UNIT 1:
Introduction to Project Management

Syllabus

- Introduction to project management:
- definition and objectives of project management,
- understanding the organization,
- project life cycle,
- project planning process,
- project management frame work.

Topic to be Covered

- **1.1 Definition and objectives of project management:**
- What is project?
- **1.2 What is Project management?**
- Project Stockholders
- Project management Knowledge area
- Project management tools & technique
- Project success?
- **1.3 Role of Project Manager**
- Project manager job description
- Suggested skills for project manager

- **1.4 A System view of project Management**
- What is system approach?
- 3 sphere model for system management
- **1.5 Understanding the organization**
- Four frames of organization
- Organizational Structures
- Organizational Culture
- **1.6 Project phase & Project life cycle**
- Project life cycle
- importance of project phases & management review
- **1.7 Project planning process,**
- **1.8 Project management frame work.**

Project?
Definition:

•A project is **"a temporary endeavor undertaken to create a unique product, service, or result"** **(PMBOK® Guide, Third Edition, 2004, p. 5)**

•Operations is work done to sustain the business

•Projects end when their objectives have been reached or the project has been terminated

•Projects can be large or small and take a short or long time to complete

What Is a Project?

Converting a **vision, a dream or a need to reality.**

A job that has a beginning and an end (Time)

A specified outcome(Scope)

At a stated level of Performance (Quality)

At a budget(Costs).

Examples of IT Projects

• A help desk or technical worker replaces ten laptops for a small department

• A small software development team adds a new feature to an internal software application for the finance department

• A college campus upgrades its technology infrastructure to provide wireless Internet access across the whole campus

• A cross-functional task force in a company decides what Voice-over-Internet-Protocol (VoIP) system to purchase and how it will be implemented

Examples of IT Projects

•A team of students creates a smart phone application and sells it online.

•A company develops a driverless car.

•A government group develops a system to track child immunizations.

•A global bank acquires other financial institutions and needs to consolidate systems and procedures

Top Ten Technology Projects in 2006

- VoIP
- Outsourcing
- Data networking
- Customer relationship management
- Collaboration
- Supply chain management
- Desktop upgrades
- Application performance management
- Business analytics
- Compliance tracking

Examples of IT Projects

- Top Strategic Technologies for 2018 (Gartner)
  - Artificial Intelligence (AI) Foundation
  - Intelligent Things
  - Cloud to the Edge
  - Immersive Experience
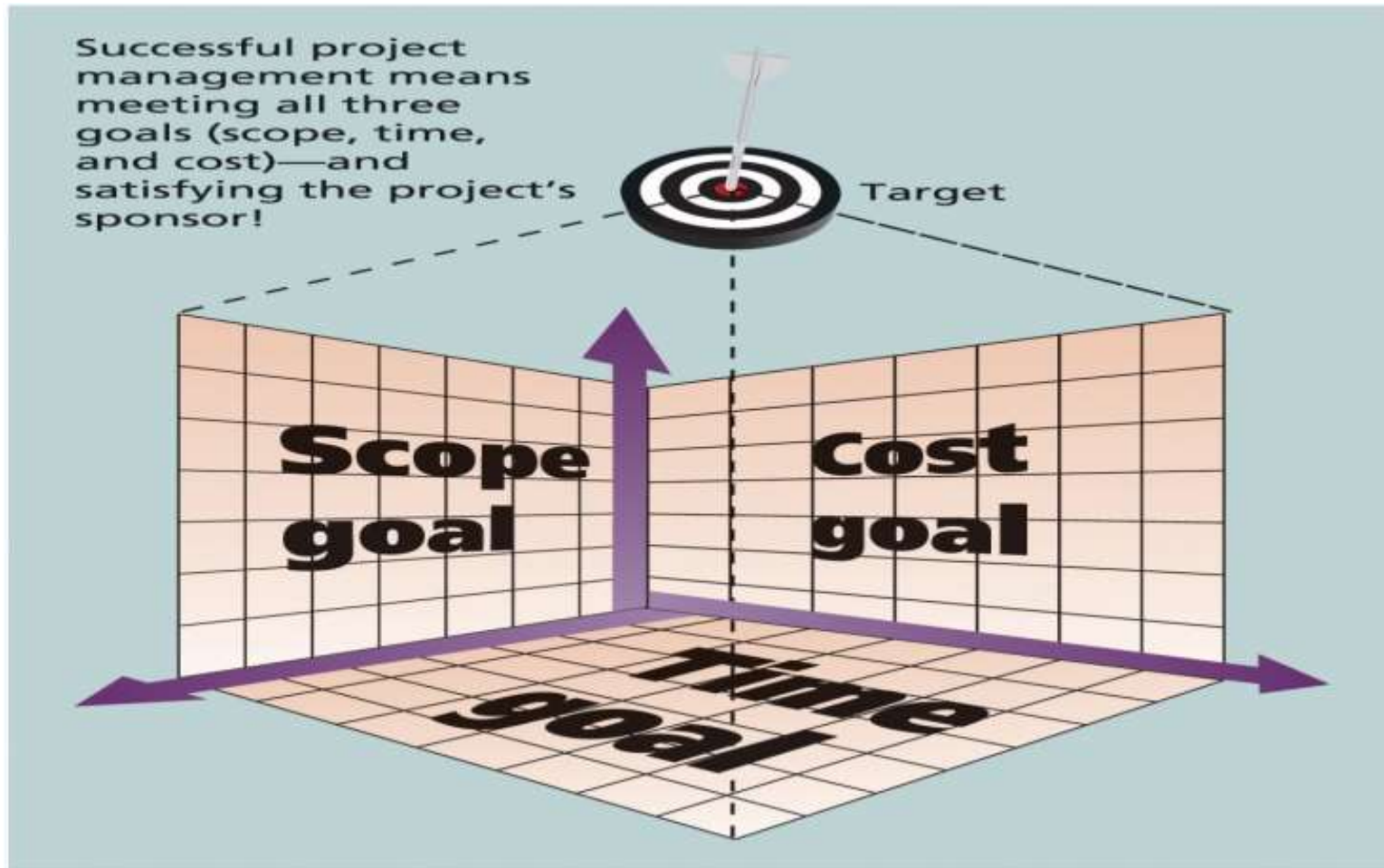
Project Attributes

- **A project**
    - has a unique purpose
    - is temporary
    - drives change and enable value creation
    - is developed using progressive elaboration
    - requires resources, often from various areas
    - should have a primary customer or sponsor

    - **The project sponsor usually provides the direction and funding for the project involves uncertainty.**

    - **Project managers work with project sponsors, team, and other people involved in a project to achieve project goals**

Project Constraints

Successful project management means meeting all three goals (scope, time, and cost)—and satisfying the project's sponsor!

Target

Scope goal

Cost goal

Time goal

FIGURE 1-1 Project constraints

Triple Constraint Project Management

•**Cost** – which represents the financial side of a particular project, or the project budget.

•**Scope** – which represents the project goal

•**Time** – which represents the project schedule

SCOPE

1.What work will be done as a part of project?
2.What unique product,services or result does customer or sponsor expect from project?
3.How will scope be verified?

TIME

1.How long should it take to complete project?

2.What is project 's Schedule.

3.How will team track actual schedule performance?

4.Who can approve changes to the schedule.

COST

1. What should it cost to complete the project?
2. What is project's budget.?
3. How cost will be tracked.
4. Who can authorize changes to the budget.

What is Management ?

•Management is the technique of understanding the problems, needs and controlling the use of Resources, Cost, Time, Scope and Quality.

Project Management?

- The art of organizing, leading, reporting and completing a project through people.

- A project is a planned undertaking

- A project manager is a person who causes things to happen

- Therefore, project management is causing a planned undertaking to happen.

Definition:

•**Project management is** "*the application of knowledge, skills , tools and techniques to project activities to meet project requirements*" (PMBOK® Guide, Sixth Edition, 2017)

•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 Stakeholders

• Stakeholders are the people involved in or affected by project activities.

• **Stakeholders include:**
  - *the project sponsor*
  - *banks and other financial institutions*
  - *the project manager*
  - *the project team*
  - *support staff*
  - *suppliers*
  - *opponents to the project*

What is Project Management Frame work?
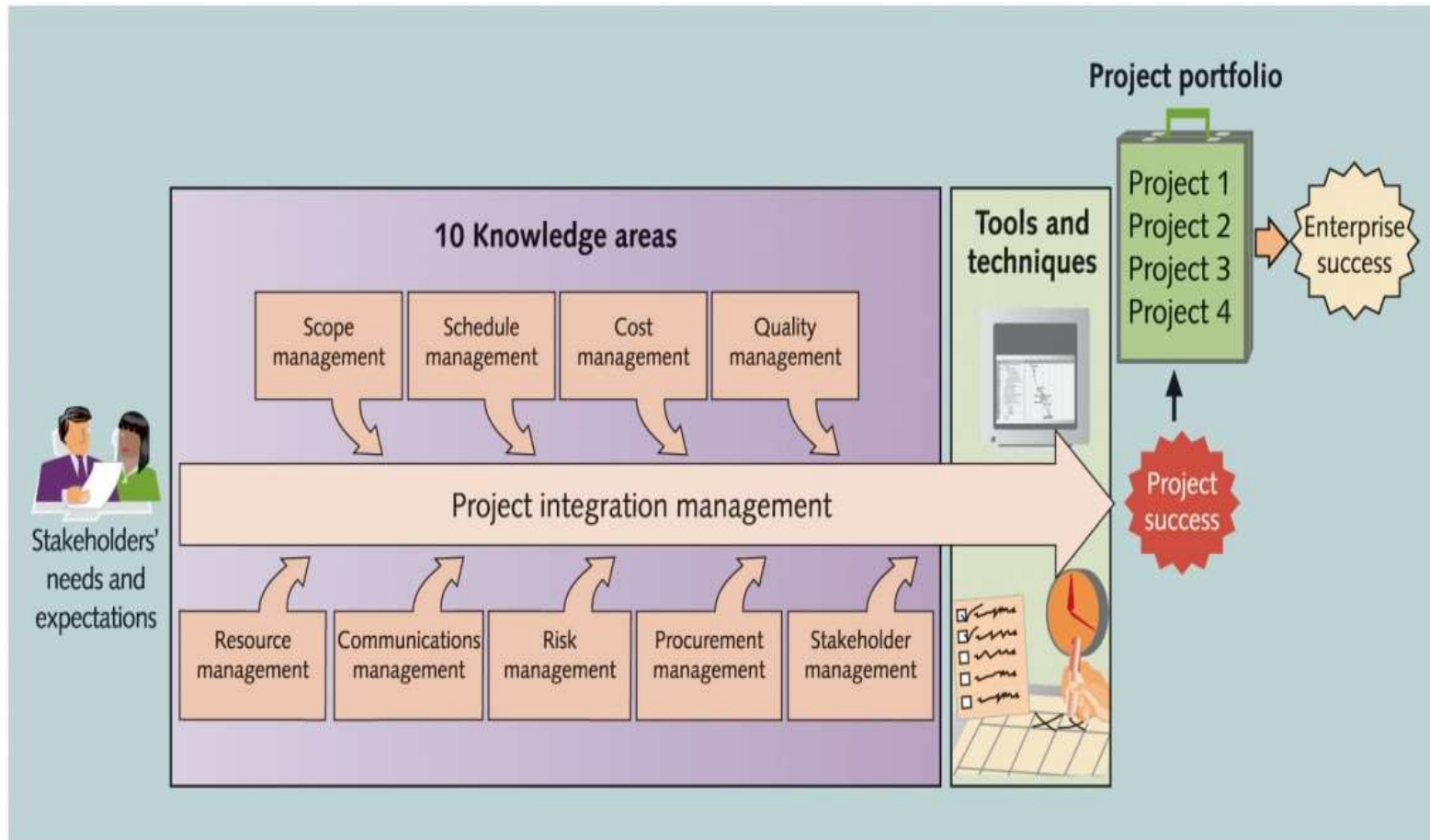
FIGURE 1-2   Project management framework

Project Management Knowledge Areas

•**Knowledge areas describe the key competencies that project managers must develop**

•Project managers must have knowledge and skills in all 10 knowledge areas **(scope, schedule, cost, quality, resource, communications, risk, procurement, stakeholder, and project integration management)**

Project Management Knowledge Areas

Four core knowledge areas lead to specific project objectives (scope, time, cost, and quality)

Four facilitating knowledge areas are the means through which the project objectives are achieved (human resources, communication, risk, and procurement management

One knowledge area (project integration management) affects and is affected by all of the other knowledge areas

All knowledge areas are important!

10 Knowledge Area

1. Integration Management:
2. Scope Management:
3. Time Management:
4. Cost Management:
5. Quality Management:
6. Human Resource Management:
7. Communications Management
8. Risk Management:
9. Procurement Management:
10. Stakeholder Management:

- *I should serve coffee; Queen Radha Comes with Rana Pratap Singh*

- I – Integration
- Should – Scope
- Serve – Schedule/time
- Coffee – Cost
- Queen – Quality
- Radha – Resource
- Comes with – Communication
- Rana – Risk
- Pratap – Procurement
- Singh – Stakeholder

Project Integration Management

- The knowledge area which is devoted **to identify and define the work in the project** is known as the **Integration Management.**

- **This knowledge area deals also with efficiently integrating changes into the project.**

Project Scope Management

- This knowledge area deals :
- **project scope,**
- **project requirement scope,**
- **project work,**
- **making the work breakdown structure,**
- **making the scope baselines and**
- **managing the scope of the project.**

- This is one point where you can plan the ways of keeping the project within the established boundaries.
- **Defining & managing all work required to complete the project successfully.**

Project Schedule/ Time Management:

- The project managers estimate the **duration of the tasks** in this knowledge area.

- This is where he/she **sequences the tasks and chooses the number of resources required to achieve the objective of the project.**

- Schedule is monitored and managed here in this area to keep the project on the track.

Project Cost Management:

•**Budget baseline is established and costs are estimated** in this knowledge area.

•The plan to manage the costs is categorized in the cost management knowledge area too.

•**Preparing & managing the budget for project.**

Project Quality Management

•Project Quality Management, the knowledge area where the **quality requirements for project deliverables are planned and tracked.**

• In this area, all the **quality issues are monitored and fixed.**

Project Human Resources Management

•This knowledge area, which is the HR management of the project, c**omprises of the processes very essential to define the ways human resources will be utilized, developed, acquired and managed.**

•**Is concerned with making effective use of people involved with the project.**

Project Communications Management

• Communications management is the knowledge area that defines **how communications within the project will work.**

• In these processes, the **project manager makes the communication management plan, ensures the plan is followed, and controls information flow within the project.**

• **Involves generating ,collecting ,disseminating & storing project information.**

Project Risk Management

- Project Risk Management consists of **identifying risks, planning risk management, conducting risk assessments, and controlling risks related to project.**

-

- The area concentrates on **identifying, analyzing, planning responses to both 'threat risks' (negative) and 'opportunity risks' (positive).**

Project Procurement Management

•This knowledge area deals with the processes which project managers usually follow to **acquire required material for the successful completion of the project.**

•In this knowledge area, project managers come up with the **plan for conducting procurements, controlling the procurements and closing out the procurements.**

Project Stakeholder Management:

•Project Stakeholder Management area encompasses all the processes which is used **by a project manager for recognizing and satisfying the ones who are affected by the project.**

• The affected party can either be internal or external, in nature.

• You can pay close attention to those stakeholders who can have a powerful positive or negative impact on the project.

Project Management Tools and Techniques

- **Project management tools and techniques** assist project managers and their teams in various aspects of project management.

- Some specific ones include:
    - **Project charter, scope statement, and WBS (scope)**
    - Gantt charts, network diagrams, critical path analysis, and critical chain scheduling (time)
    - Cost estimates and earned value management (cost)

Project Management Tools and Techniques (2 of 2)

•PMBOK® Guide – Sixth Edition lists tools and techniques based on their purpose:
   •Data gathering
   •Data analysis
   •Data representation
   •Decision making
   •Communication
   •Interpersonal and team skills
   •Ungrouped

Project Success

- There are several ways to define project success.

  - The project met scope, time, and cost goals

  - The project satisfied the customer/sponsor

  - The results of the project met its main objective, such as **making or saving a certain amount of money, providing a good return on investment, or simply making the sponsors happy**

Table 1-2: What Helps Projects Succeed?

1. Executive support
2. User involvement
3. Experienced project manager
4. Clear business objectives
5. Minimized scope
6. Standard software infrastructure

7. Firm basic requirements
8. Formal methodology
9. Reliable estimates
10. Other criteria, such as small milestones, proper planning, competent staff, and ownership

•Top three reasons why federal technology projects succeed

 •Adequate funding
 •Staff expertise
 •Engagement from all stakeholders

•Research findings show that companies that excel in project delivery capability:

- •Use an integrated toolbox
- •Grow project leaders
- •Develop a streamlined project delivery process
- •Measure project health using metrics, like customer satisfaction or return on investment

Program and Project Portfolio Management

- A **program** is "a group of related projects managed in a coordinated way to o**btain benefits and control not available from managing them individually**" (PMBOK® Guide, Third Edition, 2004, p. 16'

- A **program manager** provides leadership and direction for the project managers heading the projects within the program.

- Examples of common programs in the IT field: infrastructure, applications development, and user support

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

Tactical goals ⟵ ⟶ **Strategic goals**
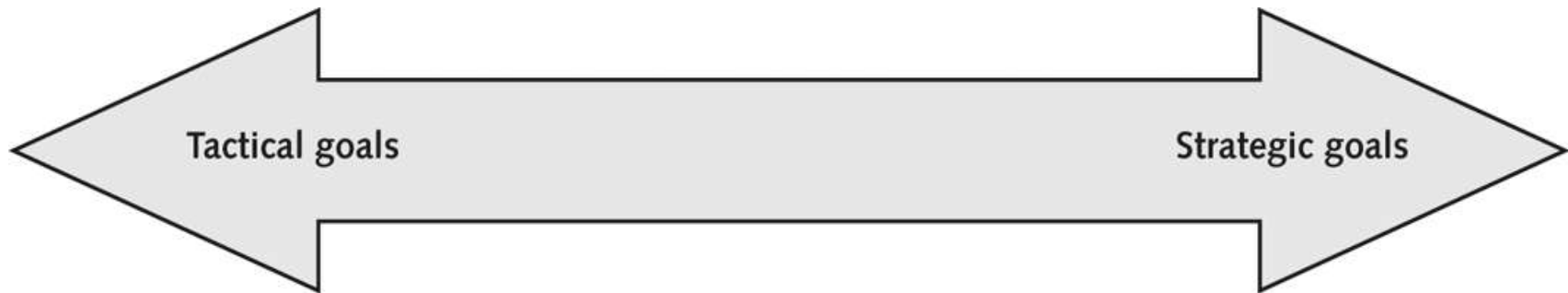
Project management
- Are we carrying out projects well?
- Are projects on time and on budget?
- Do project stakeholders know what they should be doing?

Project portfolio management
- Are we working on the right projects?
- Are we investing in the right areas?
- Do we have the right resources to be competitive?

•tactical goals	• strategic goals.
•Tactical goals are more specific	
•They are short term goals for an organization	•They are long term goals for an organization
•Individual project address to tactical goals.	•Project portfolio management address strategic goals.

Project Management	Project Portfolio Management
Are we carrying out project well?	Are we working on right project?
Are projects on time & on budget?	Are we investing in right areas?
Do project stakeholders know what they should be doing?	Do we have the right resources to be competitive?

Portfolio Project Management

Overall project portfolio categories

Marketing
HR
Materials
IT

IT project portfolio categories

Risks, Value, Timing

Venture: Transform the business

Growth: Grow the business

} Discretionary costs

Core: Run the business

} Nondiscretionary costs
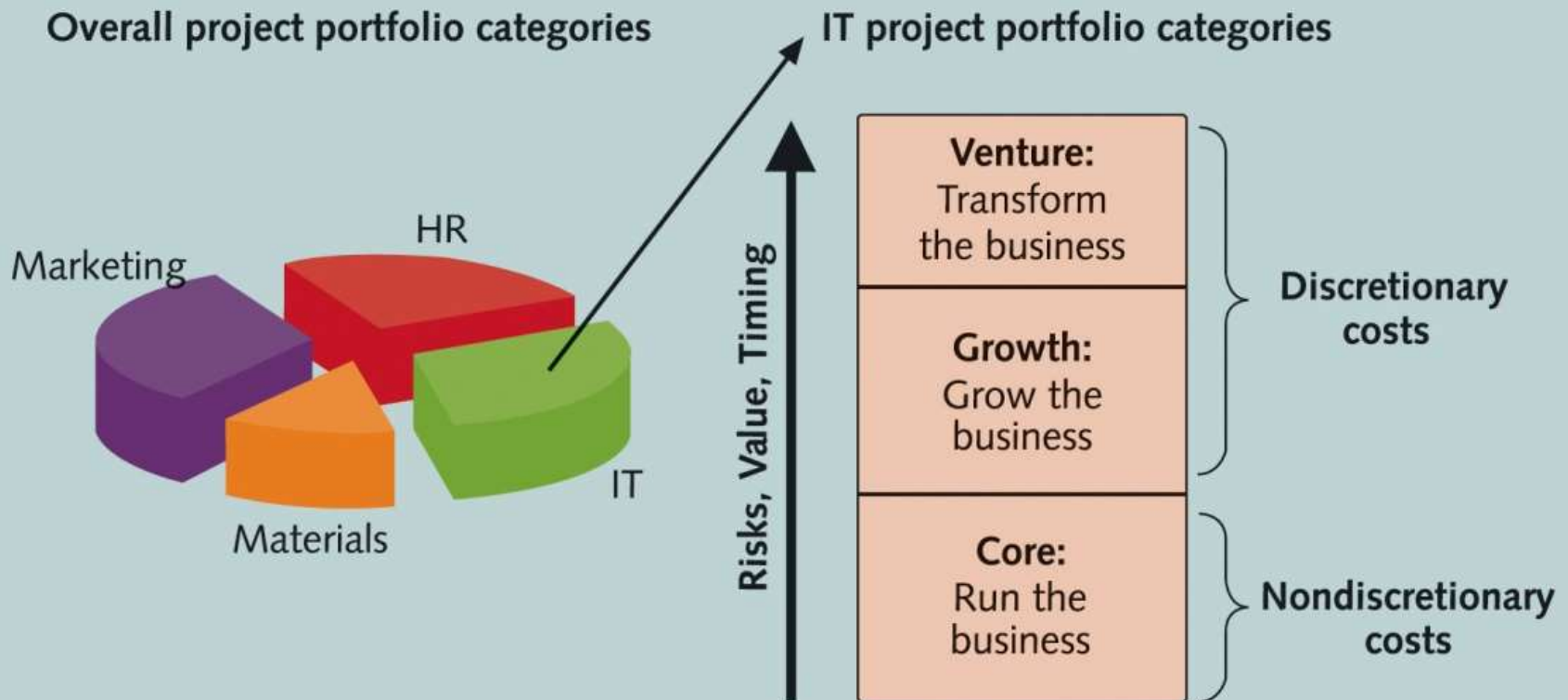
FIGURE 1-4 Sample project portfolio approach

What Went Wrong?

• A 1995 Standish Group study (CHAOS) found that only 16.2% of IT projects were successful in meeting scope, time, and cost goals; over 31% of IT projects were canceled before completion.

• A Pricewater house Coopers study found that over half of all projects fail and only 2.5% of corporations consistently meet their targets for scope, time, and cost goals for all types of project

Why do companies use PM?

- To handle projects effectively in an organization.
- To define the project and agree with the customer.

- To plan and assess resource needs for the project.
- To estimate project cost and make proposals.

- To plan & schedule activities in a project.
- To allocate the right resource at the right time.

- To assess risk and failure points and make backup plans.
- To lead a project team effectively and communicate well among team members.

Why do people learn PM?
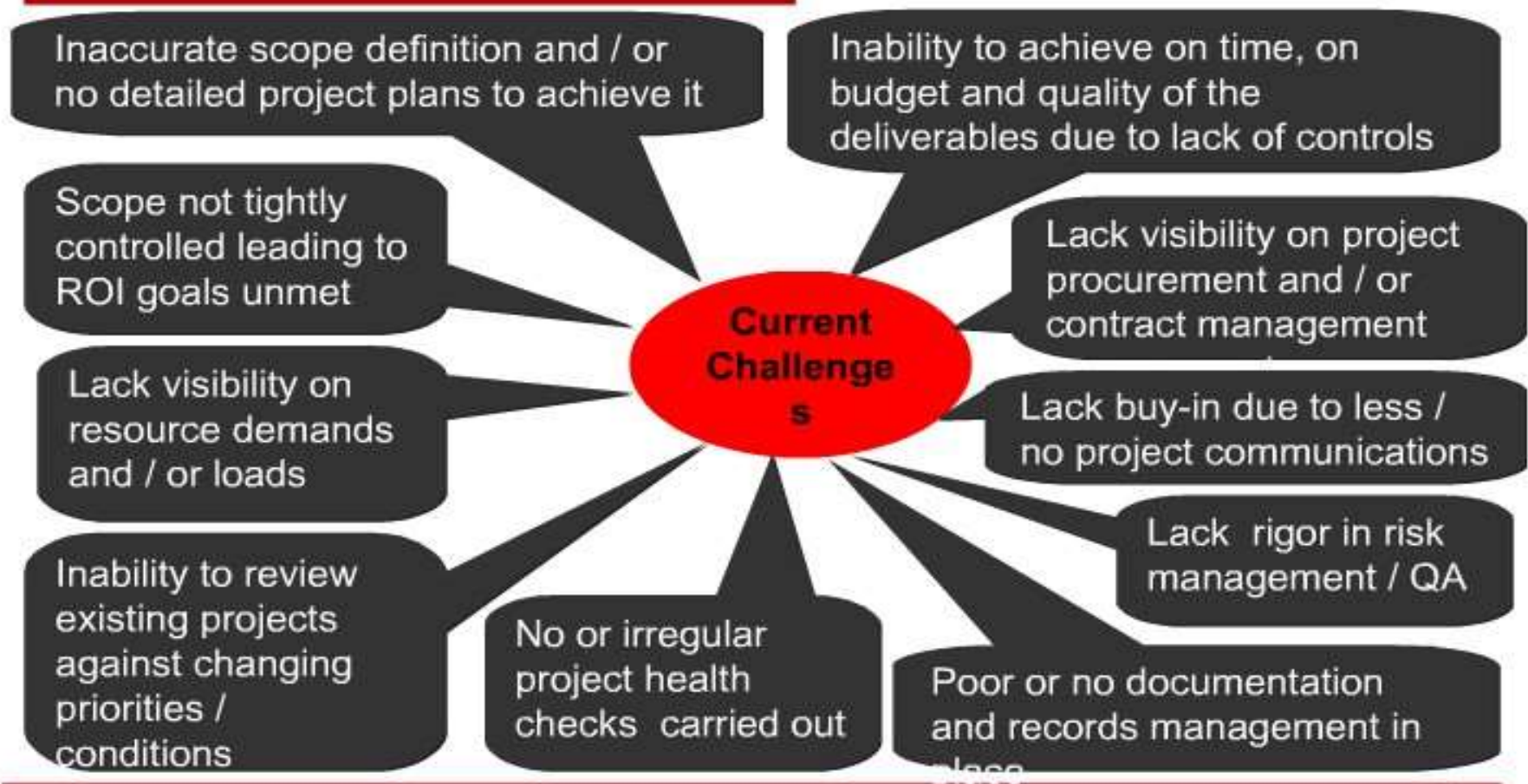
To explore the latest concepts and techniques of project management.

To increase value/contribution to the organization.

To prove yourself skillful in managing projects.

To learn a structured approach and process that helps organized thinking and execution.

To acquire a professional degree/ recognition and increase job prospects.

Endless possibilities and benefits……..

Project Management Overview

Project - Current Challenges

Inaccurate scope definition and / or no detailed project plans to achieve it

Inability to achieve on time, on budget and quality of the deliverables due to lack of controls

Scope not tightly controlled leading to ROI goals unmet

Lack visibility on project procurement and / or contract management

Current Challenges

Lack visibility on resource demands and / or loads

Lack buy-in due to less / no project communications

Inability to review existing projects against changing priorities / conditions

Lack rigor in risk management / QA

No or irregular project health checks carried out

Poor or no documentation and records management in place

Project Phases and the Project Life Cycle

- A **project life cycle** is a collection of project phases that defines:

  - What work will be performed in each phase
  - What deliverables will be produced and when
  - Who is involved in each phase
  - How management will control and approve work produced in each phase

- A **deliverable** is a product or service produced or provided as part of a project

More on Project Phases

- **In early phases of a project life cycle:**
  - Resource needs are usually lowest
  - The level of uncertainty (risk) is highest
  - Project stakeholders have the greatest opportunity to influence the project
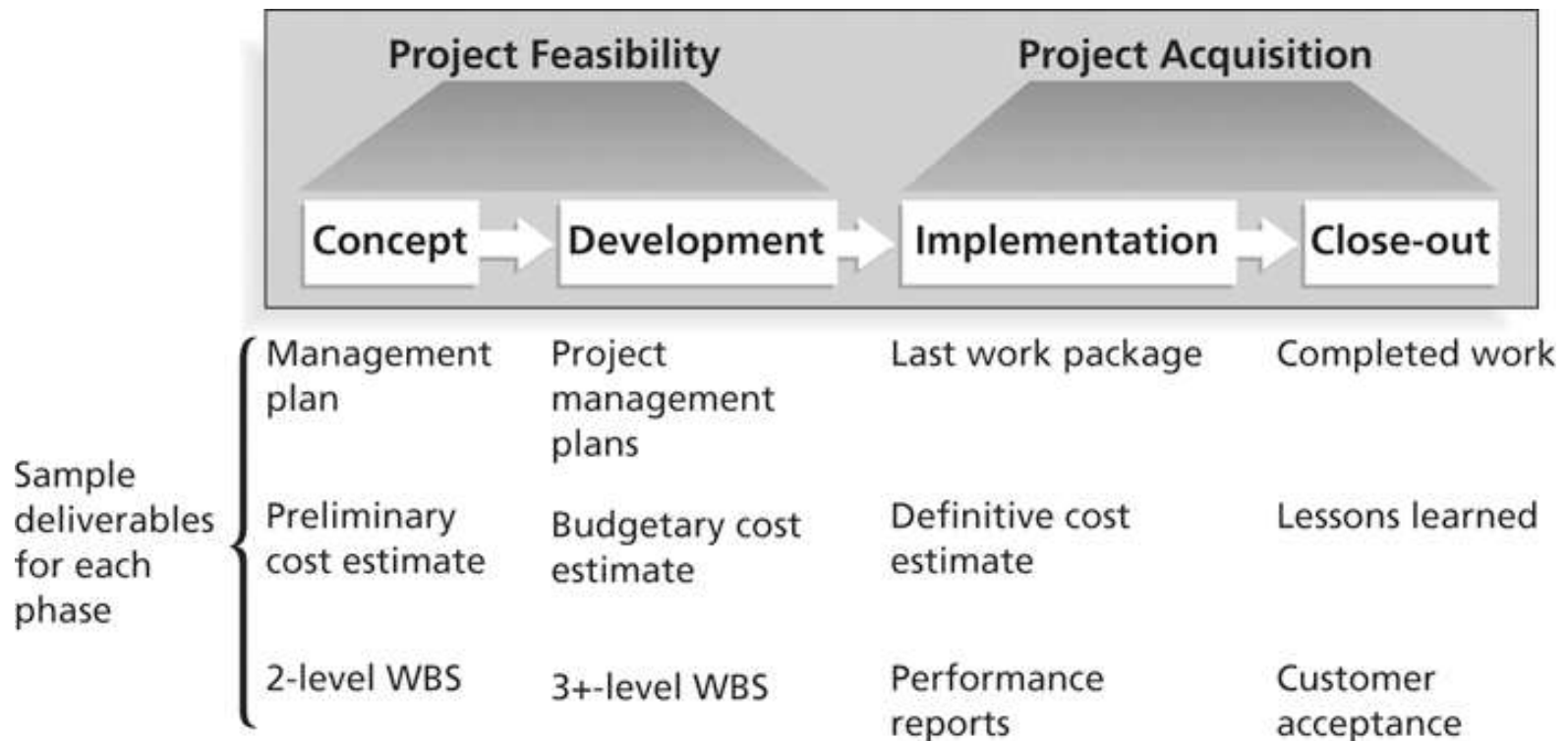
- **In middle phases of a project life cycle:**
  - The certainty of completing a project improves
  - More resources are needed

- **The final phase of a project life cycle:**
  - Ensuring that project requirements were met
  - The sponsor approves completion of the project

Figure 2-3: Phases of the Traditional Project Life Cycle

	Project Feasibility		Project Acquisition	
	Concept →	**Development** →	**Implementation** →	**Close-out**
Sample deliverables for each phase	Management plan	Project management plans	Last work package	Completed work
	Preliminary cost estimate	Budgetary cost estimate	Definitive cost estimate	Lessons learned
	2-level WBS	3+-level WBS	Performance reports	Customer acceptance

- (1 st two)Concept & Development focus on **planning.**

- Referred as **Project feasibility.**
- (last two) Implementation & close out focus on **delivering the actual work.**
- Referred as **Project acquisition.**

- **Project should successfully complete the each phase before moving on to the next phase .**

Concept phase

- Project manager develops some business case
- Which describe need of project & basic concept of project.
- Rough cost estimation is developed.
- Overview of required work is created.
- WBS outline of project is created
- that means decomposed the work activities into different levels of task.
- WBS is deliverable oriented document that define total scope of project
- **WORK BREAK DOWN STRUCTURE**

Development phase

- Project team creates more detailed project management plan.

- More accurate cost estimation.

- **This phase approach minimizes the time & money spend developing inappropriate projects.**

Implementation phase

•Project team creates definitive or very accurate cost estimate,delivers the required work,& provides performance report to the stackholders

Close -out phase

•All the work is completed

•

•Customer should accept the entire project.

•Project team should document its experiences on the project in a lessons -learned report.

The Importance of Project Phases and Management Reviews

•A project should successfully pass through each of the project phases in order to continue on to the next.

•Management reviews, also called **phase exits** or **kill points**, should occur after each phase to evaluate the project's progress, likely success, and continued compatibility with organizational goals

The Role of the Project Manager

•Project managers must work closely with the other stakeholders on a project, especially the sponsor and project team.

•They are also more effective if they are familiar with the 10 project management knowledge areas.

•And the various tools and techniques related to project management

Role of manager

- Eg: Monster includes thousands job listing role for manager
- Project manager for consulting firm
- IT project manager for financial services firm
- IT project manager for non profit consulting firm.

The Role of the Project Manager

- A Good Project Manager
- Takes ownership of the whole project
- Is proactive not reactive
- Adequately plans the project
- Is Authoritative (**NOT** Authoritarian)
- Is Decisive
- Is a Good Communicator
- Manages by data and facts not uniformed optimism
- Leads by example
- Has sound Judgment
- Is a Motivator
- Is Diplomatic
- Can Delegate

Project Manager Job Description

•Job descriptions vary, but most include responsibilities like planning, scheduling, coordinating, and working with people to achieve project goals.

•Project management is a skill needed in every major IT field, from database administrator to network specialist to technical writer

Suggested Skills for Project Managers (1 of 2)

• The Project Management Body of Knowledge

• Application area knowledge, standards, and regulations

• Project environment knowledge

• General management knowledge and skills

• Soft skills or human relations skills

•**Six traits of highly effective project managers a
follows:**

- •Be a strategic business partner

- •Encourage and recognize valuable contributions

- •Respect and motivate stakeholders

- •Be fully vested in success

- •Stress integrity and accountability

- •Work in the gray/Be able to deal with ambiguity
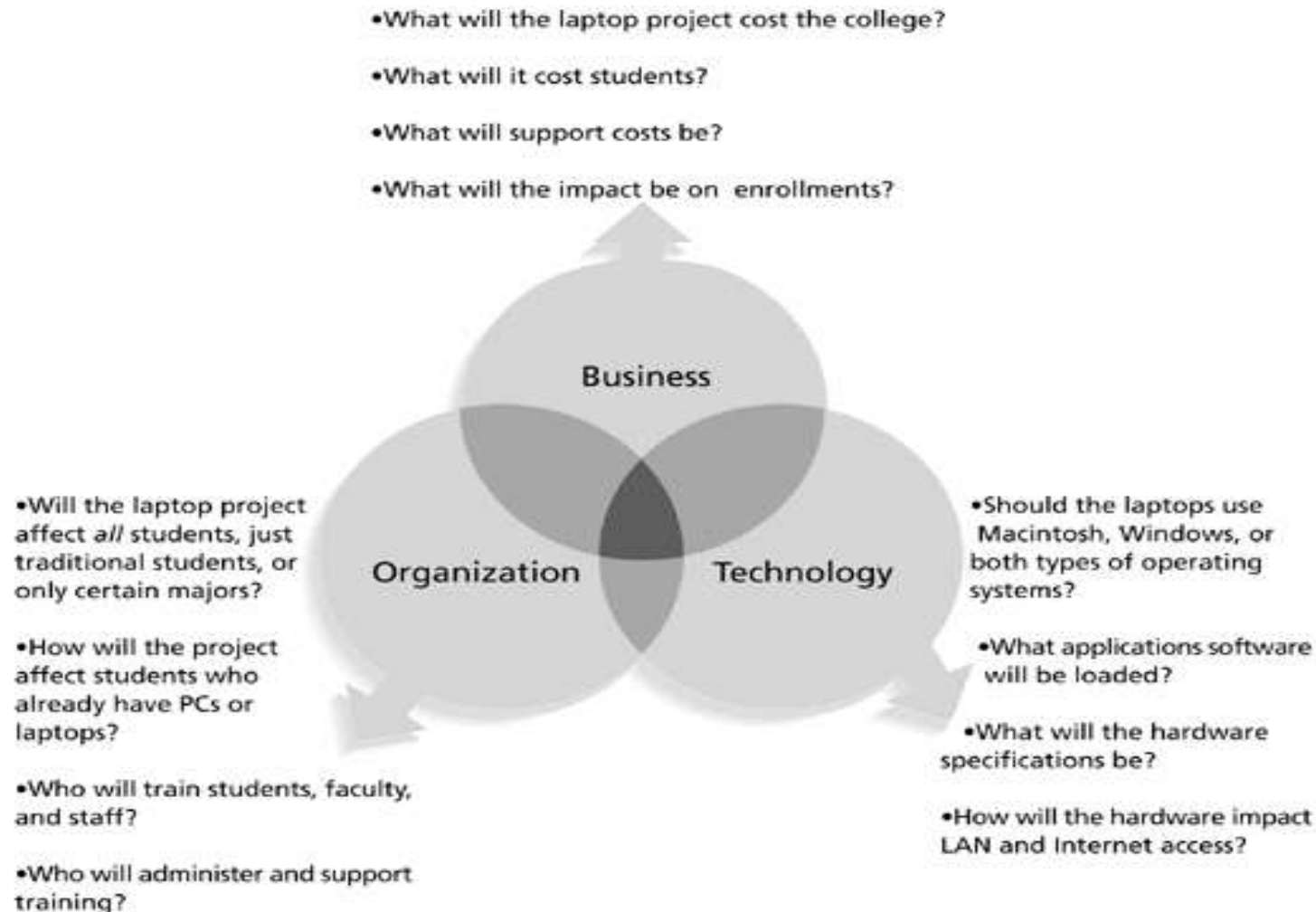
Organizational Project Management

- Organizational project management
  - Framework in which portfolio, program, and project management are integrated with organizational enablers in order to achieve strategic objectives

A Systems View of Project Management

- A **systems approach** emerged in the 1950s to describe a more analytical approach to management and problem solving

- Three parts include:

  - **Systems philosophy**: an overall model for thinking about things as systems
  - **Systems analysis**: problem-solving approach
  - **Systems management**: address business, technological, and organizational issues before making changes to systems

Figure 2-1: Three Sphere Model for Systems Management

- What will the laptop project cost the college?
- What will it cost students?
- What will support costs be?
- What will the impact be on enrollments?

Business

Organization

- Will the laptop project affect *all* students, just traditional students, or only certain majors?
- How will the project affect students who already have PCs or laptops?
- Who will train students, faculty, and staff?
- Who will administer and support training?

Technology

- Should the laptops use Macintosh, Windows, or both types of operating systems?
- What applications software will be loaded?
- What will the hardware specifications be?
- How will the hardware impact LAN and Internet access?

- three-sphere model of systems management deals with the business, organizational and technological aspects and/or issues related to the project that should be defined and considered in order to select and manage projects effectively and successfully

Business

- A project should supplement or serve as an answer to the business goals.
- **Business Issue:**
- What will the project cost the company:

- What would be the impact of the website to the sales of the magazine?

- What would be the cost of maintaining the whole system for the website?

Technology

• The technological sphere should state the proper hardware and software issues to be resolved.

• **Technological Issues:**

• What operating system, server platform, scripting language and database should be used?

• Does our current network setup allow employees to develop this project, or do we need an upgrade?

• What will be the server and desktop specifications?

Organization:

As for the organizational aspect, matters involving the stakeholders should be taken into full consideration.

Organization Issues

• Do we have the existing manpower to develop the project?   What is the higher management support required?

• Do we have infrastructure to complete the project?

• If the project manager would be able to point out as early as   possible the aforementioned issues and integrate it to the project   it would definitely aid in determining if an organization should   invest and produce the project.

Four Frames of Organization
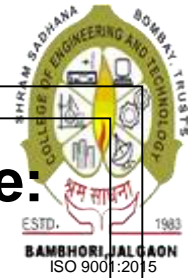
Structural frame: Focuses on roles and responsibilities, coordination and control. Organization charts help define this frame.	**Human resources frame:** Focuses on providing harmony between needs of the organization and needs of people.
Political frame: Assumes organizations are coalitions composed of varied individuals and interest groups. Conflict and power are key issues.	**Symbolic frame:** Focuses on symbols and meanings related to events. Culture is important.

Structural frame:

•Focuses on roles and responsibilities, coordination and control. Organization charts help define this frame.

•deal with how the organization is structured and focus on roles and responsibilities.

• It's important to understand these roles and responsibilities when dealing with project stakeholders, especially in procuring resources

Human resources:

•Focuses on providing harmony between needs of the organization and needs of people.

•focuses on meeting the needs of the organization and its people.

•Project managers must understand various human resources policies and procedures.

Political Resources:

• Assumes organizations are coalitions composed of varied individuals and interest groups. Conflict and power are key issues.

• addresses organizational and personal politics.

• Many project managers fail because they do not understand the political environment.

Symbolic resources:

- Focuses on symbols and meanings related to events. Culture is important.

- focuses on symbols and meanings.

- It's important to understand an organization's culture, dress code, work ethic, and so on in managing project
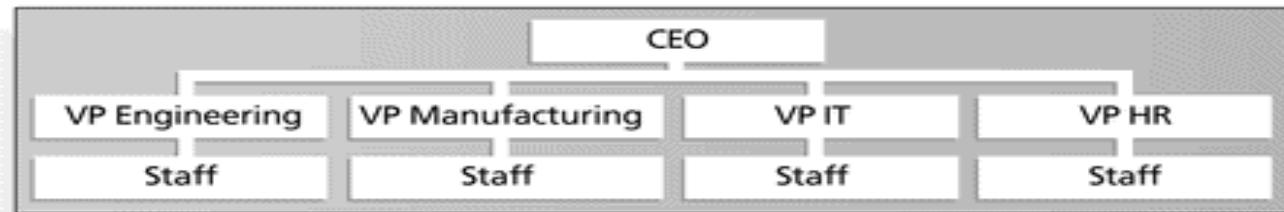
Organizational Structures

- Three basic organization structures

    - **Functional:** functional managers report to the CEO

    - **Project:** program managers report to the CEO

    - **Matrix:** middle ground between functional and project structures; personnel often report to two or more bosses; structure can be weak, balanced, or strong matrix

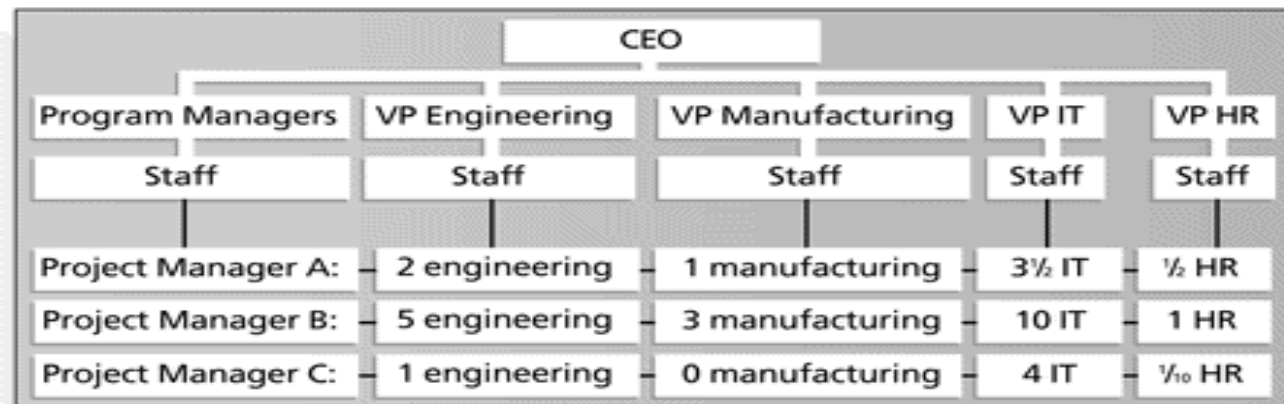# Figure 2-2: Functional, Project, and Matrix Organizational Structures

Functional

	CEO		
VP Engineering	VP Manufacturing	VP IT	VP HR
Staff	Staff	Staff	Staff

Project

	CEO	
Program Manager A	Program Manager B	Program Manager C
Staff	Staff	Staff

Matrix

	CEO			
Program Managers	VP Engineering	VP Manufacturing	VP IT	VP HR
Staff	Staff	Staff	Staff	Staff
Project Manager A:	2 engineering	1 manufacturing	3½ IT	½ HR
Project Manager B:	5 engineering	3 manufacturing	10 IT	1 HR
Project Manager C:	1 engineering	0 manufacturing	4 IT	1/10 HR

Organizational Culture

- **Organizational culture** is a set of shared assumptions, values, and behaviors that characterize the functioning of an organization

- Many experts believe the underlying causes of many companies' problems are not the structure or staff, but the culture

Ten Characteristics of Organizational Culture

- Member identity*
- Group emphasis*
- People focus
- Unit integration*
- Control

- Risk tolerance*
- Reward criteria*
- Conflict tolerance*
- Means-ends orientation
- Open-systems focus*

*Project work is most successful in an organizational culture where these items are strong/high and other items are balanced

Need for Organizational Standards

•Standards and guidelines help project managers be more effective.

•**Senior management can encourage:**

   •The use of standard forms and software for project management

   •The development and use of guidelines for writing project plans or providing status information

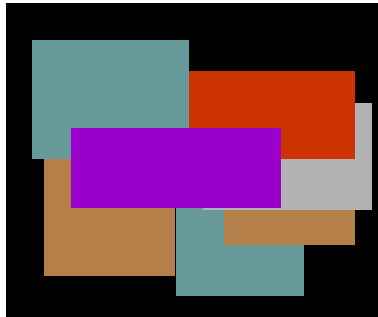   •The creation of a project management office or center of excellence

Project Planning

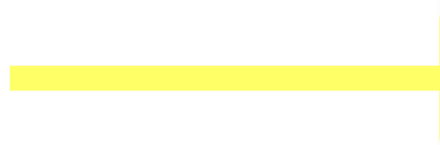**Adequate planning leads to the correct completion of work**

Proper output on time

•Inadequate planning leads to frustration towards the end of the project & poor project performance

Project Start

Project End

Project Planning

- The main purpose of project planning is to guide execution
  - Every knowledge area includes planning information (see Table 3-7)
- Key outputs included in the JWD project
  - Team contract
  - Project scope statement
  - Work breakdown structure (WBS)
  - Project schedule, in the form of a Gantt chart with all dependencies and resources entered
  - List of prioritized risks (part of a risk register)
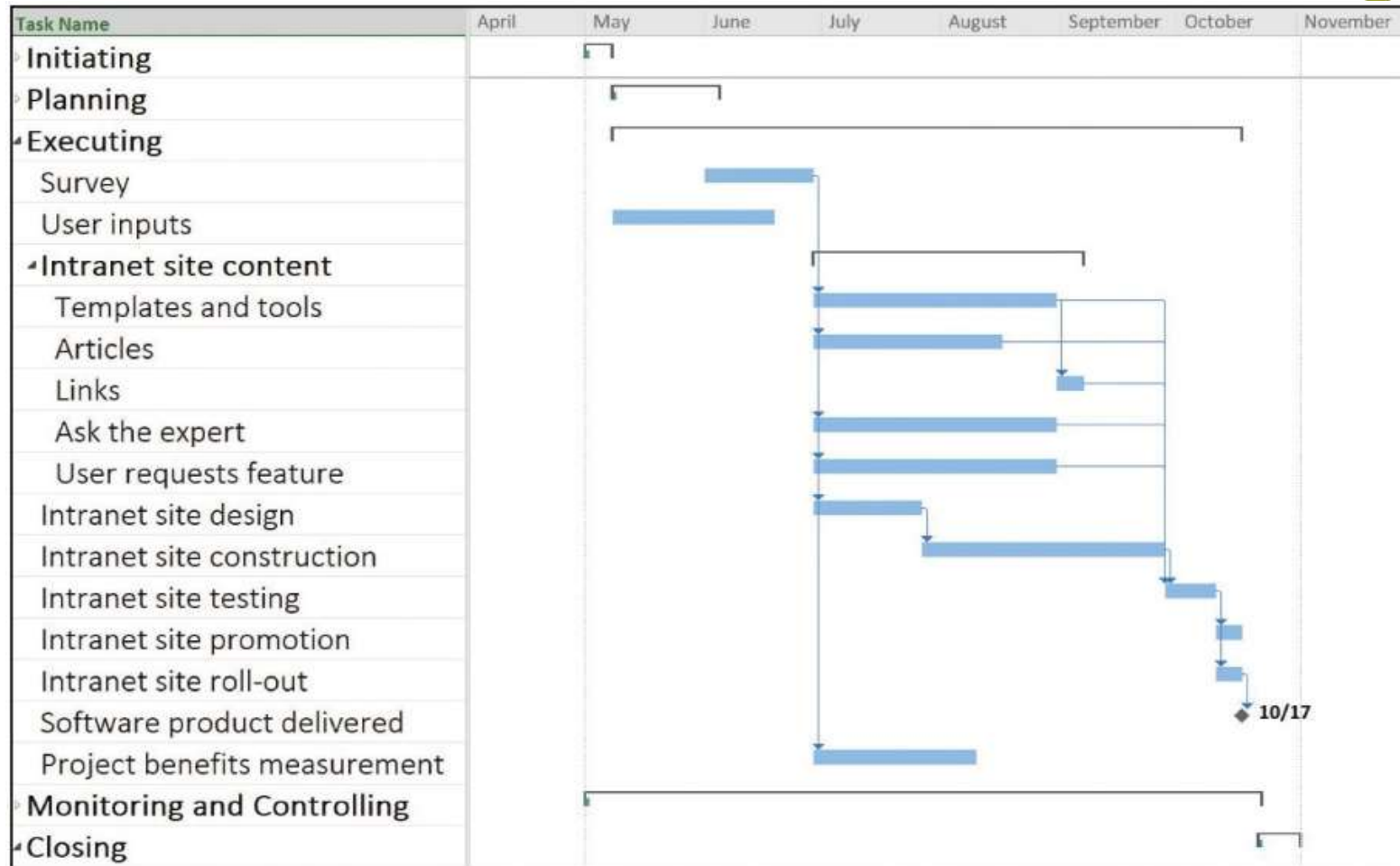
FIGURE 3-4 JWD Consulting intranet site project baseline Gantt chart

Project Planning

Table 3-10 List of Prioritized Risks

1	Lack of inputs from internal consultants
2	Lack of inputs from client representatives
3	Security of new system
4	Outsourcing/purchasing for the article retrieval and Ask the Expert features
5	Outsourcing/purchasing for processing online payment transactions
6	Organizing the templates and examples in a useful fashion
7	Providing an efficient search feature
8	Getting good feedback from Michael Chen and other senior consultants
9	Effectively promoting the new system
10	Realizing the benefits of the new system within one year

Questions

1)What is project & what are its main attributes?Also explain project constraints.

2)What is project management explain in brief. Or

3)Explain project management frame work?or

4)Explain Project management knowledge areas in detail.

5)Explain project planing process.

6)Explain project life cycle.

1)Explain Scope ,Time ,Cost ,Quality Management.

2)Explain triple constraint project management.

3)What do you mean by project stockholder Define project & its attributes.

4)What is role of project manager. How a project can be success.

5)What is concept of project management ?Why do companies use the project management.

6)Explain the four frames of organizations. How can they help project managers understand the organizational context for their projects?

7)Describe how organizational culture is related to project management. What type of culture promotes a strong project environment.

THANK YOU