The Best Performance Practices in Project Management of SAP ERP Accomplishment

Durga Prasad Sharma, Arvind Kumar Sharma, and Narpat Singh Shekhawat

***Abstract*—Most notably, SAP ECC 6.0 has been widely implemented to create value-oriented business processes that enable a high level of integration, improve communication within internal and external business networks, and enhance the decision-making process. SAP ECC 6.0 serves as a catalyst for information integration within and beyond the organizational scope through its standardized software modules, whereas at the same time working as a vehicle for transferring best practice business processes. Measures in terms of factors that led to failure and their future implications are discussed in the light of the contrasting experiences of several best practice companies.**

***Index Terms*—Business process reengineering, enterprise resource planning (ERP), project Management, and systems applications &products in data processing (SAP)**

I. Introduction

SAP Implementation strategies describes whether a company chooses a "Big Bang" or a step-by-step approach, the strategy must reflect business-specific constraints and objectives. The emergence of SAP ECC 6.0 technology has created an opportunity to ensure information and business process equality both at organizational and global levels. SAP ECC 6.0 serves as a catalyst for information integration within and beyond the organizational scope through its standardized software modules. SAP system allows a company to share common data and practices across the enterprise and produce and access information in a real-time environment. These systems are designed to solve the fragmentation of information in large business organizations, and integrate all information flows within a company [1]. Whereas at the same time working as a vehicle for transferring best practice business processes. The SAP reference models are among the most comprehensive reference models, including over 4000 entity types and covering over 1000 business processes and inter-organizational scenarios.

Study reviews an existing enterprise resource planning (SAP ERP) literature and provides the inter-organizational best practice of SAP ERP system implementation. A Focus Group (FG) method adopted as an exploratory means to gain insights and perspective of SAP ERP systems. The study examined the different SAP ERP lifecycle phases and provided the insight factors that were crucial to overall success in implementing SAP ERP. In addition, the empirical findings would be useful to SAP ERP practitioners by providing better understanding of SAP ERP from both the user and organizational perspectives. The study suggests researchers re-examine the following SAP ERPissuesat the inter-organizational level, selection of SAP ERP packages, integration of business processes, knowledge, and applications, implementation approaches, training as well as organizational transformation and software migration. SAP ERP projects gather customer needs and organizational information, which can facilitate better business and Information System (IS) planning.

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II. Recent Erp Trends

1) ERP systems are now linking groups and applications external to the organization.
2) ERP systems are now linking with web; Intranet based solutions, and E-Commerce applications.
3) ERP systems are now beginning to use web browsers as the GUI.

III. SAP ERP Selection

What Makes SAP different for Selection & Implementation to fulfill Manufacturing Industry Business Requirement?

SAP offers companies a comprehensive solution for managing financials, human resources, operations, and corporate services -- providing the most comprehensive SAP ERP product available today. It attempts to integrate all departments and functions across a company onto a single computer system that can serve all those different departments' particular needs. Traditional computer information systems used by many businesses today have been developed to accomplish some specific tasks and provide reports and analysis of events that have already taken place. All applications access common data. Real events in the business initiate transactions. Accounting is done automatically by events in sales and production. Sales can see when products can be delivered. Production schedules are driven by sales.

The whole system is designed to be real-time and not historical. SAP structure embodies what are considered the "The Best Business Practices". A company implementing SAP adapts its standard operations / functionality to achieve its efficiencies and power– as clearly shown in Fig. 1. The process of adapting procedures to the SAP model involves "Business Process Reengineering" which is a logical analysis of the events and relationships that exist in an enterprise's operations .An ERP system can be described as a modularized suite of business software applications that

are seamlessly integrated to provide automated interactions and a common source of for a firm found that when the ERP system are integrated in a supply chain, companies should get logistics performance advanges[2].

Fig. 1. SAP installation by industry graph

Occasionally, some systems operate in a "real-time" mode that is, have up to date information in them and can be used to actually control event. A typical company has manyseparate systems to manage different processes like production, sales, and accounting. Each of these systems has its own databases and seldom passes information to other systems in a timely manner. SAP takes a different approach. There is only one information system in an enterprise SAP.

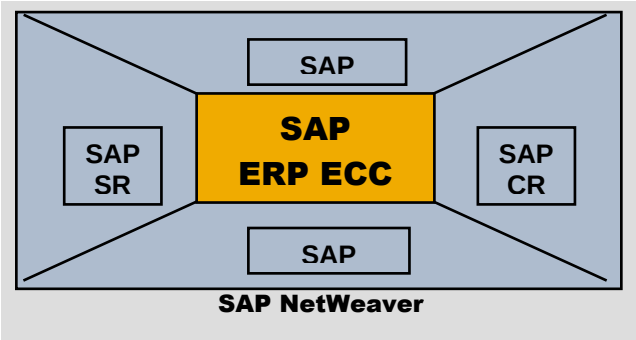

Fig. 2. ECC to enable SAP to build function as foundation of central component of other products.

IV. SAP Implementation Flow (Project Cycle)

Mission and Objective of the SAP Project - Should work in conjunction with the mission of the Organization, Should satisfy all stakeholders. The most advance group of SAP integrated system are the ERP class systems that includes mechanism based on planning and forecasting, which supports the management of entire enterprise and integrate all of its activity. The effective implementation of SAP system can bring out many benefits, beginning with the most general, such as enterprise management and information flow enhancement. Consequently, improvement of economic indicator is achievable, which finally leads to an increase in enterprise profitability [3].

Project Initiation and Planning – Appoint Executive Sponsor, Form Executive Committee, and Form Steering Committee, Appoint Chief Project Officer, Finalize Scope of Project, Assemble Implementation Team, Finalize Project Policies & Guidelines, Establish Project Office, Establish Team for Procurement, etc.

Critical Success Factors - Direct Involvement of Top Management, Clear Project Scope, Covering as Many Functions as Possible Within the Scope of the SAP Implementation, Standardizing Business Processes, Proper Visibility, and Communication on Project at All Stages, Allocation of Appropriate Budget and Resources, Full Time Assignment of Key Managers, Complete Infrastructure Activities, Institute a Change Management Plan, Training of SAP Team Members, Training of User Members, Scheduling and Managing Interfaces with Other Systems, Transition Plan for "Cut-Over" to SAP. Change management is required to prepare users for the introduction of new system, reduce resistance towards the system and influence user attitudes towards that system [4].

Implementation Strategy - Big Bang Implementation of SAP Modules, Base Modules Implemented First, Implementation of SAP Standard Functionality, Pilot Site Implementation Followed by Rollouts at Other Sites, Utilize External Consultants to Primarily Train In-House Consultants, Centralized or Decentralized SAP Configuration, User-Driven Functionality

Project Bill of Resources (BOR) – Money, Materials, Manpower, Time Period, Information

Implementation Environment – SAP ECC 6.0 Reference Model, ECC 6.0 Business Navigator, ECC 6.0 Analyzer, Implementation Guide (IMG), International Demo, and Education System (IDES), SAP Business Configuration Sets, SAP Solution Manager.

SAP Implementation Methodologies - Modeling Business Processes, Mapping Business Processes, Perform Gap Analysis, Finalize Scope, Customize SAP System, Test Customized SAP System, SAP Procedure Model Organization, and Conceptual Design, Detailed Design, and System Set Up, Preparations for Going Live, Productive Operations, Accelerated SAP (ASAP)

Project Management - Project Organization, Project Control, Project Monitoring, Project Reviews. The aspect of project pertains to how well organizations are prepared when they are embarking on their implementation. The single biggest reason that SAP project fails is because companies are unable to reconcile the technologies necessities of the system with their own business needs. A lack of understanding the scope of the system may result in a conflict between the logic of the system and the logic of business. In complex organizations such as MNCs, this requires a preliminary determination of what configuration will be rolled out in the different global sites [5].

SAP Implementation - Pre-Implementation, Training (Levels 1, 2, and 3 & Partner Academy Courses), SAP Installation Implementation, Post-Implementation

V. SAP Implementation Methodology

Phase 1- Project preparation: This phase includes initial planning with kick off meeting and preparation. Project preparation and organization must be oriented to the business drivers, resources, and potential benefits within company. This means that knowledge of any previous activities (for example, functional specifications, preliminary study) and of the results of these activities is required. If necessary, we should decide on a consultant and how much consulting we need. Project Initiation includes - Determine consulting requirements, Check the status of any

previous activities and their results, Pick the team (and their tasks) for project preparation, Determine the training requirements of this team, Complete training in the, contents, and the tools for the 'Project preparation' work package, Explain the individual project activities, Present the structure and the contents of the ECC 6.0 Reference Model. Read through the tasks in the Project preparation work package to check whether additional expertise should be assigned to this team. If you have already determined the project manager for the implementation project, assign responsibility for project preparations to this person. Consider your consulting requirements at as early a stage as possible. This means that you can benefit from the experiences of other companies. Your consultant can tailor the implementation steps involved to your needs and your resources and thus save you unnecessary manpower. This person can also ensure that the necessary requirements for successful implementation are met. If already carried out a feasibility study, we should inform our consultant of the results and of the evaluation of these results. In this way, you can ensure that knowledge is the same on both sides and that you work effectively right from the start. Most empirical studies on success have been based on perception of managerial level employees and not so much on the end users. It is possible that by focusing only on the perception of managers, an accurate assessment of the effectiveness of the interventions might not be obtained. This is because managerial perception might be influenced by the roles that that manager's played in designing those interventions [6].

Phase 2 - Business Blueprint: Documentation of the business process requirements of the company. This function documents the business processes in your company that you want to implement in the system. You create a project structure in which relevant business scenarios, business processes, and process steps are organized in a hierarchical structure. You can also create project documentation and assign it to individual scenarios, processes or process steps. You then assign transactions to each process step, to specify how your business processes should run in your SAP Systems. The Business Blueprint is a detailed description of your business processes and system requirements. You can print it out. You can continue to use the project documentation and the project structure that you use during the Business Blueprint, in the configuration and test organization phases. When you configure your business processes, the system displays the Business Blueprint project structure. You can use the Business Blueprint project structure as a point of reference during configuration. You can also display and edit the project documentation from the Business Blueprint phase, during configuration. You base all test plans that you create during test organization, on the Business Blueprint project structure. The transactions that you assign to process steps in the Business Blueprint are put in test plans during test plan generation, and run as functional tests to test the transactions. The objective should be to secure standard multidimensional reporting needs of end-users but also as a challenge to consider the integration of more advanced analytical business applications (e.g. other mySAP.com components like SEM).

Phase 3 - Realization: Implement all business and process requirements based upon the business blueprint. The purpose of Phase 3 is to configure the ECC 6.0 System, in order to have an integrated and documented solution, which fulfills your business process requirements. In this phase, configuration of your system is carried out in two steps: Baseline and Final Configuration. The Baseline configuration is designed to configure about 80% of your daily business transactions and all of your master data, and organizational structure. The remaining configuration is done in process-oriented cycles. The Business Blueprint is used as the guide for the system configuration, done using the Implementation Guide, which will be described in detail in this chapter. After this, data transfer programs, as well as interfaces, need to be tested. Security profiles can be adjusted using the Profile Generator. This often used to be the job of the technical team, who had to quiz the staff as to the details of their business processes. It is now so easy that the members of the project team responsible for the business processes can take care of it themselves. The administrator no longer has to define authorizations directly from the authorization objects; instead, the tasks that are to be performed using ECC 6.0 are simply selected.

Phase 4 - Final Preparation: Complete testing, user training, system management, and cut-over activities. The purpose of this phase is to complete the final preparation of the ECC 6.0 System for going live. Key activities during this phase include the completion of user and administrator training as well as a final fine-tuning of the SAP Business One system. As part of final system tests, necessary adjustments are made to resolve all remaining critical open issues. Cutover activities are also completed during the Final Preparation phase. This includes testing, user training, system management, and cutover activities, to finalize your readiness to go live. This Final Preparation phase also serves to resolve all crucial open issues. On successful completion of this phase, you are ready to run your business in your productive ECC 6.0 System. In Phase 4, your end users go through comprehensive training. The technical environment is installed for the productive system and the project managers make plans for going live, including the transfer of data from legacy systems and user support in the startup phase. End-user training can be the area an organization spends the most time and money to complete, since proper training is critical if the project is to be successful. A high-level training plan should have been developed within the Project Preparation phase, but now more detail is added. The training program is set up according to the number of users, their location, and their tasks. Once the site of the courses and the trainers has been chosen, the courses can be held.

Phase 5 - Go-Live & Support: Transition from implementation to production. This phase focuses on ready to Go-live with our productive system! Afterwards, the project team focuses on supporting the end users, for which training may not be completed. It is also necessary to establish procedures and measurements to review the benefits of your investment in ECC 6.0 on an ongoing basis.

These services encompass a series of remote analyses of specific ECC 6.0 System settings, with recommendations for improving system performance. The last phase of the implementation project is concerned with supporting and optimizing the operative ECC 6.0 System, the technical infrastructure and load distribution as well as the business

processes.

This phase can also include a series of follow-up projects for adding new application components or automating and improving business processes, such as with SAP Business Workflow. The project manager monitors the fulfillment of the enterprise goals and the return on investment. During Phase 5, the first Early Watch® session should be held, where experts from SAP analyze the system's technical infrastructure. The aim is to ensure that the system functions as smoothly as possible. The purpose of SAP's Early Watch Service is to improve the performance of your live ECC 6.0 System by preventing system bottlenecks. The underlying concept of SAP Early Watch® Service is prevention: taking appropriate action before a problem situation develops. Regular analysis of live ECC 6.0 Systems by teams of experts ensures that potential problems can be recognized and remedied at an early stage.

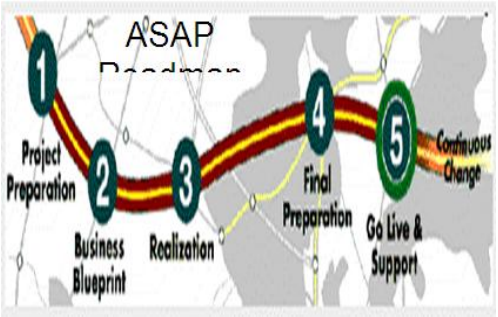

Fig. 3. Accelerated SAP roadmap overview

S.No	Activity	Duration	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7
1	Project Preparation	5 weeks							
2	Business Blueprint	4 weeks							
3	Realization	13 weeks							
4	Final Preparation	6 weeks							
5	Go-Live and Support	4 weeks							

Fig. 4. High end project plan for SAP

VI. Challenges of SAP Implementation &Post Go Live Support

Maintaining good system performance and availability of the followings

- SAP Servers at Primary Data Center
- SAP Servers at DR Data Center
- Wide Area Network Connectivity
- Power & Cooling at Data Centers

Reacting quickly to new demands for system enhancements, Process changes / enhancement, new reports

Managing SAP major upgrades and their costs

Controlling the ongoing expenditure on external consultancy

Controlling total Life-cycle costs for SAP projects spanning multiple business units and instances

Experienced SAP people are in demands everywhere, so retaining experts who know how our process works and how our SAP packages have been configured to support them.

Why SAP Projects Might Be Less Than Successful? - Top management support falters, Lack of clear scope, Decisions to change processes ignored, Lack of visibility, and communication, Lack of adequate budget, Conflicts on team not resolved quickly, Conflict between team, and consultants, Slow decision making process, Team members might resign.

VII. SAP Infrastructure Implementation

One of the key domains of today's business is Project Management of the enterprise. Most of the organizations are still using existing IT infrastructure for project management which could turn out to be an ineffective exercise at a long run. A dedicated Project Management Infrastructure for the medium to large sized organizations which run simultaneously dozens to hundreds of projects involving hundreds to thousands of resources is the need of the hour[7].

SAP Data Center Servers

- Internet Demonstration and Evaluation System (IDES) Server
- Solution Manager (SOLMAN) Server

SAP Servers Landscape

- Enterprise Central Component (ECC)
- Development Server
- Quality Server
- Production Cluster (ECC Production & Application Server)

Business Intelligence Warehouse (BIW)

- Development Server
- Production Server

Storage Area Network

MS Library - Backup Device

DR Implementation

- Server Installations

ECC Production Cluster (ECC Production & Application Server)

BIW Production Server

- Storage Area Network
- Autoloader - Backup Device
- SAP DR Mock Drill

VIII. SAP Client Management

SAP GUI Installation

SAP User management

SAP Connectivity

SAP License Audit

IX. SAP Policies

SAP IT Policy

- SAP Authorization
- ABAP Development
- Transport Request
- Backup

SAP Licensing Policy

SAP Do's & Do not's

X. Critical Success Factors

Full time involvement of the core team in the project at all

levels

Continuity of the same core team through-out the project

Process Standardization across business units to achieve completion in the aggressive time lines defined

Availability of process documents & supporting documentation in time

Adoption of 'Vanilla' Processes / Organization Processes – Minimal Development

Adoption of SAP Standard Reports

Constant interaction to review work and avoid re-work

Ensuring adherence to all the specified project milestones

Display of general reports on Intranets of organizational

Thorough reviews & timely (2 days) sign-off of the documents

Availability of Test Data for Integration Testing

Availability of up-to-date, clean data for master data upload

Commitment at all levels of Organization to ensure project success

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