



UNIVERSITY OF THE PUNJAB

Seventh Semester – 2019

Examination: B.S. 4 Years Program

Roll No.

PAPER: Project Management

Course Code: IT-404 Part – II

MAX. TIME: 2 Hrs. 45 Min.

MAX. MARKS: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2. Explain the short questions.

(10 x 2 = 20)

- 1. Define Triple Constraints? Cost, Scope and Time constraints
- 2. Define Project Management?
- 3. Differentiate b/w Project Management and Project portfolio management?
- 4. What do you know about WBS?
- 5. Name techniques of cost estimation?
- 6. List reasons why Organizations out-source?
- 7. List the tools and techniques for performing risk monitoring and control?
- 8. Enlist the processes involved in Project Human Resource Management?
- 9. Explain RACI charts?
- 10. What are bench marks?

Q.3. Explain the detailed questions.

(3 x 10 = 30)

- 1. Explain project cost management processes. Also explain basic principal of the cost management?

Activity	Initial Node	Final Node	Estimated Duration
A	1	2	2
B	2	3	2
C	2	4	3
D	2	5	4
E	3	6	2
F	4	6	3
G	3	7	6
H	6	8	2
I	6	7	3
J	7	8	1
K	8	9	2

Calculate Early Start, Early Finish, Late Start, Late Finish, Free slack, and total slack for above data? Show critical path and enlist result in a tabular format?

- 1. What is the difference between brainstorming and the Delphi technique for risk identification? What are some of the advantages and disadvantage of each approach?

What is Project Management?

- ❑ Project management is “the application of knowledge, skills, tools and techniques to project activities to meet project requirements” (PMBOK® Guide, Fourth Edition, 2012)
- ❑ Project managers strive to meet the **triple constraint** (project scope, time, and cost goals) and also facilitate the entire process to meet the needs and expectations of project stakeholders

Project Portfolio Management

- As part of project portfolio management, organizations group and manage projects and programs as a portfolio of investments that contribute to the entire enterprise's success
- Portfolio managers help their organizations make wise investment decisions by helping to select and analyze projects from a strategic perspective

Figure 1-3. *Project Management Compared to Project Portfolio Management*



Creating the Work Breakdown Structure (WBS)

- ▮ A **WBS** is a deliverable-oriented grouping of the work involved in a project that defines the total scope of the project
- ▮ WBS is a foundation document that provides the basis for planning and managing project schedules, costs, resources, and changes
- ▮ **Decomposition** is subdividing project deliverables into smaller pieces
- ▮ A **work package** is a task at the lowest level of the WBS
- ▮ The **scope baseline** includes the approved project scope statement and its associated WBS and WBS dictionary

Approaches to Developing WBSs

- ▮ **Using guidelines:** Some organizations, like the DOD, provide guidelines for preparing WBSs
- ▮ **The analogy approach:** Review WBSs of similar projects and tailor to your project
- ▮ **The top-down approach:** Start with the largest items of the project and break them down
- ▮ **The bottom-up approach:** Start with the specific tasks and roll them up
- ▮ **Mind-mapping approach:** Mind mapping is a technique that uses branches radiating out from a core idea to structure thoughts and ideas

Cost Estimation Tools and Techniques

- 1) Basic tools and techniques for cost estimates:
 - **Analogous or top-down estimates:** use the actual cost of a previous, similar project as the basis for estimating the cost of the current project
 - **Bottom-up estimates:** involve estimating individual work items or activities and summing them to get a project total
 - **Parametric modeling** uses project characteristics (parameters) in a mathematical model to estimate project costs

Outsourcing

- ❑ Organizations remain competitive by using outsourcing to their advantage, such as finding ways to reduce costs
- ❑ Their next challenge is to make strategic IT investments with outsourcing by improving their enterprise architecture to ensure that IT infrastructure and business processes are integrated and standardized (See Suggested Readings)
- ❑ Project managers should become more familiar with negotiating contracts and other outsourcing issues

Reasons Why Companies Choose To Outsource



#1 Access to the latest technology

#2 Open the door to expert opinions

#3 Augmented productivity

#4 Improved customer support

#5 Access to better talent through outsourcing

#6 A better chance of staying in the competition



6 Tools and Techniques for Controlling Risks



6 Tools and Techniques for Controlling Risks



1. Risk reassessment

Risk reassessments involve the following activities:

- Identifying new risks
- Evaluating current risks
- Evaluating the risk management processes
- Closing risks



2. Risk audit

Project teams may have defined **risk responses**. The question is—“Are the responses effective?” Project managers facilitate risk audits to examine the effectiveness of the risk responses and to determine whether changes are required. The team also examines the processes to identify, evaluate, respond to, and control risks.

3. Variance and trend analysis

As with many control processes, we now look for variances between the schedule and cost baselines and the actual results. When we the variances are increasing, there is increased uncertainty and risk. Watch the trends and respond before the situation gets out of hand.



4. Technical performance measurement

Imagine that you are working on a software development project and that the functional requirements have been developed. You've planned to deliver functions at a point in time—at the end of the fourth sprint, at the end of phase 1, or a milestone. The technical performance measurement is a measurement of the technical accomplishments.

What is Project Human Resource Management?

Project human resource management includes the processes that organize, manage, and lead the project team. The following processes and the primary goals of Project human resource management are defined below:

- Develop human resource plan. Goal: human resource plan
- Acquire project team. Goal: project staff assignments
- Develop project team. Goal: team performance assessments
- Manage project team. Goal: updates

Project Human Resource Management Summary

Planning

Process: Plan human resource management

Output: Human resource plan

Executing

Process: Acquire project team

Outputs: Project staff assignments, resource calendars, project management plan updates

Process: Develop project team

Outputs: Team performance assessments, enterprise environmental factors updates

Monitoring and Controlling

Process: Manage project team

Outputs: Change requests, project management plan updates, project documents updates, enterprise environmental factors updates, and organizational process assets updates

Project Start

Project Finish

What does RACI stand for?

- **Responsible** - the person who does the work
- **Accountable** - the approver who is accountable for the complete and thorough completion of the task or project
- **Consulted** - the person whose opinion is sought
- **Informed** - the person who is kept up-to-date

RACI Chart Example

RACI Chart

	Resource				
Activity	Ravi	George	Tuvin	Carlos	Missy
Define test criteria	A	R	I	I	R
Schedule regression test	I	A	C	I	I
Perform test	C	R	R	A	C
Publish test results	I	I	A	I	C

What Is a RACI Chart?

A RACI chart, also called a RACI matrix, is a type of responsibility assignment matrix (RAM) in project management. In practice, it's a simple spreadsheet or table that lists all stakeholders on a project and their level involvement in each task, denoted with the letters R, A, C or I. Once these roles are defined, assignments can be attributed to the roles and work can begin.

R, A, C, I stands for:

- Responsible
- Accountable
- Consulted
- Informed

Prototyping

Benchmarking, or generating ideas by comparing specific project practices or product characteristics to those of other projects or products inside or outside the performing organization, can also be used to collect requirements

What Is Project Cost Management?

Recall from Chapter 1 that the triple constraint of project management involves balancing scope, time, and cost goals. Chapters 5 and 6 discuss project scope and time management, and this chapter describes project cost management. **Project cost management** includes the processes required to ensure that a project team completes a project within an approved budget. Notice two crucial phrases in this definition: “a project” and “approved budget.” Project managers must make sure *their* projects are well defined, have accurate time and cost estimates, and have a realistic budget that *they* were involved in approving. It is the project manager’s job to satisfy project stakeholders while continuously striving to reduce and control costs. There are three project cost management processes:

1. *Estimating costs* involves developing an approximation or estimate of the costs of the resources needed to complete a project. The main outputs of the cost estimating process are activity cost estimates, basis of estimates, and project document updates. A cost management plan is created as part of integration management when creating the project management plan. It should include information related to the level of accuracy for estimates, variance thresholds for monitoring cost performance, reporting formats, and other related information.
2. *Determining the budget* involves allocating the overall cost estimate to individual work items to establish a baseline for measuring performance. The main outputs of the cost budgeting process are a cost performance baseline, project funding requirements, and project document updates.
3. *Controlling costs* involves controlling changes to the project budget. The main outputs of the cost control process are work performance measurements, budget forecasts, organizational process asset updates, change requests, project management plan updates, and project document updates.

Figure 7-1 summarizes these processes and outputs, showing when they occur in a typical project.

To understand each of the project cost management processes, you must first understand the basic principles of cost management. Many of these principles are not unique to project management; however, project managers need to understand how these principles relate to their specific projects.

Planning

Process: **Estimate costs**

Outputs: Activity cost estimates, basis of estimates, project document updates

Process: **Determine budget**

Outputs: Cost performance baseline, project funding requirements, product document updates



Monitoring and Controlling

Process: **Control costs**

Outputs: Work performance measurements, budget forecasts, organizational process assets updates, change requests, project management plan updates, project document updates



Project Start

Project Finish



FIGURE 7-1 Project cost management summary

Basic Principles of Cost Management

- Most members of an executive board better understand and are more interested in financial terms than IT terms , so IT project managers must speak their language
 - Profits are revenues minus expenditures
 - Profit margin is the ratio of revenues to profits
 - Life cycle costing considers the total cost of ownership, or development plus support costs, for a project
 - Cash flow analysis determines the estimated annual costs and benefits for a project and the resulting annual cash flow

The seven principles of effective cost management

- Provide clear, consistent performance objectives.
...
- Provide knowledge, tools to succeed. ...
- Understand true costs. ...
- Excellence: The only acceptable performance target. ...
- Reduce organizational complexity. ...
- Commit to broad-based, knowledge-driven involvement.

Brainstorming

- ▮ **Brainstorming is a technique by which a group attempts to generate ideas or find a solution for a specific problem by amassing ideas spontaneously and without judgment**
- ▮ **An experienced facilitator should run the brainstorming session**
- ▮ **Be careful not to overuse or misuse brainstorming.**
 - Psychology literature shows that individuals produce a greater number of ideas working alone than they do through brainstorming in small, face-to-face groups
 - Group effects often inhibit idea generation

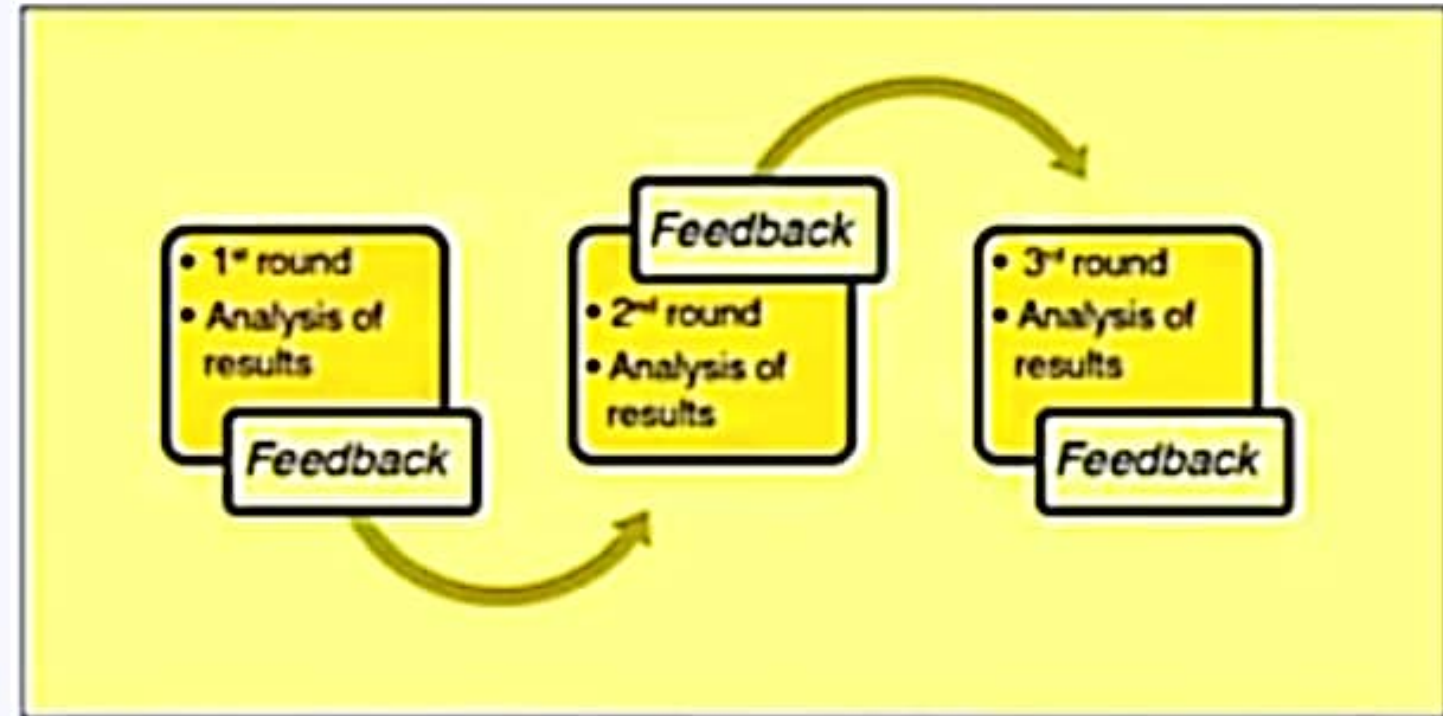
Delphi Technique

- ▮ **The Delphi Technique is used to derive a consensus among a panel of experts who make predictions about future developments**
- ▮ **Provides independent and anonymous input regarding future events**
- ▮ **Uses repeated rounds of questioning and written responses and avoids the biasing effects possible in oral methods, such as brainstorming**

Steps of Delphi Method



1. Choosing a Facilitator
2. Identifying Your Experts
3. Defining the Problem
4. Ask first round of Questions
5. Ask second round of Questions
6. Round Three Questions
7. Act on Your Findings



Brainstorming Advantages:



- Highly motivating.
- Increase task focus.
- Promotes spontaneity and creativity.
- Efficient and procedure.
- Involves participants in ownership of ideas.
- Encourages creativity.

ApowerREC - Screen Video Recorder is sharing your screen.

Stop sharing

Hide

Activate Windows

Go to Settings to activate Windows.

Disadvantage of

brainstorming

- ▶ The process is very time consuming.
- ▶ It promotes fight and arguments.
- ▶ It is not always effective.
- ▶ It is not always the right choice for everyone.

Delphi technique

Advantages

- Excellent to generate creative and free association of ideas.
- Low cost and efficient process to synthesize quantitative data.
- "Expert" input can be by mail or e-mail and requires no oral facilitation skills.
- Does not rely on a single expert, a one-shot group, average, or a round-table discussion.

Disadvantages

- Participation can drop off.
- Rather a lengthy process and not to be used if quick results are desired.
- The quality of the results is entirely dependent upon the high caliber of the "experts".