

CHAPTER THREE

Construction Project Management

- Project and project management;
- Introduction and definitions;
- Project (product) life cycles and the key players in each phase;
- Project management processes;
- Planning, executing and monitoring & evaluating a project as major processes in project management;

Construction Project Management

- Mapping the major areas of skills, knowledge, techniques that are required to stir a construction project to success;
- Major criteria of success in a project environment;
- Major technical skills for success (Construction Technology);
- Major managerial BOKs for

Definitions of Project

- According to (PMI 2013), a project is defined as it is a temporary endeavor undertaken to create a unique product, service, or result
- According to (US Federal Transit Administration;2006) project is made up of a group of interrelated work activities constrained by a specific scope, budget, and schedule to deliver capital assets needed to achieve the

Definitions of Project...

- According to (Locker & Gordon;1996) a project is a unique process, consisting of a set of coordinated and controlled activities with an assumed start and known finish dates, undertaken to achieve an objective conforming to specific requirements including constraints of time, cost and resources.
- Even though most of the definitions

CATEGORIES OF A PROJECT

- Three broad categories of projects can be identified (Dennis Lock, 1987) each with its own characteristics:
 - I. Manufacturing projects
 - II. Projects requiring external organizations, and
 - III. Management projects

CATEGORIES OF A PROJECT.....

1. **Manufacturing projects:**

In this category projects involve the following activities:

- ❑ Original design work
- ❑ Prototype testing, if necessary,
- ❑ Manufacturing,
- ❑ Assembling, and
- ❑ Installation and commissioning.

CATEGORIES OF A PROJECT.....

- Except installation and commissioning works, most of the activities are carried out under the control of the manufacturer.
- Such projects are often made for a fixed price, promised delivery dates, and a set of unambiguous

CATAGORIES OF A PROJECT.....

2. Projects requiring external organizations

- ❑ Such projects include civil engineering, construction, petrochemical, mining, etc; which aims to establish buildings or operating plant on required sites requiring external or supplementary organization to the mother organization on these sites.
- ❑ Such projects need more attention to

CATEGORIES OF A PROJECT.....

3. Management Projects

The employment of an external manager or managing teams offering services to organizations

- To ensure effective and efficient management system
- To ensure efficient installation and start up of new approaches
- To follow projects of the above nature on behalf of clients and / or financiers, etc

Project Management

Project Management

- ❖ Projects have inherently been part of the human activities since civilization started.
- ❖ However, the practice of project management as a science, in our world, is aged not more than three to four decades.
- ❖ Researchers and theorists tried to suggest the reason for emphasis on project management in the last three

Project Management...

- The need on getting things done on time and within cost budgets,
- The fierce competition among organizations in succeeding to get projects
- Welfare and safety requirements

Project Management...

- The new business development – Downsizing, Flattening, Empowering employees and outsourcing have also contributed to two stages of development:
 1. The traditional project management approach, and
 2. The new project management approach

Project Management...

- Project management can literally mean achieving successful project completion with the resources and time constraints

The Traditional Project Management Approach

The changing environment internally and externally to organizations gives rise to complex and an uncertain situations that cause to see into the pros and cons of the traditional project management system.

The Traditional Project Management Approach....

The problems in the traditional project management system fall into three distinct items.

1. It is in attention to the importance of customer satisfaction (**Through Time, Budget, and Specification or Performance**)

The Traditional Project Management Approach....

- There is a general trend and acceptance in the traditional approach that customer satisfaction can be fulfilled through the third constraint – Specification.
- However, practical experience showed that it failed to take adequate account of customer needs and wants. This is largely because specifications are created by experts who:

The Traditional Project Management Approach....

- I.** lack the skills and training to work with customers,
- II.** don't understand the customers' business,
- III.** design and build products that are personal interest to themselves, and
- IV.** often drive to establish specification that will gain them

The Traditional Project Management Approach....

2. Its single minded focus on a fixed set of tools for dealing with scheduling, budgeting, and resource allocation
- The traditional approach being single-minded in these fixed sets of tools makes mastery of these tools are likely to be a good

The Traditional Project Management Approach....

3. Its narrow definition what it should be concerned with
 - Traditional project management often limits the project life cycle to four phases: concept, planning, execution and close out.
 - With this life cycle, the project team members can wash their hands of the deliverables after it is handed over to the customer; Which is the most practical problem for construction activities in

The Traditional Project Management Approach....

- Traditional project management holds a constricted view that primarily sees project managers as implementers.
- Often, project managers do not involve in the decision making process at the inception phase of the project rather it is handed over to him, whose charge is to do the job within the pre-determined scope.

The New Project Management Approach

- The new project management recognizes most of the traditional approaches are still relevant to today's changing environment.
- Therefore the new approaches rather than establishing its own total frame of assumptions, it aims to enhance the traditional approach by aligning it with the new business in the world

The New Project Management Approach...

- These alignments fall into three basic and central issues of the new project management system:

1. Become more customer basis

If projects are carried out in accordance with the needs and wants of the customer, it is then be called that the project management becomes more customer basis.

The New Project Management Approach...

2. Redefine the role of the project manager
 - Neither stable nor free from competition, today's business environment could not fulfill its intended purpose successfully with the traditional approach thinking of project managers as

The New Project Management Approach...

- **Project managers input in project identification, preparation, appraisal and negotiation and approval stages of the inception phase of the project cycle is very necessary.**

The New Project Management Approach...

- Projects (including construction projects) are carried out using identified project phases.
- Project phases are understood as the processes at which projects are formulated, implemented and completed.
- These processes are well understood in many literatures as *The Project Life Cycle* under Process

Processes Management

- Process management in Construction Projects can be understood using concepts developed in *Project Cycle for Construction Management Process System* for Project Scope Management.

Processes Management

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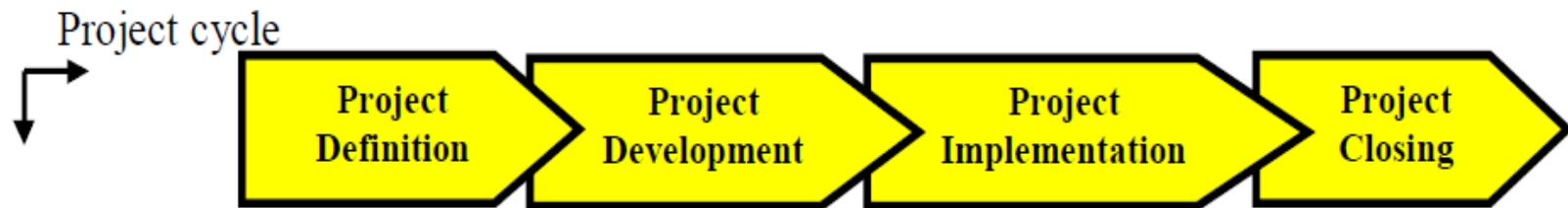
Construction Management Process System

- Construction projects as it possesses its unique characteristics from other projects, its project cycle exhibited contextual phases.
- Construction process as a concept covers sub processes having different characteristics.
- These sub processes can be grouped under three major classifications:

Construction Management Process System

1. Core processes
2. Administrative processes and
3. Public regulatory processes. These processes are termed Project Processes

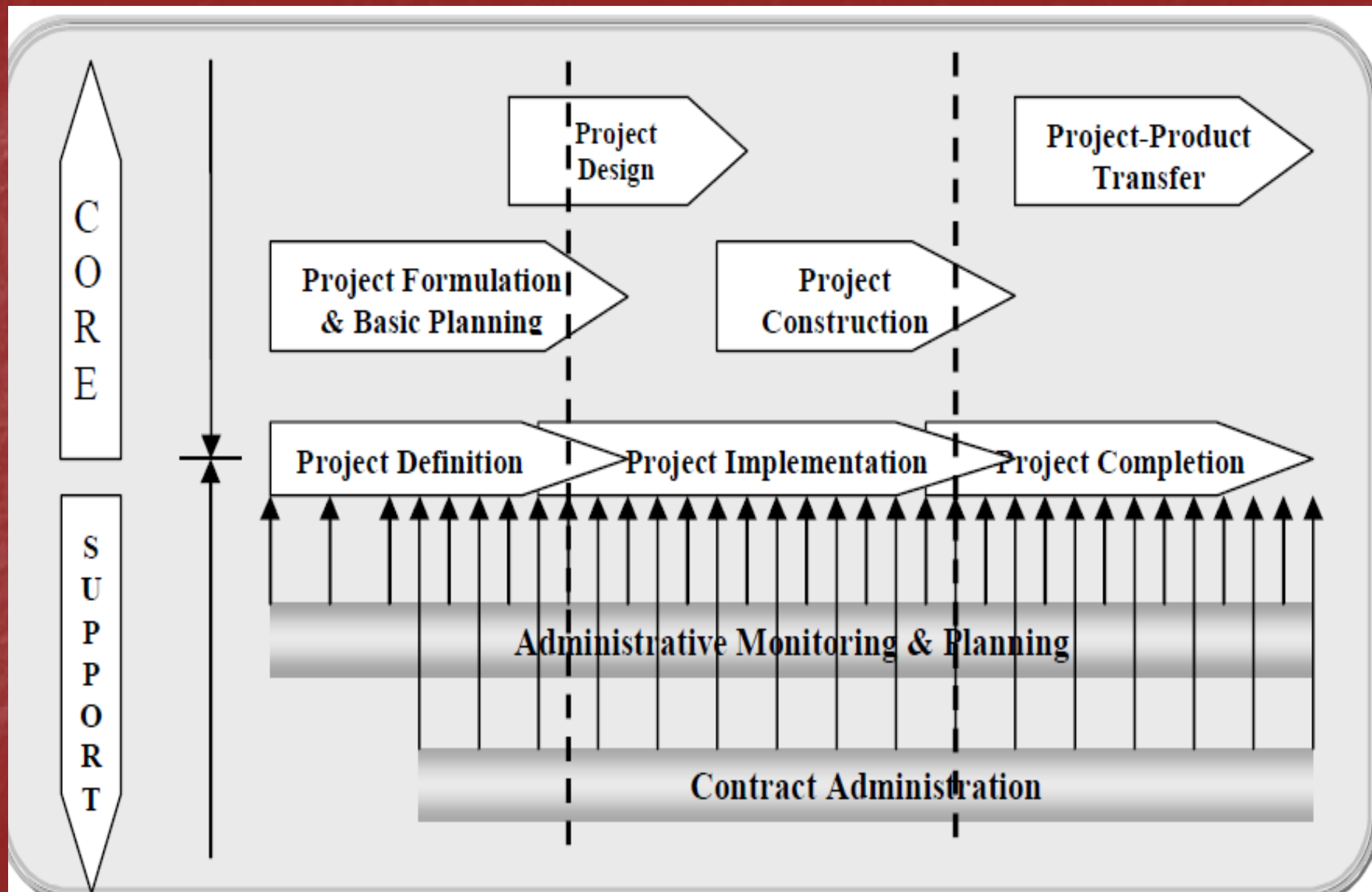
Construction Management process system



Core Processes	Concept Definition	Concept Development	Design of buildings, Roads, etc & Physical construction works	Maintenance Period and Defect Remedies
Administrative Processes	Concept Evaluation Project Approval Budget Allocation		Monitoring, Procurement and Other Processes	Acceptance, Hand Over and
Public Regulatory Processes	Right-of-way (if necessary) and Regulatory Permits		Tender award and Changes and Variation	Final Approval, and User Permit

Construction Management Process System

- Wubishet, 2004 in his dissertation combined these characteristics and came up with a modified project management process using a three by two matrix





Project Definition Phase

- Initiate the project
- Identify the Project Manager
- Develop the Project Charter
- Conduct a Feasibility Study
- Define Planning Phase
- Sign off on the Project Charter

Project Planning Phase

- Organize and staff the project
- Develop a Project Plan
- Sign off on the Project Plan

Project Execution Phase

- Execute the Project Plan
- Manage the Project Plan
- Implement the project's results
- Sign off on project's completion

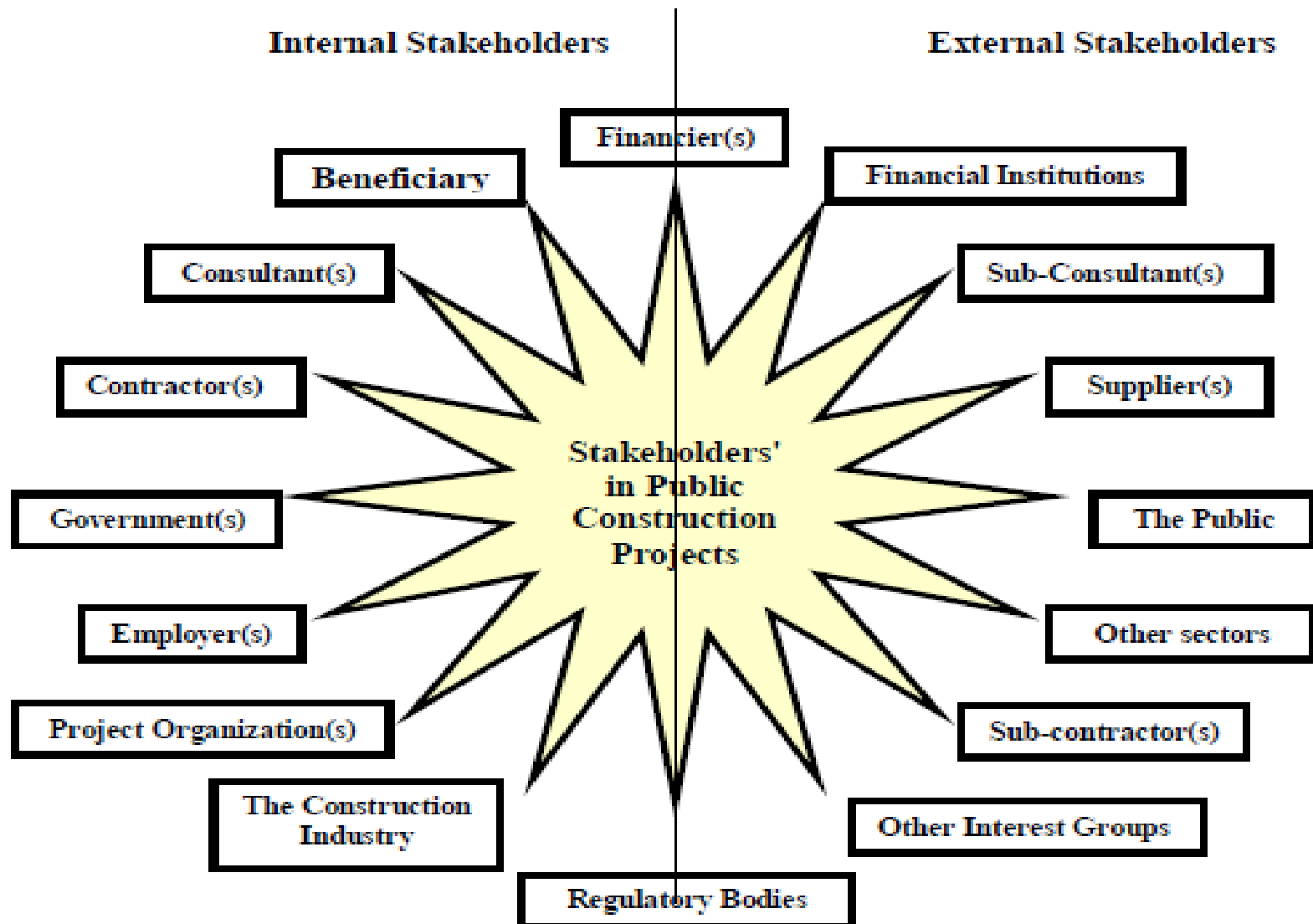
Project Close-out Phase

- Document the lessons learned during the project
- After-implementation review
- Provide performance feedback
- Close-out contracts
- Complete administrative close-out

Stakeholders Management in project management

- Stakeholders can be defined as either individuals or units or the organization itself for which they claim a stake in the project such that they get benefit from or affected by the whole processes of the project and its deliverables.
- Stakeholders can generally be classified under Internal and External stakeholders.

Stakeholders in Public Construction Projects



Stakeholders Management

- Further to these a comprehensive four by four matrix was developed in order to clearly show stakeholders' roles

Stakeholders Roles

	Project Owners	Project Providers	Project Regulators	Other Interest Groups
Budgetary Stakeholders	Client / Employer	----	Financiers / Sponsors	Legislative bodies
Contractual Stakeholders	Client / Employer	Consultant / Contractor	----	Financial Institutions
Regulatory Stakeholders	Client (Partial)	Consultant (Partial)	Public works bodies	General Audit

Stakeholders Relationships Management

- Stakeholders' relationships management is meant that attitudes, objectives and self serving interests of individuals, groups or organizations who have stakes in the project are reflected in their relationships to affect the success of the project.
- As a result, projects need to manage such relationships in order to ensure their successful completions. The

Stakeholders Relationships Management

1. Stakeholders' Identification
2. Stakeholders' Information gathering on recurrent attitudes, strategy (Vision, Mission, Objectives, etc) and self-serving interests
3. Stakeholders' SWOT Analysis
4. Stakeholders' predicted / expected Behavior
5. Stakeholders' Relationships

Stakeholders Relationships Management

Recent important skills required for project stakeholders' management are

- Communication
- Negotiation
- Alliance
- Socializations
- Organization Culture and value building skills

Stakeholders Relationships Management

- The weak and untrustworthy relationships among stakeholders have been one of the major factors for low project performances.
- This has been found related to the perception of these stakeholders practiced during their involvement in the project management processes.

Stakeholders Relationships Management

- **Project Financiers' (PFs) and Project Owners;**
- **Project Owners (POs) and Project Doers (PDs); and**
- **Within Project Owners (that is between Implementing Agencies & Beneficiaries).**

Project Management Framework

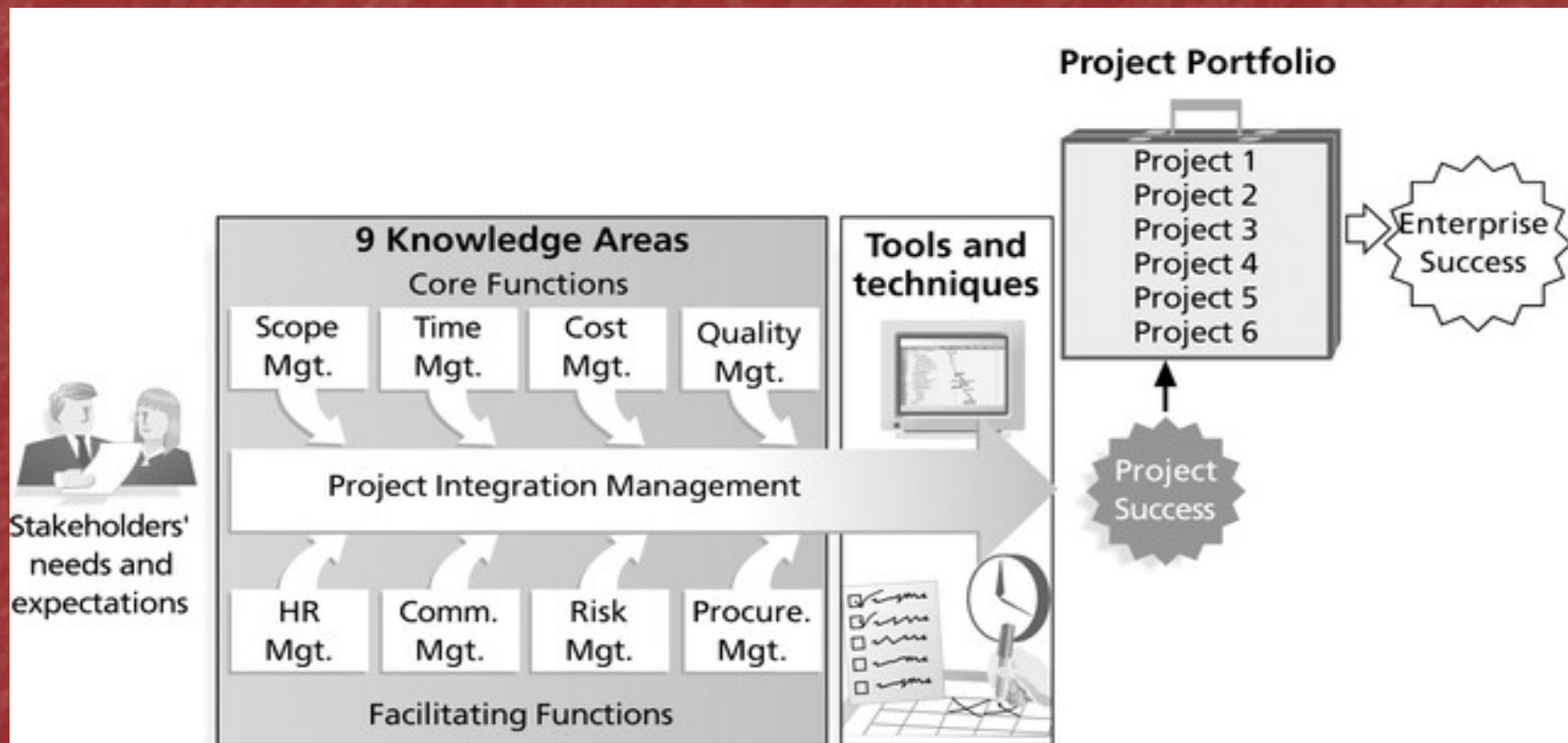


Figure 1-2. Project Management Framework

9 Project Management Knowledge Areas

- Knowledge areas describe the key competencies that project managers must develop
 - 4 core knowledge areas lead to specific project objectives (scope, time, cost, and quality)
 - 4 facilitating knowledge areas are the means through which the project objectives are achieved (human resources, communication, risk, and procurement management)
 - 1 knowledge area (project integration management) affects and is affected by all

How Project Management Relates to Other Disciplines

- Much of the knowledge needed to manage projects is unique to the discipline of project management
- Project managers must also have knowledge and experience in
 - general management
 - the application area of the project

Reasons for Project Failure

1. Poor project and program management discipline
2. Lack of executive-level support
3. No linkage to the business strategy
4. Wrong team members
5. No measures for evaluating the success of the project
6. No risk management
7. Inability to manage change

Project Success Criteria

- On time
- On budget
- Meeting the goals that have been agreed upon

Project Success

Rule #1

Gain consensus on project outcome.

Rule # 2

Build the best team possible

Rule#3

Develop a comprehensive, viable plan and keep it up-to-date.

Project Success Rules...

- Rule #4

Determine how much stuff you really need to get things done.

- Rule #5

Have a realistic schedule.

- Rule #6

Won't try to do more than can be done.

Project Success Rules...

- Rule #7
Will remember that people count
- Rule #8
Will gain the formal and ongoing support of management and stakeholders.
- Rule 9
Must be willing to change
- Rule 10
Must keep others informed of what

Project Success Rules...

- Rule 11
Must be willing to try new things.
- Rule 12
Must become a leader

Seven Traits of Good Project Managers

Trait 1

Enthusiasm for the project

Trait 2

Ability to manage change effectively

Trait 3

A tolerant attitude toward ambiguity

Trait 4

Team – building and negotiating skills

Seven Traits of Good Project Managers

Trait 5

A customer-first orientation

Trait 6

Adherence to the priorities of business

Trait 7

Knowledge of the industry or technology