

# Organizational Structures & Project Environment

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WEEK 2? LECTURE 3&4

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# Today's Objectives

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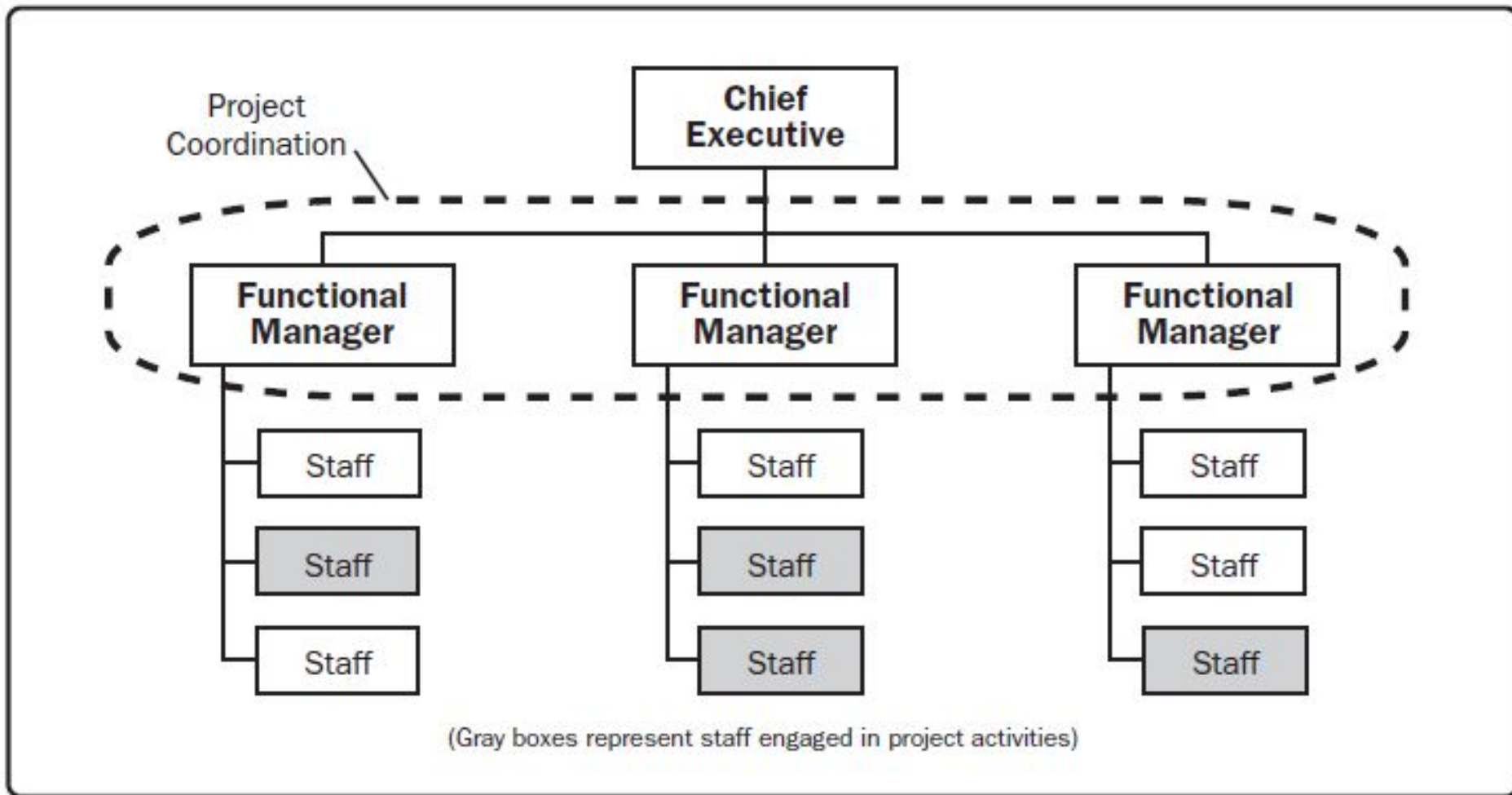
- Organizational Structures
- Project Stakeholders
- Management Spectrum-4 Ps
- W5HH Principle

# Organizational Structures

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- Functional
- Projectized
- Weak matrix
- Balanced matrix
- Strong matrix

# Functional Organization



**Figure 2-1. Functional Organization**

# Advantages/Disadvantages of Organizations

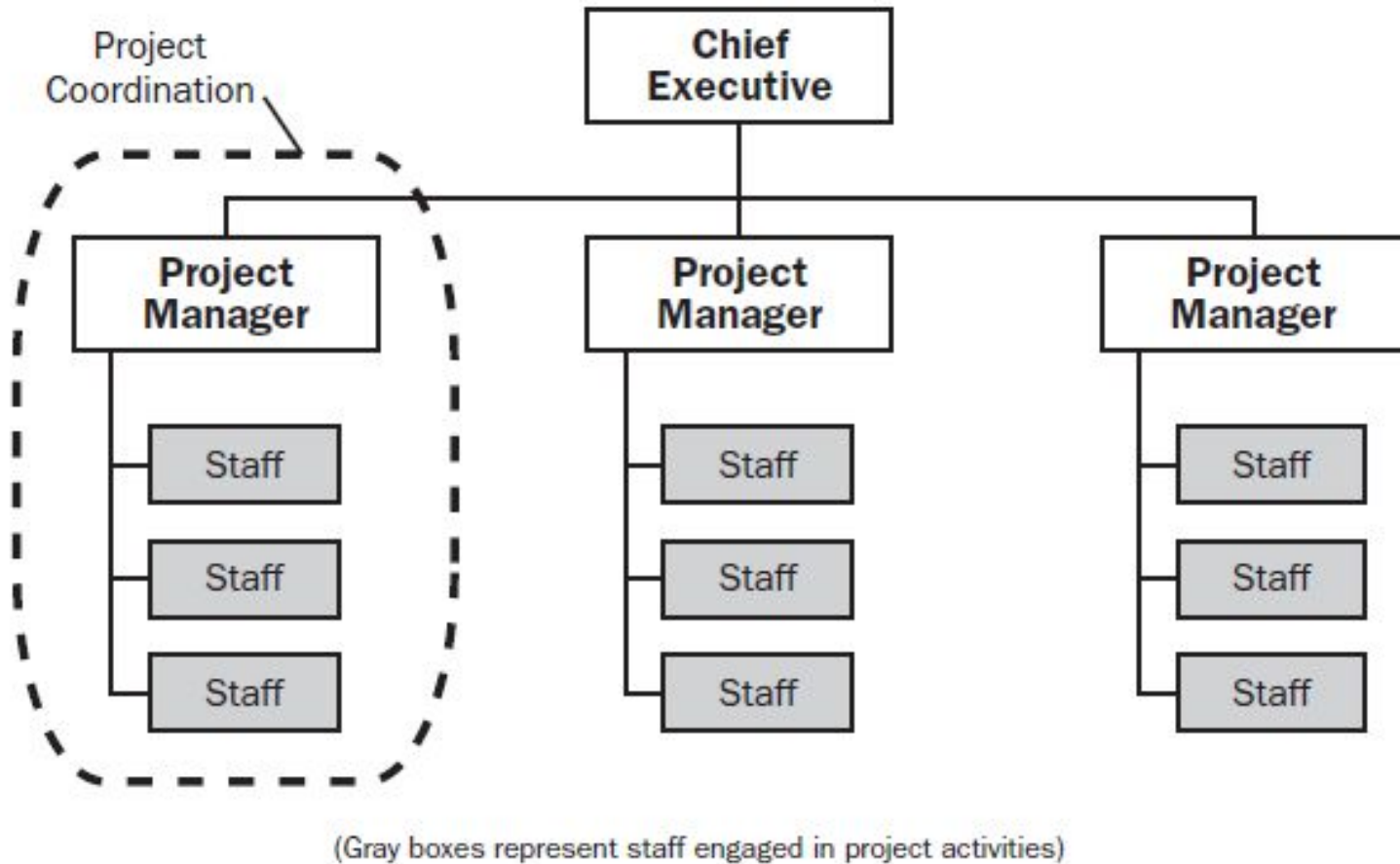
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## Functional Organization

Grouped by areas of specialization/ functions. Power is with the functional leader.

- **Advantages:** access to specialists; members reporting to only one supervisor, clearly defined career paths
- **Disadvantages:** less focus on project deliverables, no career path on project management, PM has no authority.

# Projectized Organization



**Figure 2-5. Projectized Organization**

# Advantages/Disadvantages of Organizations

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## Projectized Organization

Organization is by projects. Personnel report to PM/has total power.

- **Advantages:** efficient project organization - loyalty to the project - effective communications.
- **Disadvantages:** duplication of facilities.

# Matrix Organizational Structures

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- A matrix organizational structure is a workplace format in which employees report to two or more managers rather than one manager overseeing every aspect of a project.
- For example, an employee may have a primary manager they report to as well as one or more project managers they work under.



# Matrix Organizational Structures (Cont.)

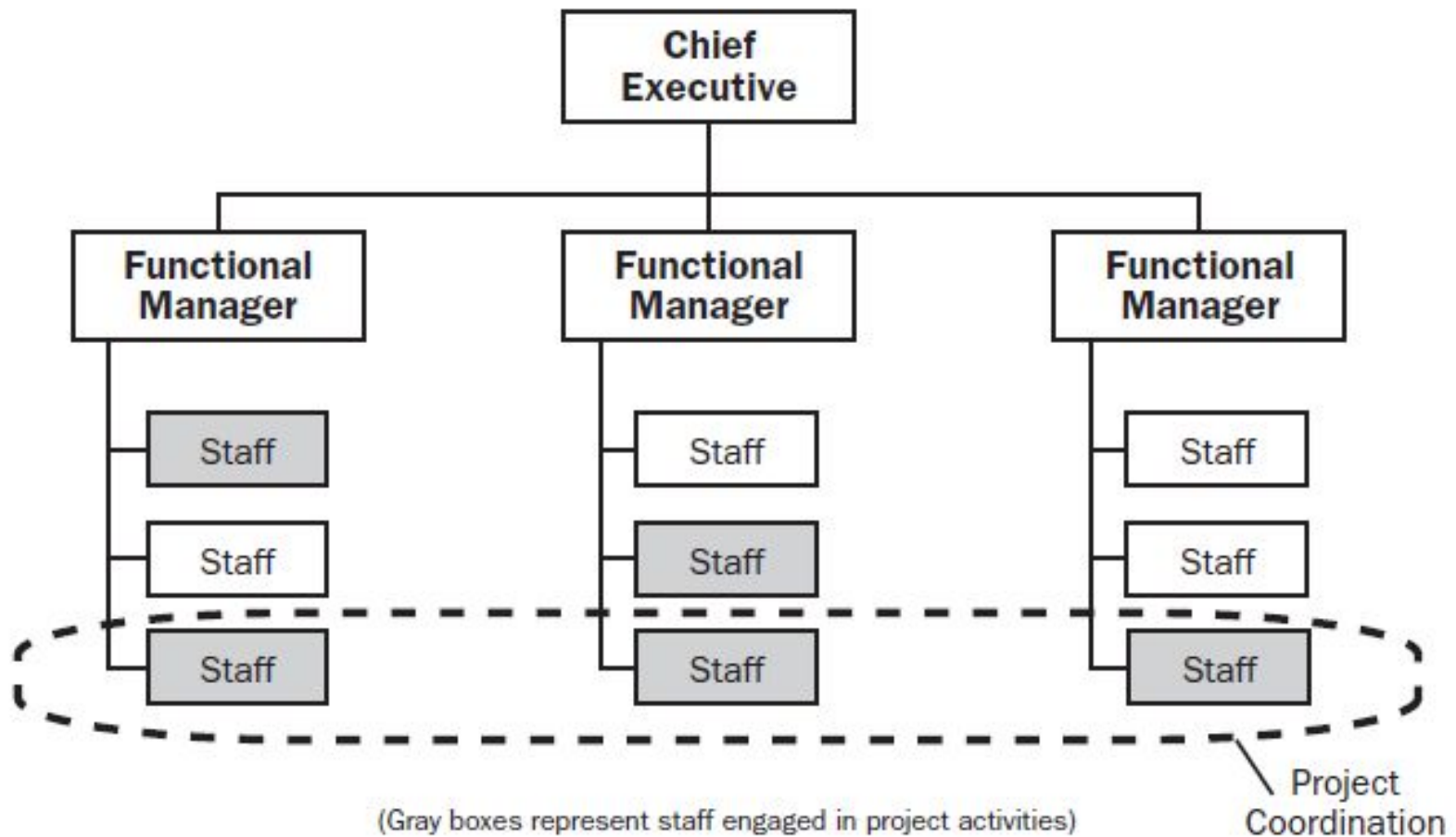
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- This type of structure is often useful when skills need to be shared across departments to complete a task and can allow companies to utilize a wide range of talents and strengths.

There are three types of matrix organizational structures:

- Weak Matrix Organizational Structures
- Balanced Matrix Organizational Structures
- Strong Matrix Organizational Structures

# Weak Matrix Organization



**Figure 2-2. Weak Matrix Organization**

# Balanced Matrix Organization

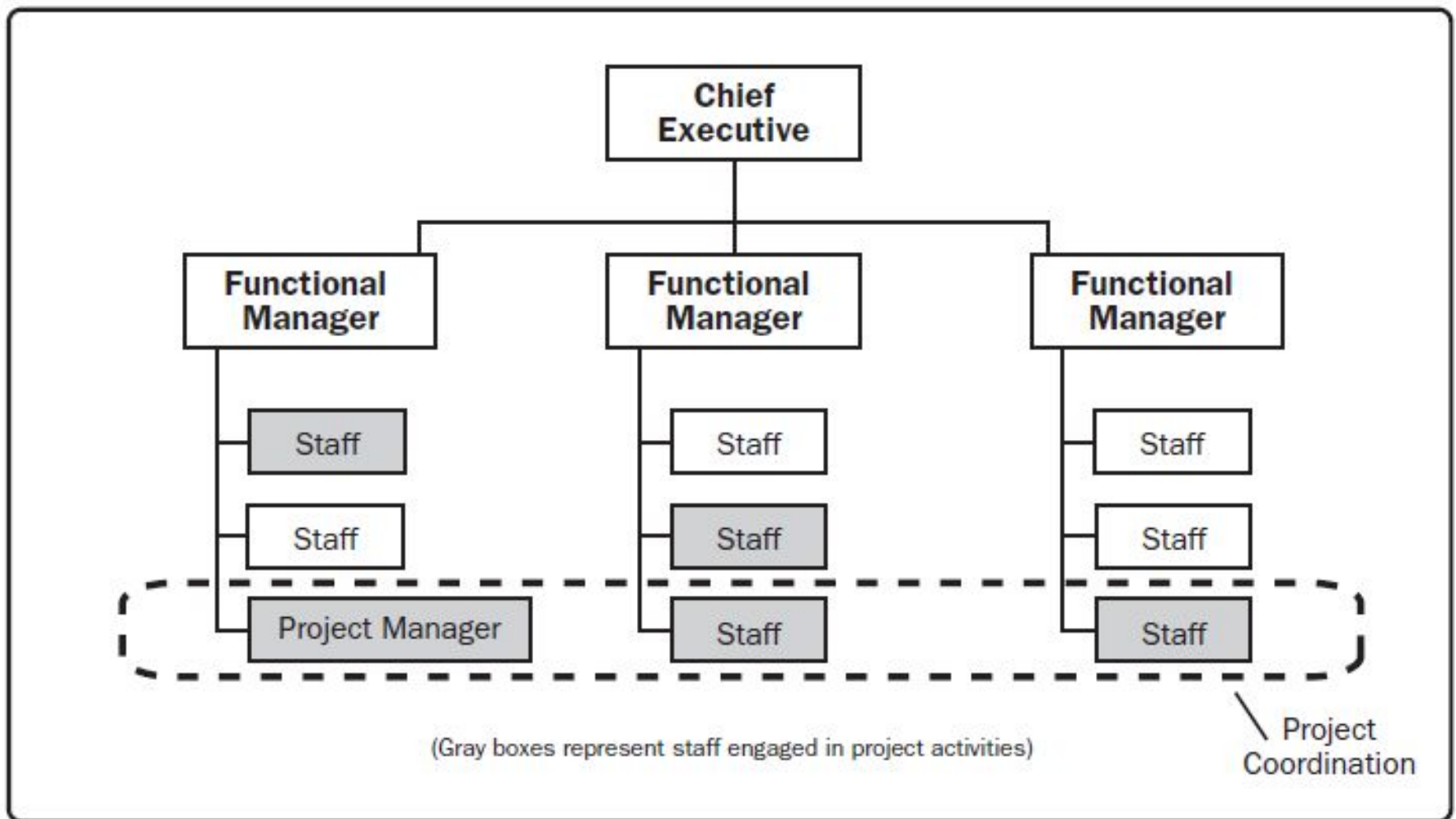


Figure 2-3. Balanced Matrix Organization

# Strong Matrix Organization

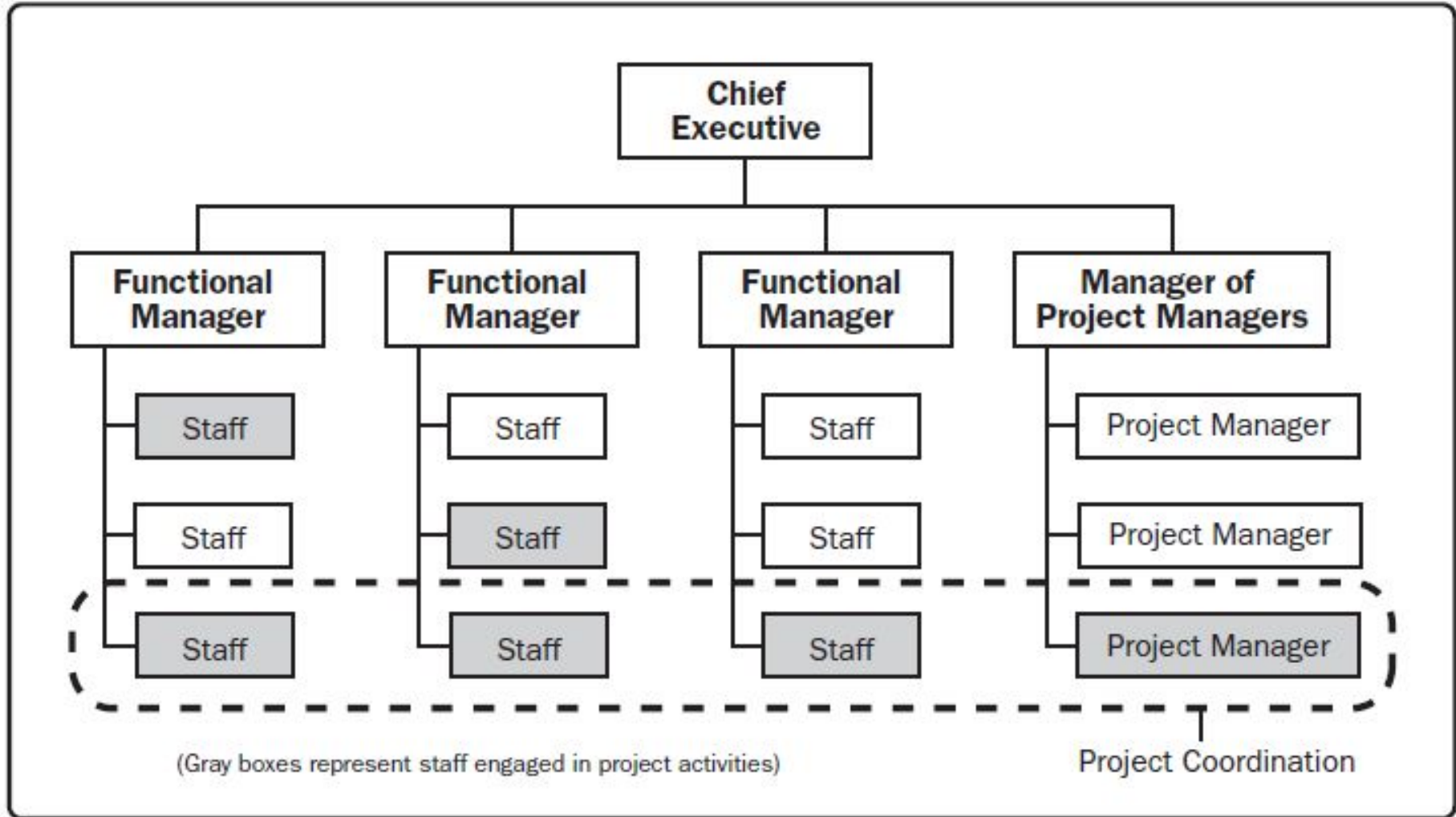


Figure 2-4. Strong Matrix Organization

# Advantages/Disadvantages of Organizations

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## Matrix Organization

Power varies between project & functional managers according to its type (strong, balanced or weak)

□ advantages:

- Maximum utilization of occasional resources
- Efficient horizontal & vertical distribution of information
- Retention of home after project closure.

# Advantages/Disadvantages of Organizations

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## Matrix Organization

- **Disadvantages:**
- Different priorities between PM & FM (conflicts)
- Dual reporting
- Complex to monitor and control

# Organizational Structure Influences

<div> <div>Organization Structure</div> <div>Project Characteristics</div> </div>	Functional	Matrix			Projectized
		Weak Matrix	Balanced Matrix	Strong Matrix	
Project Manager's Authority	Little or None	Low	Low to Moderate	Moderate to High	High to Almost Total
Resource Availability	Little or None	Low	Low to Moderate	Moderate to High	High to Almost Total
Who manages the project budget	Functional Manager	Functional Manager	Mixed	Project Manager	Project Manager
Project Manager's Role	Part-time	Part-time	Full-time	Full-time	Full-time
Project Management Administrative Staff	Part-time	Part-time	Part-time	Full-time	Full-time

# FACTORS IN ORGANIZATION STRUCTURE SELECTION

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- Each organization considers numerous factors for inclusion in its organizational structure. Each factor may carry a different level of importance in the final analysis.
- The combination of the factor, its value, and relative importance provides the organization's decision makers with the right information for inclusion in the analysis.
- Factors to consider in selecting an organizational structure include but are not limited to:
  - Degree of alignment with organizational objectives,
  - Specialization capabilities,
  - Span of control, efficiency, and effectiveness,
  - Clear path for escalation of decisions,
  - Clear line and scope of authority,
  - Delegation capabilities,



# FACTORS IN ORGANIZATION STRUCTURE SELECTION

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- Accountability assignment,
- Responsibility assignment,
- Adaptability of design,
- Simplicity of design,
- Efficiency of performance,
- Cost considerations,
- Physical locations (e.g., colocated, regional, and virtual),
- Clear communication (e.g., policies, status of work, and organization's vision).

# PROJECT MANAGEMENT OFFICE

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- A project management office (PMO) is an organizational structure that standardizes the project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques.
- The responsibilities of a PMO can range from providing project management support functions to the direct management of one or more projects.
- There are several types of PMOs in organizations.
- Each type varies in the degree of control and influence it has on projects within the organization

# PROJECT MANAGEMENT OFFICE

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**Supportive.** Supportive PMOs provide a consultative role to projects by supplying templates, best practices, training, access to information, and lessons learned from other projects. This type of PMO serves as a project repository. The degree of control provided by the PMO is low.

**Controlling.** Controlling PMOs provide support and require compliance through various means. The degree of control provided by the PMO is moderate. Compliance may involve:

- Adoption of project management frameworks or methodologies;
- Use of specific templates, forms, and tools; and
- Conformance to governance frameworks.

**Directive.** Directive PMOs take control of the projects by directly managing the projects. Project managers are assigned by and report to the PMO. The degree of control provided by the PMO is high.

# Project Stakeholders

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## Key Stakeholders

**Individuals and organizations who are actively involved in the project and whose interests may be positively or negatively affected by the project success or failure.**

- Project manager manages the project
- Customer uses the product or service
- Performing organization enterprise that does the project work
- Sponsor provides financial resources

# Project Stakeholders

## Project Life Cycle and Organization

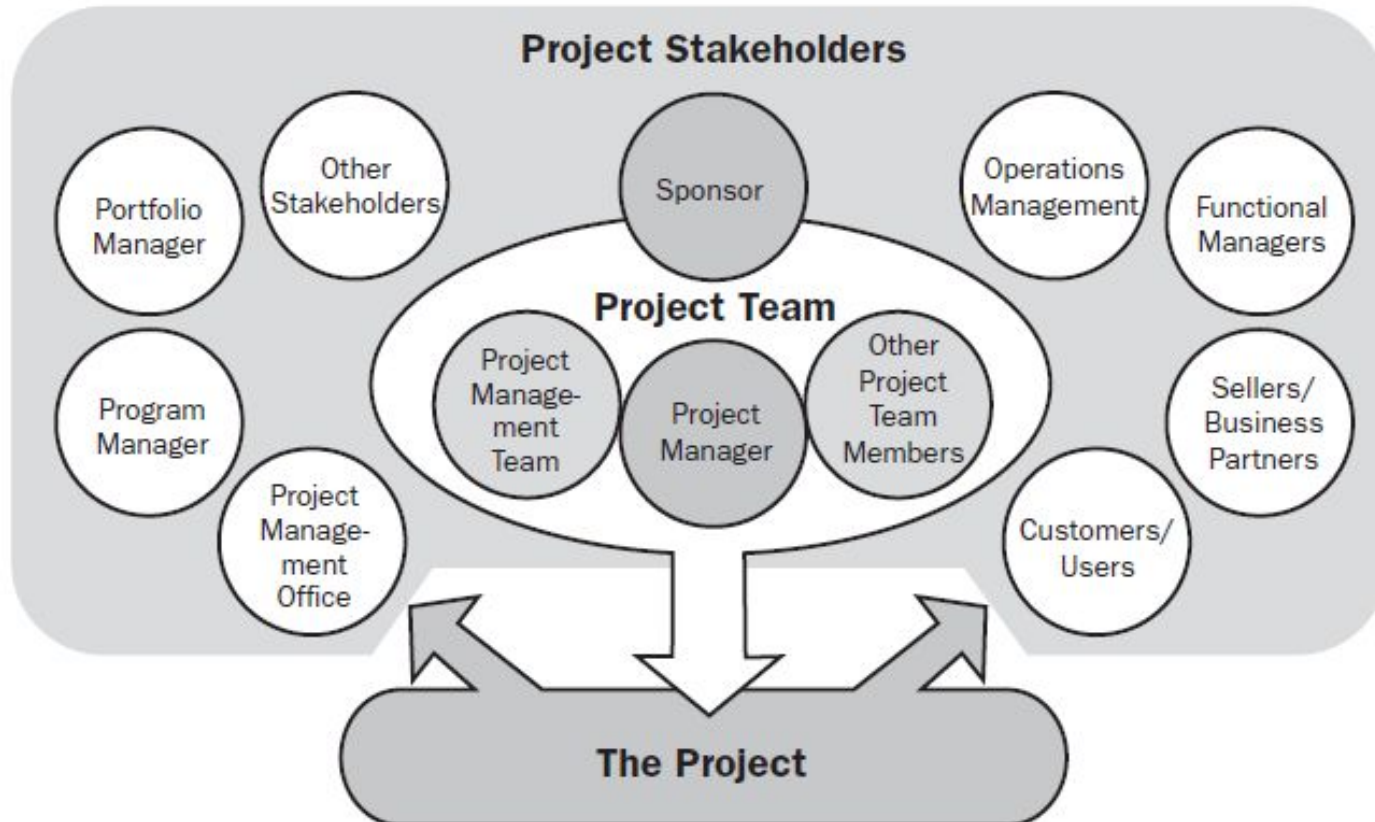


Figure 2-7. The Relationship Between Stakeholders and the Project

# What is a Deliverable?

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- A unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase or project.
- A deliverable often marks the end of a phase of the project or a major milestone.

# Project Phases

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- Divides the project into phases that provide better management control and the appropriate links to the operations of the organization
- Project governance across the life cycle
- Phase-to-phase relationship

# Management Spectrum

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## Four P's

- People
- Product
- Process
- Project

The order of the P's is Important



# Management Spectrum

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The order is not arbitrary.

People: the cultivation of motivated, highly skilled people has been discussed since the 1960s. People factor is so important that the software institute has developed a people management capability maturity model (PM-CMM).

It defines following key practice areas for software people: recruiting, selection, performance management, training, compensation, career development, organization and work design and team/ culture development

Product: before a project can be planned product objectives and scope should be established alternative solution should be considered, and technical and management constraints should be identified. Without this it is impossible to define reasonable estimates of the cost, assessment of risk, a realistic breakdown of project task, project schedule.

# Management Spectrum

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Process: software process provides a framework from which a comprehensive plan for software development can be established. A number of different task sets, milestone, work product, and quality assurance points enable the framework activities.

Project: we conduct planned and controlled software projects to manage complexity and yet we still struggle. In 1998, industry data indicated that 26 percent of the software projects failed outright and 46 percent experienced cost and schedule overruns.

# The People

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(PM-CMM) People Management Capability Maturity Model:

is a maturity framework that focuses on continuously improving the management and development of the human assets of an organization.

# The People

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PM-CMM key practice areas:

- Recruiting
- Selection
- Performance management
- Training
- Compensation
- Career development
- Team coordination

# The People(Players)

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**Senior managers** - Define business issues that have significant influence on projects

**Project managers**- Plan, Motivate, Organize, Control

Software engineers – Analysis design code test...

Practitioners - Technical skilled persons

Customers - Specify project requirements/ stakeholders

End users - Actual users

# Product

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A computer program written for sale.

A product can be defined as:

## Objectives

- Overall goals of the Project
- No consideration of implementation

## Scope

- Identification of Primary data
- Functions and Behaviors
- Boundaries of the Objectives

# The Process

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- Identification of the model to be used
- Define a preliminary plan

# The Process

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Process is a framework for comprehensive plan of software development

## Common framework activities(task)

- Milestones
- Deliverables
- Quality assurance points

## Umbrella tasks

- Software quality assurance
- Configuration management



# Project

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Conduct planned and controlled software projects to manage complexity.

All work required to make the product a reality

# The Project

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- To manage complexity
- To avoid failure
- To develop a commonsense approach for
  - Planning
  - Monitoring
  - and controlling the project.

# The Project

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## Ten signs that indicates that information system project is in threat

1. Software people don't understand their customer's need
2. The product scope is poorly defined
3. Changes are managed poorly
4. The chosen technology changes
5. Business needs changes
6. Deadline are unrealistic
7. Users are resistant
8. Sponsorship is lost
9. The project team lacks people with appropriate skills
10. Managers avoid best practices and lessons learn

# The Project

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Five-part commonsense approach to software projects:

1. Start on the right foot
2. Maintain Momentum
3. Track Progress
4. Make smart decisions
5. Conduct a postmortem analysis

# The W5 HH principle

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Barry Boehm suggested w5HH principle

1. Why is the system being developed?
2. What will be done by when?
3. Who is responsible for function?
4. Where are they organizationally located?
5. How will the job be done technically and managerially?
6. How much of each resource is needed?

# Discussion Question

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What type of organization is BEST for managing complex projects involving cross disciplinary efforts?

- A. Functional
- B. Projectized
- C. Weak Matrix
- D. Matrix

# ORGANIZATIONAL PROCESS ASSETS

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Organizational process assets (OPAs) are the plans, processes, policies, procedures, and knowledge bases specific to and used by the performing organization. These assets influence the management of the project.

OPAs include any artifact, practice, or knowledge from any or all of the performing organizations involved in the project that can be used to execute or govern the project.

The OPAs also include the organization's lessons learned from previous projects and historical information. OPAs may include completed schedules, risk data, and earned value data.

OPAs are inputs to many project management processes. Since OPAs are internal to the organization, the project team members may be able to update and add to the organizational process assets as necessary throughout the project.

# ORGANIZATIONAL PROCESS ASSETS

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They may be grouped into two categories:

- Processes, policies, and procedures; and
- Organizational knowledge bases.

Generally, the assets in the first category are not updated as part of the project work.

Processes, policies, and procedures are usually established by the project management office (PMO) or another function outside of the project.



# ORGANIZATIONAL PROCESS ASSETS

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These can be updated only by following the appropriate organizational policies associated with updating processes, policies, or procedures.

Some organizations encourage the team to tailor templates, life cycles, and checklists for the project. In these instances, the project management team should tailor those assets to meet the needs of the project.

The assets in the second category are updated throughout the project with project information.

For example, information on financial performance, lessons learned, performance metrics and issues, and defects are continually updated throughout the project.

# PROCESSES, POLICIES, AND PROCEDURES

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The organization's processes and procedures for conducting project work include but are not limited to:

Initiating and Planning:

- Guidelines and criteria for tailoring the organization's set of standard processes and procedures to satisfy the specific needs of the project;
- Specific organizational standards such as policies (e.g., human resources policies, health and safety policies, security and confidentiality policies, quality policies, procurement policies, and environmental policies);
- Product and project life cycles, and methods and procedures (e.g., project management methods, estimation metrics, process audits, improvement targets, checklists, and standardized process definitions for use in the organization);
- Templates (e.g., project management plans, project documents, project registers, report formats, contract templates, risk categories, risk statement templates, probability and impact definitions, probability and impact matrices, and stakeholder register templates); and
- Preapproved supplier lists and various types of contractual agreements (e.g., fixed-price, cost-reimbursable, and time and material contracts).

# Executing, Monitoring, and Controlling

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- Change control procedures, including the steps by which performing organization standards, policies, plans, and procedures or any project documents will be modified, and how any changes will be approved and validated;
- Traceability matrices;
- Financial controls procedures (e.g., time reporting, required expenditure and disbursement reviews, accounting codes, and standard contract provisions);

# Executing, Monitoring, and Controlling

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- Issue and defect management procedures (e.g., defining issue and defect controls, identifying and resolving issues and defects, and tracking action items);
- Resource availability control and assignment management;
- Organizational communication requirements (e.g., specific communication technology available, authorized communication media, record retention policies, videoconferencing, collaborative tools, and security requirements);
- Procedures for prioritizing, approving, and issuing work authorizations;
- Templates (e.g., risk register, issue log, and change log);
- Standardized guidelines, work instructions, proposal evaluation criteria, and performance measurement criteria; and
- Product, service, or result verification and validation procedures.

# ORGANIZATIONAL KNOWLEDGE REPOSITORIES

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The organizational knowledge repositories for storing and retrieving information include but are not limited to:

- Configuration management knowledge repositories containing the versions of software and hardware components and baselines of all performing organization standards, policies, procedures, and any project documents;
- Financial data repositories containing information such as labor hours, incurred costs, budgets, and any project cost overruns;
- Historical information and lessons learned knowledge repositories (e.g., project records and documents, all project closure information and documentation, information regarding both the results of previous project selection decisions and previous project performance information, and information from risk management activities);

# ORGANIZATIONAL KNOWLEDGE REPOSITORIES

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- Issue and defect management data repositories containing issue and defect status, control information, issue and defect resolution, and action item results;
- Data repositories for metrics used to collect and make available measurement data on processes and products; and
- Project files from previous projects (e.g., scope, cost, schedule, and performance measurement baselines, project calendars, project schedule network diagrams, risk registers, risk reports, and stakeholder registers).

# Conclusion

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We have discussed

- Organization structures :

- Functional, Projectized, Weak Matrix, balanced Matrix, Strong Matrix

- Stakeholders

- Management Spectrum-4Ps

- People

- Product

- Process

- Project

# Assignment 1

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1. Introduction of FYP
2. Define problem statement of your FYP
3. Define Scope of the Project
4. List all major goals and objectives of your project
5. Give team structure
6. Assignment should be of 3-4 pages.



# Reading Assignment

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**Chapter 2: The Environment in which the Project Operates** by  
PMBOK-Guide-6th-Edition-PMI

(Book and Lecture Slides are already uploaded on resource link.)

**Resource Link:**

Thank You