

AN OVERVIEW OF PROJECT PLANNING

Project Planning is at the heart of the project life cycle.

- The Planning Phase is when the project plans are documented, the project deliverables and requirements are defined, and the project schedule is created.
- It involves creating a set of plans to help guide your team through the implementation and closure phases of the project.
- The plans created during this phase will help you manage time, cost, quality, changes, risk, and related issues.
- They will also help you control staff and external suppliers to ensure that you deliver the project on time, within budget, and within schedule.
- The project planning phase is often the most challenging phase for a project manager, to guess about the staff, resources, and equipment needed to complete your project.

Purpose of the Project Planning Phase

- 1) Establish business requirements like cost, schedule, list of deliverables, and delivery dates.
- 2) Establish resources plans.
- 3) Obtain management approval and proceed to the next phase.

The Basic Processes of Project Planning :

1) Scope Planning:

Specifying the in-scope requirements for the project to facilitate creating the work breakdown structure.

2) Preparation of the Work Breakdown Structure:

Spelling out the breakdown of the project into tasks and sub-tasks.

3) Project Schedule Development :

Listing the entire schedule of the activities and detailing their sequence of implementation.

4) Resource Planning :

Indicating who will do what work, at which time, and if any special skills are needed to accomplish the project tasks.

5) Budget Planning:

Specifying the budgeted cost to be incurred at the completion of the project.

6) Procurement Planning:

Focusing on vendors outside your company and subcontracting.

7) Risk Management :

Planning for possible risks and considering optional emergency plans and strategies.

8) Quality Planning :

Assessing quality criteria to be used for the project.

9) Communication Planning :

Designing the communication strategy with all project stakeholders.

Project Objectives:

1) Specific

- Get into the details.
- Objectives should be specific and written in clear, short, and understandable terms.

2) Measurable

- Use quantitative language.
- To know about the completion of the project.

3) Acceptable

Agreed with the stakeholders.

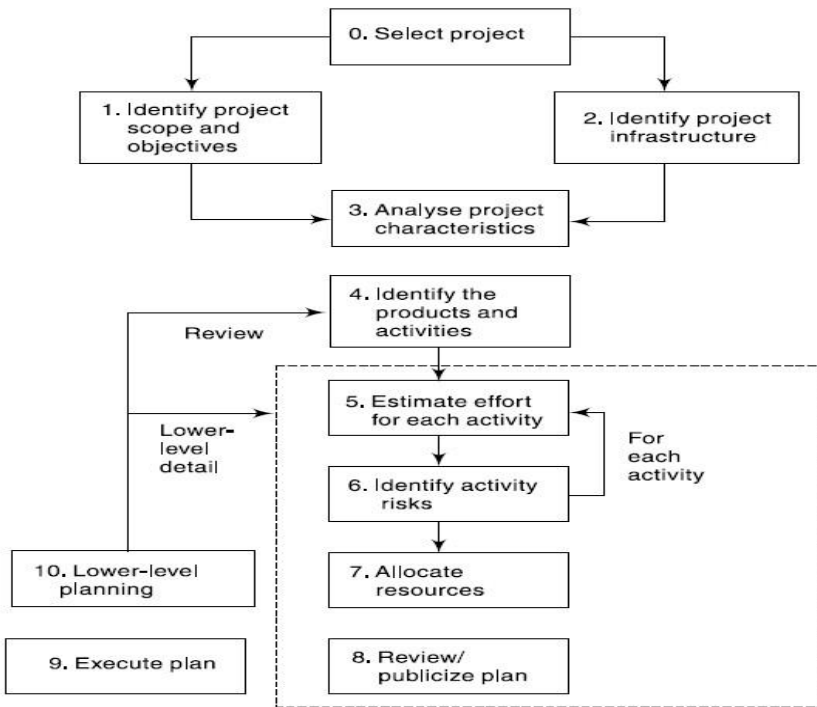
4) Realistic

- In terms of achievement (Only Possible)
- Objectives that are impossible to accomplish are not realistic and not reachable.

5) Time Based

- Deadlines not durations.
- Objectives should have a time frame with an end date assigned to them.

Steps Involved in Project Planning



Step	Activities within step
0	Select project
1	Identify project scope and objectives 1.1 Identify objectives and measures of effectiveness in meeting them 1.2 Establish a project authority 1.3 Identify stakeholders 1.4 Modify objectives in the light of stakeholder analysis 1.5 Establish methods of communication with all parties
2	Identify project infrastructure 2.1 Establish relationship between project and strategic planning 2.2 Identify installation standards and procedures 2.3 Identify project team organization
3	Analyse project characteristics 3.1 Distinguish the project as either objective- or product-driven 3.2 Analyse other project characteristics 3.3 Identify high-level project risks 3.4 Take into account user requirements concerning implementation 3.5 Select general life-cycle approach 3.6 Review overall resource estimates

4	Identify project products and activities
4.1	Identify and describe project products (including quality criteria)
4.2	Document generic product flows
4.3	Recognize product instances
4.4	Produce ideal activity network
4.5	Modify ideal to take into account need for stages and checkpoints
5	Estimate effort for each activity
5.1	Carry out bottom-up estimates
5.2	Revise plan to create controllable activities
6	Identify activity risks
6.1	Identify and quantify activity-based risks
6.2	Plan risk reduction and contingency measures where appropriate
6.3	Adjust plans and estimates to take account of risks
7	Allocate resources
7.1	Identify and allocate resources
7.2	Revise plans and estimates to take account of resource constraints
8	Review/publicize plan
8.1	Review quality aspects of project plan
8.2	Document plans and obtain agreement
9/10	Execute plan/lower levels of planning
	This may require the reiteration of the planning process at a lower level

SELECT PROJECT

- This is called Step 0, because in a way it is outside the main project planning process.
- Proposed projects do not appear out of thin air.
- Some process must decide to initiate this project rather than some other.

IDENTIFY PROJECT SCOPE AND OBJECTIVES

The activities in this step ensure that all the parties to the project agree on the objectives and are committed to the success of the project.

- Identify objectives and practical measures of the effectiveness in meeting those objectives.
- Establish a project authority.
- Stakeholder analysis - identify all stakeholders in the project and their interests.
- Modify objectives in the light of stakeholder analysis.
- Establish methods of communication with all parties.

INFRASTRUCTURE

Identifying Project Infrastructure:

- Projects are never carried out in a vacuum.
- There is usually some kind of existing infrastructure into which the project must fit.
- Where project managers are new to the organization, they must find out the precise nature of this infrastructure.
- This could be the case where the project manager works for an outside organization carrying out the work for a client.

Identify Relationship between the Project and Strategic Planning.

- It is a technical framework within which the proposed new systems to be fit.
- Hardware and software standards for various systems can communicate with each other.
- Technical strategic decisions should be documented as part of an enterprise architecture process.

Identify Installation Standards and Procedures.

The quality checks that need to be done at each point of the project life cycle or these may be documented in a separate quality standards and procedures manual.

Identify Project Team Organization

High-Level Managerial Decision might have been taken that software developers and business analysts will be in different groups, or that the development of Business - to - Consumer Web Applications will be done within a separate group from that responsible for traditional database applications.

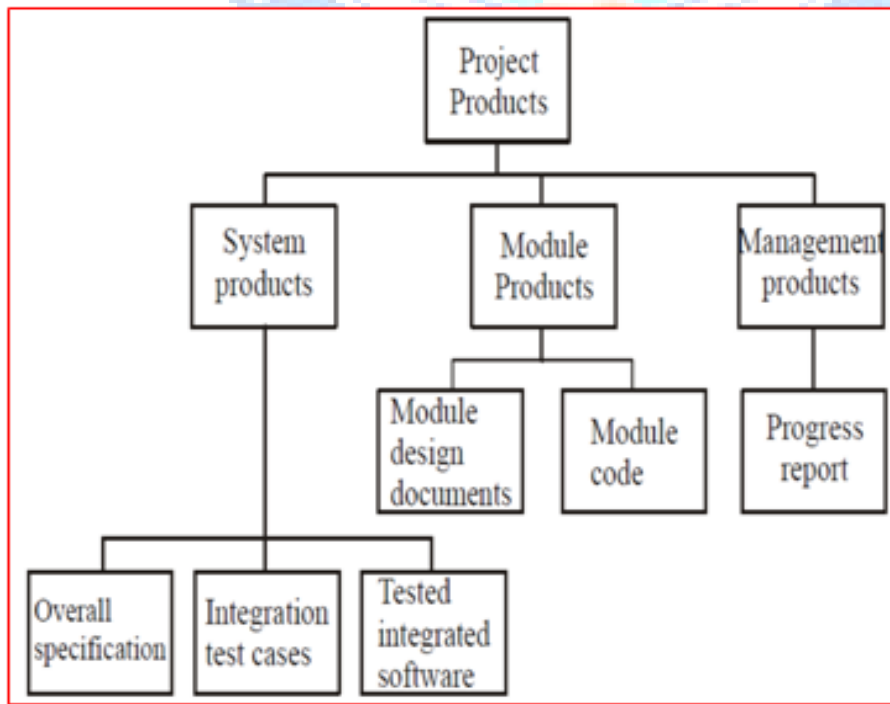
PROJECT PRODUCTS AND CHARACTERISTIC

- These products will include a large number of technical products, such as training material and operating instructions.
- There will also be products to do with the management and the quality of the project.
- The detailed planning of the individual activities are ,

Identify and Describe Project Products (or Deliverables)

- The products will form a hierarchy
- The main products will have sets of component products which in turn may have sub-component products, and so on.
- These relationships can be documented in a Product Breakdown Structure (PBS).

- In this example the products have been grouped into those relating to the system as a whole, and those related to individual modules. A third group, which happens to have only one product, is called 'management products' and consists of progress reports.
- Common error is to identify as products things that are really activities, such as training, design and testing.
- Specifying documentation as a product should also be avoided.
- These specify that products at the bottom of the PBS should be documented by Product Descriptions which contain:
 - 1) The name / identity of the product;
 - 2) The purpose of the product;
 - 3) The derivation of the product;
 - 4) The composition of the product;
 - 5) The form of the product;
 - 6) The relevant standards;
 - 7) The quality criteria that should apply to it.



Document Generic Product Flows

- A program design must be created before the program can be written and the program specification must exist before the design can be commenced.
- These relationships can be portrayed in a product flow diagram (pfd).
- the 'FLOW' in the diagram is assumed to be from top to bottom and left to right.
- 'USER REQUIREMENTS' is in an oval which means that it is used by the project but is not created by it.
- It is often convenient to identify an overall product at the bottom of the diagram, in this case 'integrated/tested software', into which all the other products feed.

Recognize Product Instances

- Where the same generic PFD fragment relates to more than one instance of a particular type of product, an attempt should be made to identify each of those instances.
- In the above example, component software modules in the software to be built.

Produce Ideal Activity Network

- In order to generate one product from another there must be one or more activities that carry out the transformation.
- By identifying these activities, we can create an activity network which shows the tasks that have to be carried out and the order in which they have to be executed.

Modify the ideal to take into account need for stages and Checkpoints

- The approach to sequencing activities described above encourages the formulation of a plan which will minimize the overall duration, or elapsed time, for the project.
- It assumes that an activity will start as soon as the preceding ones upon which it depends have been completed.
- There might, however, be a need to modify this by dividing the project into stages and introducing checkpoint activities.
- These are activities which draw together the products of preceding activities to check that they are compatible.

- This could potentially delay work on some elements of the project – there has to be a trade-off between efficiency and quality.
- The people to whom the project manager reports could decide to leave the routine monitoring of activities to the project manager.
- However, there could be some key activities, or milestones, which represent the completion of important stages of the project of which they would want to take particular note. Checkpoint activities are often useful milestones.

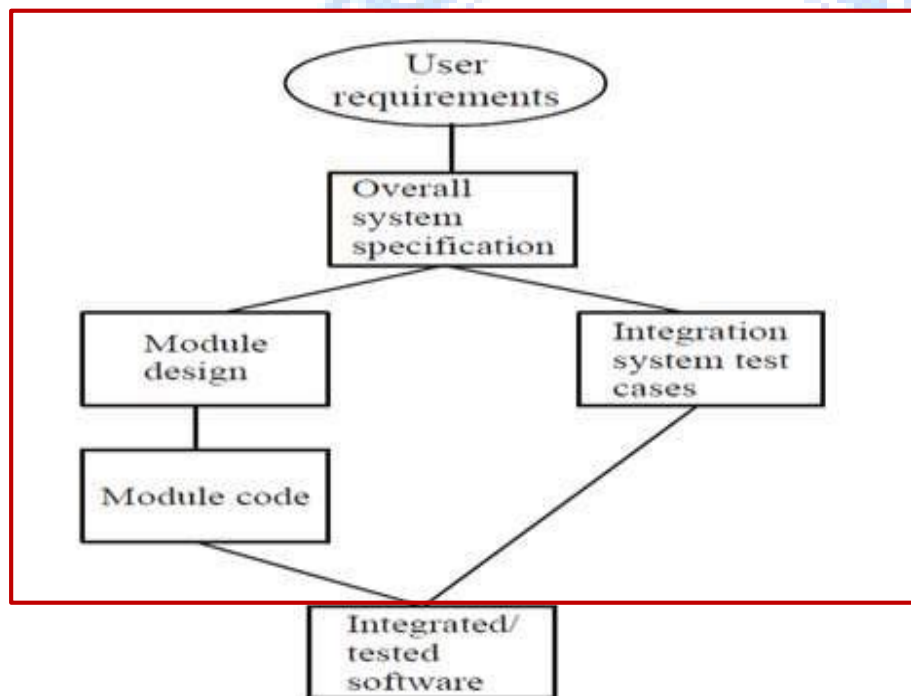


Fig: Product Flow Diagram [for Software Development]

ESTIMATE EFFORT

Step 5.1: Carry out bottom-up estimates

Step 5.2: Revise plan to create controllable activities

- The difference between elapsed time and effort should be noted.
- Effort is the amount of work that needs to be done.
- If a task requires three members of staff to work for two full days each, the effort expended is six days.
- Elapsed time is the time between the start and end of a task.

- In our example above, if the three members of staff start and finish at the same time then the elapsed time for the activity would be two days.

IDENTIFY ACTIVITY RISKS

Step1:

- Identify and quantify activity-based risks. Risks inherent in the overall nature of the project have already been considered in
- We now want to look at each activity in turn and assess the risks to its successful outcome.
- Any plan is always based on certain assumptions. Say the design of a component is planned to take five days.
- This is based on the assumption that the client's requirement is clear and unambiguous.
- If it is not then additional effort to clarify the requirement would be needed.

Step 2: Make risk reduction and contingency measures where ever appropriate

Step 3: Adjust overall plans and estimates to take account of risks

ALLOCATE RESOURCES

Step 1:

- Identify and allocate resources
- The type of staff needed for each activity is recorded.
- The staff available for the project is identified and is provisionally allocated to tasks.

Step 2:

- Revise plans and estimates to take into account resource constraints
- Some staff may be needed for more than one task at the same time and, in this case, an order of priority is established.
- The decisions made here may have an effect on the overall duration of the project when some tasks are delayed while waiting for staff to become free.

Ensuring someone is available to start work on an activity as soon as the preceding activities have been completed might mean that they are idle while waiting for the job to start and are therefore used inefficiently.