. Fear of being Redundant - The biggest fear shared by people in companies going in for ERP implementation is the loss of their job.
2. Fear of Failure - Another fear that must be addressed in the planning phase is how to handle people's fear of failure—the fear of not understanding or being able to work within an automated environment.
3. Fear of the Future - Openly discussing and announcing the purpose of implementation and what it means to the employees of the firm can help to address the fear of the future. Without a feeling of confidence that things are going to be good, they may never try it at all!

Dealing with Employee Resistance

If employees are not convinced about the importance of the ERP system and the benefits of using it, they will not be fully co-operative. This can result in the failure of the system.

It is very important therefore, that users be won over before implementing the system.

Some of the techniques used to deal with employee resistance are:

1. Training and Education - One main reason for the resistance is ignorance. So people should be told in advance about the ERP implementation, its implications, advantages and how the job profiles will change and the company is planning to ensure that the employees are trained so that they can get better opportunities and jobs in the new system.
2. Creating ERP Champions - Another method of reducing resistance is by creating champions. One of the most efficient ways to transition to new technology is to find a well-respected potential user of the technology.
3. Pilot Projects - Implementing the ERP system in a pilot project is a good idea because it minimizes the risk of failure. A successful pilot project is a morale booster for the implementation team and a good marketing tool.

ERP Package Evaluation and Selection

- As all ERP packages are not created equal and have their own strengths and weaknesses, an ERP package that is suited for one organization will not be suited for another.
- So the most important step in the ERP implementation is to select the ERP package that is best suited for the organization.
- Evaluating the ERP systems available in the marketplace and then selecting one for your organization are critical parts of the process.
- The most important factor to keep in mind when analyzing the different packages is that none of them are perfect.
- The objective of the evaluation and selection process is to find a package that is flexible enough to meet the company's needs.
- It is generally accepted that most ERP packages are stronger in certain areas than in others and each one is trying hard to add functionality in areas where they have been lacking.
- When making the analysis it is a good idea to investigate the origins of the different packages to identify their strengths.
- To choose the best system, the company should identify the system that meets the business needs, matches the business profile and identifies with the business practices of the company.

Selection Process

The following are the steps in the ERP package selection process:

1. Selection committee formation - form a selection or evaluation committee that will do the evaluation process. This committee should comprise of people from the various departments (the functional experts), top management (preferably the CIO or COO) and consultants (package experts).
2. Pre-evaluation screening - do a pre-evaluation screening to limit the number of packages that are to be evaluated by the committee.
3. Studying the technological issues – Examining the technological infrastructure of the company and deciding the best course of action—whether to integrate the new system with the existing one or go in for a clean installation.
4. Handling vendors – Listening to the vendor presentations, verifying the testimonials, questioning them about the various issues that are important for the organization, making site visits, and getting the vendor claims in writing.
5. Selection criteria creation – The selection committee should develop a selection criteria to assess the different packages that are short listed.
6. Decision – After the vendor presentation and verification of the vendor claims, the packages should be compared using the selection criteria and a package that is best suited for the organization should be selected.

ERP Packages—Make or Buy?

- Developing an ERP package is a very complex and time-consuming process that requires a lot of skilled manpower and other resources.
- Many companies have personnel on their payrolls who can absorb the necessary knowledge and who have experience in developing sophisticated systems. The problem is that ERP package development is not the main business of these companies and these companies should be focusing their energies on their main business.
- ERP package vendors are people who have invested huge amounts of time and effort in research and development to create packaged solutions.
- ERP vendors spend billions of dollars in research and come up with innovations that make the packages more efficient, flexible and easy to implement and use.
- Also with the evolution of new technologies the vendors will be able to constantly upgrade their product to take advantage of the best and latest advancements in technology because their main focus is on improving the capabilities of their tools.
- So unless and until your project or organization has a need that cannot be fulfilled by the available tools, it is better to buy the tools than to make them.