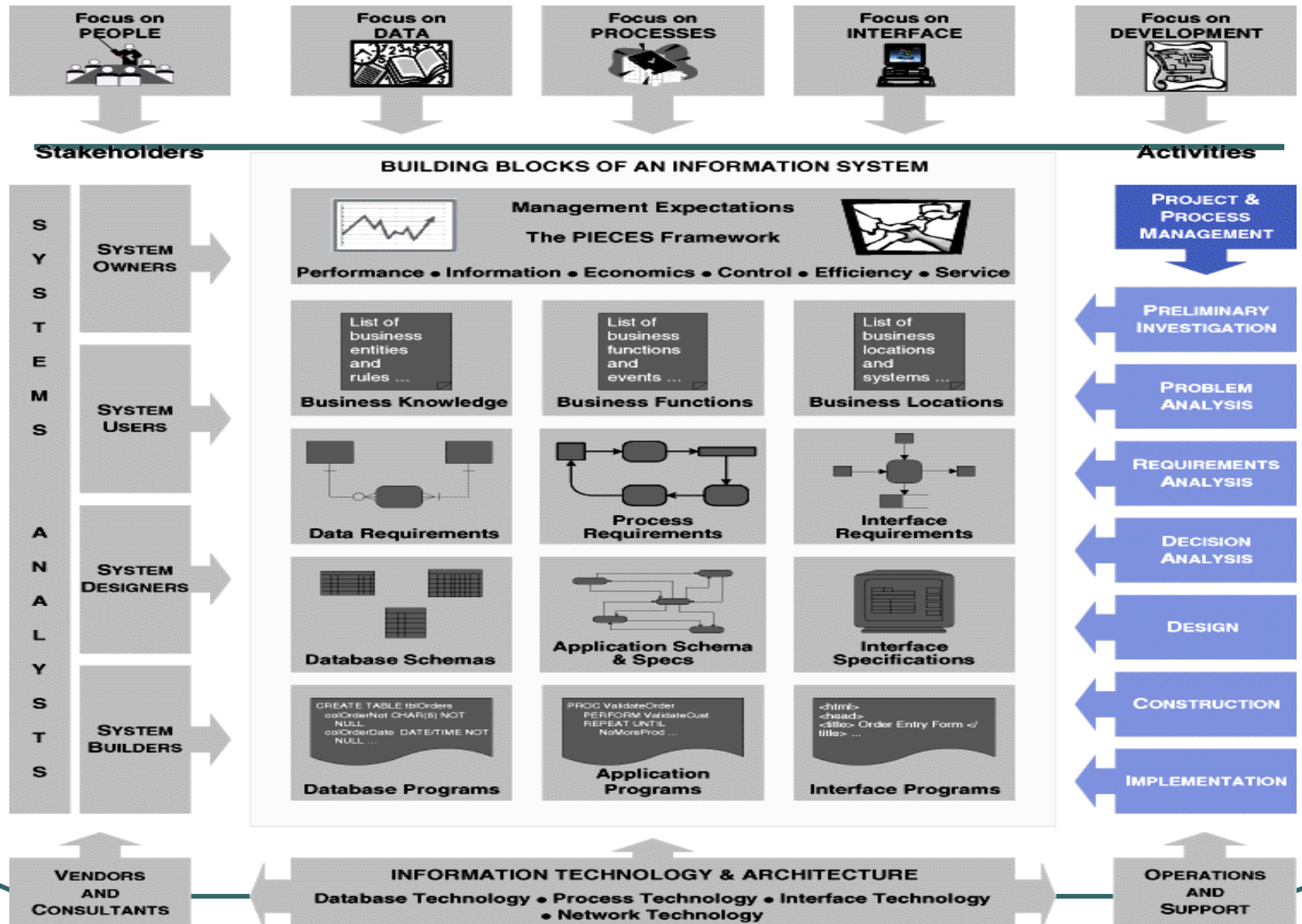


CHAPTER

4

**PROJECT
MANAGEMENT**

Chapter Map



Project and Project Management

A **project** is a [temporary] sequence of unique, complex, and connected **activities having one goal** or purpose and that must be completed by specific **time**, within **budget**, and according to specification.

Project management is the **process of scoping, planning, staffing, organizing, directing, and controlling the development** of an acceptable system at a **minimum cost** within a specified **time frame**.

Project versus Process Management

Project management is the process of scoping, planning, staffing, organizing, directing, and controlling the development of an acceptable system at a minimum cost within a specified time frame.

Process management is an ongoing activity that documents, manages the use of, and improves an organization's chosen methodology (the "process") for system development. Process management is concerned with the activities, deliverables, and quality standards to be applied to all projects.

Measures of Project Success

- The resulting information system is **acceptable to the customer.**
- The system was delivered “**on time.**”
- The system was delivered “**within budget.**”
- The system development process had a **minimal impact** on ongoing business operations.

Causes of Project Failure

- Failure to establish **upper-management commitment** to the project
- Lack of organization's **commitment to the system development methodology**
- Taking **shortcuts** through or around the system development methodology
- **Poor expectations** management
- **Premature commitment** to a fixed budget and schedule
- Poor estimating **techniques**
- **Overoptimism**
- The **mythical man-month** (Brooks, 1975)
- Inadequate people management **skills**
- Failure to adapt to business **change**
- Insufficient **resources**
- Failure to “**manage to the plan**”

Project --> Fails

- Lack of breath
- Lack of integration
- Lack of education
- Less experience & training
- Lack of standard
- Lack of adequate pay off
- Lack of good leadership & **political problem**
- False use of technology & Methodology
- Lack of innovation

Project Manager Competencies: *Theory & Experience*

-
- Business awareness
 - Business partner orientation
 - Commitment to quality
 - Initiative
 - Information gathering
 - Analytical thinking
 - Conceptual thinking
 - Interpersonal awareness
 - Organizational awareness
 - Anticipation of impact
 - Resourceful use of influence
 - Motivating others
 - Communication skills
 - Developing others
 - Monitoring and controlling
 - Self-confidence
 - Stress management
 - Concern for credibility
 - Flexibility

Project Management Functions

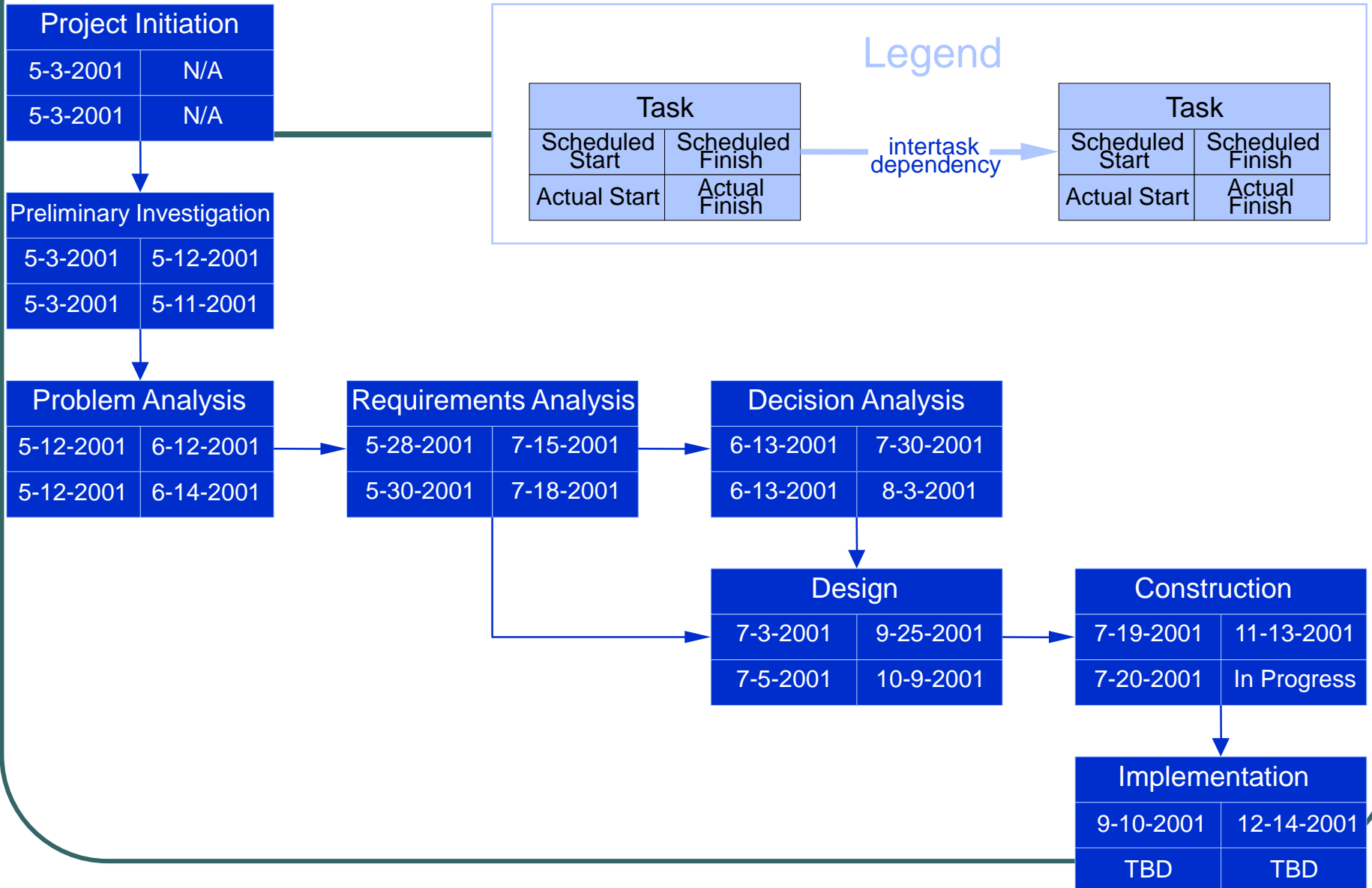
- Scoping
- Planning
- Estimating
- Scheduling
- Organizing
- Directing
- Controlling
- Closing

Project Management Tools & Techniques

A **PERT chart** is a graphical network model that depicts a project's tasks and the relationships between those tasks.

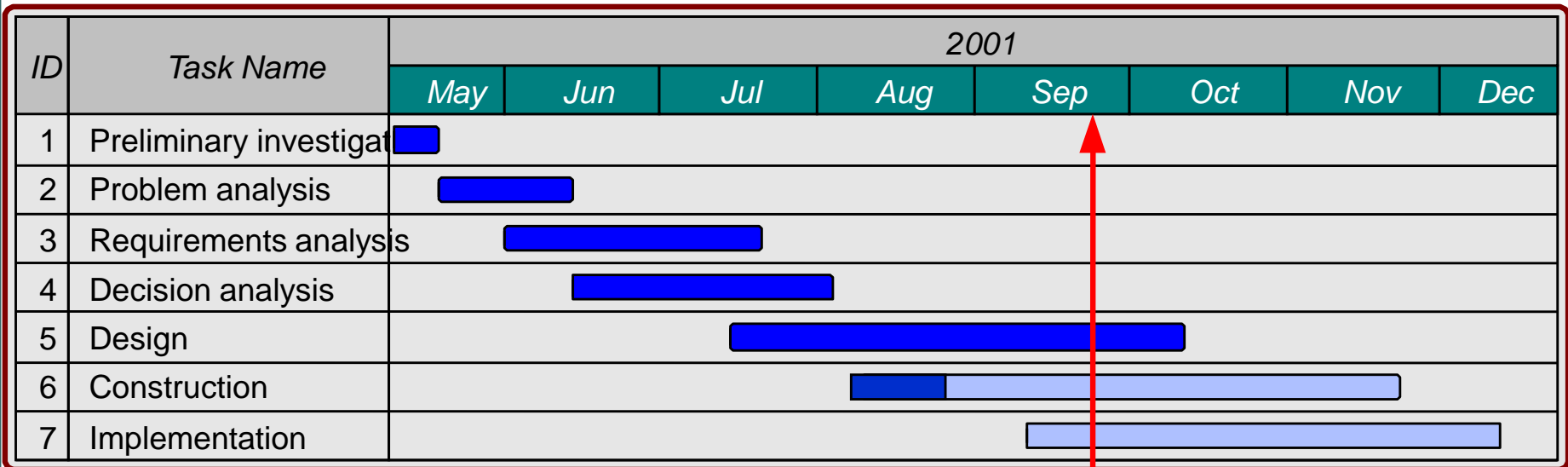
A **Gantt chart** is a simple horizontal bar chart that depicts project tasks against a calendar. Each bar represents a named project task. The tasks are listed vertically in the left-hand column. The horizontal axis is a calendar timeline.

PERT Chart



Gantt Chart: Show overlap tasks

As at “Improve Date”



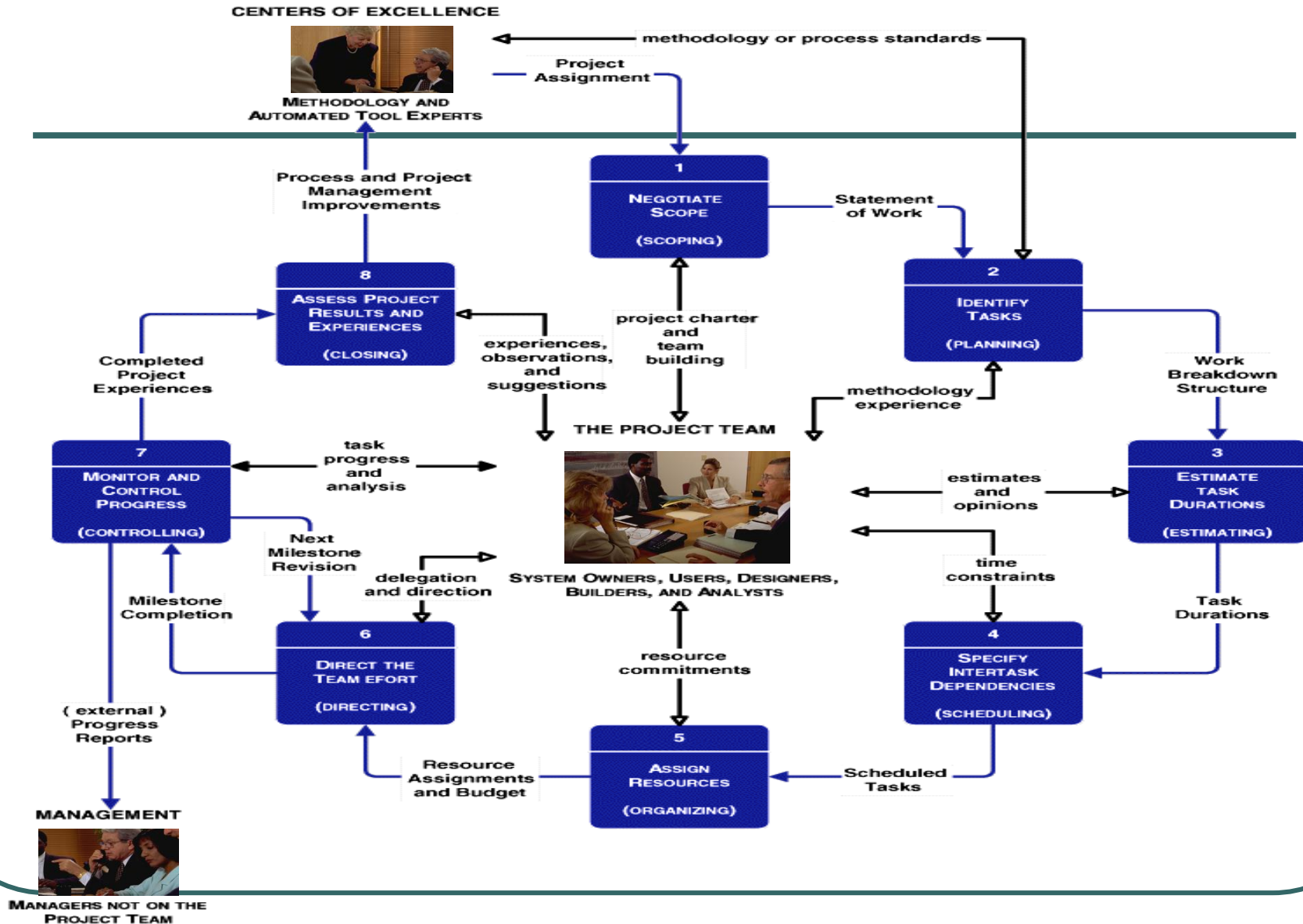
Legend

█ Complete Task

█ Incomplete Task

Show the Whole Project at a Glance.
Activity/ Time/ Duration

Project Management Life Cycle



Joint Project Planning Strategy

Joint project planning (JPP) is a strategy wherein all stakeholders in a project (meaning system owners, users, analysts, designers, and builders) participate in a one-to-three day project management **workshop**, the result of which is **consensus agreement** on project scope, schedule, resources, and budget. (Of course, subsequent workshops or meetings may be required to adjust scope, budget, and schedule.)

Activity 1: Negotiate Scope

Scope defines the **boundaries of a project**—What part of the business is to be studied, analyzed, designed, constructed, implemented, and ultimately improved?

- **Product** What
- **Quality** How good
- **Time** When
- **Cost** How much
- **Resources** What's resource

A **statement of work** is a narrative **description of the work** to be performed as part of a project. Common synonyms include *scope statement*, *project definition*, *project overview*, and *document of understanding*.

Statement of Work

- I. Purpose**
- II. Background**
 - A. Problem, opportunity, or directive statement**
 - B. History leading to project request**
 - C. Project goal and objectives**
 - D. Product description**
- III. Scope**
(notice the use of your information system building blocks)
 - A. Stakeholders**
 - B. Data**
 - C. Processes**
 - D. Locations**
- IV. Project Approach**
 - A. Route**
 - B. Deliverables**
- V. Managerial Approach**
 - A. Team building considerations**
 - B. Manager and experience**
 - C. Training requirements**
 - D. Meeting schedules**
 - E. Reporting methods and frequency**
 - F. Conflict management**
 - G. Scope management**
- VI. Constraints**
 - A. Start date**
 - B. Deadlines**
 - C. Budget**
 - D. Technology**
- VII. Ballpark Estimates**
 - A. Schedule**
 - B. Budget**
- VIII. Conditions of Satisfaction**
 - A. Success criteria**
 - B. Assumptions**
 - C. Risks**
- IX. Appendices**

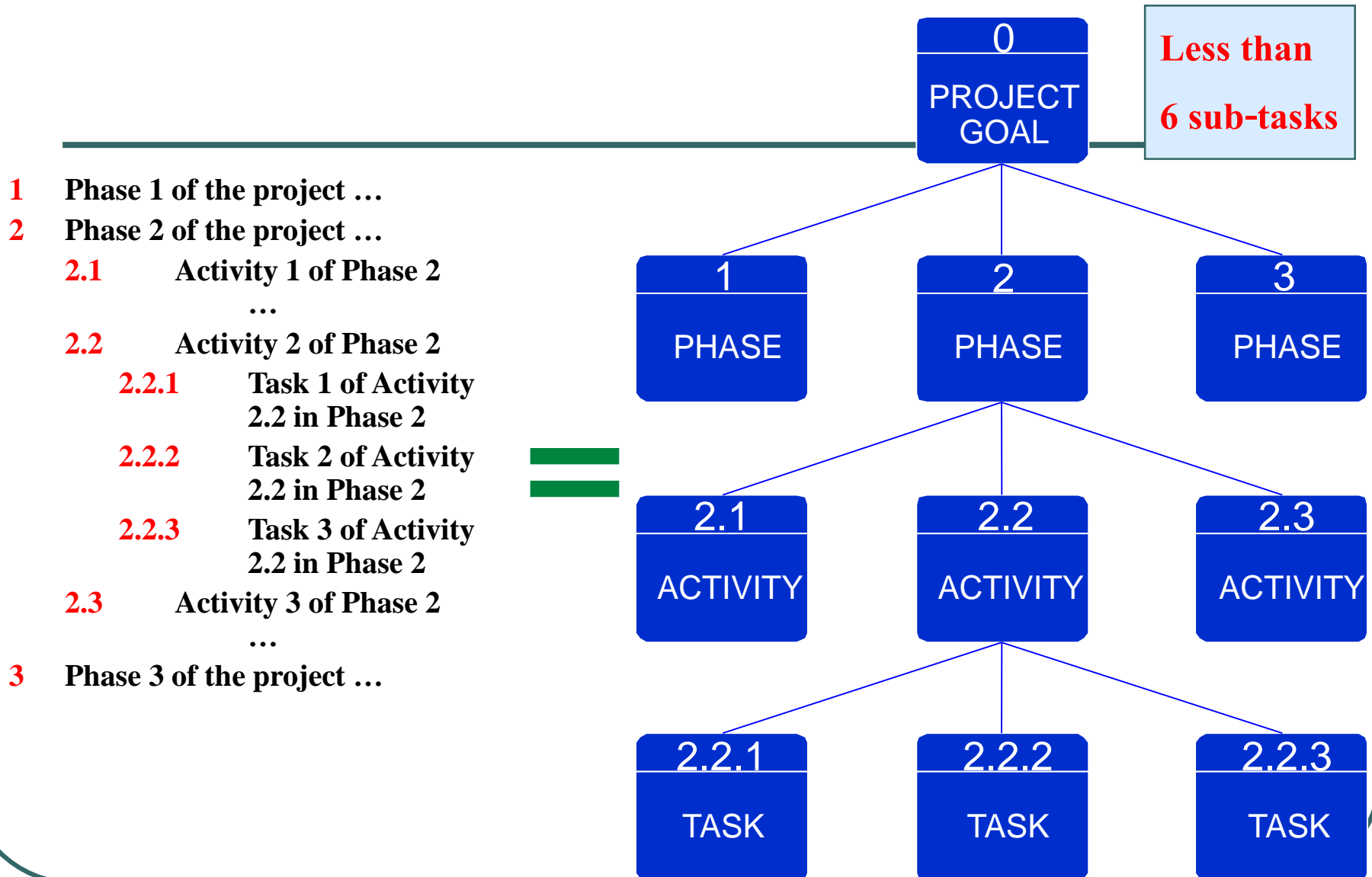
(continued)

Activity 2: Identify Tasks

A **work breakdown structure (WBS)** is a hierarchical **decomposition of the project** into phases, activities, and tasks.

Milestones are **events** that signify the accomplishment or completion of major deliverables during a project.

Work Breakdown Structures



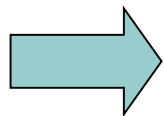
Activity 3: Estimate Task Durations

1. Estimate the **minimum** amount of time it would take to perform the task. We'll call this the optimistic duration (OD).
2. Estimate the **maximum** amount of time it would take to perform the task. We'll call this the pessimistic duration (PD).
3. Estimate the **expected duration** (ED) that will be needed to perform the task.
4. Calculate the most likely duration (D) as follows:

$$D = \frac{(1 \times OD) + (4 \times ED) + (1 \times PD)}{6}$$

Activity 4: Specify Intertask Dependencies

- Finish-to-start (FS)—The finish of one task triggers the start of another task. **Default**
- Start-to-start (SS)—The start of one task triggers the start of another task.
- Finish-to-finish (FF)—Two tasks must finish at the same time.
- Start-to-finish (SF)—The start of one task signifies the finish of another task.



Schedule

Scheduling Strategies

Forward scheduling establishes a project **start date** and then **schedules forward from that date**. Based on the planned duration of required tasks, their interdependencies, and the allocation of resources to complete those tasks, a projected project completion date is calculated.

Reverse scheduling establishes a project **deadline and then schedules backward from that date**. Essentially, tasks, their duration, interdependencies, and resources must be considered to ensure that the project can be **completed by the deadline**.

Activity 5: Assign Resources

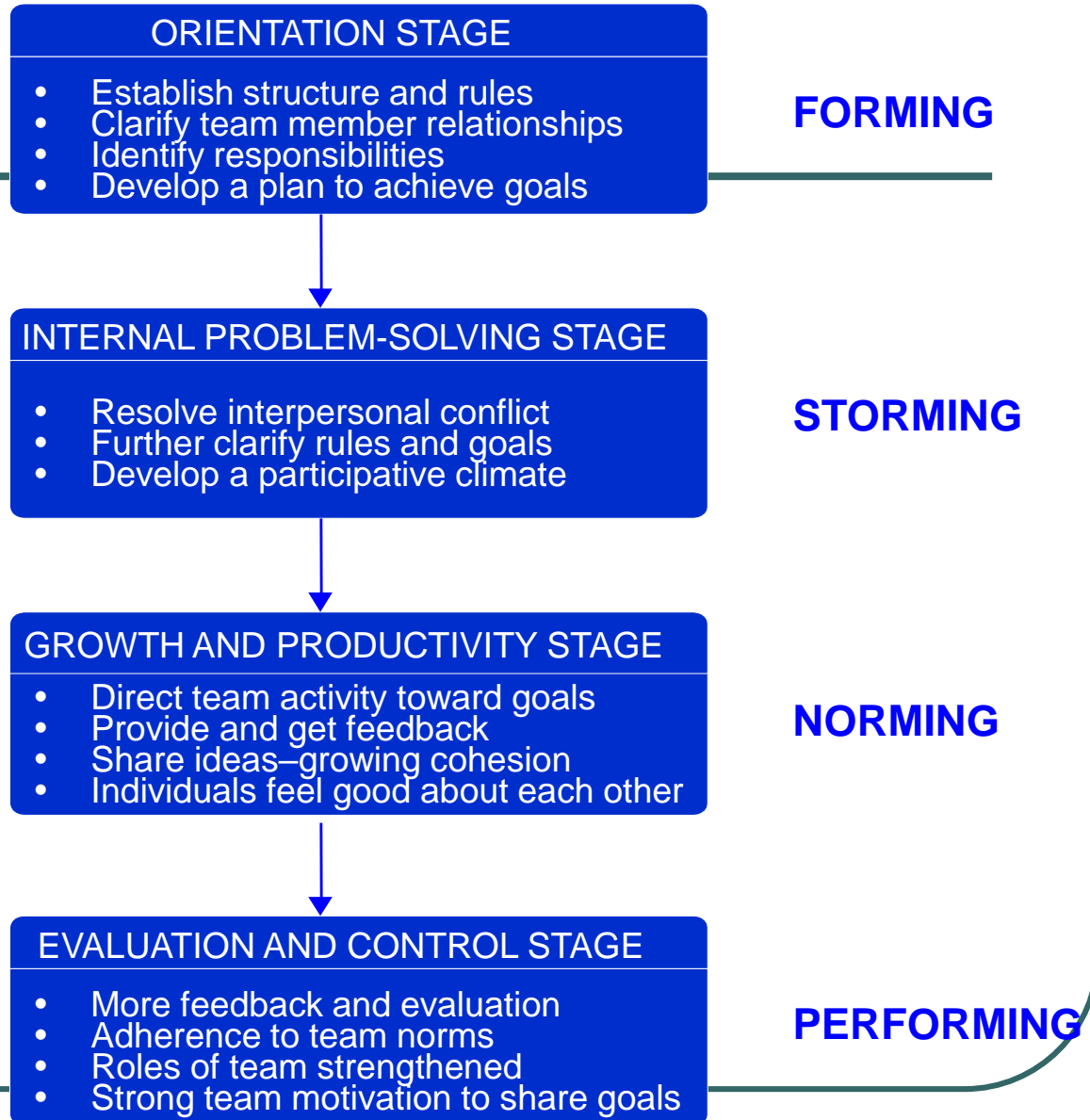
- People—inclusive of all the system owners, users, analysts, designers, builders, external agents, and clerical help that will be involved in the project in any way, shape, or form.
- Services—a service such as a quality review that may be charged on a per use basis.
- Facilities and equipment—including all rooms and technology that will be needed to complete the project.
- Supplies and materials—everything from pencils, paper, notebooks, toner cartridges, etc.
- Money—A translation of all of the above into the language of accounting—budgeted dollars!

Task Splitting and Delaying

- The **critical path** for a project is that sequence of dependent tasks that have the largest sum of most likely durations. The critical path determines the **earliest possible completion date of the project**.
 - **Tasks that are on the critical path** cannot be delayed **without delaying the entire project schedule**. **To achieve resource leveling, critical tasks can only be split.**
- The **slack time** available for any **noncritical** task is the amount of **delay** that can be tolerated between the starting time and completion time of a task without causing a delay in the completion date of the entire project.
 - **Tasks that have slack time can be delayed to achieve resource leveling**

Activity 6: Direct the Team Effort

- Supervision resources
 - The DEADLINE – A Novel About Project Management
 - The One Minute Manager
 - The Care and Feeding of Monkeys
- Stages of Team Maturity (see figure to the right)



Activity 7: Monitor and Control Progress

- Progress reporting
- Change management
- Expectations management
- Schedule adjustments—critical path analysis (CPA)

Activity 8: Closing --> Assessment

Sample Outline for a Progress Report

-
- I. **Cover Page**
 - A. Project name or identification
 - B. Project manager
 - C. Date or report
 - II. **Summary of progress**
 - A. Schedule analysis
 - B. Budget analysis
 - C. Scope analysis
(describe any changes that may have an impact on future progress)
 - D. Process analysis
(describe any problems encountered with strategy or methodology)
 - E. Gantt progress chart(s)
 - III. **Activity analysis**
 - A. Tasks completed since last report
 - B. Current tasks and deliverables
 - C. Short term future tasks and deliverables
 - IV. **Previous problems and issues**
 - A. Action item and status
 - B. New or revised action items
 - 1. Recommendation
 - 2. Assignment of responsibility
 - 3. Deadline

(continued)

Sample Outline for a Progress Report (concluded)

- V. New problems and issues**
 - A. Problems**
(actual or anticipated)
 - B. Issues**
(actual or anticipated)
 - C. Possible solutions**
 - 1. Recommendation**
 - 2. Assignment of responsibility**
 - 3. Deadline**
- VI. Attachments**
(include relevant printouts from project management software)

Consideration

- You can have it fast, you can have it cheap, or you can have it right. Pick any two.
- The **objectives** are unrealistic, they will not be met.
- The system will be **late, over budget, of lower quality**, or most likely all three.
- A project plan is essential because it serves as a basis for planning other user activities.
 - The key to success is NOT what you promise, but **what you deliver**.

Summary

- *Project and Project management*
- IS projects *Failures*
- Project managers' *Competencies*
- Functions of project management.
- *PERT* and *Gantt charts*: project management tools.
- *Eight activities* in project management.
- *Joint project planning* and its role in project management.
- *Work breakdown structure* to decompose a project into tasks.
- Use critical path analysis to adjust schedule and resource allocations in response to schedule and budget deviations.
- Manage user expectations of a project and adjust project scope.