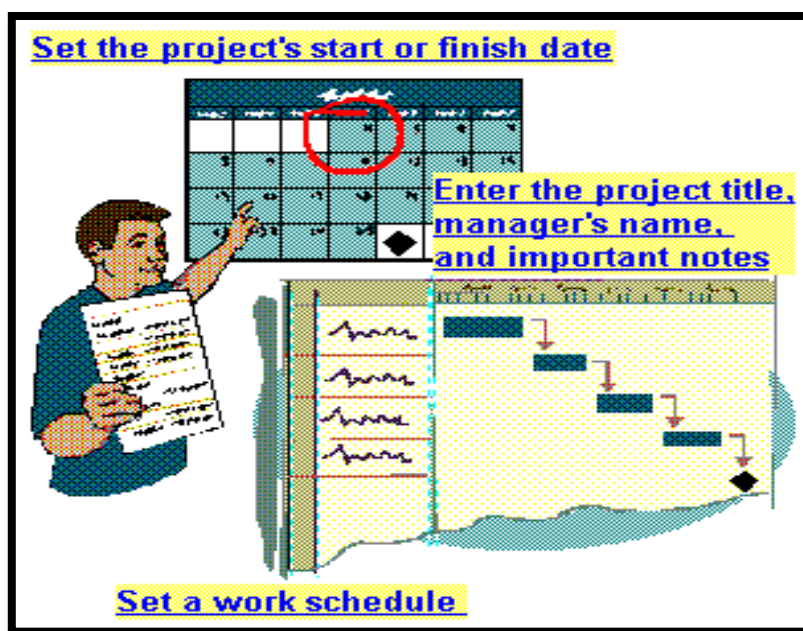


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Mode Unit in study

## Planning and Control in Projects:

Planning  
Scheduling  
Controlling



By

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# Lecture 2

## 1. Overview

- a. **Target Population:** For students of stage of second and fourth stage in technical Colleges and Institutes in foundation of technical education.
- b. **Rationale:** Project planning is a critical element of every successful investment. It provides a foundation on which to base anticipated efforts. Additionally, it helps identify investment components and illustrates these components in a project plan.
- a. **Central Ideas:** The basic purpose of a planning and control in projects is to help managers schedule, monitor and control large and complex projects.
- b. **Objectives:** The student will be able after finishing lecture on:
  - Define planning, scheduling and control processes.
  - Study the main steps of planning, scheduling and control processes in projects.

## 2. Pre-Test:

1. Define the term “scheduling process”.
2. Contingency needs to be allowed both on the estimated effort and elapsed time because of the likelihood of unforeseen work arising. State True or False
3. The role of the project manager falls into three areas -----, ----- and -----.
4. ----- is the process of comparing actual performance with planned performance, analyzing the differences, and taking the appropriate corrective action.
5. Planning process is closest to mean for:
  - a) Project Scope Management
  - b) Project Time Management
  - c) Project Cost Management
  - d) Project Quality Management

**Note:** Check your answers in “Answer Keys” in end of mode unit. If you obtain 75% of solution, you cannot need to this mode unit. If your answer is poor, you will transfer to next page.

### 3. Theory:

#### Introduction

#### Planning

**Planning** is the process performed to define and mature the project scope, develop the project management plan, and identify and schedule the project activities that occur within the project.

#### Scheduling

**Scheduling** is the process of determining when project activities will take place depending on defined durations and precedent activities. Schedule constraints specify when an activity should start or end based on duration, predecessors, external predecessor relationships, resource availability, or target dates.

#### Control

**Control** is the process of comparing actual performance with planned performance, analyzing the differences, and taking the appropriate corrective action.

### 4. Pre-Test:

1. Define the term “planning process”.
2. Scheduling is the process of determining when project activities will take place depending on defined ----- and -----.

#### Project Planning and Scheduling

Project Planning begins as soon as Definition allows. The process involves planning subprojects first and hence Definition must at least have identified the sub-projects and the major tasks involved in them. From this point, Planning and Definition tend to continue in parallel as a series of iterations, gradually refining and hardening both Definition and Plans.

The purpose of the Project Plan at this stage is to provide detailed realistic estimates of time, duration, resource and cost, and planning should be carried out only in sufficient detail to allow this to be achieved. Detailed planning for allocation of tasks to individuals is carried out progressively as the work proceeds.

Where there are sub-projects these should be planned first and then combined to produce the overall project plan. Produce a plan for each sub-project, or for the total project if there are no sub-projects as follows:

### **1. Identify Major Activities**

Break the work down into activities of the order of 20-50 days of effort, ensuring that milestones correspond to completion of one or more of these. In practice the achievement of a milestone is usually a good basis for identifying an activity e.g. “prepare and perform user training”.

### **2. Identify and Chart Dependencies**

Produce a network chart for the sub-project showing dependencies between the major activities and dependencies on other sub-projects or external events.

### **3. Estimate Effort and Duration**

Estimate effort and duration of each major activity.

### **4. Provide Contingency**

At this stage estimates are likely to be 'soft' and probably expressed in ranges, because precise details of the work are not settled. Contingency needs to be allowed both on the estimated effort and elapsed time because of:

- The likelihood of unforeseen work arising,
- The likelihood that tasks will take longer than expected,
- The likelihood of changes to requirements or plans before publication. (Subsequent changes should be processed through Change Control).

Contingency provision should remain evident in plans (probably as one or more contingency 'tasks'). This provision should then progressively be removed from plans during Tracking and Control as a result of either:

- being used up by e.g. tasks taking longer than planned,
- or reaching a point where uncertainty is reduced such that a part of contingency provision can safely be deleted. This usually means the deletion of contingency allowed, but not used, on tasks now completed.

### **5. Schedule Major Activities**

Determine start and end dates for each major activity and produce a bar chart or other diagram, showing relationships between activities.

### **6. Calculate Resource Requirements**

Calculate requirements for each time period. Identify needs for each resource type (e.g. systems analyst, user staff) and identify needs for special skills or scarce resources.

## **7. Calculate Costs**

Calculate costs for the sub-project. This should include 'hardening up' items such as cabling, training etc., for which an order of costs had been produced previously.

## **8. Determine Overall Costs and Benefits of the Project**

The cost/benefit justification should have already been stated in the feasibility study.

This stage provides the opportunity to review the case in the light of more detailed information.

## **9. Document the Project Plan**

Once a viable plan has emerged (i.e. conflicts have been resolved, resource availability has been confirmed etc.) the Project Manager should produce the Project Plan covering:

- Project Schedule. This should show major activities by sub-project on a bar chart or other diagram. The chart should also show project milestones and target dates.

Show contingency as a single provision at the end. Include an overall project network showing the critical path. Narrative explanation may be included for clarification.

- Major Check points and Reviews. List the dates of Checkpoint Reports, Checkpoint Meetings, Steering Group Meeting and the Post-Implementation Review.

- Deliverables. List the major products of the project with delivery dates and acceptance procedures.

- Resources. Summarise the resource needs from the sub-project plans.

- Costs and Benefits figures. Revise and refine as a result of completion of Definition and Planning.

- Potential Problems. List any risks, problems or assumptions which may jeopardize the Plan, together with actions needed to correct the situation.

## **10. Ensure Management Systems are in place.**

3. Contingency needs to be allowed both on the estimated effort and elapsed time because of the likelihood that tasks will take longer than expected. State True or False

4. Systems analyst and user staff come under "Calculate Resource Requirements" State True or False

## **Project Implementation and Control**

The role of the project manager falls into three areas:

- i) Management of stakeholders
- ii) Management of the project life cycle
- iii) Management of performance

An approach needs to be developed for each of these. Control and monitoring procedures need to be put in place and appropriate information systems developed. The procedures which are put into place can only be successful if:

- a) there is satisfactory information to enable the team to manage the project effectively;
- b) they are simple and easy to operate and understand;
- c) they have the full support of the project team.

How should this relate to the three categories referred to above?

**i) Management of stakeholders:**

Stakeholders' interest must be monitored to ensure that:

1. their interest and support is maintained;
2. their views and ideas are being adequately reflected in the project development;
3. their personal success criteria are being pursued and achieved;
4. Environmental change is fully taken into account.

**ii) Management of the project life cycle:**

This is probably the most conventional view of project control. Feedback systems need to be set up to monitor key areas. The key areas would be as follows:

1. The project timetable, with particular reference to critical event times and potential bottlenecks. There should be feedback on activity times achieved and their effect on the whole project. If network analysis is used, then it is vital that the network is reworked and updated to take into account the actual performance achieved.
2. The project budget; budgetary control procedures can be used as in respect of any other form of budget.
3. Quality and performance standards; these need to be monitored against the original project specification subject to changes agreed with stakeholders in the course of project development. Where possible this should all be done through positive reporting which will require action to be taken.

**iii) Management of performance:**

This is the least tangible but possibly the most important of the three categories. How it is tackled will depend upon what kind of project is being carried out.

It is unlikely that the project team will spend all of their working time together in close proximity and under the direct supervision of the project manager. It is much more likely that they will work apart most of the time, only meeting up occasionally and only meeting with the project manager from time to time. Control issues that need to be considered therefore would be:

1. How to get the best out of the team when they are together. If you are holding meetings then they should be purposeful and effective. They should not simply be part of the routine. Having said that, they may be an important element in binding the team together and in developing a team approach to planning and monitoring of performance.
2. Ensuring people work when the team is apart. You need to set people realistic deadlines and ensure that they see the importance of their contribution and that their contribution is fully valued.
3. Communications are important in terms of disseminating information and keeping everyone informed. There are views that team members should be given information on a need to know basis but this approach can cause problems.
4. Ensuring continuing commitment by the team and adherence to the values and beliefs being pursued by the team.
5. Change, in particular, needs to be communicated to team members quickly and effectively. It is important to stress once again the need to look at the team and also for the project leader to look inwards at his or her own performance.

5. The term “**scope definition**” in a steps of project management comes under  
a) Project initiation   b) project planning   c) project scheduling   d) project costing

## 5. Post- Test

1. Define the term ”control process”
2. List briefly the points that the manager should produce to cover “Document the Project Plan”.
3. The role of the project manager falls into three areas -----, ----- and -----.
4. Planning process performed to define and mature the -----.
5. Identify and Chart Dependencies les under:
  - a) Planning process
  - b) Control process
  - c) Planning and scheduling process
  - d) Staffing process

**Note:** Check your answers in “Answer Keys” in end of mode unit.



## 6. References

1. Principles of Project Management, NPC publication
2. S. Choudhury “Project Management”, Tata McGraw Hill – 2003
3. Y. Bakouros and V. Kelessidis “Project management” INNOREGIO: dissemination of innovation and knowledge management techniques, January 2000.
4. <http://www.projectmanagement.com/main.htm>

### Answer Keys

#### Pre- Test

1. Scheduling is the process of determining when project activities will take place depending on defined durations and precedent activities. Schedule constraints specify when an activity should start or end based on duration, predecessors, external predecessor relationships, resource availability, or target dates.
2. True.
3. management of stakeholders, management of the project life cycle and management of performance
4. Control process
5. a) Project Scope Management

#### Self-Test

1. Planning: This process performed to define and mature the project scope, develop the project management plan, and identify and schedule the project activities that occur within the project.
2. Durations and precedent activities.
3. True
4. True
5. b) project planning

#### Post- Test

1. Control is the process of comparing actual performance with planned performance, analyzing the differences, and taking the appropriate corrective action.
2.
  - Project Schedule.
  - Major Check points and Reviews.
  - Deliverables.
  - Resources.
  - Costs and Benefits figures.
  - Potential Problems.
  - Appendices.
3. management of stakeholders, management of the project life cycle and management of performance
4. project scope
5. a) Planning and scheduling process