

# ERP Software Implementation – User participation is among Critical Successful factors

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## Abstract

The introduction of an information system such as Enterprise Resource Planning (ERP) system in an organization brings with it changes on how users work and organization performs. An ERP system which becomes system cut across the different functional units and therefore, if an ERP is not managed during its implementation might lead to resistance from the users. The success rate is decided on many factors like effort, money, resources, relevance, and acceptance by the management and users. Usually, the ERP projects exceed the allocated budget and timeline due to many factors in the areas of process, people and technology infrastructure. Through empirical research, this research attempts to quantify the delays due to these key players and has developed a framework to measure the delays before the start of the project.

Usually, the research on ERP systems have mainly been on ERP adoption, success measurement, and critical success factors (CSFs). There is rareness of studies on the participation and contribution by users towards the successful implementation of ERP systems. This paper reviews literature on ERP implementation with an aim of building a case for involving users in this implementation and Critical Success Factors.

**Key terms:** Enterprise Resource Planning, ERP systems, ERP implementation, user participation, CSFs (Critical Success Factors).

## 1. Introduction

Information Systems (IS) are deal with people and technology. An information system such as ERP is user-interfaced and designed to provide information useful to support strategy, operations, management analysis, and decision-making functions in an organization. The biggest challenge in the today's environment is to concentrate on core competencies and outsourcing lead to increase in partners and vendors networks.

The implementation of an ERP system affects users at various levels of the organization since it cuts across all functional units. These users range from top management to low level users who use the system on their day-to-day operations. We may come across D, V, D, CoC, then change occurs. Where: D = dissatisfaction with the current situation, V = having a valid vehicle in which to implement the change, D = having a strong desire for change and CoC = the Cost of Change. It is a matter of finding the right place to apply them. Many have validly pointed out that the problem is not so much a technical but people problem, and is one of change management rather than implementation. You will always meet resistance initially regardless of who it is. In the end, all but 8% will have adopted the change and they will be claiming the idea as one of their own forgetting who originally initiated the idea. The rate of change will be significantly different. Some will become supporters at the end of the first conversation. Others (in the 92%) will take months and even years. But find some books or articles on how change occurs and understand the different stages and the different rates it takes for people to go through it. It's the need of the hour to understand who the real decision makers are and who the influencers are in the organization. This is vital, and even more so in the organizations of the size you are involved in. Draw up a people map and identify the decision makers and in which areas they make decisions.

Earlier studies on ERP systems that focused on critical success factors, such as, Revere11 (2004) and Light12 (2005), a typical ERP implementation often involves some degree of business process re-engineering (BPR) and customization and have identified user participation and involvement. User participation is defined as the assignments, activities and behaviors that users perform during the systems implementation process. A quick review of literature addressing ERP systems implementation reveals that more focus has been directed to success or failure including CSFs, success measurement and evaluation of ERP systems. There is a rareness of studies on user participation and the contribution of users towards the successful implementation of ERP systems

All ERP implementation goes through following three phases. Success or failure depends on the work carried out at each of these phases.

- Selection phase: The requirement finalization, selection of package and vendor takes place.
- Implementation phase: Business Analysis, Set up / Configuration, Conference room pilot.
- Customization, Data migration, Security profile, Readiness assessment, Production set up, Go live takes place.
- Post implementation phase: Support and report generation, refinement take place.

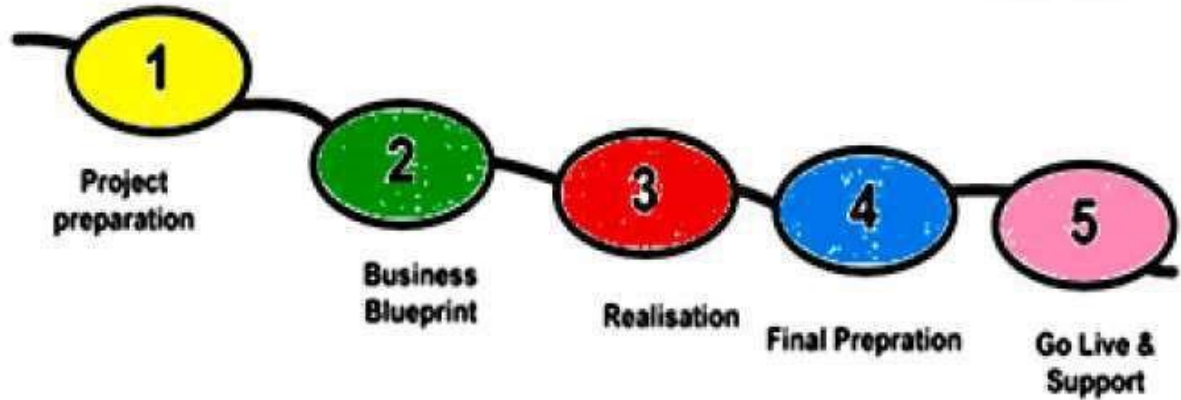
The types of implementation are:

- Implementation for a company is called New implementation
- Implementation for a start-up company is called Green field implementation
- Implementation of a first site/business for a Group company is called Pilot implementation
- Implementation of the next sites for a Group company is called Roll out implementation

## 2. Background

### ERP modules



ERP implementation phases. Source: Otieno. J.(2010)Comparison of Big bang Vs. Phased approach

Factors	Big bang	Phased/ modular
1. Overall cost	Low	High
2. Development of interface programs	Low	High
3. Implementation time frame	Rapid	High
4. Implementation risk	High	Low
5. Control of implementation	High	Low
6. Integration issues	Low	High
7. Detailed implementation planning	Yes	No
8. Resource needed at at point of time	high	Low
9. Recovery in failure	difficult	Fast
10. Consequence of failed implementation	Very high	Low
11. Flexibility in the implementation schedule	No	Yes
12. Implementation team turnover	Low	High

Implementation methodologies

Methodologies	Details		
ASAP ( Accelerated SAP) by SAP AG	Provides examples , checklists or templates as samples	Five phases	1. Project preparation, 2. Business blue print, 3. Realisation, 4. Final preparation & 5. go-live and support continuous change
The Total solution by Ernest & Young	System re- engineering approach	Five components	1. The value proposition, 2. Reality check, 3. Aligned approach, 4. Success dimension, 5. Delivering value
The Fast Track work plan by Deloitte & Touché	Helps to achieve a rapid high quality business transformation	Five phases	1. Scoping & planning, 2. Visioning & targeting, 3. Re-design, 4. Configuration, 5. Testing & delivery.

**Past research on ERP system implementation**

ERP system implementation is and continues to be an active area of interest to researchers. There are various streams of research that have been taken by researchers while exploring ERP system implementation. Some of these include implementation of ERP, ERP optimization, ERP software management, case studies, ERP success models, factor research which involves identifying the factors or variables that are critical for implementing the ERP systems, process research which focuses on processes that allow an organization to focus on the sequence of activities that are associated with the successful implementation of ERP systems. Moon [22] identified six research streams while conducting a review on literature. These streams are (1) implementation, (2) using ERP, (3) extension, (4) value, (5) trends, and (6) education.

Past ERP implementation research was factor-based focusing on identifying the factors or variables considered to be critical in the successful implementation of ERP systems. Some of these studies resulted in identification of critical success factors (CSFs) for successful ERP implementation. Within ERP implementation context, CSFs are defined as those factors that are necessary to ensure a successful ERP project. A conceptual model for ERP system implementation proposed by Marnewick and Labuschagne [20] addresses four aspects of implementation namely **people, product, process and performance (4P)**.

## Thematic and Sub-thematic Research Areas within the ERP Domain

Theme	Sub-theme
Implementation	• <i>General</i>
	• <i>Case Study</i>
	• <i>Critical Success Factors</i>
	• <i>Change Management</i>
	• <i>Focused stage in the implementation process</i>
	• <i>Cultural (national) issues</i>
Using ERP	• <i>General</i>
	• <i>Decision support</i>
	• <i>Focused function in ERP</i>
	• <i>Maintenance</i>
Extension	
Value	
Trends and perspectives	• <i>General</i>
	• <i>In a particular sector</i>
Education	

*Source: Moon [22]*

There are different strategies for implementing ERP successfully identified in literature.

These strategies can be classified into organizational, technical, and people strategies.

Organizational strategies focus mainly on change management techniques, project management, organizational structure and resources and how these would lead to successful ERP implementation.

Technical strategies address infrastructural issues like ERP installation, ERP complexity, adequacy of in house technical expertise, and time and cost of implementation have been proposed as determinants of successful ERP implementation.

Involving users (people) in the stage of defining organizational needs provides the users with an opportunity to mould and shape the system based on their priorities and business requirements and thus control the outcome.

According to Markus et al. [19] there are various phases an ERP project progresses through. The initial phase is a chartering phase that addresses the decision-making issues such as the need to purchase system and requirements analysis that lead to financial approval of an ERP project. The next phase is a project phase, where

system configuration, customization, data capture and conversion and rollout is conducted and finally the shakedown phase. The shakedown phase is a period in which the system begins to operate and users interact with it in their day to day operations.

### 3. Methodology

The methodology used in this study heavily focused on ERP implementation literature discussing user participation and involvement. Keywords that were used in searching for appropriate literature were ERP, ERP implementation, ERP CSFs, user participation, user involvement. The derivation of these keywords formed the first stage of the methodology. The second stage involved conducting a search on journal articles, conference papers, books and web postings based on the keywords identified.

### 4. Discussion

The focus of this paper is on user participation in the context of ERP systems implementation. Past research on ERP implementation has focused on ERP adoption, success measurement, implementation methodologies and success factors. There is a dearth of research as far as user participation in ERP system implementation is concerned.

The closest attempt in recognizing the role of users in the successful implementation of ERP systems is in the identification of critical success factors (CSFs) where user participation and involvement is mentioned as one of the CSFs. Review of literature conducted by Moon [22].

Most studies have focused on participation of users in traditional data processing environments such as participation in the development of transaction processing systems and management information systems. There has been little research focus in ERP system adoption at the individual or user level.

The successful implementation or adoption of technology by an organization must take into account the human and management issues. Users of these technologies, such as information systems/technology, are at the central of these implementations and adoption. It is therefore important to allow these users to participate in the implementation process. User participation

has traditionally been recognized as a critical component in Information System/Technology implementation.

## 5. Conclusion

The introduction of a new information system such as an ERP system will definitely change the way people work. The platform is new, new and different interfaces, data entry is changed and report formats are different. Users often find these changes unnecessary and therefore refuse to accept them. One of the ways to address and reduce the impact of these changes is to encourage user participation in the implementation of ERP systems.

As stated earlier, the past research has focused on ERP adoption, success measurement, and success factors among other technical aspects of ERP implementation. An information system, including an ERP system, is user-interfaced and designed to provide information processing capability to support the strategy, operations, management analysis, and decisionmaking functions in an organization. The user is at the centre of an information system.

In conclusion, we would like to reiterate the fact that ERP implementation is a complex IT-related social phenomenon. A substantial number of ERP implementations fail with a number of potential explanations for these failures presented. These failures, according to literature, may broadly be classified as human/organizational, technical, and economic. While each of these is important, there appears to be a growing consensus among researchers those human factors, more than technical or economic, are critical to the success of ERP projects. Obtaining benefits from ERP system is not straightforward as it is perceived at the time of investment. The prior knowledge from various studies do not help in mitigate the problems before embarking themselves on the implementation.

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