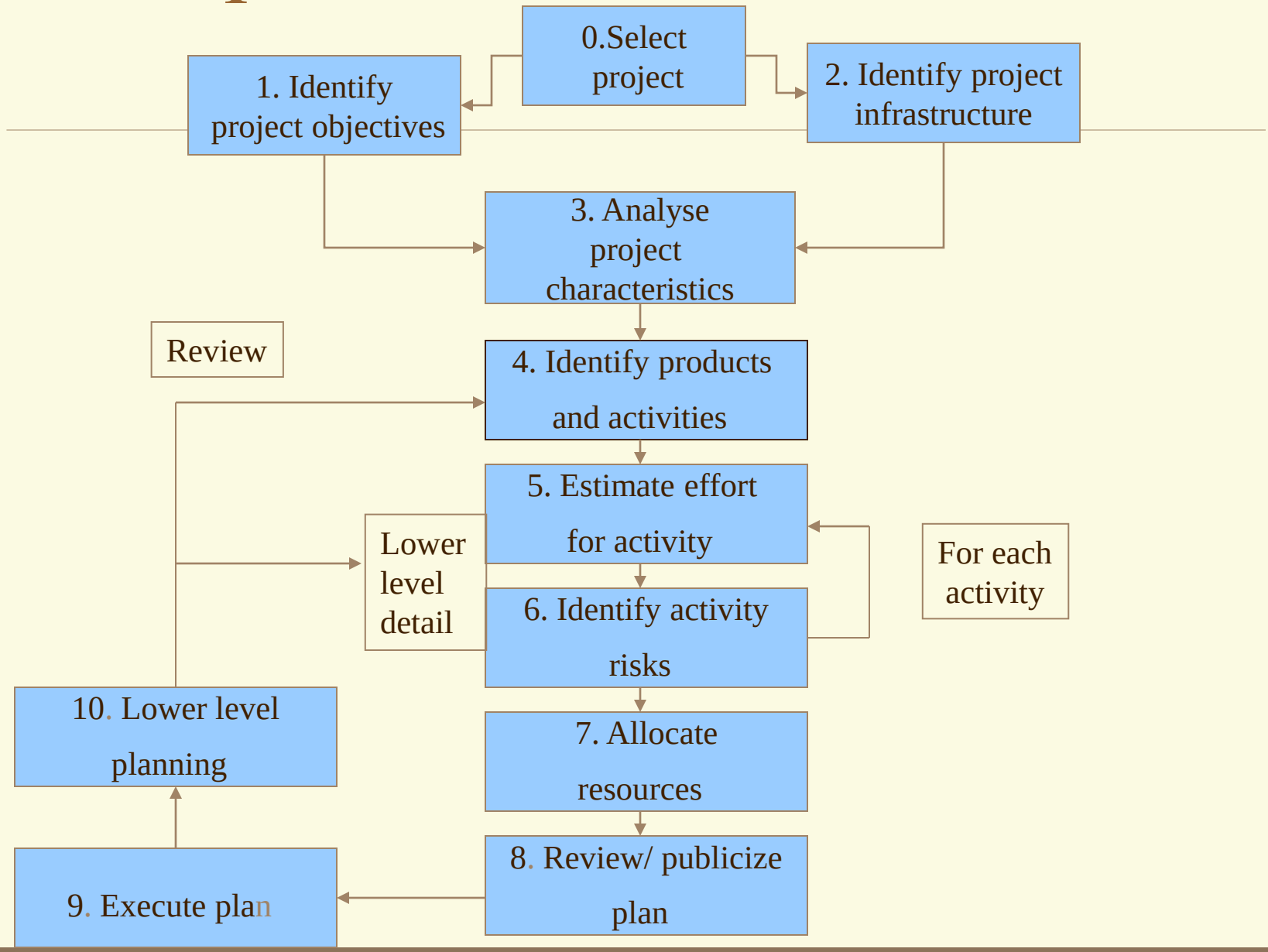
Step Wise Overview of Project Planning

Questions from customer

- do you understand my problem and my needs?
- can you design a system that will solve my problem and satisfy my needs?
- how long will it take to develop such a system?
- how much will it cost to have you develop such a system?

‘Step Wise’ - an overview



Project Planning

- Project Manager reviews contractual commitment.
- Creates plan.
- Project plan involves:
  - Life-cycle process to be followed.
  - Estimating the effort.
  - scheduling

Planning (cont…)

- Quality and configuration management
- Risk management

- Principle: plan outline

Step 0: Select Project

- Outside the main project planning process.
- Initiation is required.
- Feasibility study.

Step 1: Identify project scope and objectives

- Scope of s/w project
- Project manager defines the scope.
- Agreement of all the parties.
- Ensure commitment.

Step 1.1 Identify objectives and practical measure of effectiveness in meeting those objectives.

- Measure of effectiveness: tells how successful the project has been.
- Success in achieving those objectives.

Step 1.2 Establish a project authority.

- Single overall authority is needed for the unity of work done by all the people.

  (project steering committee or project board or project management board)

Step 1.3 Stakeholder analysis

- Identify all the stakeholders.
- Their interest in project.

Step 1.4 Modify objectives in the light of stakeholder analysis

- Adding new features suggested by the stakeholders.
- Full cooperation and commitment could be assured.

Step 1.5 Establish methods of communication with all parties.

- Communication with all the people involved in the project.

Step 2: Identify project infrastructure

- Infrastructure needed for a particular project.
- The project leader responsible for finding out the infrastructure.

Step 2.1 Identify relationship between the project and strategic planning

- What order the project should be carried out.
- Establish a framework.

Step 2.2 Identify installation standards and procedures.

- Should define their development procedures.
- Should be documented as the product is created at each stage.

Step 2.3 Identify project team organization

- Project is divided among different teams.
- Should identify the project team.
- programmers and system analysts put into different teams.
- Eg:Development of PC application and mainframe application in different groups.

Step 3: Analyze Project characteristics.

- Ensure that appropriate methods are used for the project.

Step 3.1 Distinguish the project as either objective or product driven

- Identify the project by their aim whether the project is required for meeting some objectives or to produce a product.

Step 3.2 Analyze other project characteristics.

- Including quality based-ones.
- Will the system be safe critical.
- i.e. where human life could be threatened by a malfunction.

Step 3.3 Identify high level project risks

- Risk that threaten the successful outcome of the project.

Step 3.4 Take into account user requirements concerning implementation

- User requirement in order to fulfill their needs.

Step 3.5 Select development methodology and life cycle approach

- How the development methods is carried out
- **Methodology :**group of methods to be used in a project.
- and life cycle approach to be used.

Step 3.6 Review overall resource estimates

- After estimating the risks and approach good point is to re-estimate the effort and other resources required for the project.

Step 4:Identify the project products and activities

- More detailed planning of the process takes place.
- Longer term planning is broad and outline
- Immediate tasks are planned in detail.

Step 4.1 Identify and decribe project products(or deliverables)

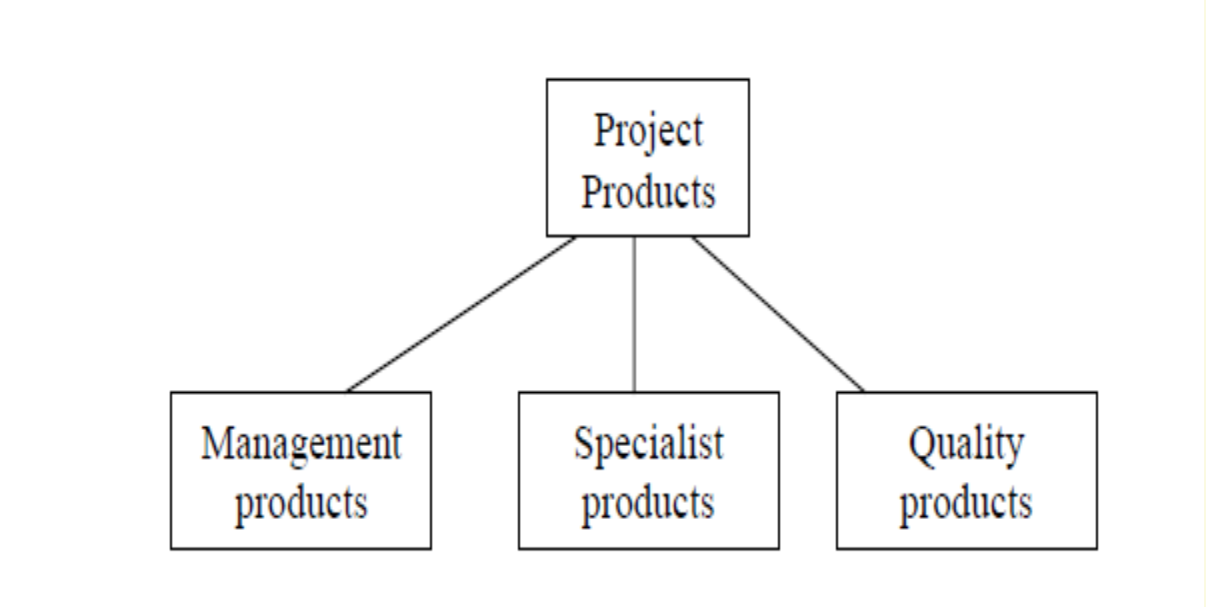
- Products form an hierarchy. (Product is result of an activity)
- Main products-set of component products-sub component products and so on...
- The relationship are documented in PBS (Product Breakdown Structure)

Product Breakdown Structure

- It’s an exhaustive ,hierarchical tree structure of components that make up an item arranged in a whole-part relationship.
- Help clarifying what is to be delivered by the project.

Example of PBS

- **E.g. PBS of a computer.**
- **Main unit**
  - **Housing**
  - **Motherboard**
    - **CPU**
    - **RAM chips**
    - **...**
  - **FDD**
  - **HDD**
  - **Video card**
  - **Sound card**
  - **Network card**
  - **LPT port card**
- **Monitor**
  - **CRT**
  - **Housing**
  - **Electronic components**
- **Mouse**
  - **Body**
  - **Marble**
  - **Cable**
- **Keyboard**
  - **...**


Project Products
Management products
Specialist products
Quality products

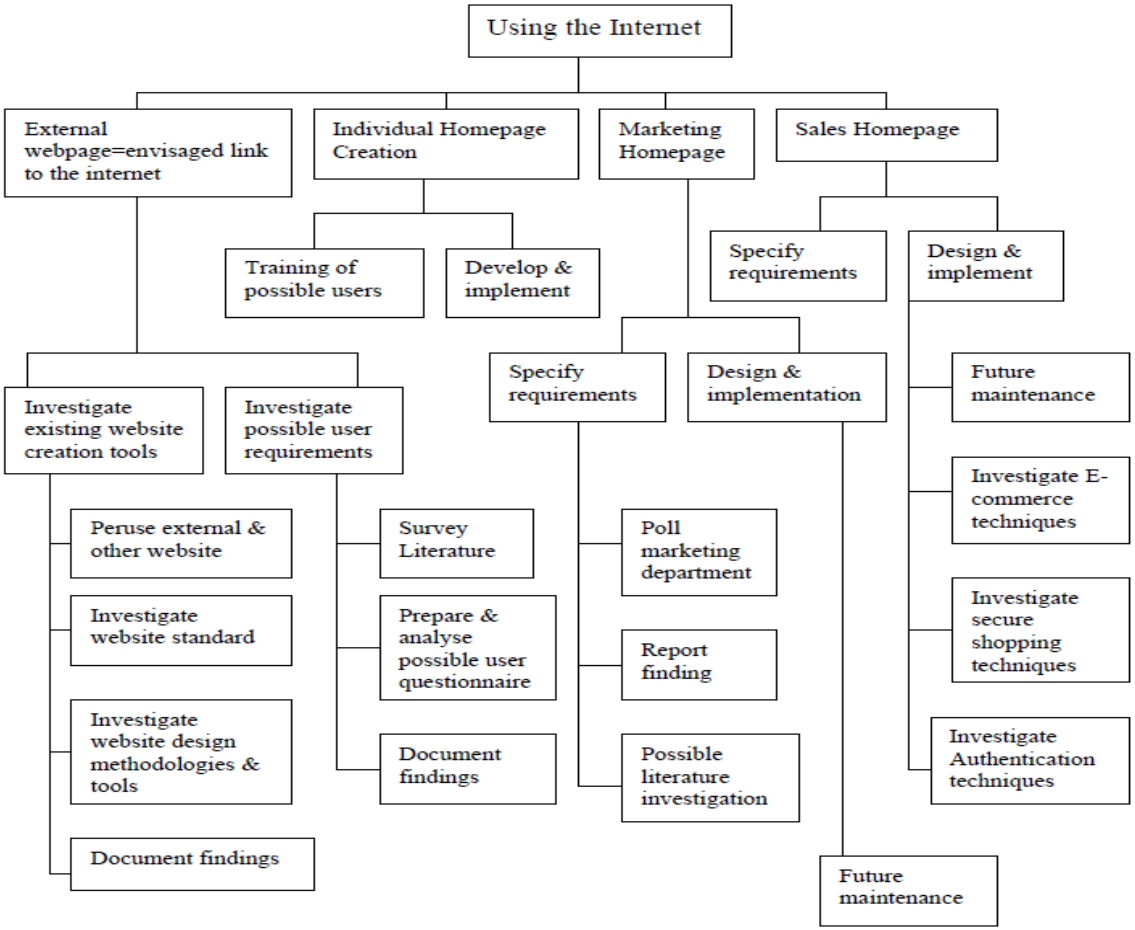


Figure 1: PBS for "Using the Internet"

Step 4.2:Document generic product flows

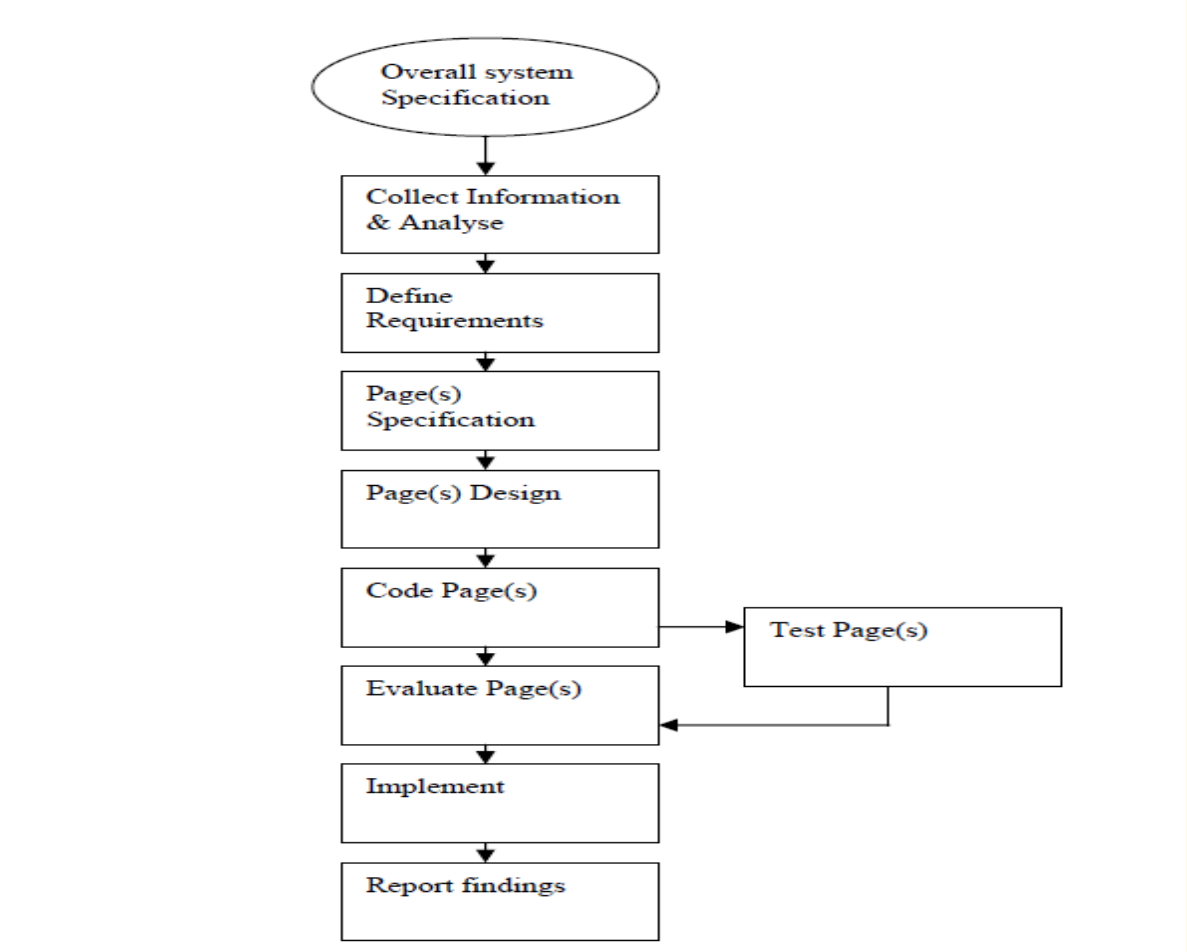
- Existence of one or more product.
- E.g. program design should be there before coding, documentation should be there before design.
- These relationship can be shown using PFD (Product Flow Diagram)

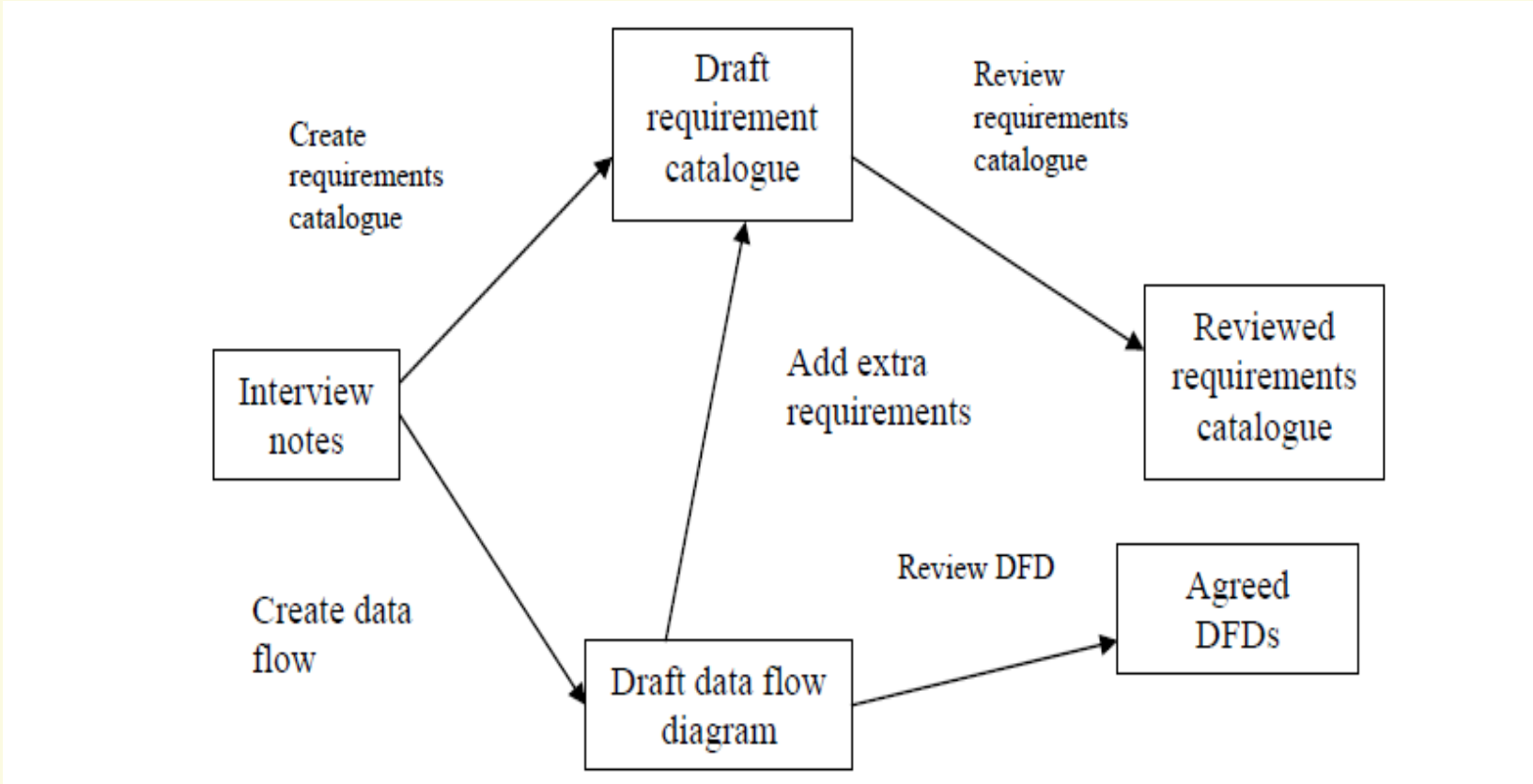
Product Flow Diagram

- PFD specifies which product must be completed before next can be produced.
- Flow in the diagram is from top to bottom and left to right.

PFD (continues..)

- Some items are intermediate products, needed only to help produce other products.
  - **Indicated by boxes.**
- Some items will exist already
- Used by project but is not created by it
  - **Feasibility study**
  - **Indicated by ovals (ellipse)**


Overall system Specification
Collect Information & Analyse
Define Requirements
Page(s) Specification
Page(s) Design
Code Page(s)
Test Page(s)
Evaluate Page(s)
Implement
Report findings


Draft requirement catalogue
Review requirements catalogue
Create requirements catalogue
Reviewed requirements catalogue
Interview notes
Add extra requirements
Review DFD
Agreed DFDs
Create data flow
Draft data flow diagram

Step 4.3 Recognize product instances.

- When same PFD fragment relates to more than one instances of a product.
- Attempt to identify those instances.

Step 4.4: Produce ideal activity network.

- Identifying the all activities that produce a product can create an activity network.
- Activity network: shows the tasks to carried out and the order in which they are executed.

Step 4.5:Modify the ideal to take into account need for stages and checkpoints

- Ideal activity network should be modified by dividing into stages and inserting checkpoints.
- Checkpoints draws together the products of proceeding activities to check that they are compatible.
- Delay some work.

Activities and Milestones

- Milestones indicate measurable level of progress
- Each milestone completed can be reported or demonstrated to the customer.
- An **activity** is part of a project that takes place. A milestone is a completed activity

Step 5: Estimate the effort for each activity.

Step 5.1: Carry out bottom-up estimates.

- Estimation of the staff effort required.
- The probable elapsed time.
- Elapsed time-it's time between start and end of a task.
- Non-staff resource needed.
- Estimation may vary according to the activity.

Step 5.2:Revise plan to create controllable activities.

- some activity takes long time.
- Long activity make project difficult to control.

Step 6: Identify activity risk

Step 6.1: identify and quantify activity-based risks

- Project plan is based on huge assumptions.
- To identify risk is more important.
- Damage caused by each risk should be identified.
- If risk occurs, it make the task longer or more costly.

Step 6.2:Plan risk reduction and contingency measures where appropriate

- Avoid or at least reduce some of the identified risks.
- Contingency measures: action that is to be taken if risk materializes.
- E.g. contract staff.

Step 6.3: Adjust overall plans and estimates to take account of risks.

- Change our plan by adding new activities that reduce risks.
- E.g. new programming language requires training of developers.

Step 7 :Allocate resources

Step 7.1: Identify and allocate Resources

- Type of staff needed for each activity is recorded.
- Staff available for the project is identified.
- Allocated to tasks.

Step7.2:Revise plan and estimates to take into account resource constraints.

- Ensuring that staffs are available as soon as the proceeding work is completed.
- Gantt chart.

Gantt Charts

- Shows all project activities and their
  - start, finish and slippage time
  - total duration
  - slack time
  - critical periods
  - dates associated within these times
- in Bar Chart form

Step 8: Review/publicize plan

Step 8.1: Review quality aspects of the project plan

- Ensure that activity is properly completed not giving a chance to re-work.
- Each task should have ‘exit requirement’.
- These are quality checks that have to be done before the activity can be signed off as completed.

Step 8.2:Document plan and obtain agreement

- Careful documentation of the plan.
- All the parties to project understand and agree to the commitment in the plan.

Step 9 and 10:Execute plan and lower level planning

- Plan drawn up in detail for each stage.
- Detailed planning of the later stages is delayed as more information is available as we reach nearer the start of the stage.

Key Points

- Effective management depends on planning
- Planning and estimating are iterative
- Project milestones should be dispersed throughout the project
- Managers must analyse options thoroughly
- Project scheduling must account for interrelationships