Integrated Project Management using Sap PS (Project System)

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Abstract- In today's complex project management in construction and aerospace industries, there is a tendency to have an integrated information system. For this, there are a lot of Enterprise resource planning software packages namely, SAP, BAAN, PeopleSoft etc. Lot of research has been made to know about how to select the ERP for their own organization. This paper provides an overview about SAP- Market leader (Project System) module and its functionalities for efficient project management.

Keywords: SAP, Project management

I. INTRODUCTION ABOUT PROJECT MANAGEMENT

Many organizations do not employ full-time Project Managers and it is common to pull together a project team to address a specific need. While most people do not have formal skills in a project methodology, taking a role in a project team can be an excellent learning opportunity and can improve a person's career profile.

Project management in the modern sense began in the early 1950s, although it has its roots much further back in the latter years of the 19th century. The need for project management was driven by businesses that realized the benefits of organizing work around projects and the critical need to communicate and co-ordinate work across departments and professions. One of the first major uses of project management as we know it today was to manage the US space programme. The government, military and corporate world have now adopted this practice.

Here is the main definition of what project management is:

- Project management is no small task.
- Project management has a definite beginning and end. It is not a continuous process.
- Project management uses various tools to measure accomplishments and track project tasks. These include Work Breakdown Structures, Gantt charts and PERT charts.
- Projects frequently need resources on an *ad-hoc* basis as opposed to organizations that have only dedicated full-time positions.
- Project management reduces risk and increases the chance of success.

Project management is often summarized in a triangle (*see* Figure 1). The three most important factors are time, cost and scope, commonly called the triple constraint. These form the vertices with quality as a central theme.

Figure 1: The triple constraint

- Projects must be within cost.
- Projects must be delivered on time.
- Projects must be within scope.
- Projects must meet customer quality requirements.

More recently, this has given way to a project management diamond, with cost, time, scope and quality the four vertices and customer expectations as a central theme (*see*Figure 2). No two customer expectations are the same so you must ask what their expectations are.

Figure 2: The project management diamond

A project goes through six phases during its life:

1. **Project Definition:** Defining the goals, objectives and critical success factors for the project.
2. **Project Initiation:** Everything that is needed to set-up the project before work can start.
3. **Project Planning:** Detailed plans of how the work will be carried out including time, cost and resource estimates.
4. **Project Execution:** Doing the work to deliver the product, service or desired outcome.
5. **Project Monitoring & Control:** Ensuring that a project stays on track and taking corrective action to ensure it does.

6. **Project Closure:** Formal acceptance of the deliverables and disbanding of all the elements that were required to run the project.

The role of the project manager is one of great responsibility. It is the project manager's job to direct, supervise and control the project from beginning to end. Project managers should not carry out project work, managing the project is enough. Here are some of the activities that must be undertaken:

- The project manager must define the project, reduce it to a set of manageable tasks, obtain appropriate resources and build a team to perform the work.
- The project manager must set the final goal for the project and motivate his/her team to complete the project on time.
- The project manager must inform all stakeholders of progress on a regular basis.
- The project manager must assess and monitor risks to the project and mitigate them.
- No project ever goes exactly as planned, so project managers must learn to adapt to and manage change.

A project manager must have a range of skills including:

- Leadership;
- People management (customers, suppliers, functional managers and project team);
- Effective communication (verbal and written);
- Influencing;
- Negotiation;
- Conflict management;
- Planning;
- Contract management;
- Estimating;
- Problem solving;
- Creative thinking; and
- Time management.

"Project managers bear ultimate responsibility for making things happen. Traditionally, they have carried out this role as mere implementers. To do their jobs they needed to have basic administrative and technical competencies. Today they play a far broader role. In addition to the traditional skills, they need to have business skills, customer relations skills, and political skills. Psychologically, they must be results-oriented self-starters with a high tolerance for ambiguity, because little is clear-cut in today's tumultuous business environment. Shortcomings in any of these areas can lead to project failure." - J. Davidson Frame

Many things can go wrong in project management. These things are often called barriers. Here are some possible barriers:

- Poor communication;
- Disagreement;
- Misunderstandings;
- Bad weather;
- Union strikes;
- Personality conflicts;
- Poor management; and
- Poorly defined goals and objectives.

A good project management discipline will not eliminate all risks, issues and surprises, but will provide standard processes and procedures to deal with them and help prevent the following:

- Projects finishing late, exceeding budget or not meeting customer expectations.
- Inconsistency between the processes and procedures used by projects managers, leading to some being favoured more than others.
- Successful projects, despite a lack of planning, achieved through high stress levels, goodwill and significant amounts of overtime.
- Project management seen as not adding value and as a waste of time and money.
- Unforeseen internal and/or external events impacting the project.

Project management is about creating an environment and conditions in which a defined goal or objective can be achieved in a controlled manner by a team of people.

II. ERP

Information technology has transformed the way we live in and the way we do business. Since last decade, I.T. has made a drastic change in our life. As compared to earlier stage, when computer was used just as a typewriter, nowadays users have become more intelligent and IT literate. Now the user knows that a PC can do many more things rather then just typing a letter in a word processing software or making balance sheets in excel. They expect more things out of their PC. During this phase of industry, every one of us must have heard the word ERP in one or the other form. It may be in title of any IT magazine or may be a point of discussion in any IT Seminar or may be in an advertisement of big IT Company. Thus in any form, we all have been through this word.

III. SAP

SAP was founded in 1972 in Walldorf, Germany. It stands for Systems, Applications and Products in Data Processing. Over the years, it has grown and evolved to become the world premier provider of client/server business solutions for which it is so well known today. The SAP R/3 enterprise application suite for open client/server systems has established a new standards for providing business information management solutions.

SAP product are consider excellent but not perfect. The main problems with software product is that it can never be perfect.

The main advantage of using SAP as your company ERP system is that SAP have a very high level of integration among its individual applications which guarantee consistency of data throughout the system and the company itself.

In a standard SAP project system, it is divided into three environments, **Development, Quality Assurance and Production**.

The development system is where most of the implementation work takes place. The quality assurance system is where all the final testing is conducted before moving the transports to the production environment. The production system is where all the daily business activities occur. It is also the client that all the end users use to perform their daily job functions.

To all company, the production system should only contains transport that have passed all the tests.

SAP is a table drive customization software. It allows businesses to make rapid changes in their business requirements with a common set of programs. User-exits are provided for business to add in additional source code. Tools such as screen variants are provided to let you set fields attributes whether to hide, display and make them mandatory fields.

This is what makes ERP system and SAP in particular so flexible. The table driven customization are driving the program functionality instead of those old fashioned hard-coded programs. Therefore, new and changed business requirements can be quickly implemented and tested in the system.

Many other business application software have seen this table driven customization advantage and are now changing their application software based on this table customizing concept.

In order to minimized your upgrading costs, **the standard programs and tables should not be changed as far as possible.** The main purpose of using a standard business application software like SAP is to reduced the amount of time and money spend on developing and testing all the programs. Therefore, most companies will try to utilized the available tools provided by SAP.

What is Client? What is the difference between Customization and Configuration?

The difference between cutomizing and configuration is:
- CONFIGURATION: we will configure the system to meet the needs of your business by using the existing data.
- CUSTOMIZING: we will customise or adapt the system to your business requirements, which is the process of mapping SAP to your business process.
- CLIENT: A client is a unique one in organizational structure, can have one or more company codes. Each company code is its own legal entity in finance.

IV. CONFIGURATION VS. CUSTOMIZATION

When considering enterprise software of any type, it is important to understand the difference between configuration and customization.The crux of the difference is complexity. Configuration uses the inherent flexibility of the enterprise software to add fields, change field names,modify drop-down lists, or add buttons. Configurations are made using powerful built-in tool sets. Customization involves code changes to create functionality that is not available through configuration. Customization can be costly and can complicate future upgrades to the software because the code changes may not easily migrate to the new version.Wherever possible, governments should avoid customization by using configuration to meet their goals.Governments also should understand their vendor's particular terminology with regard to this issue since words like "modifications" or "extensions" often mean different things to different vendors.   *-- **Sivaprasad, Sonali Sardesai**

What is SAP R3?

We know that SAP R/3 is software, it particular it is client-server software. This means that the groups/layers that make up a R/3 System are designed to run simultaneously across several separate computer systems.

When you install Microsoft Excel on your PC, each component of Excel (printing components, graphing components, word processing components, and etc.) is stored, managed, and processed via the hardware of your PC. When a company installs SAP's software each component (or "layer" in R/3's case) is stored, managed, and processed via the hardware of separate and specialized computer systems. Each of the various layers is capable of calling upon the specialty of any of the other installed layers in order to complete a given task.

Those components/layers that are requesting services are called "clients", those components/layers that are providing services are called "servers". Thus the term - "client/server".

What is meant by SAP ECC?

SAP is an ERP (Enterprise Resource Planning) module, ECC is the version of SAP, like 4.6, 4.6c and 4.7 in that series new version is ECC-6. Its known as Enterprise core component.

SAP Project System

1) PS an overview
2) Master data of project system
3) Types of Project are Customer and Investment projects
4) Structuring

The following diagram illustrates the hierarchy of objects within an SAP Project:
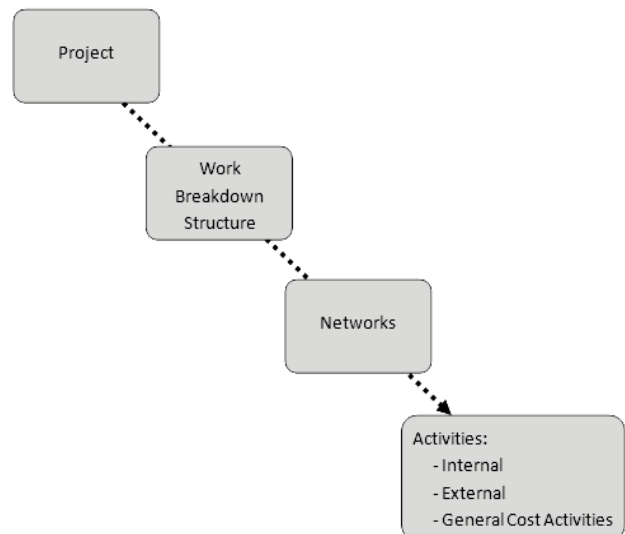
5) Project Structures WBS Elements
6) Project Structures- Networks
7) Project Planning Board – it is an integrated environment for performing efficient project management.

Project System is part of SAP's solution for Project and Portfolio Management. Project System helps you manage the project through its entire life cycle, from setting up a structure, to drawing up detailed plans, to execute and completing the project. Because of its tight integration into financial and logistic core enterprise processes Project System can especially be used for large and complex
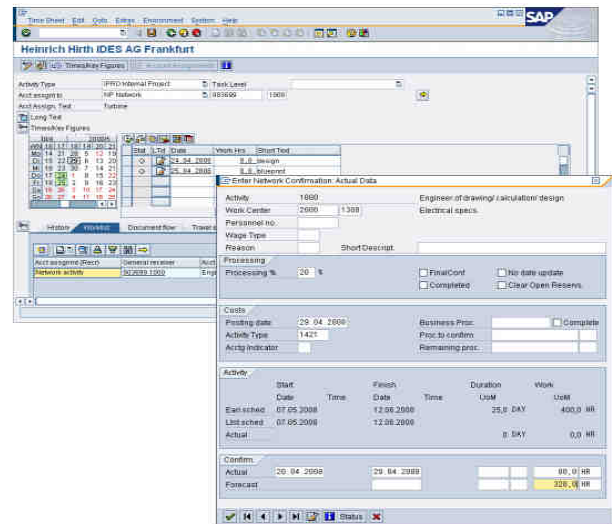
projects such as construction, production, maintenance, investment, or costs projects in all industries.
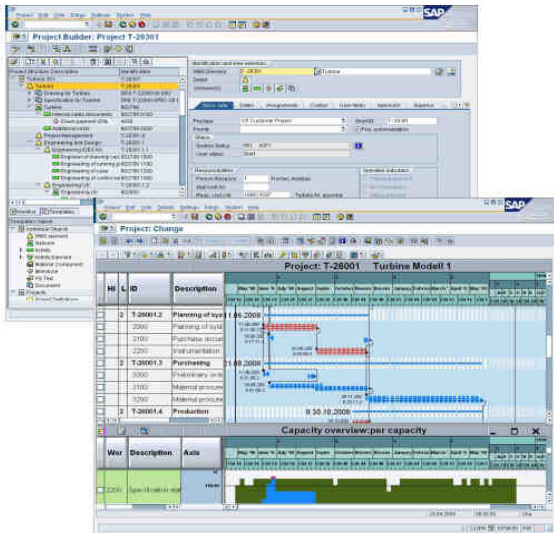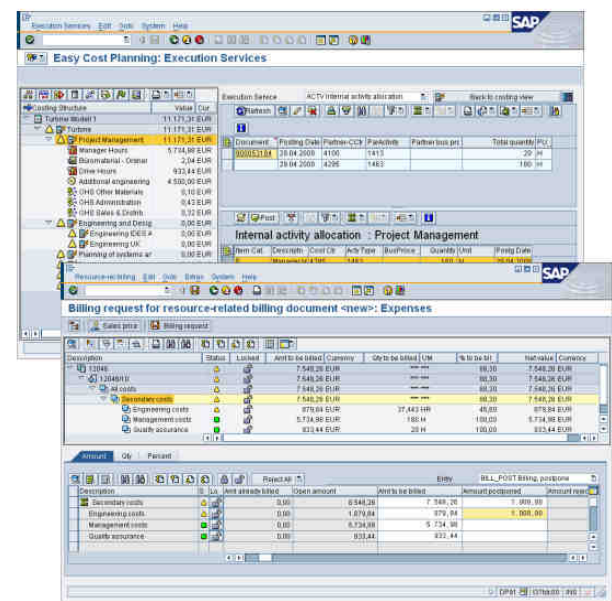

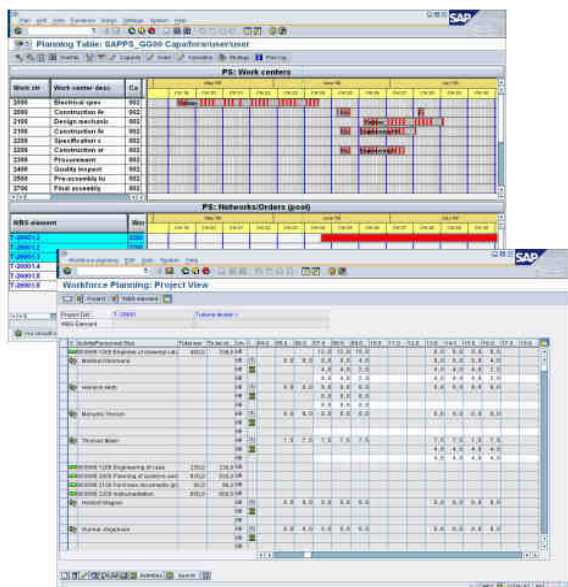**Project Builder and Project Planning Board**
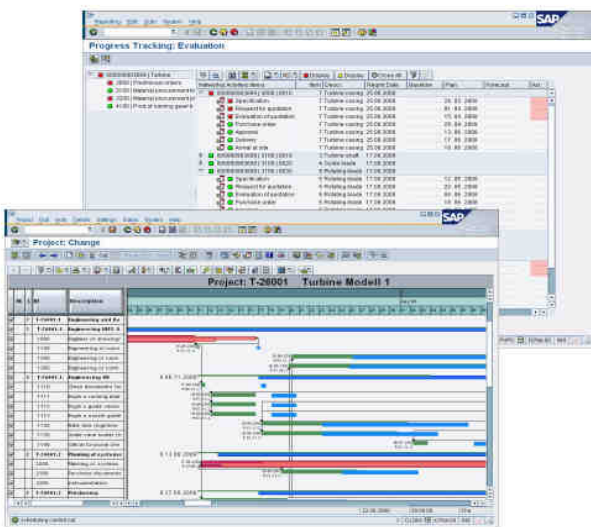
Progress Tracking and Project Planning Board

Capacity Leveling and Workforce Planning

CATS and Individual Confirmation

Execution Services and Resource Related Billing

V. CONCLUSION

This paper provided an overview about SAP module- its evolution, how project management came into existence and particularly emphasis was given on Project system module. Even though more modules like materials management, sales and distribution exist, PS is an integrated module with all the functionalities in built for making efficient decision making.

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