

CONTROLLING & MONITORING

1. Control and monitoring:

- Measuring the status of work performed.
- Comparing the status with what was planned to be accomplished to date.
- Acting to correct any deviation to get back on target.

2. Controlling and monitoring activities

- Planning performance.
- Observing actual performance.
- Comparing actual and planned performance.
- Adjusting as required.

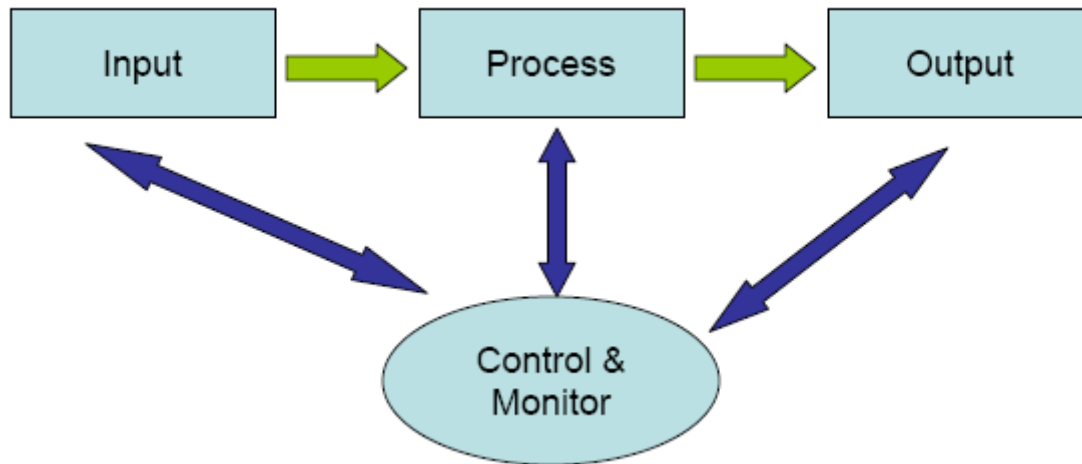
3. Feedback

- Timely provision of comprehensive control information at each stage of the implementation process.

4. Monitoring activities

- Monitor all aspects of project:
 - Budget
 - Schedule
 - Manpower
 - Material utilization
 - Team moral, etc.
- Regular feedback meetings with project team.
- Compare progress with schedule.

5. Project Control System

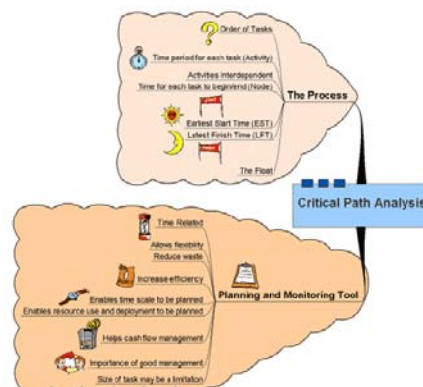


6. Methods use in controlling and monitoring:

- Critical Path Analysis (CPA)
- Program Evaluation & Review Technique (PERT)
- Gantt Chart
- Benchmarking

7. Critical Path Analysis (CPA)

- List all activities for the plan.
- For each activity, determine starting, duration and ending, dependence, sequential or parallel to other activities.
- Plot the activity as circle and arrow diagram
- In summary CPA is:



- Listing activities

Task	Possible start	Length	Type	Dependent on...
1. High level analysis	week 1	5 days	sequential	
2. Selection of hardware platform	week 1	1 day	sequential	1
3. Installation and commissioning of hardware	week 3	2 weeks	parallel	2
4. Detailed analysis of core modules	week 1	2 weeks	sequential	1
5. Detailed analysis of supporting utilities	week 1	2 weeks	sequential	4
6. Programming of core modules	week 4	3 weeks	sequential	4
7. Programming of supporting modules	week 4	3 weeks	sequential	5
8. Quality assurance of core modules	week 5	1 week	sequential	6
9. Quality assurance of supporting modules	week 5	1 week	sequential	7
10. Core module training	week 7	1 day	parallel	6

- In figure:

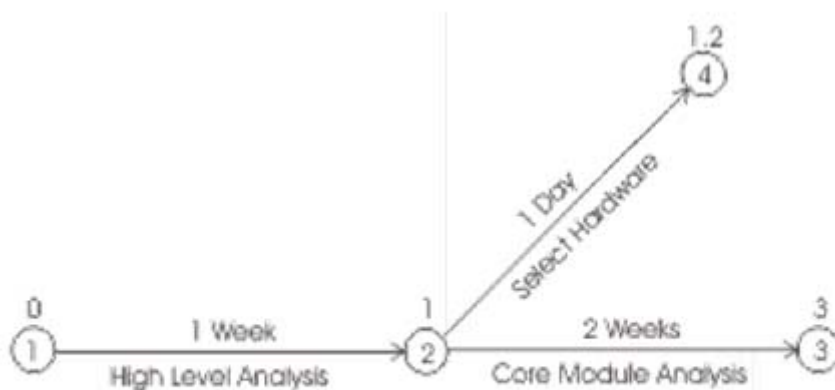


Figure 3: Circle and Arrow Diagram showing two activities that cannot be started until the first activity has been completed.

Figure 4: Circle and Arrow Diagram showing an activity (6 to 7) that cannot start until other activities (12 to 6, 5 to 6, and 9 to 6) have been completed.

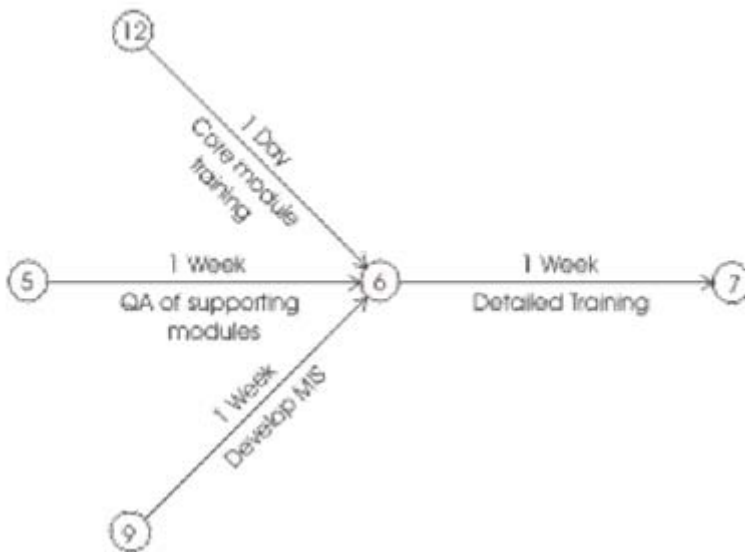
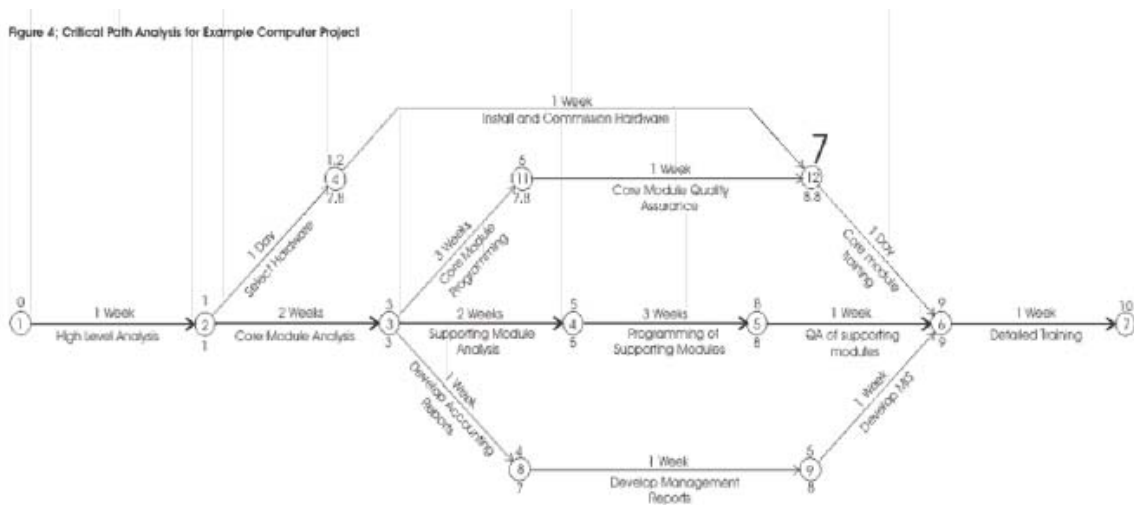


Figure 4: Critical Path Analysis for Example Computer Project



8. Program Evaluation & Review Technique (PERT)

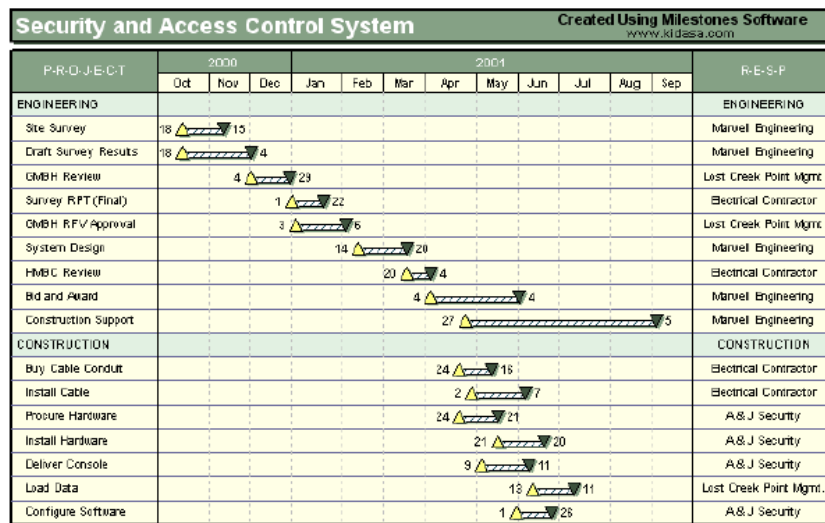
- List all the activities for the plan.
- Estimate shortest possible time, longest possible and likely length of time.
- Use the formula below to calculate the time to use for each project stage:

$$\frac{\text{shortest time} + 4 \times \text{likely time} + \text{longest time}}{6}$$

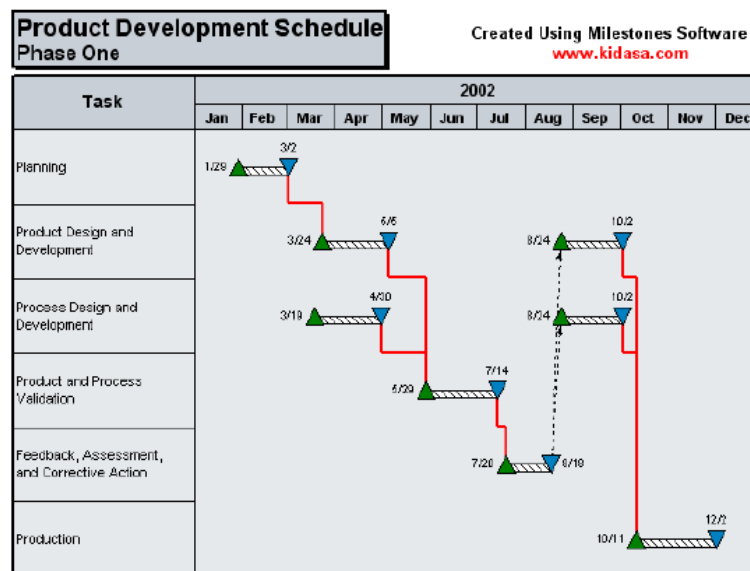
- PERT is a variant of SPA that takes a more skeptical view of the time needed to complete each project stage.

9. Gantt Chart

- A graphical representation of the duration of tasks against the progression of time.
- It is a useful tool for planning and scheduling projects.
- It is helpful when monitoring a project’s progress.
- Example of Gantt Chart:



Example Gantt Chart with dependence



10. Benchmarking

- When organizations want to improve their performance, they benchmark. That is, they compare and measure their policies, practices, philosophies, and performance measure against those of high-performing organizations anywhere in the world.
- “Improving ourselves by learning from other.”
- Benchmarking is simply about making comparisons with other organizations and then learning the lessons that those comparisons throw up.” (source: The European Benchmarking Code of Conduct)
- “Benchmarking is the continuous process of measuring products, services and practices against the toughest competitors or those companies recognized as industry leaders (best in class).” (source: The Xeror Corporation)