ENGR 301
Lecture 1
Wednesday, June 28, 2017
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Chapter 1 – Introduction - Why is Project Management Important?

Examples of projects

- Splitting the atom
- Building a tunnel under the English Channel
- Introducing Windows 7
- Planning the Olympic Games in London

"Projects, rather than repetitive tasks, are now the basis for most value – added in business" – Tom Peters

Process vs. Project work

Project	Process
• Takes place outside the normal, process – oriented setting • Unique and separate from routine, process driven work • Continually evolving	• Ongoing, day – by – day activities to produce goods and services • Using existing system, properties, and capabilities • Typically, repetitive

A project is a **temporary endeavor** undertaken to create a unique product or service

Additional Definitions

A project is a unique venture with a beginning and an end, conducted by people to meet established goals within parameters of cost, schedule, and quality

- Buchanan & Boddy '92

Projects are goal – oriented, involved the coordinated undertaking of interrelated activities, are of finite duration, and are all, to a degree unique.

- Frame '95

Project Definitions Summarized

A project can be considered any series of activities and tasks that have:

- **Specific objectives**to be completed within certain specifications,
- Defined **start** and **end dates**,
- **Funding** limits,
- Human and nonhuman **resources**,
- **Multifunctional** focus.

Elements of Projects

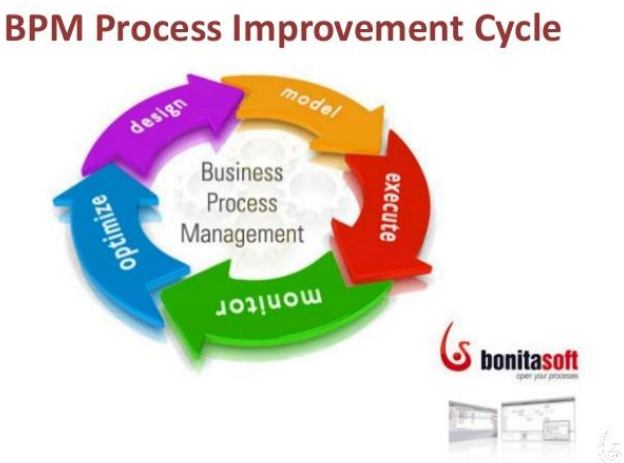
- **Complex**, one – time processes
- **Limited** by budget, schedule, and resources
- Developed to resolve a **clear goal**or set of goals
- **Customer** – focused

General Project characteristics

- **Ad – hoc**endeavors with a clear life cycle
- **Building blocks**in the design and execution off organizational **strategies**
- Responsible for the **newest**and most improved **products**, services, and organizational **processes**
- Provide a philosophy and strategy for **management of change.**
- Entail **crossing**functional and organization **boundaries**
- **Traditional management functions**of planning, organizing, motivating, directing, and controlling apply
- Principle outcomes are the **satisfaction of customer**requirements within **technical**, **cost**, and **schedule objectives**.
- **Terminated**upon successful completion of performance objectives.

Process & Project Management (Table 1.1)

Process	Project
1. Repeat process or product	1. New process or product
2. Several objectives	2. One objective
3. Ongoing	3. One shot – limited life
4. People are homogenous	4. More heterogeneous
5. Well – established systems in place to integrate efforts	5. Systems must be created to integrate efforts
6. Greater certainty of performance, cost, schedule	6. Greater uncertainty or performance, cost, schedule
7. Part of line organization	7. Outside of line organization
8. Bastions of established practice	8. Violates established practice
9. Supports status quo	9. Upsets status quo



Project Success rates

- Software & hardware projects **fail at a 65%**rate
- **Over half**of all IT projects become **runaways**
- **Only 30%** of technology – based projects and programs are a success
- Only **2.5%**of global businesses achieve 100% **project success** and over **50%** of global business **projects fail**
- **Average success** of business – critical application development projects is **32%,** and
- **Approximately**42%of the 1,200 Iraq reconstruction projects were **eventually terminated** due to mismanagement or shoddy construction

Why are projects important?

1. Shortened product life cycles
2. Narrow product launch windows.
3. Increasingly complex and technical products
4. Emergence of global markets
5. Economic period marked by low inflation

Project Lifecycles

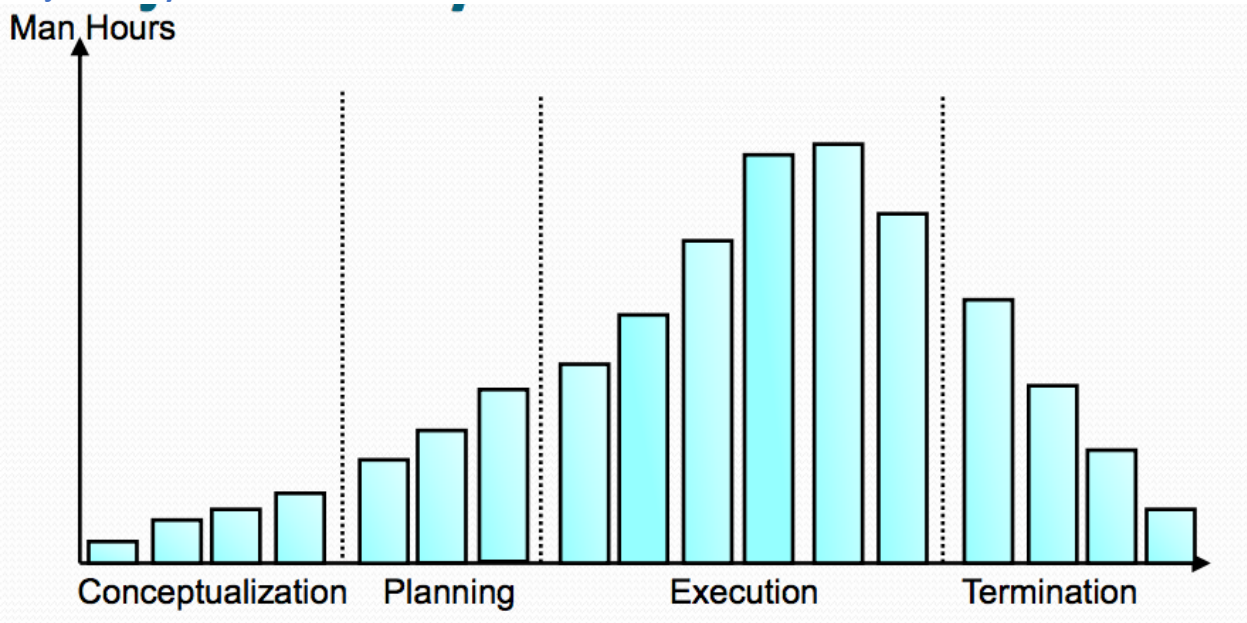


Fig 1.3 Project Life Cycle Stages

Project Lifecycle

- **Conceptualization** – the development of the initial goal and technical specifications. (Determine scope; identify necessary resources, important organizational contributors or **stakeholders** signed on)
- **Planning** – All detailed specifications, schematics, schedules, and other plans are developed. The individual pieces of the project, often called **work packages**, are broken down, individual assignments made, and the process for completion clearly delineated.
- **Execution –** actual "work" of the project is performed, the system developed, or the product created and fabricated. It is during the execution phase that the bulk of the project team labor is performed.
- **Termination –** occurs when the completed project is transferred to the customer, its resources reassigned, and the project formally closed out. As specified subactivities are completed, the project shrinks in scope and costs decline rapidly.

Project Life Cycles and Their Effects

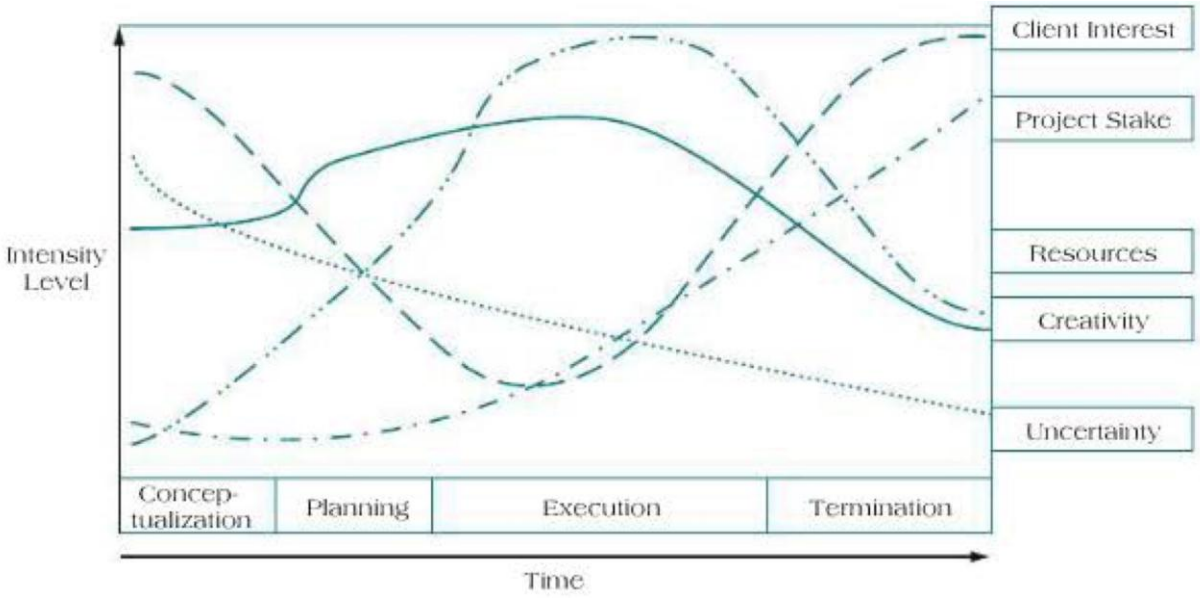


FIGURE 1.4 Project Life Cycles and Their Effects

Source: Victor Sohmen. (2002, July). "Project Termination: Why the Delay?" Paper presented at PMI Research Conference, Seattle, WA.

Quadruple Constraint of Project Success

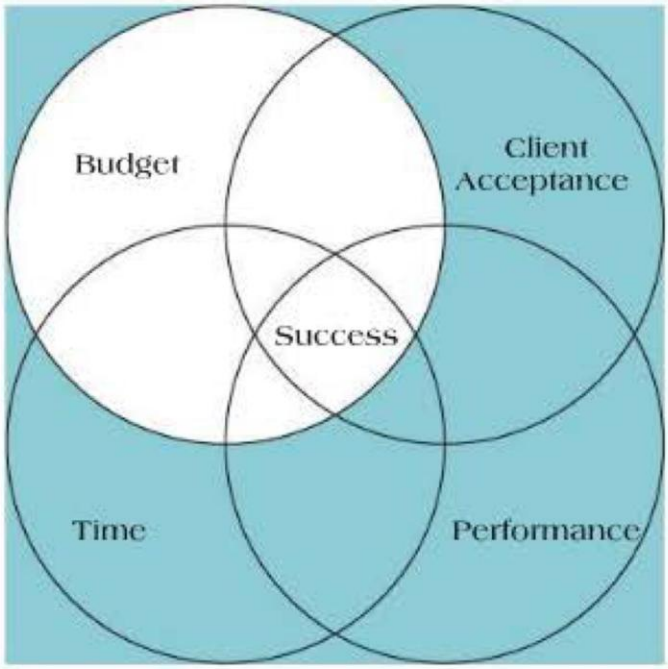


FIGURE 1.6 The New Quadruple Constraint

Four Dimensions of Project Success

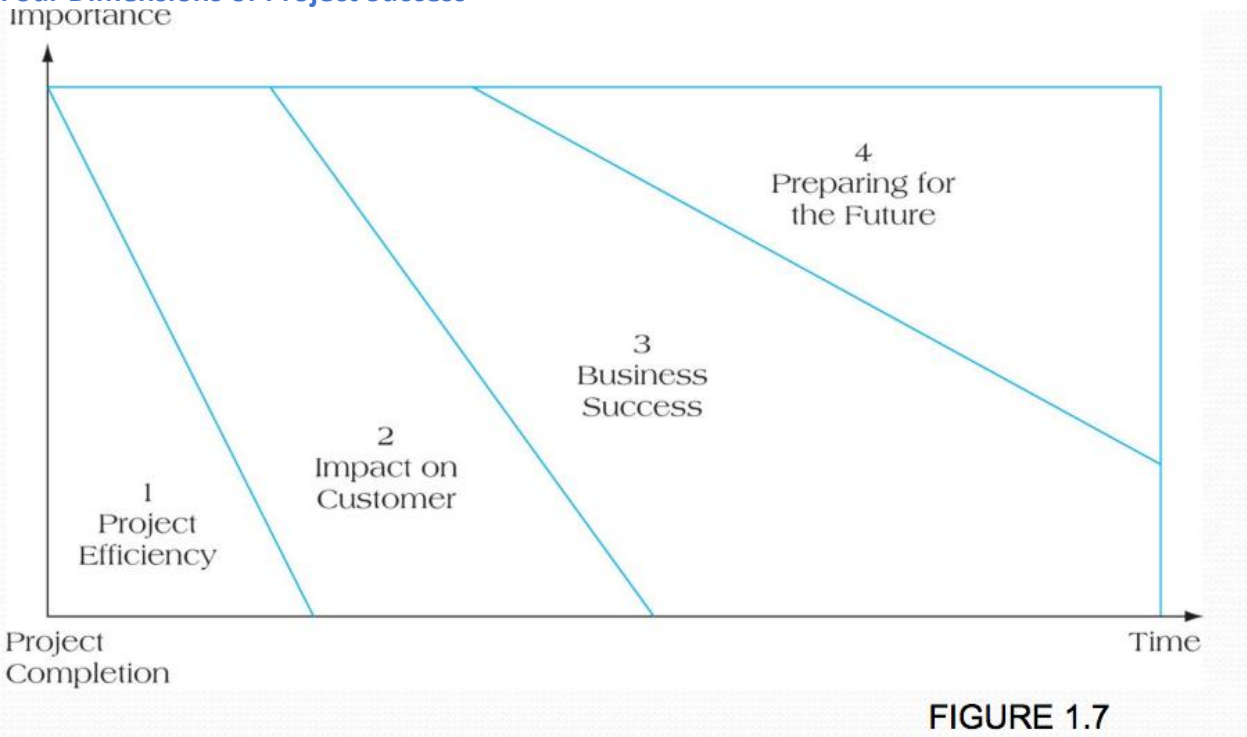


FIGURE 1.7

Four Dimensions of Project Success

- **Project efficiency –** Meeting budget and schedule expectations
- **Impact on customer –** Meeting technical specs, addressing customer needs, create project that satisfies client needs
- **Business success –** Determine whether project achieved significant commercial success
- **Preparing for the future –** Determine whether project opened new markets or product lines or helped to develop

Six Criteria for IT Project Success

- **System quality –** assure client system will perform as required
- **Information quality –** Info generated = info required and quality is such that action can be taken
- **Use –** System should be used once installed
- **User Satisfaction –** Is client happy with system and its output
- **Individual impact –** System should benefit individual users in ways that are most important to them
- **Organizational impact –** Is there positive impact throughout the client organization

Project Management Maturity Models

- Used to benchmark best practices of successful project management firms
- Different companies may have different levels of experience/sophistication with successful project management
- Benchmark is used to systematically manage process improvements of project delivery by a single organization over a specified period of time

Project Management Maturity Models

Maturity Models provide necessary framework to:

1. Analyze and critically evaluate current practices as they pertain to managing projects
2. Compare those practices against those of chief competitors or some general industry standard
3. Define a systematic route for improving these practices

Understanding Success Criteria

TABLE 1.2 Understanding Success Criteria

Iron Triangle	Information System	Benefits (Organization)	Benefits (Stakeholders)
Cost	Maintainability	Improved efficiency	Satisfied users
Quality	Reliability	Improved effectiveness	Social and environmental impact
Time	Validity	Increased profits	Personal development
	Information quality	Strategic goals	Professional learning, contractors' profits
	Use	Organization learning	Capital suppliers, content
		Reduced waste	Project team, economic impact

Spider Web Diagram for Measuring Project Maturity

Ring Level	Meaning
0	Not defined or poor
1	Defined but substandard
2	Standardized
3	Industry leader or cutting edge

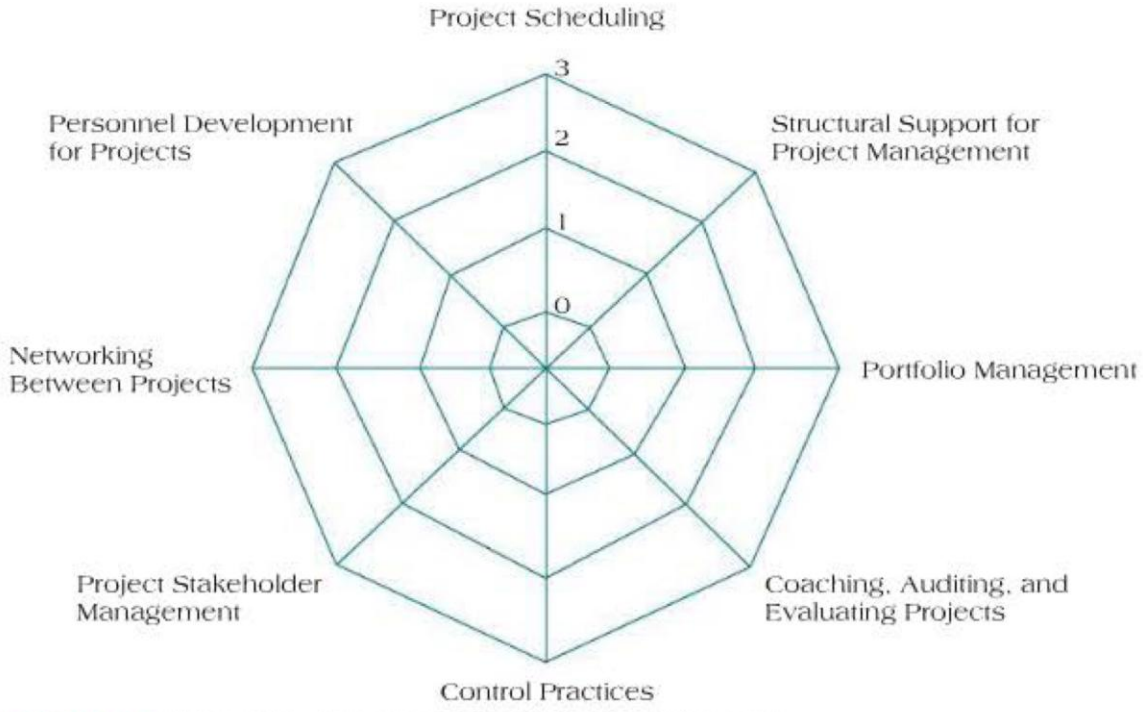


FIGURE 1.8 Spider Web Diagram for Measuring Project Maturity

Spider Web Diagram with Embedded Organizational Evaluation

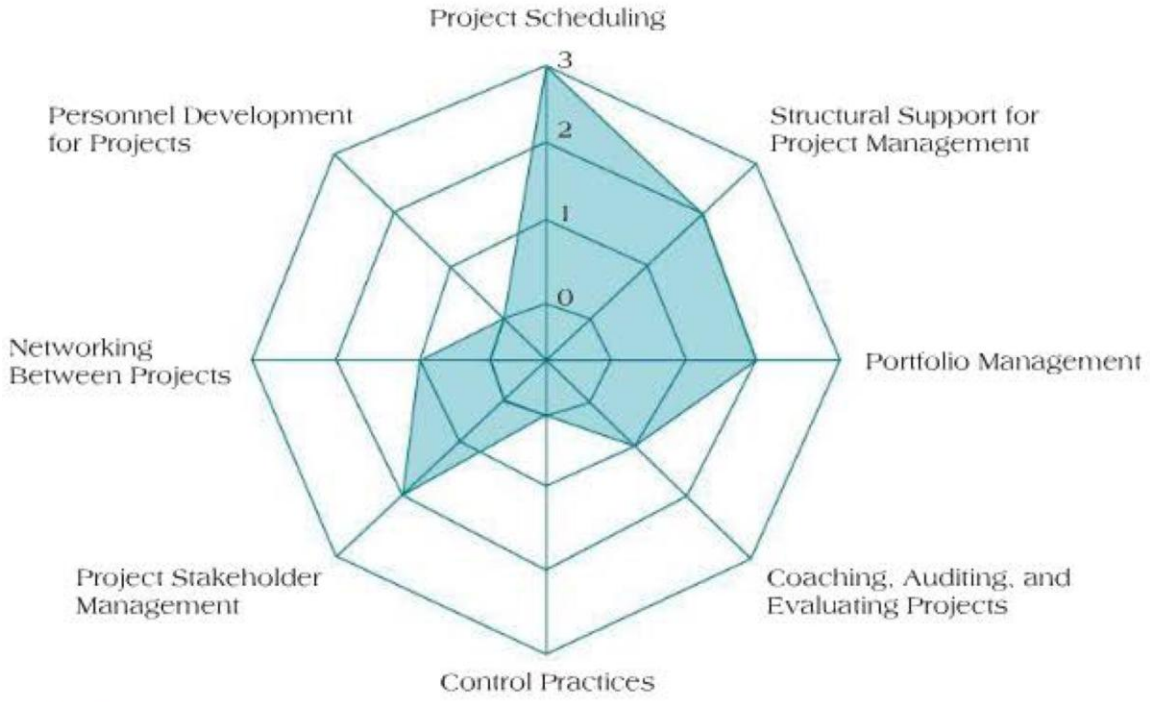


FIGURE 1.9 Spider Web Diagram with Embedded Organizational Evaluation

Developing Project Management Maturity

Project Management Maturity (PMM) Models
Center for Business Practices
Kerzner's Project Management Maturity Model
ESI International's Project Framework
SEI's Capability Maturity Model Integration

Center for Business Practices

Level 1: Initial Process
Level 2: Structure, Process, and Standards
Level 3: Institutionalized Project Management
Level 4: Managed
Level 5: Optimizing

Kerzner's PMM Model

Level 1: Common Language
Level 2: Common Processes
Level 3: Singular Methodology
Level 4: Benchmarking
Level 5: Continuous improvement

ESI International's Project Framework

Level 1: Ad Hoc
Level 2: Consistent
Level 3: Integrated
Level 4: Comprehensive
Level 5: Optimizing

SEI's Capability Maturity Model Integration

Level 1: Initial
Level 2: Managed
Level 3: Defined
Level 4: Quantative Management
Level 5: Optimizing

Project management Maturity Generic Model

FIGURE 1.10 Project Management Maturity—A Generic Model

Project Elements and Text Organization

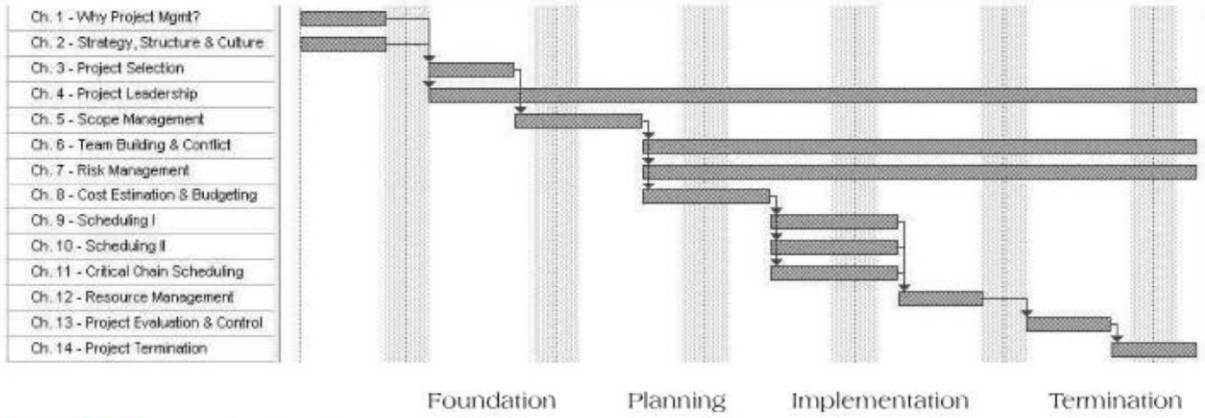


FIGURE 1.11 **Organization of Text**

Project Manager Responsibilities

- Selecting a team
- Developing project objectives and plan for execution
- Perform risk management activities
- Cost estimating and budgeting
- Scheduling
- Managing resources

Overview of the Project Management Institute's PMBoK Knowledge Areas

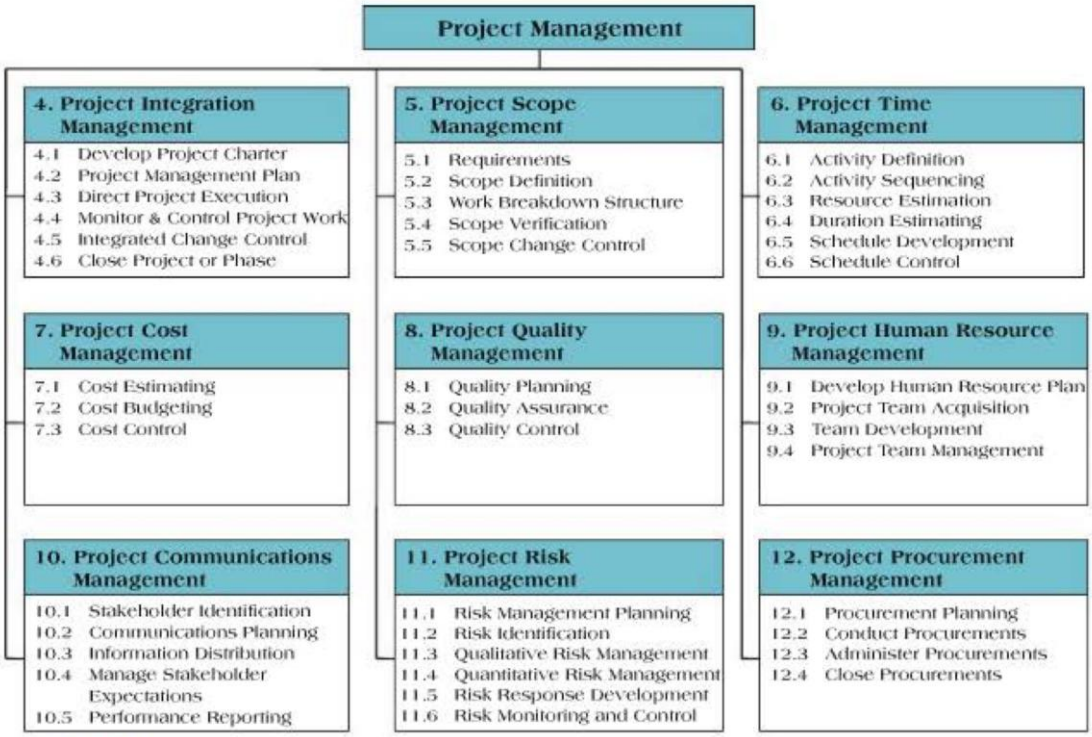


FIGURE 1.12 Overview of the Project Management Institute's PMBoK Knowledge Areas

Summary

- Understand why project management is becoming such a powerful and popular practice in business today
- Recognize the basic properties of projects, including their definition
- Understand why effective project management is such a challenge
- Differentiate between project management practices and more traditional, process – oriented business functions
- Recognize the key motivators that are pushing companies to adopt project management practices