CONSTRUCTION EXTENSION TO THE PMBOK® GUIDE 3rd Edition

The Project Management Framework

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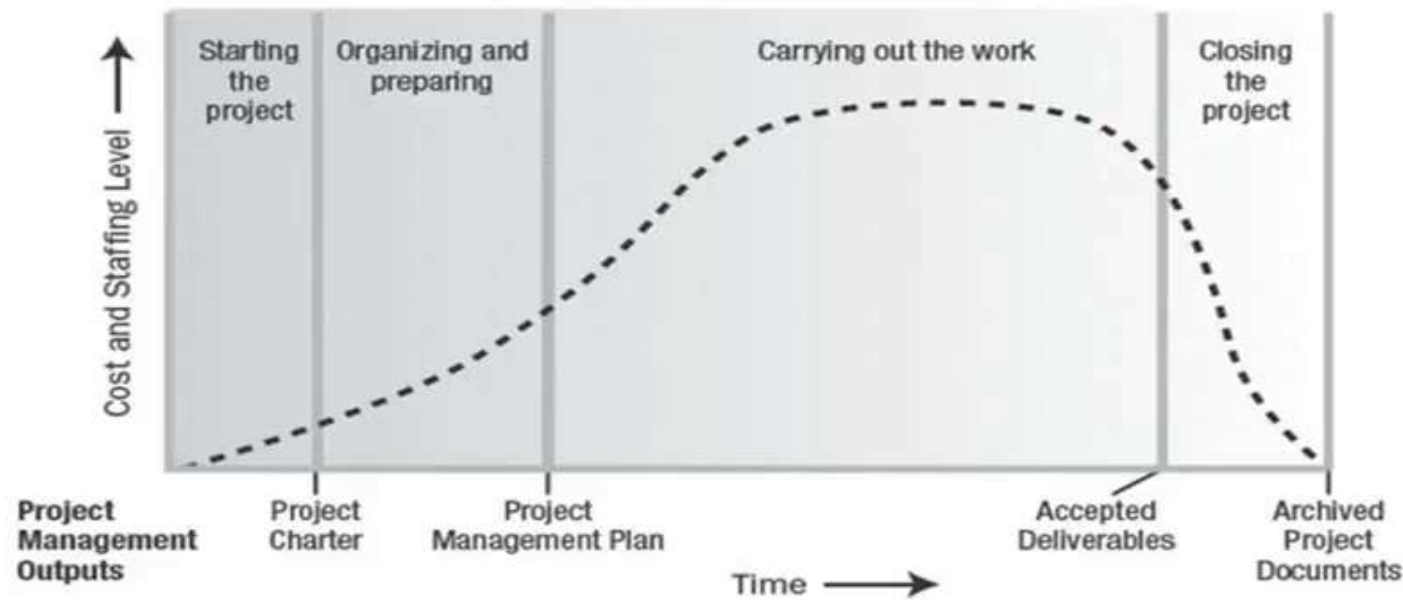M1 URBAN PROJECT MANAGEMENT

PROJECT MANAGEMENT

2024/2025

Project Life Cycle and Organization

▶ **Project Life Cycle and Organization**
- ✓ The Project Life Cycle
- ✓ Project Stakeholders
- ✓ Organizational Influences

The Project Life Cycle-Overview


General Life cycle structure

Project Life Cycle

▶ **The Project Life Cycle :**This concept is particularly important for a construction project where each phase has defined **decision points, deliverables**, or **completion milestones** which, when observed, provide a smooth flow and improved control over the life of the project. Many organizations identify a specific set of life cycles for use on all of their projects.

Project Life Cycle and Organization

The project life cycle defines the phases that connect the beginning of a project to its end.
In construction project a project proposal could start with design development (DD) or a contractor request for proposal/quotation (RFP/RFQ), depending on the time of initiation of the proposed project.
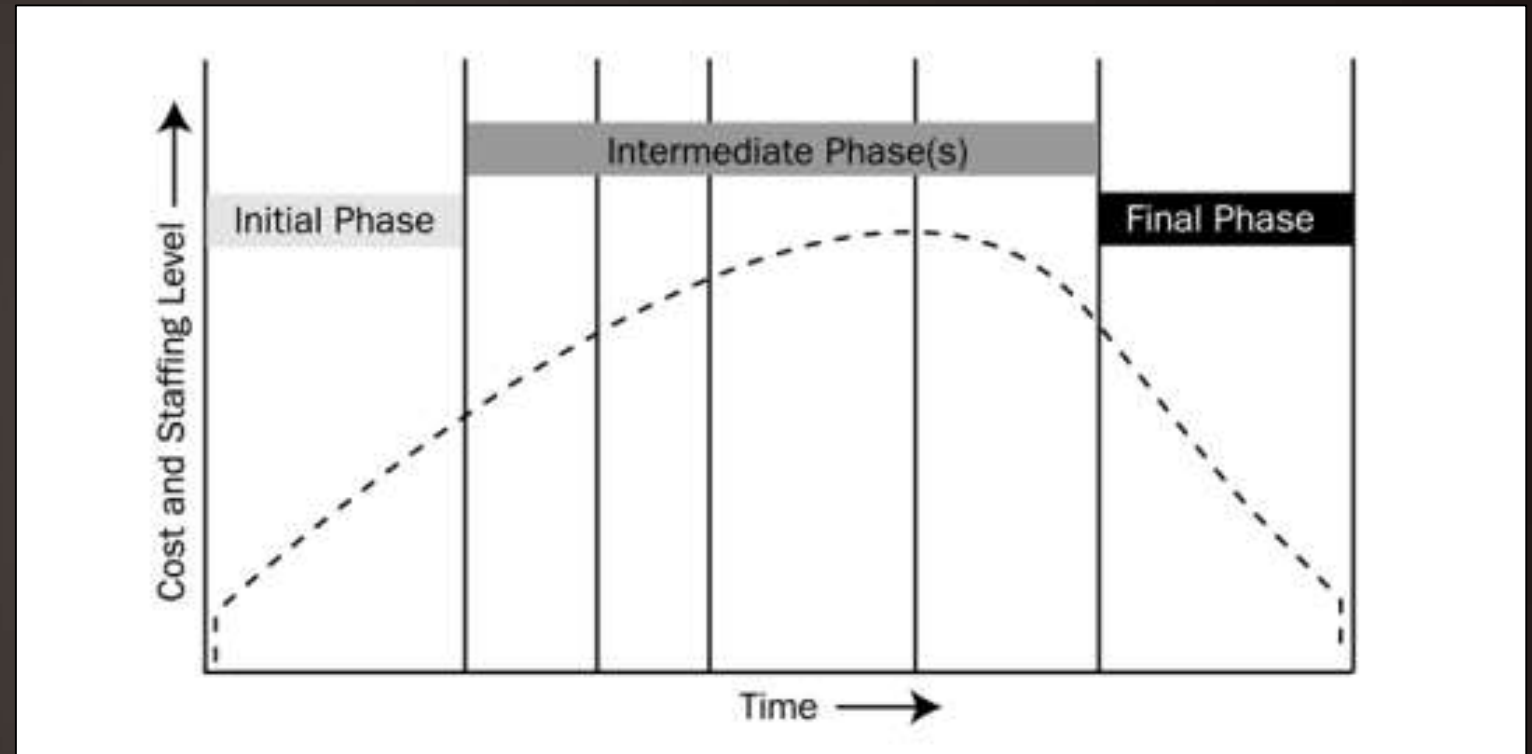
Typical Project Cost and Staffing Level Across the Project Life Cycle

Project Life Cycle

▶ In the context of project and construction management, the portions of **the constracted services** that extend beyond the completion of the facility itself (i.e., maintenance or operation) **are not considered** to be a part of the management of a construction project.

▶ While such services may be a **part of contracted services** and need to be considered, planned, and executed carefully, they take place in the field of ''**operation**s'' and **are not included in the Body of Knowledge** related to the management of construction projects.

Project Life Cycle and Organization

▶ The successful completion of **the feasibility** study marks the first of several transition milestones and probably is the most important.

▶ It is better to cancel the project at an early stage rather than spend more money on a project that, most likely, will fail ultimately.
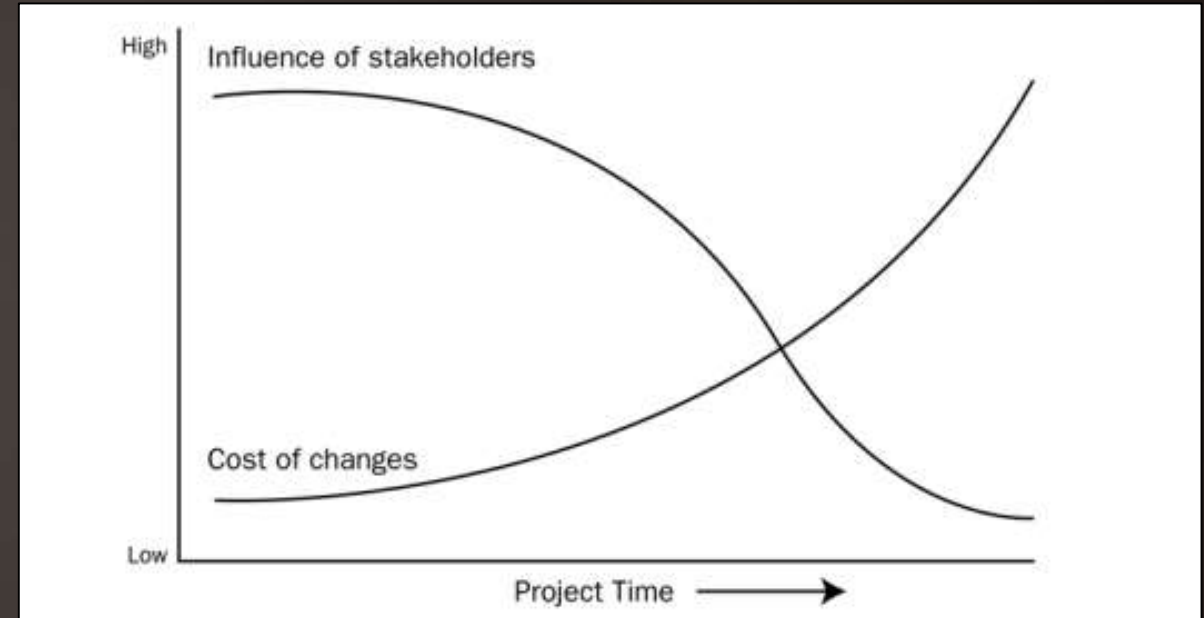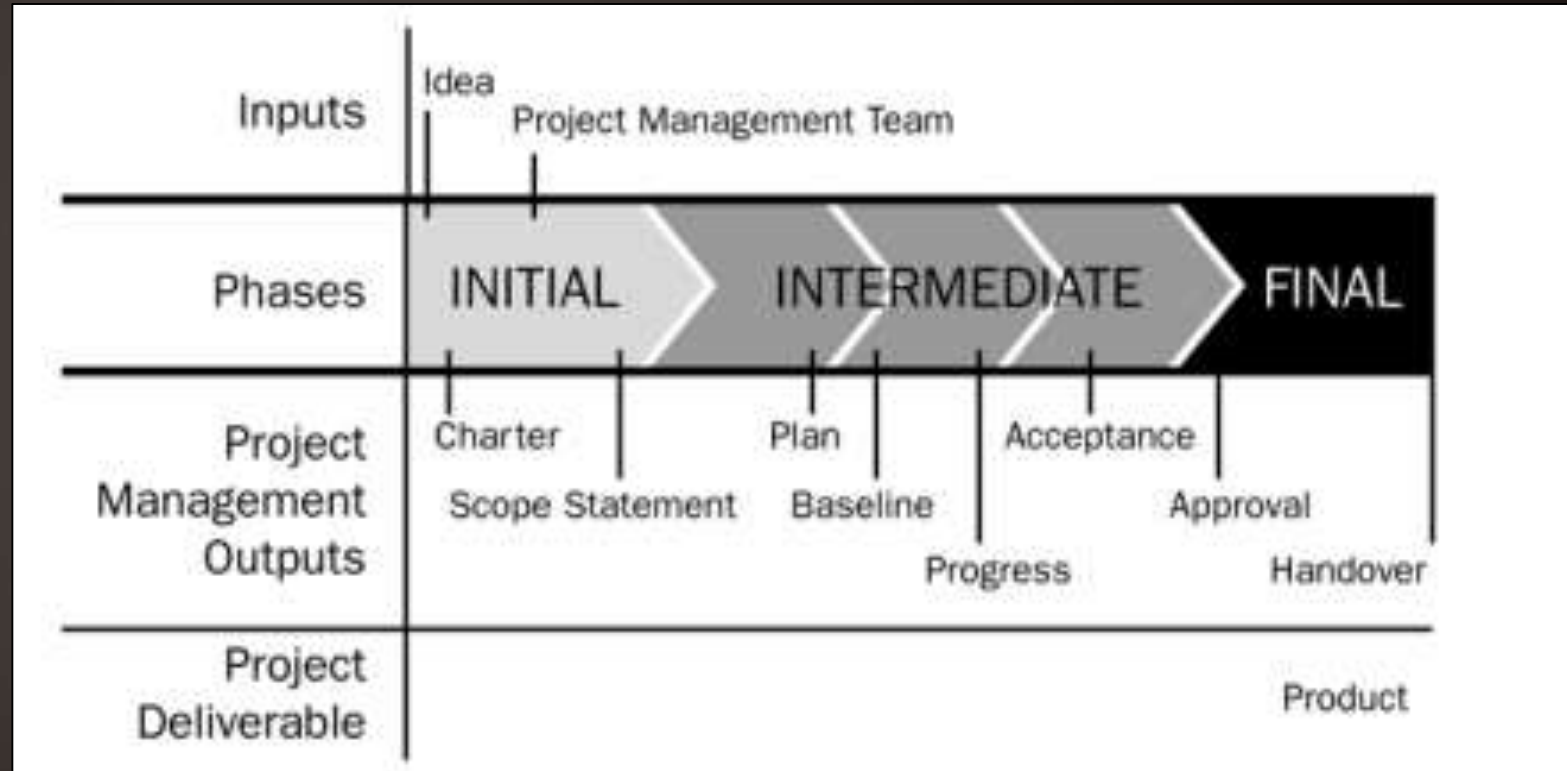

Stakeholders' Influence Over Time

Project Life Cycle

▶ **Characteristics of Project Phases**

▪ each one of construction project phases can be treated like a project in itself, with all of the process groups operating as they do for the overall project.

• These phases are:
o concept,
o planning (and development),
o detailed design, construction,
o start-up turnover.

Project Life Cycle

▶ **The concept phase is essentially the feasibility study.**

▶ In **the planning and development phase**, the concept is defined further:

▪ the project criteria are established,

▪ basic drawings are produced along with a schedule,

▪ budget, and work plan of how the detailed design,

▪ construction, and start-up are to be performed.

▪ It is customary, and often critical, that the client or owner approve the basic drawings, criteria, and work plan.

Project Life Cycle

▶ In **the detailed design phase**, all design details are completed and drawings and specifications are issued for construction. This can be accomplished using one of the following methods:

a) **A traditional design-bid-build project delivery method**.

b) **A design-build or phased design method.**

Project Life Cycle

▶ When construction is completed, the project is ready for final testing and **start-up operations**, followed by turnover to the owner. For major projects (e.g., industrial), the start-up phase is often done in sequential segments following the process flow; the project culminates when the plant or project becomes operational according to its design.

Project Life Cycle

▶ The critical milestones for construction projects are:

● Initial approval of the concept (feasibility study)

● Approval of the project criteria (baseline configuration)

● Readiness to initiate start-up

● Contractual completion of the project

Project Life Cycle

▶ The phases of the product life cycle

o Development

o Introduction

o Growth

o Maturity

o Decline

▶ The phases of project Life Cycle

o Initiation

o Planning

o Executing

o Monitoring and Control

o Closing

Project Life Cycle

▶ **Project Life Cycle and Product Life Cycle Relationships**

Some organizations formally approve projects only after the completion of a feasibility study, a preliminary plan, or some other equivalent form of analysis; in these cases, the preliminary planning or analysis takes the form of a separate project.
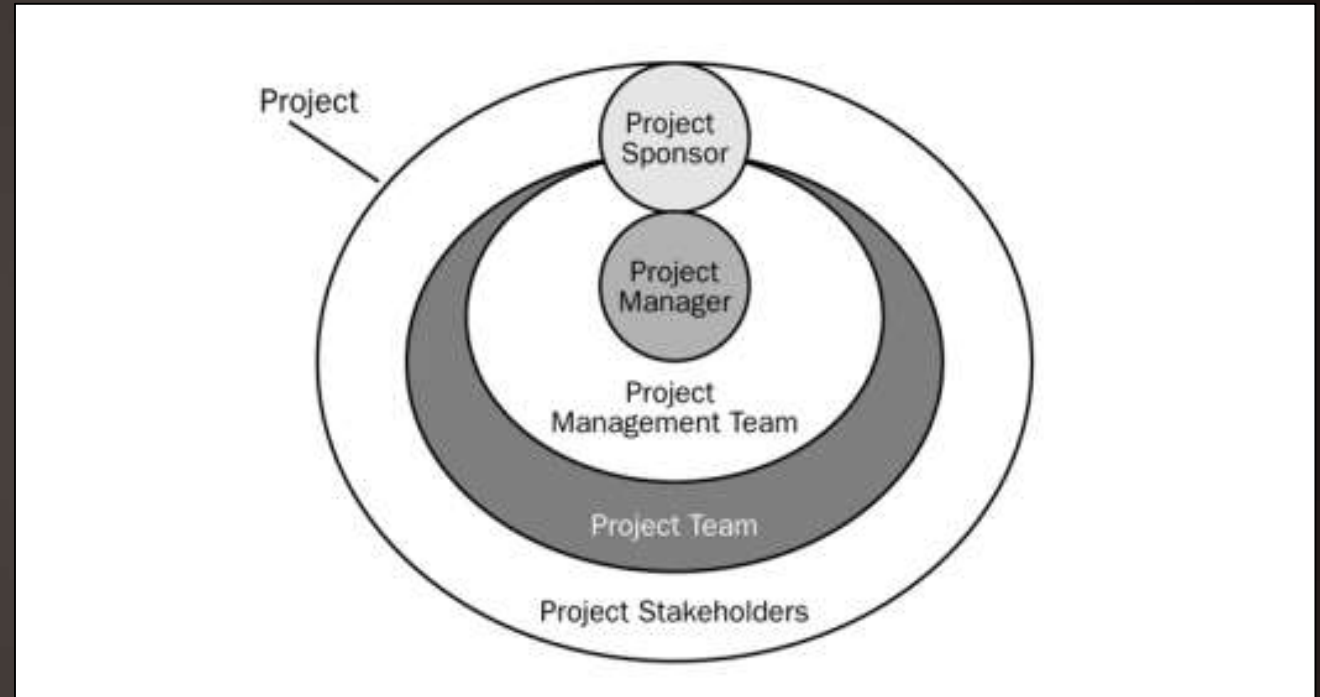
Project Life Cycle
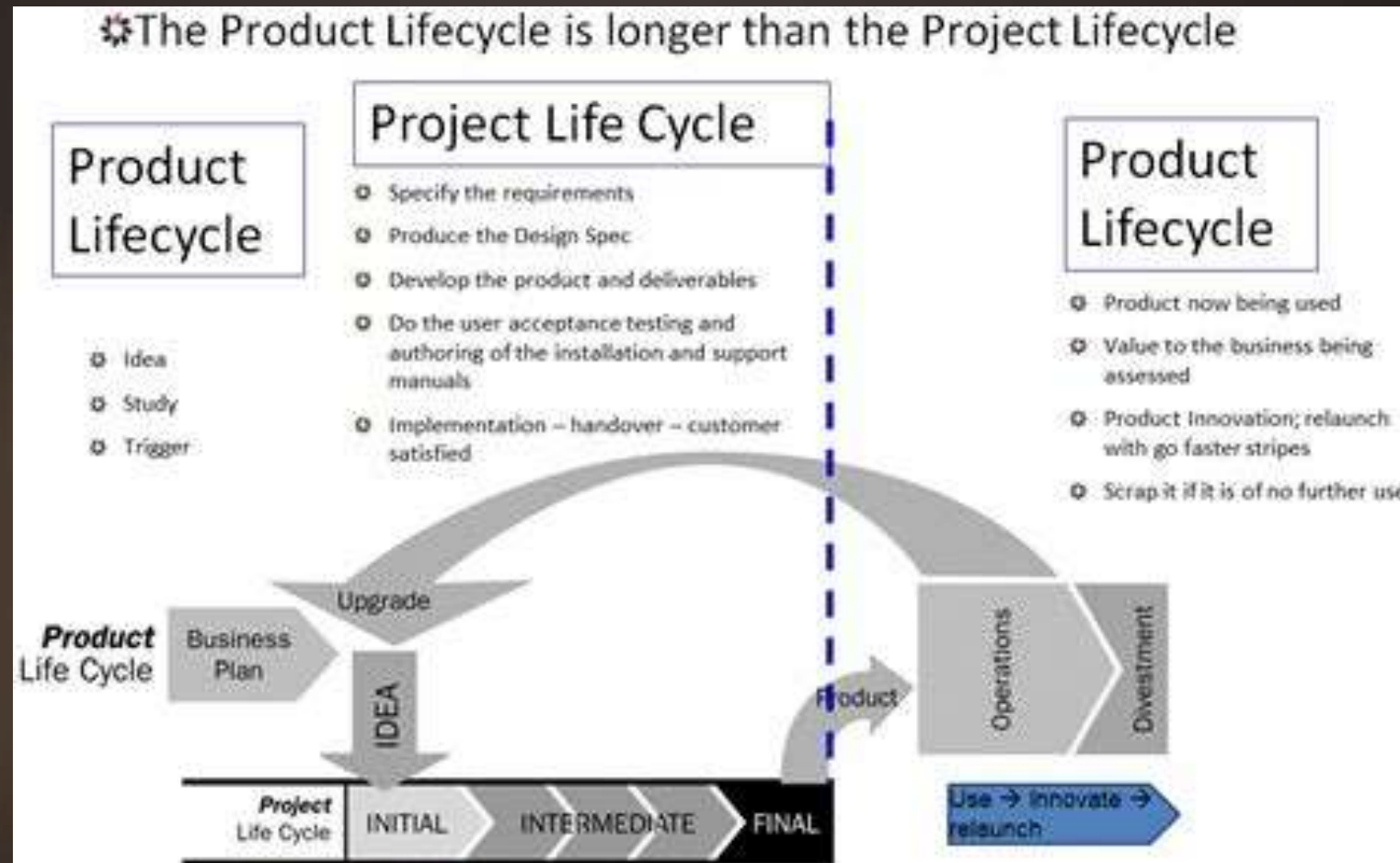
Project Life Cycle

| Parameters	Product life cycle	Project life cycle
Repetitive nature	The product life cycle can have single or multiple projects.	The project life cycle has a single project.
Comparison between duration	A product life cycle is much longer than a project life cycle.	A project life cycle is much shorter than a product life cycle.
Nature	A product life cycle may not end as it has a maintenance stage that can go on forever.	A project life cycle has a definite end as it does not need to be maintained in the future.
Order	We must follow a sequence in the product life cycle.	We do not need to follow any sequence in the project life cycle.
Purpose	A product life cycle focuses on the market's demands and competition.	A project life cycle focuses on the outcome as per the user requirements.
Duration	It can take up to years.	It can be short or long but shorter than the product life cycle.
Team	A product life cycle will have the needs of all the departments like sales, technology, testing, etc.	A project life cycle may involve the need of only a particular department with its project managers and team members.
Resources	A product would use the resources allocated to it such as a cloud database.	A project will release the resources allocated after its completion and it can be further re-allocated to other projects.
Performance	A product should have good feedback and be in demand in the market.	A project should be according to the user requirements and fulfill all the needs of the users.
Deliveries	A product life cycle includes maintenance which means the responsibility has not ended after handing over the product.	A project life cycle ends with the closure or the completion of the project and delivering it to the customer/client.

Project stakeholders

▶ **Project stakeholders: are individuals and organizations that are actively involved in the project, or whose interests may be affected as a result of project execution or project completion. They may also exert influence over the project's objectives and outcomes.**

▶ The project management team must identify the stakeholders, determine their requirements and expectations, and, to the extent possible, manage their influence in relation to the requirements to ensure a successful project.
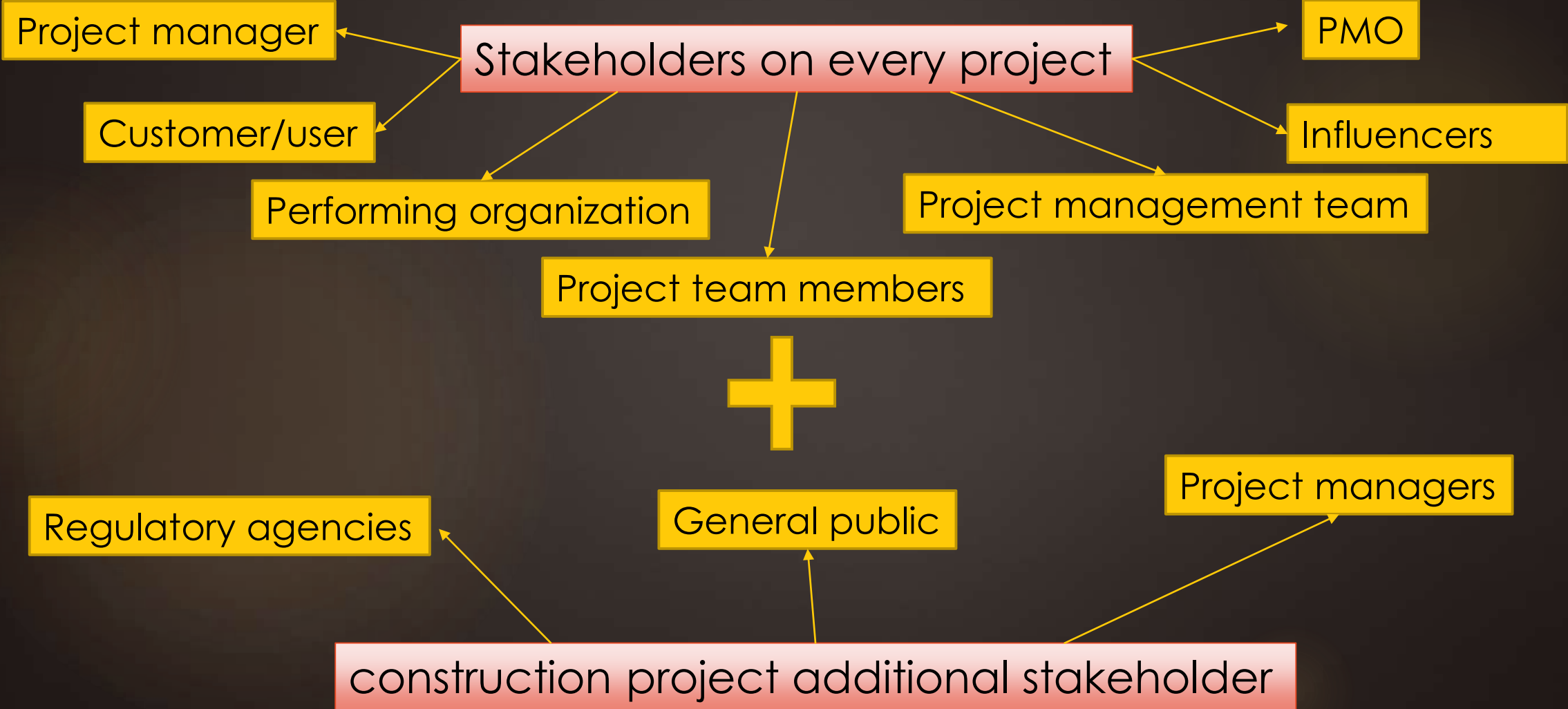
Project stakeholders

▶ Stakeholders have **varying levels of responsibility** and **authority** when participating in a project and these can change over the course of the project's life cycle.

▶ Their responsibility and authority range from occasional contributions in surveys and focus groups to full project sponsorship, which includes providing financial and political support.

Project stakeholders
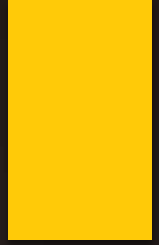
▶ Sometimes, stakeholder identification can be difficult. Failure to identify a key stakeholder can cause major problems for a project.

▶ Stakeholders may have a positive or negative influence on a project. Positive stakeholders are those who would normally benefit from a successful outcome from the project, while negative stakeholders are those who see negative outcomes from the project's success.

Project stakeholders

Project manager

PMO

Stakeholders on every project

Customer/user

Influencers

Performing organization

Project management team

Project team members

+

Project managers

Regulatory agencies

General public

construction project additional stakeholder

Project Life Cycle and Organization

▶ In addition to these key stakeholders, there are many different names and categories of project stakeholders, including internal and external, owners and investors, sellers and contractors, team members and their families, government agencies and media outlets, individual citizens, temporary or permanent lobbying organizations, and society-at-large.

Project stakeholders

▶ The naming or grouping of stakeholders is primarily an aid to identifying which individuals and organizations view themselves as stakeholders. Stakeholder roles and responsibilities can overlap.

▶ Project managers must manage stakeholder expectations, which can be difficult because stakeholders often have very different or conflicting objectives.

Organizational Influences

▶ **Organizational Influences**

The maturity of the organization with respect to its project management system, culture, style, organizational structure, and project management office can also influence the project. The following sections describe key aspects of these larger organizational structures that are likely to influence the project

Organizational Influences

▶ **Organizational Systems**

Project-based organizations: are those whose operations consist primarily of projects. These organizations fall into two categories:

a) **Organizations that derive their revenue primarily from performing projects** for others under contract – architectural firms, engineering firms, consultants, construction contractors, and government contractors.

b) **Organizations that have adopted management by projects**, These organizations tend to have management systems in place to facilitate project management. For example, their financial systems are often specifically designed for accounting, tracking, and reporting on multiple, simultaneous projects.

Organizational Influences

► **Organizational Systems**

Non-project-based organizations often may lack management systems designed to support project needs efficiently and effectively. The absence of project-oriented systems usually makes project management more difficult. In some cases, non-project-based organizations will have departments or other sub-units that operate as project-based organizations with systems to support them. The project management team should be aware of how its organization's structure and systems affect the project.

Organizational Influences

Organizational Cultures and Styles

▶ Most organizations have developed unique and describable cultures. These cultures de are reflected in numerous factors, including, but not limited to:

• Shared values, norms, beliefs, and expectations

• Policies and procedures

• View of authority relationships

• Work ethic and work hours.

▶ Organizational cultures often have a direct influence on the project.
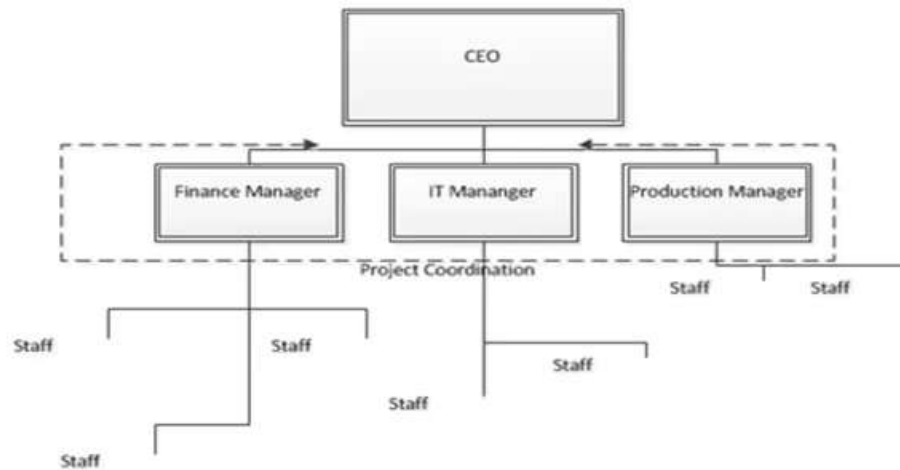
Organizational Influences

▶ **Organizational Structure**

a) The classic functional organization
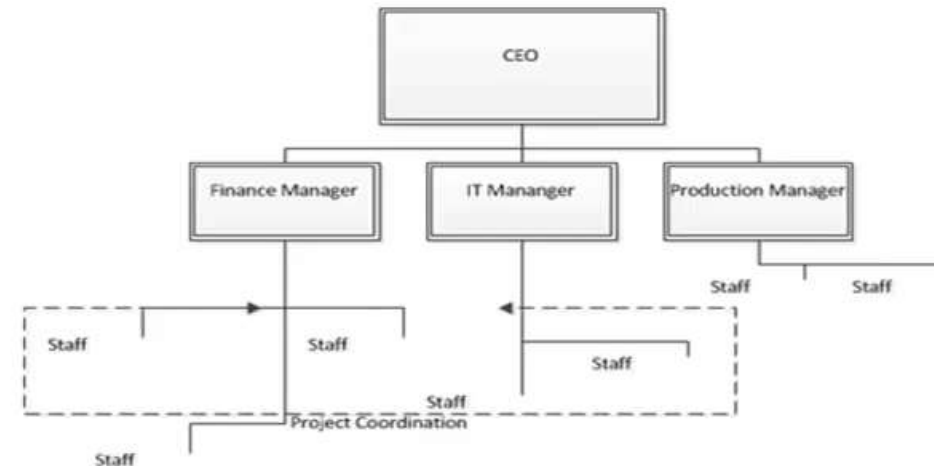
b) The projectized organization

c) Matrix organizations

Organizational Influences
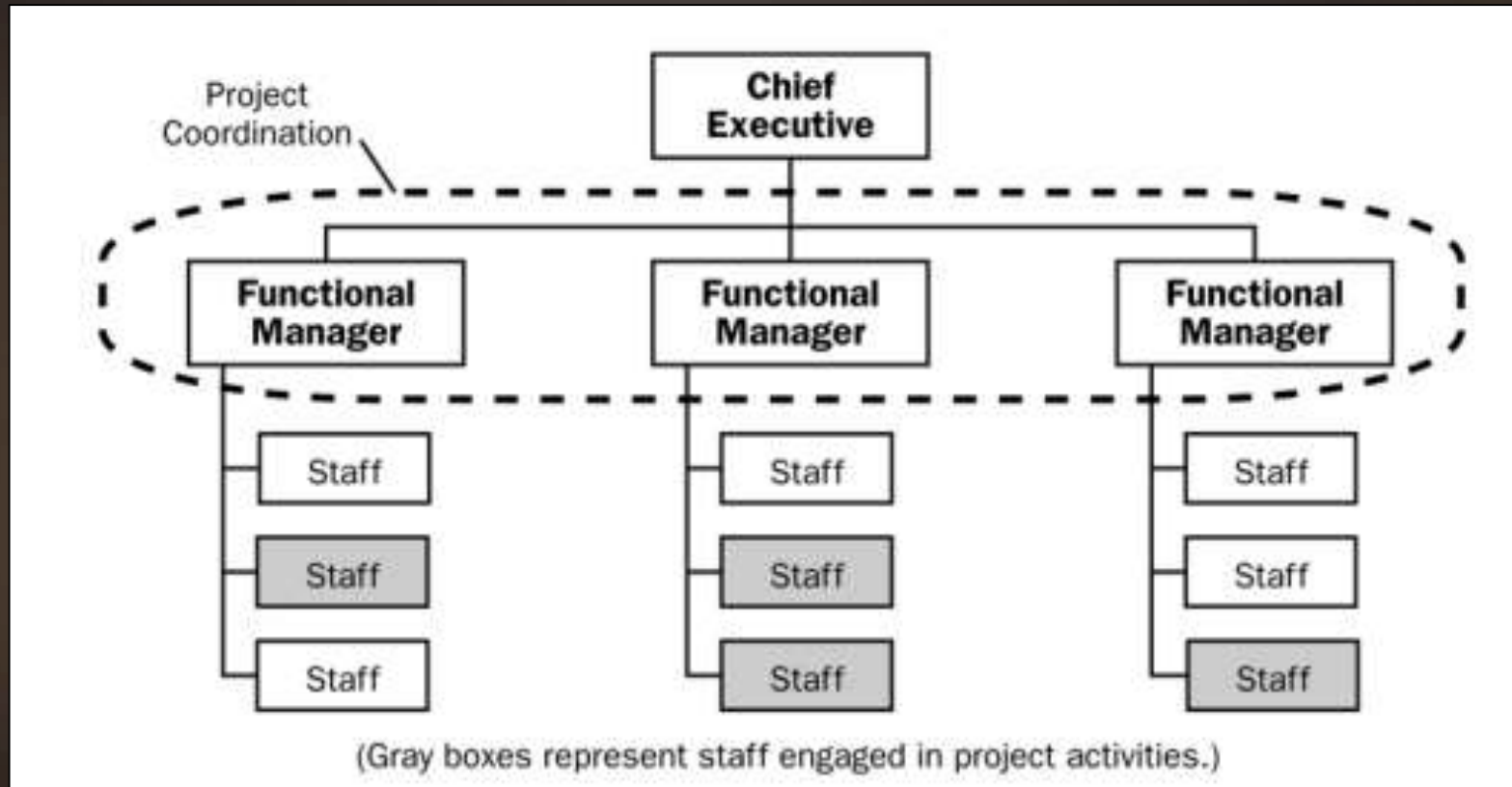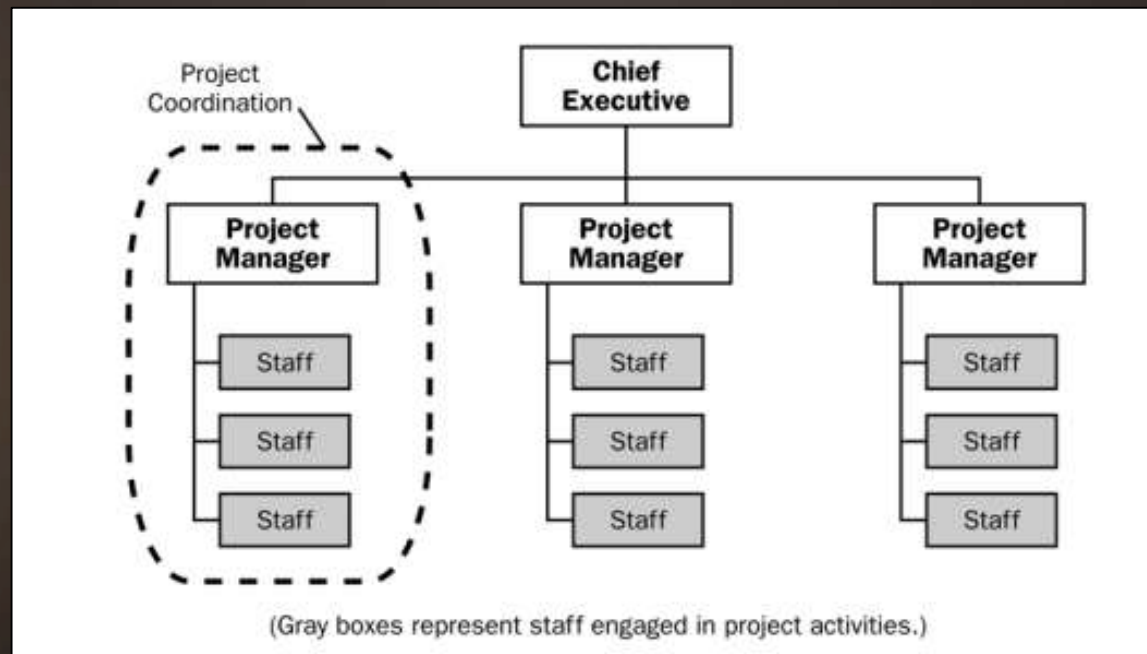
Organizational Influences

✓ **The classic functional organization**, is a hierarchy where each employee has one clear superior. Staff members are grouped by specialty, such as production, marketing, engineering, and accounting at the top level.

(Gray boxes represent staff engaged in project activities.)

Organizational Influences

▶ In **a projectized organization**, team members are often collocated. Most of the organization's resources are involved in project work, and project managers have a great deal of independence and authority. Projectized organizations often have organizational units called departments, but these groups either report directly to the project manager or provide support services to the various projects.

(Gray boxes represent staff engaged in project activities.)

Organizational Influences

- ✓ **Matrix organizations** are a blend of functional and projectized characteristics. Weak matrices maintain many of the characteristics of a functional organization and the project manager role is more that of a coordinator or expediter than that of a manager. In a similar fashion, strong matrices have many of the characteristics of the projectized organization and can have full-time project managers with considerable authority and full-time project administrative staff. While the balanced matrix organization recognizes the need for a project manager, it does not provide the project manager with full authority over the project and project funding.
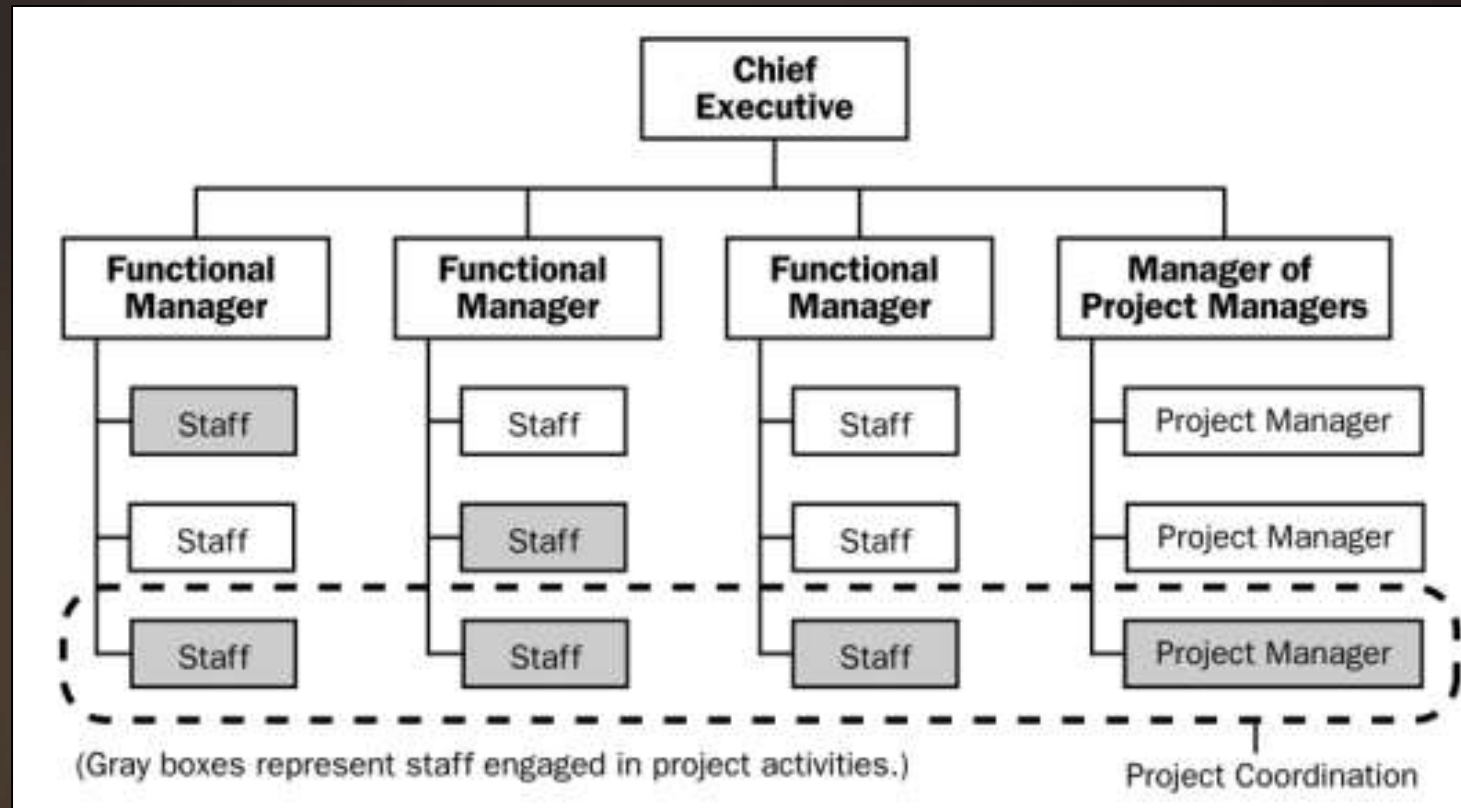
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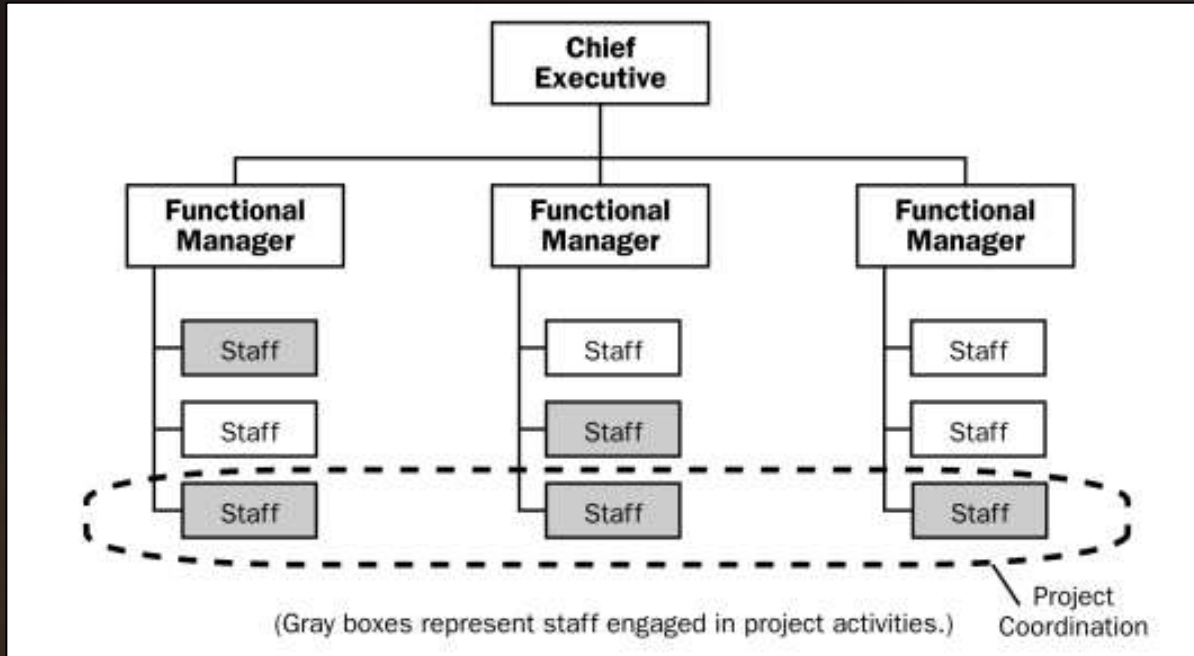
Weak Matrix Organization

Balanced Matrix Organization

Organizational Influences
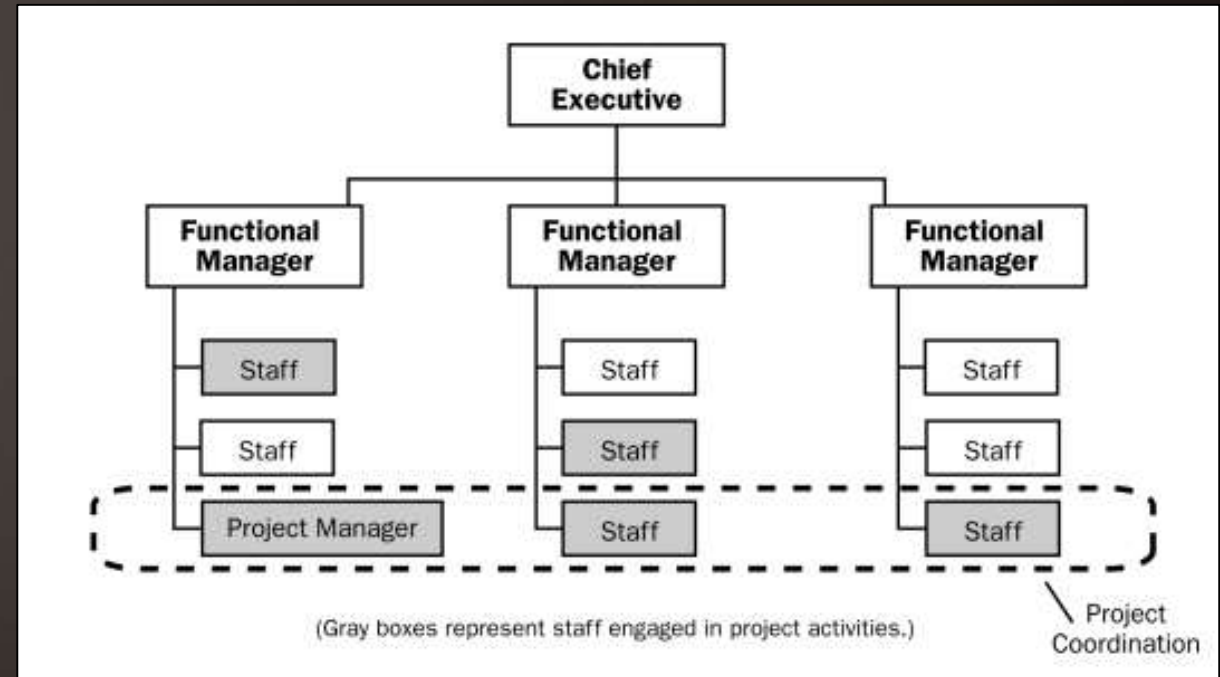
(Gray boxes represent staff engaged in project activities.)

Strong Matrix Organization

Organizational Influences

Project Characteristics / Organization Structure	Functional	Matrix			Projectized
		Weak Matrix	Balanced Matrix	Strong Matrix	
Project Manager's Authority	Little or None	Limited	Low to Moderate	Moderate to High	High to Almost Total
Resource Availability	Little or None	Limited	Low to Moderate	Moderate to High	High to Almost Total
Who controls 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

Organizational Structure Influences on Projects

Organizational Influences

▶ Most modern organizations involve all these structures at various levels, **(Composite Organization).** For example, even a fundamentally functional organization may create a special team to handle a critical project. Such a team may have many characteristics of a project team in a projectized organization. The team may include full-time staff from different functional departments who may develop their own operating procedures and may operate outside the standard, formalized reporting structure.

(Gray boxes represent staff engaged in project activities.)
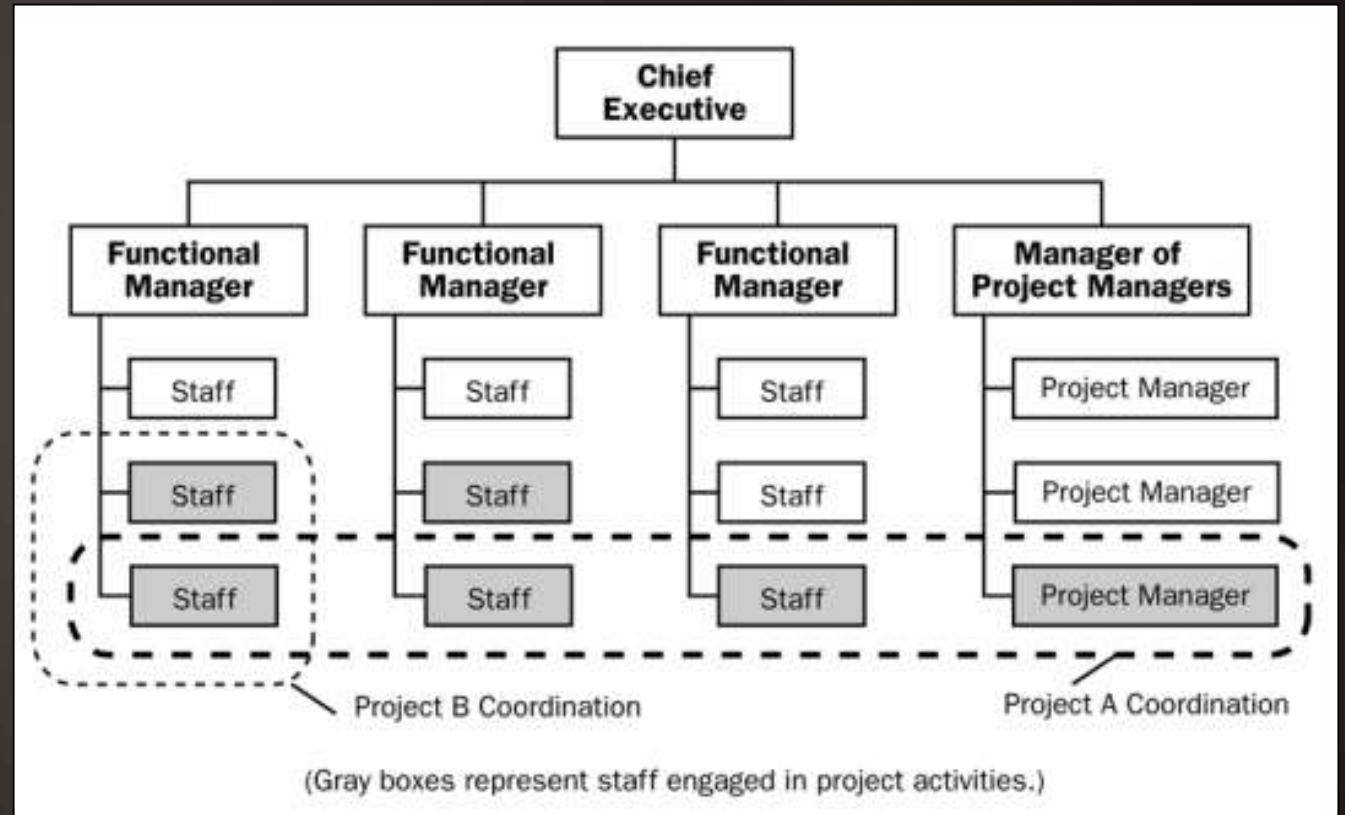
Project Life Cycle and Organization

▶ Large engineering firms or engineers/ constructors will likely utilize a matrix organization, while a contractor will be organized more along the lines of a projectized organization. The management of construction is sometimes made difficult when several organizational structures intersect because of the various stakeholders' differing viewpoints and agendas. The challenge is to manage the decision process effectively, recognizing these differences. Construction now utilizes **partnering** as a project alignment technique to bridge these differences.

Organizational Influences

▶ **The Role of the PMO in Organizational Structures**

o Many organizations realize the benefit of developing and implementing a PMO. This is often true of those organizations employing a matrix organizational structure.

o A PMO's function in an organization may range from an advisory influence, limited to the recommendation of specific policies and procedures on individual projects, to a formal grant of authority from executive management.

o The project manager will have administrative support from the PMO either through dedicated staff or through a shared staff member. The project team members will either be dedicated to the project or might include staff members who are shared with other projects and, in turn, are managed by the PMO.

Organizational Influences

▶ Note that if a PMO exists -in the Projectized Organization figure- would have an additional box, labeled PMO, between the project manager layer and the chief executive layer. Similarly in Strong Matrix Organization and Composite Organization figures, the "manager of project managers" would normally be the PMO manager, whereas in the other organizational structures , the PMO usually does not directly report to the chief executive.