



**Everyone's Smart
University**

Project Feasibility Study

Lecture 6

PMG201

PLANNING THE PROJECT

Outline

- 1. The Contents of a Project Plan—The “Project Charter”**
- 2. The Planning Process—Overview**
- 3. The Planning Process—Nuts and Bolts.**
- 4. More on the Work Breakdown Structure and Other Aids**
- 5. Multidisciplinary Teams—Balancing Pleasure and Pain**

Introduction

- ☐ If problems arise during the life of a project, our first hunch would be that the project was not properly planned. Most of the time our hunch would be correct. Inadequate planning is more the case than the exception. We can only guess why. Perhaps the reason is that senior management and/or the PM and/or the project team are impatient. They want “ to get on with it. ”
- ☐ Possibly some of the people who should be engaged in planning have heard Tom Peters, well - known searcher - for - excellence and management guru, comment that good planning almost never cuts implementation time and that “ Ready, Fire, Aim ” is the way good businesses do it.

Project Planning

- **Basic objective:**
 - To create a plan to meet the commitments of the project
 - create a path that, if followed, will lead to a successful project
- **Planning involves**
 - defining the LC process to be followed, estimates, detailed schedule, plan for quality, etc.
- **Main output**
 - a project management plan, and
 - project schedule

Key Planning Tasks

- **Define suitable processes for executing the project**
- **Estimate effort**
- **Define project milestones and create a schedule**
- **Define quality objectives and a quality plan**
- **Identify risks and make plans to mitigate them**
- **Define measurement plan, project-tracking procedures, training plan, team organization, etc.**

Process Planning

- ☐ Plan how the project will be executed, (ie. the process to be followed)
- ☐ Process will decide the tasks, their ordering, milestones
- ☐ Hence process planning is an important project planning task
- ☐ Should plan for LC and PM processes as well as supporting processes

Life Cycle Process

- ☐ Various LC models - waterfall, iterative, prototyping; diff models suit different projects
- ☐ During planning can select the model that is best for the project
- ☐ This gives the overall process which has to be fine-tuned to suit the project needs
- ☐ Usually done by process tailoring - changing the process to suit the project
- ☐ Tailoring finally results in adding, deleting, modifying some process steps

1. The Contents of a Project Plan—The “Project Charter”

- Before considering how to plan, we should decide why we are planning and what information the plan should contain. The primary function of a project plan is to serve the PM as a map of the route from project start to finish.
- The plan should include the business case or the organization 's expected financial benefits that will accrue as well as the strategic reasons for the project.
- The plan should contain sufficient information that, at any time, the PM knows what remains to be done, when, with what resources, by whom, when the task will be completed, and what deliverables the output should include.

The Contents of a Project Plan—The “Project Charter” cont. ...

- **This information must be known at any level of detail from the most general overall level to the minutiae of the smallest subtask. As the project travels the route from start to finish, the PM needs also to know whether or not any changes in project plans are contemplated and whether or not any problems are likely to arise in the future.**
- **In other words, the PM needs to know the project 's current state and its future expectations. Because PMs are sometimes appointed**

The multiple elements required in the project plan fall into one of the following nine categories.

- 1. Overview.***
- 2. Objectives.***
- 3. General approach.***
- 4. Contractual aspects.***
- 5. Schedules.***
- 6. Resource requirements .***
- 7. Personnel.***
- 8. Risk management.***
- 9. Evaluation methods.***

1. Overview.

- This section contains a brief description of the project and its deliverables (the latter are the project scope), together with a list of the major milestones or significant events in the project schedule and any constraints on the project scope. It is intended for senior management. This section (or the next) should include the *Business Case* for the project.
- The Business Case includes the strategic reasons for the project, its expected profitability and competitive effects as well as the desired scope and any other technical results. The intent of the Business Case is to communicate to project team members (and others) the reasons why the organization is undertaking the project. If not specifically noted elsewhere, the overview can list the project stakeholders, groups (or individuals) who have a legitimate interest in the project or its deliverables.

2. Objectives.

- **This is a more detailed description of the project ' s scope, its deliverables and outcomes. Another approach to describing a project ' s objectives is the project *mission statement*. While somewhat similar to the Business Case, the focus of the mission statement is to communicate to project team members (and others) what will be done to achieve the project ' s overall objectives. To foster team understanding of the project as a whole, a representative group of team members and stakeholders are often included in the process of developing the statement of objectives.**

3. General approach.

- In this section, the technological and managerial approaches to the work are described. An identification of the project as “ derivative, ” “ platform, ” or “ breakthrough ” might be included, as might the relationship between this project and others being undertaken or contemplated by the organization.
- Also noted are plans that go beyond the organization ’ s standard management practices. For example, some firms do not allow the use of consultants or subcontractors without special approval.

4. Contractual aspects.

- **This section contains a complete description of all agreements made with the client or any third party. This list would include all reporting requirements; the technical specifications of all deliverables; agreements on delivery dates; incentives (if any) for performance, for exceeding contractual requirements, and penalties (if any) for noncompliance; specific procedures for making changes in the deliverables, project review dates and procedures; and similar agreements. If relevant, it may contain agreements to comply with legal, environmental, and other constraints on the project work and outputs.**

5. Schedules.

- **Included in this section is an outline of all schedules and milestones. Each task in the project is listed in a project WBS. (The WBS is discussed later in this chapter.) Listed with each task is the time required to perform it. The project schedule is constructed from these data and is included in this section.**

6. Resource requirements

- Estimates of project expenses, both capital and operating, are included here. The costs associated with each task are shown, and overhead and fixed charges are listed. Appropriate account numbers to be charged are listed with the relevant cost items.
- This becomes the *project budget* , though the PM may use a budget that deletes overhead and some fixed charges for day - to - day project management and control. (The details of budget preparation are covered in the next chapter.) In addition, cost monitoring and cost control procedures are described here. The details of materiel acquisition are also detailed in this section.

7. Personnel.

- This section covers the details of the project work force. It notes any special skill requirements, necessary training, and special legal arrangements such as security clearances or nondisclosure agreements. Combined with the schedule, it notes the time - phasing of all personnel requirements.
- Sections 5, 6, and 7 may contain individual notations concerning managerial responsibility for control of each area, (see later in this chapter) detailing the managerial/informational accountability requirements for each person.

8. *Risk management.*

- **“ Learn from experience ” is a widely ignored adage. This section is an attempt to remedy that condition. Planners should list the major and minor disasters that may strike projects similar to the one being undertaken — late subcontractor deliveries, bad weather, unreasonable deadlines, equipment failure, complex coordination problems, changes in project scope, and similar dire happenings. The argument is made that crises cannot be predicted.**

8. *Risk management.*

- **The only uncertainty, however, is which of the crises will occur and when. In any case, dealing with crises does not require a which - and - when prediction. In every project there are times when dependence on a subcontractor, or the good health of a software - code writer, or good weather, or machine availability is critical to progress on a project. Contingency plans to deal with such potential crises should be a standard part of the project plan as well as a permanent file in the PMO.**

9. Evaluation methods.

- **Descriptions of all project evaluation procedures and quality standards are found in this section. Responsibility and control of all project activities, as detailed in the RACI matrix, may be noted here instead in the Personnel section.**
- **Also included are procedures to ensure compliance with all corporate requirements for monitoring, collecting, and storing data on project performance, together with a description of the required project history.**

2. The Planning Process—Overview

- **A great deal has been written about planning. Some of the literature focuses on the strategic aspect of planning — choosing and planning projects that contribute to the organization ' s goals.**
- **Another body of writing is directed at the techniques of how to plan rather than what to plan. These techniques, if we are to believe what we read, differ from industry to industry, from subject to subject.**
- **Architecture has a planning process; so does software development, as does construction, as well as pharmaceutical R & D projects, and campaigns for raising funds for charity**

The Planning Process—Overview cont....

- As far as we can determine, the way that planning techniques vary in these different cases has more to do with nomenclature than substance. Consider, for example, the following planning process that has been divided into **eight** distinct steps.
 - 1.** Develop and evaluate the concept of the project. Describe what it is you wish to develop, including its basic performance characteristics, and decide if getting such a deliverable is worthwhile. If so, continue.
 - 2.** Carefully identify and spell out the actual capabilities that the project 's deliverable must have to be successful. Design a system (product or service) that will have there quisite capabilities.

The Planning Process—Overview cont....

- 3. Create such a system (product or service), which is to say, build a prototype deliverable.**
- 4. Test the prototype to see if it does, in fact, have the desired capabilities. If necessary, cycle back to step 3 to modify the prototype and retest it. Continue until the deliverable meets the preset requirements.**
- 5. Integrate the deliverable into the system for which it was designed. In other words, install the deliverable in its required setting**

The Planning Process—Overview cont....

- 6. Validate the deliverable — which answers the question, “ Now that we have installed the deliverable, does it still work properly? ”**
- 7. If the deliverable has been validated, let the client test it. Can the client operate the system? If not, instruct the client.**
- 8. If the client can operate (and accepts) the deliverable, make sure that the client understands all standard operating and maintenance requirements. Then shake the client ’ s hand, present the client with a written copy of maintenance and operating instructions, give the client the bill, and leave.**

The Planning Process—Overview cont....

- **There are many techniques for developing a project plan and Project Charter. They are fundamentally similar. All of them use a systematic analysis to identify and list the things that must be undertaken in order to achieve the project ' s objectives, to test and validate the plan, and to deliver it to the user.**

3. The Planning Process—Nuts and Bolts.

- **This section deals with the problem of determining and listing the various tasks that must be accomplished in order to complete a project. The important matters of generating a project budget and developing a precise project schedule are left to succeeding chapters, though much of the raw material for doing those important things will come from the planning process described here.**

The Planning Process—Nuts and Bolts cont. ...

- **The Launch Meeting — and Subsequent Meetings**
- **Sorting Out the Project — The Work Breakdown Structure (WBS)**
- **Extensions of the Everyday WBS**

The Planning Process—Nuts and Bolts cont. ...

- **The project launch meeting sets the project scope, elicits cooperation of others in the organization, demonstrates managerial commitment to the project, and initiates the project plan. The plan itself is generated through a hierarchical planning process by which parts of the plan are sequentially broken down into finer levels of detail by the individuals or groups that will implement them. The result is a WBS that lists all the tasks required to carry out the plan together with task resource requirements, durations, predecessors, and identification of the people responsible for each task.**

4. More on the Work Breakdown Structure and Other Aids

- **At times, PMs seem to forget that many of the conventional forms, charts, and tables that they must fill out are intended to serve as aids, not punishments. They also forget that the forms, charts, and tables are not cast in bronze, but, like Emeril ' s recipes, may be changed to fi t the PM ' s taste.**

More on the Work Breakdown Structure and Other Aids cont. ...

- The process of building a WBS is meaningful. The PM and individual team members may differ on the technical approach to working on the task, the type and quantity of resources needed, or the duration for each subtask. If so, negotiation is apt to accompany the planning process. As usual, participatory management and negotiation often lead to improved project performance and better ways of meeting the project ' s goals. We have described the process to construct the project WBS above, but it bears repeating.

More on the Work Breakdown Structure and Other Aids cont. ...

- 1. All project activities will be identified and arranged in successively finer detail, that is, by levels.**
- 2. For each activity, the type and quantity of each required resource (including personnel) are identified.**
- 3. For each activity, predecessors and task duration are estimated.**
- 4. All project milestones are identified and located on the project schedule following their predecessor activities.**
- 5. For each activity, the individual or group assigned to perform the work is identified. Acceptance of the assignment is noted by “ signing - off. ” In addition, we can determine several other pieces of information from the items previously listed.**

More on the Work Breakdown Structure and Other Aids cont. ...

6. If project milestones, task durations, and predecessors are combined, the result is the project master schedule. Additional time allowances for contingencies may be added, though we will later argue against this way of dealing with uncertainty.

More on the Work Breakdown Structure and Other Aids cont. ...

7. The master schedule allows the PM to compare actual and planned task durations and resource usage at any level of activity, which is to say that the master schedule is also part of a control document, the Project Charter. The need for such comparisons dictates what information about project performance should be monitored. This gives the PM the ability to control the project and take corrective action if the project is not proceeding according to plan.

5. Multidisciplinary Teams—Balancing Pleasure and Pain

- **Integration Management**

❑ The problems of integration management are easily understood if we consider the traditional way in which products and services were designed and brought to market. The different groups involved in a product design project, for example, did not work together.

5. Multidisciplinary Teams—Balancing Pleasure and Pain

- ❑ They worked independently and sequentially. First, the product design group developed a design that seemed to meet the marketing group ' s specifications. This design was submitted to top management for approval, and possible redesign if needed. When the design was accepted, a prototype was constructed. The project was then transferred to the engineering group who tested the prototype product for quality, reliability, manufacturability, and possibly altered the design to use less expensive materials.
- ❑ There were certain to be changes, and all changes were submitted for management approval, at which time a new prototype was constructed and subjected to testing.

Multidisciplinary Teams—Balancing Pleasure and Pain cont. ...

- **Interface Coordination — Interface Management**

- ❑ One of the PM ' s more difficult problems when working with MTs is coordinating the work of different functional groups interacting as team members. The team members come from different functional areas and often are not used to dealing with one another directly.
- ❑ For the most part, they have no established dependencies on each other and being co - members of a team is not sufficient to cause them to associate — unless the team has a mission that makes it important for the members to develop relationships.

Multidisciplinary Teams—Balancing Pleasure and Pain cont. ...

- **The Design Structure Matrix**

- ☐ One observation that can be made regarding integration management and parallel tasking is that both are fundamentally concerned with coordinating the flow of information.
- ☐ Furthermore, while the need to coordinate the flow of information is a challenge that confronts virtually all projects, the use of MTs tends to magnify this challenge.
- ☐ This is particularly true for new product development projects.

Multidisciplinary Teams—Balancing Pleasure and Pain cont. ...

- **Comments on Empowerment and Work Teams**
- **Some of the more important advantages of empowerment are:**
 1. Teams generate high - quality solutions to appropriate problems.
 2. Micromanagement is avoided.
 3. The team is given accountability for some part of the project deliverable.
 4. Synergistic solutions are frequent.
 5. The PM has a tool for timely team evaluation and feedback.

Multidisciplinary Teams—Balancing Pleasure and Pain cont. ...

- **The task of managing the ways in which different groups interact during planning and implementation of projects is called “interface coordination.” An important aid to interface coordination is mapping the interactions of the various groups.**

Multidisciplinary Teams—Balancing Pleasure and Pain cont. ...

- **The task of integrating the work of these groups is called integration management. Parallel tasking allows all groups involved in designing a project to work as a single group and join together to solve design problems simultaneously rather than separately and solving the problems sequentially.**
- **When information from some project activities is required to complete other activities, the Design Structure Matrix may be quite useful.**