

# 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- Project became outdated due to changing business environment (no longer trendy)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

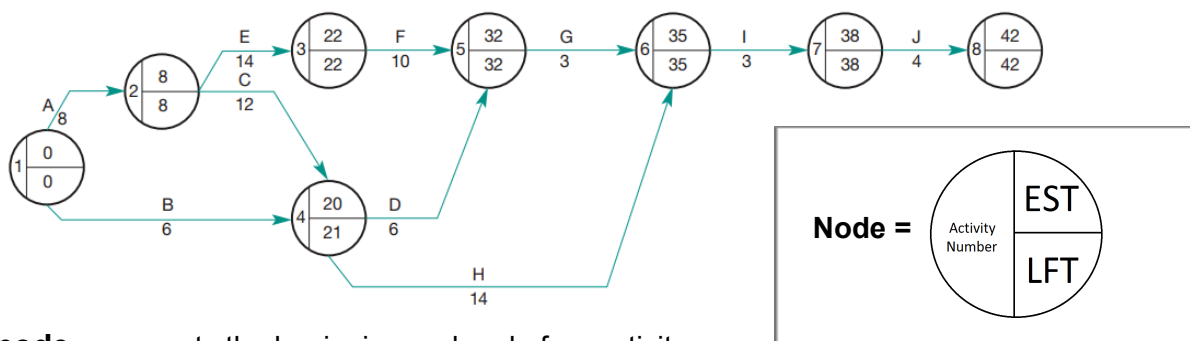
**Critical path analysis** is a planning technique that identifies all tasks in a project, puts them in the correct sequence and allows for the identification of the critical path. The advantages and disadvantages of critical path analysis are as follows :

- (✓) 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 )