CHAPTER 3

PROJECT LIFECYCLE

3.1 The four phases of project management life cycle are

1. **Initiation**
2. **Planning**
3. **Execution**
4. **Closure or Termination**

1. **Initiation**
   - **a.** Development of business case.
   - **b.** Performing feasible study.
   - **c.** Establishment of terms of reference.
   - **d.** Setting up of project office.
   - **e.** Appointment of project team.
   - **f.** Performing a phase review.

2. **Planning:** It involves creating planning documents to guide the project team throughout its delivery. **Following are the components of project planning**.

   - **a. Project plan:** Deliver in time and within the project.
   - **b. Resource plan:** Identifies all the resources required for completing the project successfully.
   - **c. Financial plan:** It sets the budget for the project.
   - **d. Quality plan:** It sets the quality targets to ensure project meets customer needs.
   - **e. Risk plan:** It identifies the risk in the project and implements a plan to reduce it.
   - **f. Acceptance plan:** It helps to gain the acceptance of the customers for the deliverables produced.
   - **g. Communication plan:** It helps to communicate to the right information to the right people at the right time.
   - **h. Procurement plan:** It lists all the goods and services required, research the market, provide financial justification etc.
   - **i. Communication plan:** communicating right information to the right people at the right time.
   - **j. Contracting the suppliers.**
   - **k. Performing the phase review**.

3. **Execution:** It is the longest phase of the project life cycle and it consumes lot of energy and resources. In this phase the deliverables are produced and presented to the customers. Proper monitoring and control are required to manage time, cost, quality,risks etc.

Following are the components of project execution.

a. Cost management

i. It monitors and records all costs within a project.
ii. The costs are recorded & controlled using expense forms.
iii. Tracking of expenses using expense register.
iv. Review and approve of expenses before the purchase.
v. Keeping central record of all expenses.
vi. Monitoring and controlling overspending.
vii. Monitoring and controlling overall cost of project.
viii. Keeping financial plans up to date.
ix. It maintains Expense form and Expense register.

b. Quality management

i. To improve the quality of deliverables produced by the project.
ii. Enhance the ability of the project team to produce deliverables which meet the specifications and satisfy the customer.
iii. It lists methods to measure the quality targets.
iv. It identifies quality issues.
v. It has two components, namely quality improvement process and quality assurance process.
vi. It maintains Quality review form and Deliverable register.

c. Change management

i. To manage all request for change within the project.
ii. As a project team which is working to satisfy the request of the sponsor it ishighly essential to incorporate the changes which are suggested by the sponsor in the course of the project execution.
iii. Determining feasibility of change requested by the sponsor.
iv. Approving the changes and implement properly.
v. Check the impact of change on project.
vi. It maintains Change request form and Change register.

d. Risk management

i. Identifying the critical and non-critical risks.
ii. It documents each risk in depth.
iii. It takes actions to minimize the risks.
iv. It reduces the impact of the risk on the project.
v. Creating a log of each risk and notifying.
vi. It maintains Risk form and Risk register.

e. Issue management

i. Identifying and recording all issues.
ii. Document issues properly.
iii. It takes actions to resolve the issues.
iv. Determining the impact of issues on the project.
v. Resolve issue quickly.
vi. It maintains Issue form and Issue register.

f. Procurement management

i. Listing goods and services that are required.
ii. Making purchase orders and issuing them to suppliers.
iii. Agreeing on delivery time and methods.
iv. Receiving goods and services from the suppliers.
v. Checking and approving the items procured.
vi. Making suppliers payments.
vii. It maintains Purchase Order Form and Procurement Register.

g. Acceptance Management

It manages to gain the acceptance of the customers for the deliverables produced

i. Acceptance testing of completed deliverables.
ii. Involving project team and user in acceptance test.
iii. Scheduling and completing the user acceptance test.
iv. Getting acceptance decision from the customers
v. Communicating the acceptance decision from the customers.
vi. It maintains Acceptance Form and Acceptance Register.

h. Communication Management

It manages to communicate to the right information to the right people at theright time.

i. Identify the messages that need to be sent.
ii. List the target audience for communication.
iii. Deciding on message format and timing.
iv. Drafting the message and getting approval.
v. Communicating the message through proper channel.
vi. Getting the feedback and improving the process.
vii. It maintains Project Status Report and Communication Register.

4. Closure or Termination:

a. It is the last phase of the project life cycle.
b. In this phase project deliverables are handed over to the customers.
c. Staffs and equipments used for the project are released.
d. It formally closes the project by reporting overall achievements.
e. It maintains Project Closure Report and Reviewing the Project Completion.

3.2 Project Risk:

"It is defined as the possibility of an outcome being different from the expected Outcome"

1. The element of risk in an inherent in every activity or project.
2. It is necessary to conduct risk analysis for big and long duration projects.
3. Since all risks cannot be eliminated or avoided but can be minimized.
4. It is the job of the project manager to ensure that risks do not harm adversely to the project outcome.

Types of risk:

a. Technical risks
b. Social risks
c. Political risks
d. Economic risks
e. Marketing risks
f. Production risks
g. Financial risks
h. Human risks
i. Implementation risks

3.3 Risk Assessment Techniques

1. **Sensitivity Analysis**
2. **Scenario Analysis**
3. **Best and Worst Case Analysis**
4. **Simulation Analysis**

1. Sensitivity Analysis

a. It measures how the impact of uncertainties of one or more input variables can affect the output.
b. This analysis improves the prediction of the model by improving the response of model to change in input variables.
c. In sensitivity analysis, typically one variable is changed at a time.
d. It does the "what if" analysis of the project.
e. Since the future is uncertain, it helps to know what will happen to the viability of the project when some variable like sales or investment deviates

from its expected value.

f. It shows how robust or vulnerable a project is to changes in input variables and indicates where further action to be taken.

2. Scenario Analysis

a. Scenario analysis is a process of analyzing future events by considering alternative possible outcomes.

b. Scenario analysis is conducted, to analyze the impacts of possible future events on the system performance.

c. It is considered as an improvement over sensitivity analysis because it considers variation in several variables together.

d. If variables are interrelated, it will be helpful to look at some likely scenarios, each scenario representing a consistent combination of variables.

3. Best and Worst Case Analysis

It helps to get a feel of what happens under the most favorable or the most adverse changes in key variables.

1	Best Scenario	High demand, High selling price
2	Normal Scenario	Average demand, average selling price
3	Worst Scenario	Low demand, low selling price, high variable cost

4. Simulation Analysis:

"It is a process of designing a model of a real system and conducting experiments with this model for the purpose of either understanding the behavior of the system."

OR

A simulation is the imitation of the operation of a real-world process or system.

a. It is used to determine how target variables are affected based on changes in input variables.

b. The model uses simulations to predict how the outcome of a decision would vary if we take a set of input variables in a given range.

c. Simulation is done on computers because of tedious computations involved

3.4 Estimating Cost and Time overrun risks.

Cost Overruns:

The Project Manager prepares a **"cost overrun analysis sheet"** as shown below. It helps in finding the reasons for cost overruns.

"Cost overrun analysis sheet"

Project Name:			Date:		
Project Code:			Month:		
Project Manager:			Year:		
S.No	Project Cost	Cost Overruns	Analysis of cost overruns		
			Price increase	Time overruns	Others
1	Land developing				
2	Machinery				
3	License fees				
4	Preliminar yexpenses				

Example of Cost overrun

A state highway project was planned to implement with an estimated budget of 40 crores. However, after the completion of the project, it was found that the project total cost was 45 crores. Analyze the possible reasons for the increase in cost of the project

The possible reasons for the given project cost overruns

1. Unplanned expansion of the project scope.
2. Inaccurate initial cost estimation.
3. Failures in project performance.
4. Errors in project design.
5. Improper risk management.
6. Improper project team building.
7. Wrong choice of equipment.
8. Incompetent material suppliers.

Time Overruns:

The Project Manager prepares a **"time overruns analysis sheet"** as shown below. It helps in finding the reasons for time overruns.

"Time overrun analysis sheet"

Project Name:					Date:	
Project Code:					Month:	
Project Manager:					Year:	
S.No	Event Name	Schedule Time	Actual Time	Time overruns	% Of time overrun	Reason for time overruns
1						
2						
3						
4						
5						

Example of time overrun

A shopping mall construction project was planned with estimated time duration of 18 months. However, the project took 24 months for its completion. Evaluate the possible reasons for the delay in the project

The possible reasons for the given project time overruns/ delay in projects

1. A change in the scope of the project.
2. Ineffective project time management.
3. Delays in starting and executing some of the project activities.
4. A delay in one project, results in delays in subsequent projects.
5. Use of outdated technology.
6. Political interference.
7. Poor administration.
8. Poor planning.