

Project Management

Definition

Modern Project Management was first used to manage the US space program. After its initial success, it expanded rapidly through the government, the military and the corporate world. Project management is no small task. It is defined as having a definite beginning and end and it is not a continuous process. Project management uses various measurement tools to accomplish and track project tasks (WPM, Gantt, PERT charts). These are described later. Projects frequently need resources on an add-on basis as opposed to organizations that have full-time positions.



There are three main points that are most important to a successful project:

1. A Project must meet customer requirements (**quality**)
2. A Project must be under budget (**cost**)
3. A Project must be on time (**time**)

Quality – Defined as the degree to which the facilities or deliverable products meet the specific requirements. Did the customer get what the customer asked for?

Cost – This requirement refers to the amount of money – the capital cost – the client wishes to spend to complete the project. Cost can also be referred to as management of ones own time spent on the project

Time – Requirement refers to the calendar date by which customers want the project finished so that it can be used for the customers purposes. It also implies intermediate dates for stages of the work to be completed along the way

Project Manager – Roles and Responsibilities

A project manager is expected to:

- Direct and supervise the project from beginning to end
- Define the project, reduce the project to a set of manageable tasks, obtain appropriate and necessary resources, and build a team or teams to perform the project work
- Set the final goal for the project and motivate workers to complete the project on time
- Have technical skills (financial planning, contract management, managing creative thinking and problem solving techniques, etc)
- Learn to adapt to change as no project ever goes 100% as planned

Why Projects Fail

Projects fail in many different ways but are successful in only one – when everything goes right! Some examples of why projects fail are:

- The project lacks higher management support and resources
- Tasks and goals are vaguely defined
- Planning and pre-project preparation are inadequate
- Management methods are inappropriate or misused
- Communication is insufficient
- Technical and managerial skills are missing
- The project manager is lacking in skills and experience

Project Management Tools

Projects are successful if they are completed on time, within budget, and to performance requirements. A number of techniques, methodologies, and tools are available in order to accomplish this. Such techniques provide the tools for managing different components involved in a project for example planning and scheduling and monitoring progress

Work Breakdown Structure (WBS)

This tool is related to planning and scheduling a project. Basically it is a functional decomposition of the tasks of the project. The total work of the project is broken down into major subtasks. It starts with the end objective required and successively subdivides it into manageable components in terms of size and complexity, which may include program, project, system, subsystem, components, tasks, subtasks, and work elements. While a WBS is useful for defining the work required for complex projects, it does not show the timing of activities.

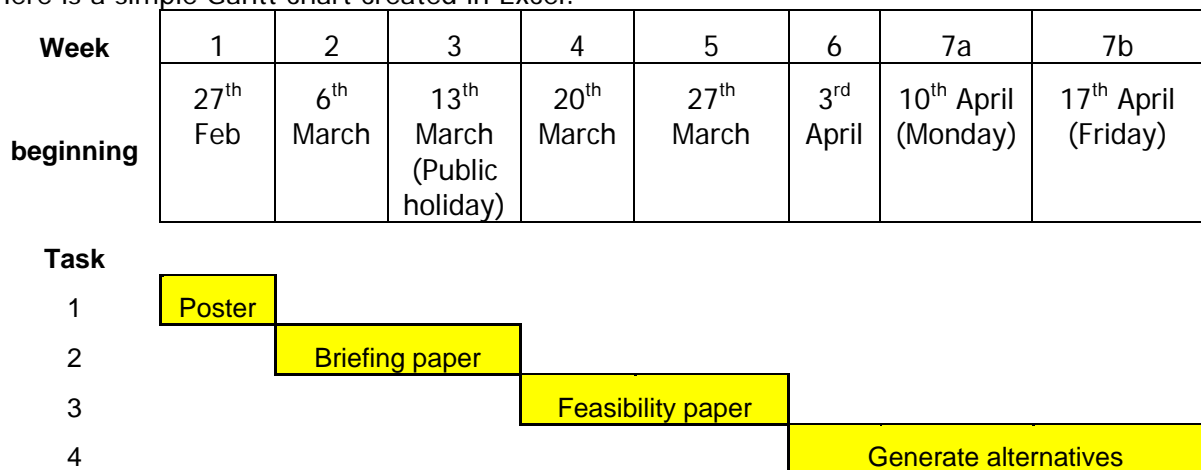
Gantt Charts

These were developed by Harry Gantt in 1916. Charts give a timeline for each activity. They are used for planning, scheduling and then recording progress against these schedules. Two basic types of Gantt Charts exist. These are *Load Charts* and *Project Planning Charts*.

Load Charts – Useful for manufacturing projects during peak or heavy load periods. The format of the Gantt Load Chart is very similar to the Gantt Project Planning Chart.

Project Planning Chart – Addresses the time of individual work elements giving a time line for each activity of a project. These charts are easy to understand and show when each activity starts and finishes. However, the chart cannot determine when each activity may start or if we can start a particular activity before finishing the immediate predecessor activity. Need somehow know the precedence relationships between activities (PERT / CPM charts).

Here is a simple Gantt chart created in Excel:



PERT (Program Evaluation and Review Techniques) / CPM (Critical Path Method)

Both methods show precedence relationships explicitly. They are used to portray graphically the interrelationships of the elements of a project and to show the order in which the activities must be performed.

What does this mean for me/us?



As you begin your project work, you are beginning to learn project management. We will ask you to prepare (and revise regularly) a Gantt chart to show the tasks required in your project. You should estimate the resources required for each activity (eg hours of work). How will you get the task done by the due date?

We will ask you to have group meetings and keep proper records of matters discussed and action items. At your next meeting you will check that actions have been completed.

We will ask you to work in groups in order to gain experience with working with difficult people. (We are all difficult at times).

Other aspects of project management will become clear as we proceed through subsequent projects.