

ANALYSIS OF ERP IMPLEMENTATIONS

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ABSTRACT

ERP systems are being planned, designed and implemented to improve competitiveness, flexibility, productivity and responsiveness to customer needs in a global economy. They enable the Organizations to achieve greater effectiveness and cost savings. However in current situation, it can no longer be said that an ERP system just implemented would provide complete advantage as majority of large and medium companies have already implemented an ERP System. Instead, a competitive advantage would be how the ERP System is implemented – especially how the ERP Project Management ensures meeting the objective of ERP Implementation. We are trying to bring out the significance of Project Management among all the other Critical Success Factors of ERP Implementations through this paper.

KEYWORDS: ERP Project Management, ERP Implementation, Critical Success Factors, Success of ERP

INTRODUCTION

There are several business cases registered about the success of ERP Implementations by achieving the benefits of having integrated working environment, standardized process and operational benefits to the organization. At the same time, there are reported failure cases of ERP implementations and improper implementations, which have taken the companies to bankruptcy and in several cases organizations decided to abandon the ERP implementation projects half-the-way. *ERP Project Management* is a significant Critical Success Factor (CSF) that can sense the status and health of remaining all other CSF-s identified along the ERP Project Life Cycle.

METHODOLOGY

This study is to review of Literature exclusively about the significance of Project Management with reference to all the other Critical Success Factors (CSF) of ERP Implementations. All the articles selected were published in prestige journals. We have used the terms ERP Project Management, ERP, Enterprise Resource Planning, ERP success factors. We have limited the search date to be between (1999 and 2013) in order to get relatively new articles. Moreover this literature study is being carried out at several stages in an iterative manner.

CRITICAL SUCCESS FACTORS (VS) PROJECT MANAGEMENT

A critical success factor (CSF), represents an element of an organisation's activity which is central to its future success. The concept of CSF was introduced as a mechanism to identify the information needs of chief executive officers in order to ensure successful competitive performance for the organisation. (Yehoshua Itzhaik, 2012). Multiple authors have listed down the CSF-s of ERP Implementations and the following is a comprehensive list of CSF-s collated from these research papers.

- Top management support
- The implementation team
- Project Management
- Business plan/vision/goals
- Architecture choices, technical implementation, technological infrastructure
- Training
- Legacy systems knowledge (data analysis & conversion)
- Re-engineering Business Process
- Organizational Culture
- Change management programme
- Communication
- Partnership / Vendor Support
- Testing Effectiveness
- Employee's general IT skills
- Company-Wide Commitment
- Management of Risk
- Organization's or firm size
- Organizational structure
- Data Management

Amongst the list, researchers identified and assigned with the priorities and rankings, however the Project Management is the Key and hence we are going to have a 'deep dive' on this subject.

SIGNIFICANCE OF PROJECT MANAGEMENT IN ERP IMPLEMENTATIONS

Effective project management is critical for the successful ERP implementation. Effective project management should define clear project objectives, develop a work and resource plan, and carefully track the project's progress. (Goeun Seo, 2013). Project Management involves the use of skills and knowledge in coordinating the scheduling and monitoring of defined activities to ensure that the stated objectives of implementation projects are achieved. The formal project implementation plan defines project activities, commits personnel to those activities, and promotes organizational support by organizing the implementation process. (T.R. Bhatti, 2005).

The study of CSF-s brings out an interest to find out how these authors have tried to prioritise the CSF-s when they present to the industry. Out of 23 authors, whom we have taken for study, 15 were actually touched upon the

Factor - Project Management. This has definitely exhibited the significance of Project Management with respect to an ERP Implementation. Further, we tried to associate the ‘Ranking’ provided by these authors when they actually listed the CSF-s in their study. Though in many of the studies it is not explicitly stated as the ‘Rank’ of each CSF, we interpreted for the purpose of our study in the same order that has been listed. This helps to visualize the significance of Factor - Project Management and tabled as below matrix with Bar Chart.

The average rating gets derived as 5.88 towards Project Management where, 1 being as lowest and 9 as highest rating for the significance.

Author	Converted Rating for Project Management Factor									Rank	Total	Converted Rating
	1	2	3	4	5	6	7	8	9			
Christopher P. Holland and Ben Light (1999)	[Bar chart showing 8 units in column 8]									5	25	8.00
S. Shanks*, A Parr*, B. Hu*, B. Corbitt* (2000)	[Bar chart showing 2 units in column 2]									4	5	2.00
Liang Zhang, Matthew K.O. Lee, Zhe Zhang, Probr Banerjee (2002)	[Bar chart showing 6 units in column 6]									4	10	6.00
Ada Wong, Harry Scarbrough (2003)	[Bar chart showing 7 units in column 7]									3	10	7.00
T.R. Bhatti (2005)	[Bar chart showing 1 unit in column 1]									1	10	9.00
Houman Kalbasi (2007)	[Bar chart showing 2 units in column 2]									5	6	1.67
E.W.T. Ngai, C.C.H. Law*, F.K.T. Wat (2007)	[Bar chart showing 3 units in column 3]									13	18	2.78
Khaled Al-Fawaz, Zahran Al-Salti, Tllal Eldabi, (2008)	[Bar chart showing 5 units in column 5]									4	8	5.00
Stephan A. Kronbichler & Herwig Ostermann and Roland Staudinger	[Bar chart showing 7 units in column 7]									5	15	6.67
Miguel Maldonado (2009)	[Bar chart showing 8 units in column 8]									2	10	8.00
Gordon Baxter (2010)	[Bar chart showing 5 units in column 5]									3	6	5.00
Majid Aarabi 1, 2*, Muhamad Zameri Mat Saman (2011)	[Bar chart showing 7 units in column 7]									6	17	6.47
YEHOSHUA ITZHAIK (2012)	[Bar chart showing 6 units in column 6]									5	11	5.45
Otto Korhonen (2013)	[Bar chart showing 5 units in column 5]									5	22	7.73
Go Eun Seo (2013)	[Bar chart showing 3 units in column 3]									3	12	7.50

Figure 1: Significance of Project Management in ERP Implementations

With the above table illustration after understanding the significance of Project Management as a Key Critical Success Factor for ERP Implementations, let us review the literature on the same for the benefit of Industry.

ERP IMPLEMENTATION METHODOLOGY (VS) ERP PROJECT MANAGEMENT

As per the definitions from PMBOK Fifth Edition, 2013, a project life cycle can be documented within a methodology. While every project has a definite start and definite end, the specific deliverables and activities that take place in between will vary widely with the project. **The lifecycle provides the basic frame work for managing the project, regardless of the specific work involved.**

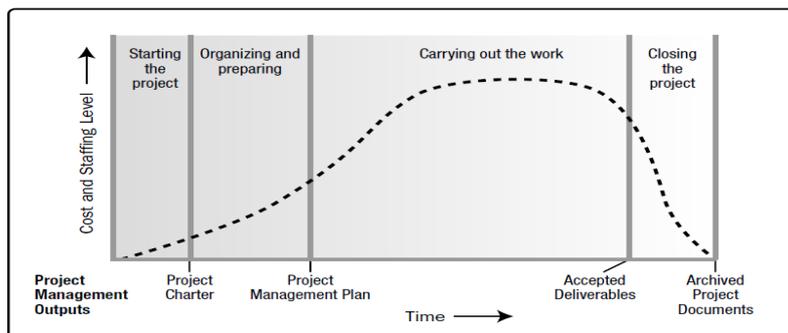


Figure 2: Project Life Cycle

A project can be divided into any number of phases. A project phase is a collection of logically related project activities that culminates in the completion of one or more deliverables. When projects have more than one phase, the phases are part of generally sequential process designed to ensure proper control of the project and attain the desired result.

Water Fall Methodology

Water fall methodology has a form of Sequential Relationship between Phases. This corresponds to the ‘Sequential Relationship’ mentioned in PMBOK Fifth Edition, 2013. As per PMBOK Guide, in a sequential relationship, a phase starts only when a previous phase is complete.

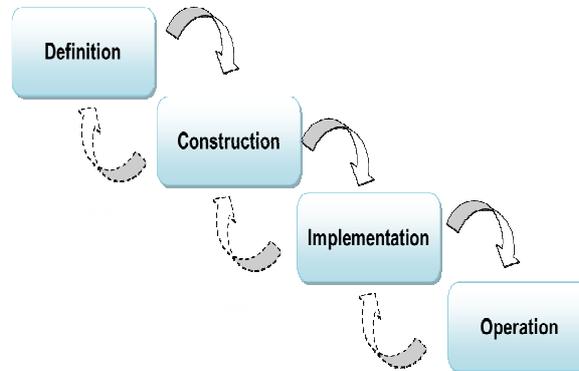


Figure 3: Waterfall Methodology for ERP Implementations

Agile Methodology

This is referred as ‘Adaptive Life Cycles’ in PMBOK Fifth Edition, 2013, intended to respond to high levels of change and ongoing stake holder involvement. Adaptive methods or Agile methods are also iterative and incremental, but differ in the iterations are very rapid (usually with a duration of 2 to 4 weeks).

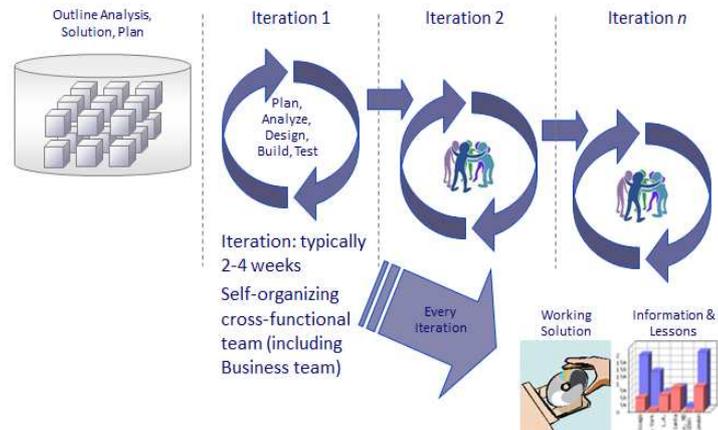


Figure 4: Agile Methodology for ERP Implementations

The overall scope of the project will be decomposed into set of requirements or work to be performed, sometimes referred as product backlog. At the beginning of the iteration, the team will determine how many of the highest priority items on the backlog list can be delivered within the next iteration. At the end of each iteration, the product should be ready for the review by customer. Adaptive methods or ‘Agile’ methods are generally preferred when dealing with rapidly changing environment, when requirements and scope are difficult to define in advance.

ASAP Methodology from SAP

Standard ASAP Methodology takes a disciplined approach to project management, organizational change management, solution management, application life-cycle management and other disciplines applied in the implementation

of SAP solutions. The Standard ASAP Methodology is built around the SAP Advanced Delivery Management model and supports project teams with templates, tools, questionnaires, and checklists, including guidebooks and accelerators. Standard ASAP Methodology empowers companies to exploit the power of the accelerated features and tools already built into SAP solutions.



Figure 5: ASAP Methodology Road-Map



Figure 6

Standard ASAP Methodology Phases -- The Standard ASAP Methodology is structured into the following phases.

- **Project Preparation:** During this phase the team goes through initial planning and preparation for SAP project.
- **Business Blueprint:** The purpose of this phase is to achieve a common understanding of how the company intends to run SAP to support their business. In Standard ASAP Methodology the result is the Business Blueprint, a detailed documentation of the results gathered during requirements workshops.
- **Realization:** The purpose of this phase is to implement all the business process requirements based on the Business Blueprint. The system configuration in Standard ASAP Methodology is done in two work packages: Baseline configuration (major scope); and Final configuration (remaining scope). During this phase the solution is also tested.
- **Final Preparation:** The purpose of this phase is to complete the final preparation (including technical testing, end user training, system management and cutover activities) to finalize your readiness to go live. The Final Preparation phase also serves to resolve all critical open issues. On successful completion of this phase, you are ready to run your business in your live SAP System.
- **Go-Live Support:** The purpose of this phase is to move from a project-oriented, pre-production environment to live production operation.
- **Operate:** During this phase the system is operated with the help of the central operation platform, SAP Solution Manager, with the documented solution based on the transferred project documentation.

Each phase has a set of deliverables that are produced during the duration of the phase and serve as the input to follow-up phases. Each deliverable provides list of outputs it consist of and methods that are used to produce the deliverable.

PROJECT MANAGEMENT PROCESS

As per the definitions from PMBOK Fifth Edition, 2013, Project Management is the application of knowledge, skills, tools and techniques to project activities to meet the project requirements. Project Management is accomplished through the appropriate application and integration of 47 logically grouped project management processes, which are categorised into five Process Groups and ten Knowledge Areas as mentioned below.

Five Process Groups Are

- Initiating
- Planning
- Executing
- Monitoring and Controlling and
- Closing

Ten Knowledge Areas Are

- Project Integration Management
- Project Scope Management
- Project Time Management
- Project Cost Management
- Project Quality Management
- Project Human Resource Management
- Project Communications Management
- Project Risk Management
- Project Procurement Management
- Project Stake Holder Management

DISCUSSIONS ON ERP PROJECT MANAGEMENT

From the literature review, we could find valuable observations through earlier studies on ERP Implementations and relevant Critical Success Factors. Helo et al. (2008) suggest that up to 90% of all ERP projects can be considered as failures in terms of project management. ERP system implementations are highly complex in nature as they require significant amounts of time and capital, management of multiple geographically dispersed stakeholders, data standardization, integration of the system with other information systems and management of consultants and vendors. As a result, traditional project management challenges are magnified, making the implementation more difficult, expensive and failure-prone. (Otto Korhonen, 2013).

As per Liang Zhang, Matthew K.O. Lee, Zhe Zhang, Probir Banerjee (2002), ERP systems implementation is a

set of complex activities, involving all business functions and often requiring between one and two years of effort, thus companies should have an effective project management strategy to control the implementation process, avoiding overrun of budget and ensuring the implementation within schedule. There are five major parts of project management: (1) having a formal implementation plan, (2) a realistic time frame, (3) having periodic project status meetings, (4) having an effective project leader who is also a champion, and (5) having project team members who are stakeholders.

According to Ada Wong, Harry Scarbrough (2003), due to limited ERP knowledge, capability and poor project management skills, none of the companies' project managers could exercise effective project management of ERP implementation. They agreed that a failure to plan, lead, manage and monitor the project was a core factor that resulted in their implementation failure, because the ERP system was complex, and project teams were required to collaborate with top management, different departments, users and consultants during implementation process. The ERP project was considered by the project managers to be challenging and demanding, as it involved managing systems, people (project team, users and external consultant) as well as re-designing business processes. According to the research outcome of T.R. Bhatti (2005), Project Management critical success factor is strongly correlated with the other success factors of ERP Implementations.

According to the research outcome of BooYoung Chung, (2007), Wilder and Davis (1998) identified that poor planning or poor project management is the main reason why IT projects fall behind schedule or fail.

According to E.W.T. Ngai, C.C.H. Law, F.K.T. Wat (2007), there is no doubt that project management is necessary for implementing any kind of project. Excellent project management against a project plan with clear objectives, deliverables, and milestones ensures that the project is effectively planned and delivered. For ERP implementation, a clear and well defined project plan, including the goals, objectives, strategy, scope, and schedule of the project, are significant issues in project management. This factor was common in various countries and regions, regardless of cultural or national differences.

CONCLUSIONS

Through this analysis we have tried to bring out the significance of Project Management factor, out of all the other Critical Success Factors that the researches have identified and discussed so far. As Project Management is a subject and field by itself, when coupled with the ERP area associated with all the other CSF-s the overall assignment of an ERP Implementation is getting into more complex and hence needs more attention from all the stake holders including the Senior Management Team. This complexity can to be managed effectively through the knowledge, skills, tools and techniques of Project management principles.

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