

PROJECT MANAGEMENT (4.6)

(Chapter 27 - A Level 4.6)

A **project** consists of specific tasks that arise from the need for a business to change. All projects, both large and small, require managing. Examples of projects could include :

- Opening a new shop
- Launching an advertising campaign
- Building a new factory
- Designing and launching a new product

For a project to be successful, it will require :

- ❖ **Resources**, enough workers, equipment and materials needed
- ❖ **Time** and **money**
- ❖ Carefully set and defined **objectives**
- ❖ Giving each team member a **clear role**
- ❖ Good **management**

Reasons why projects fail?

- Customers were not involved in the process (didn't do market research)
- Did not have enough resources (money, employees etc.)
- Poor management and therefore poor planning
- Incompetent project team
- Project became outdated due to changing business environment (no longer trendy)

What is the impact of project failure?

- **Bad publicity**
- **Penalty payments** having to be paid to the customers
- **Lost future contracts**, may be seen as unreliable by future potential investors / partners
- **Money** and **resources** spent on project **wasted**

Critical path analysis and network diagrams

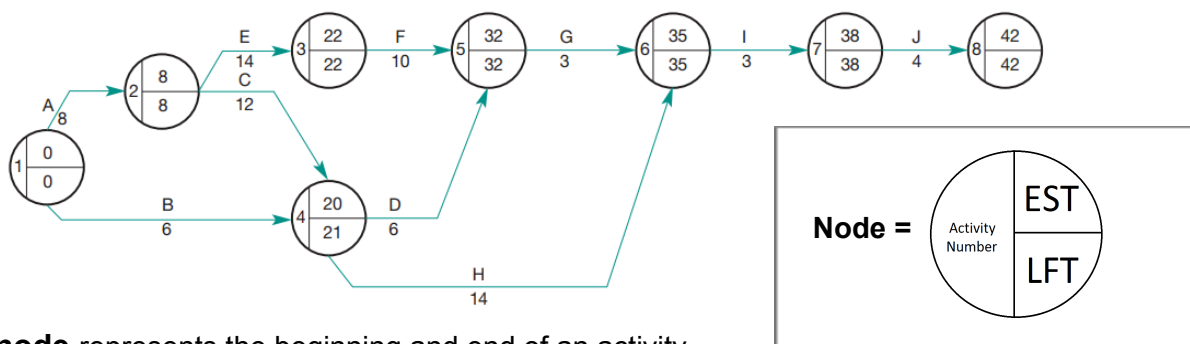
Critical path analysis is a planning technique that identifies all tasks in a project, puts them in the correct sequence and allows for the identification of the critical path. The advantages and disadvantages of critical path analysis are as follows :

- (✓) Helps with planning and organising tasks and equipment
- (✓) Helps determine the longest possible time a project may take to complete
- (✗) Can be costly and time consuming
- (✗) Relies on assumptions, isn't a guarantee (it's also very confusing :[)

The process of using critical path analysis includes the following steps :

1. **Identify the objective of the project**, e.g. building a factory in six weeks.
2. Put the tasks that make up the project into the right sequence and **draw a network diagram**.
3. **Add the times** set for each of the activities
4. Identify the **critical path** – those activities that must be finished on time for the project to be finished in the shortest time.
5. Use the network as a control tool when problems occur during the project.

A **network diagram** can be drawn to help identify the *critical path*.



A **node** represents the beginning and end of an activity.

The **earliest start time (EST)** is found by looking at the earliest finished times of previous activities. The EST of the final node/activity shows the overall possible minimum duration of the project.

The **latest finish time (LFT)** is found by adding the **dummy activities** (letter times) to the previous ESTs.

Dummy activities are artificial activities added to a project schedule as a placeholder, they are represented by letters with a number underneath. It has no activity time associated with it. (no nodes.)

Floats show how much potential slack there may be in the network.

Total floats show how much activity can be delayed without delaying the overall project.
(Total float = LFT - duration - EST)

Free floats show how much an activity can be delayed with delaying the next activity.
(Free float = EST of next activity - duration - EST of the current activity)