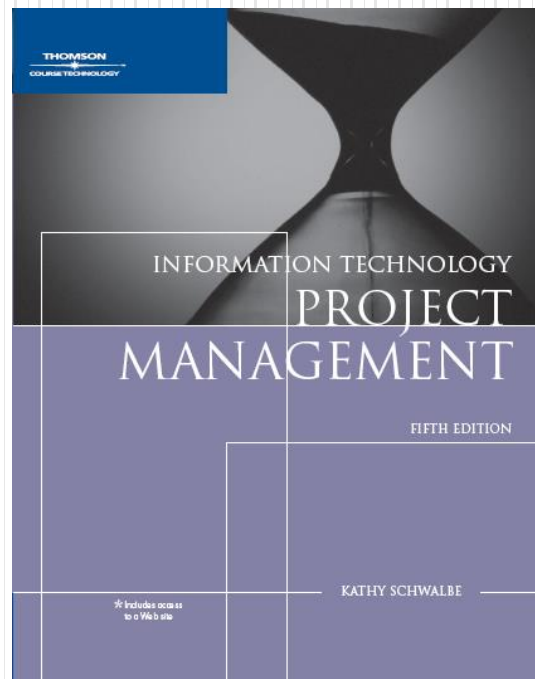


Introduction to Project Management



Learning Objectives

- Understand the growing need for better project management, especially for information technology projects
- Explain what a project is, provide examples of information technology projects, list various attributes of projects, and describe the triple constraint of projects
- Describe project management and discuss key elements of the project management framework, including project stakeholders, the project management knowledge areas, common tools and techniques, and project success

Learning Objectives (continued)

- Discuss the relationship between project, program, and portfolio management and the contributions they each make to enterprise success
- Understand the role of the project manager by describing what project managers do, what skills they need, and what the career field is like for information technology project managers
- Describe the project management profession, including its history, the role of professional organizations like the Project Management Institute, the importance of certification and ethics, and the advancement of project management software

Advantages of Using Formal Project Management

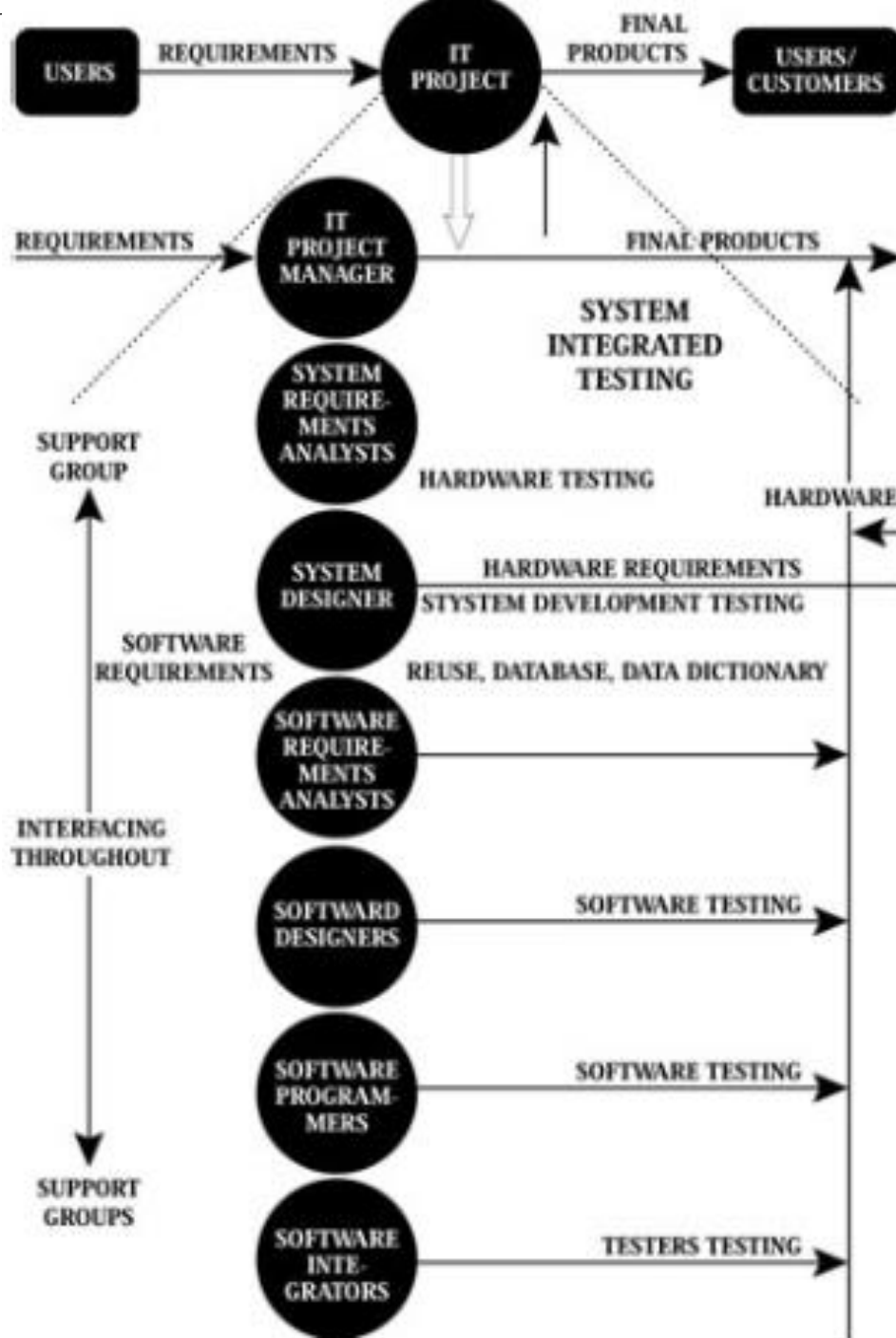
- Better control of financial, physical, and human resources
- Improved customer relations
- Shorter development times
- Lower costs and improved productivity
- Higher quality and increased reliability
- Higher profit margins
- Improved productivity
- Better internal coordination
- Positive impact on meeting strategic goals.
- Higher worker morale (less stress)

What Is a Project?

- A **project** is “a temporary endeavor undertaken to create a unique product, service, or result”
- Operations is work done to sustain the business
- Projects end when their objectives have been reached or the project has been terminated
- Projects can be large or small and take a short or long time to complete

Examples of IT Projects

- A help desk or technical worker replaces ten laptops for a small department
- A small software development team adds a new feature to an internal software application for the finance department
- A college campus upgrades its technology infrastructure to provide wireless Internet access across the whole campus



Various phase
of the IT
Project

Project Attributes

- A project:
 - Has a unique purpose
 - Is temporary
 - Is developed using progressive elaboration
 - Requires resources, often from various areas
 - Should have a primary customer or sponsor
 - The **project sponsor** usually provides the direction and funding for the project
 - Involves uncertainty

Project Constraints

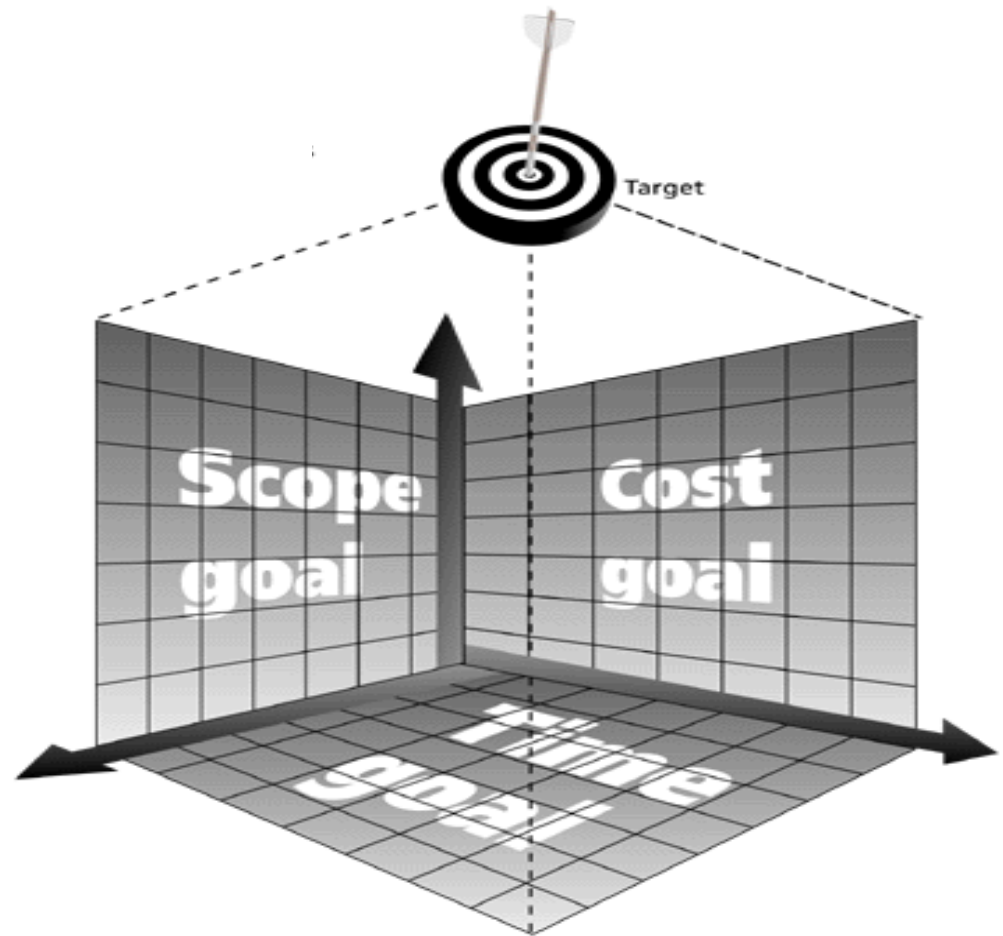
- Scope
 - What work will be done as part of the project?
 - What unique product, service, or result does the customer or sponsor expect from the project?
 - How will the scope be verified?
- Time
 - How long should it take to complete the project?
 - What is the project's schedule?
 - How will the team track actual schedule performance? Who can approve changes to the schedule?
- Cost
 - What should it cost to complete the project? What is the project's budget?
 - How will costs be tracked? Who can authorize changes to the budget?

Project and Program Managers

- **Project managers** work with project sponsors, a project team, and other people involved in a project to meet project goals
- **Program:** group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually
- Program managers oversee programs and often act as bosses for project managers

The Triple Constraint of Project Management

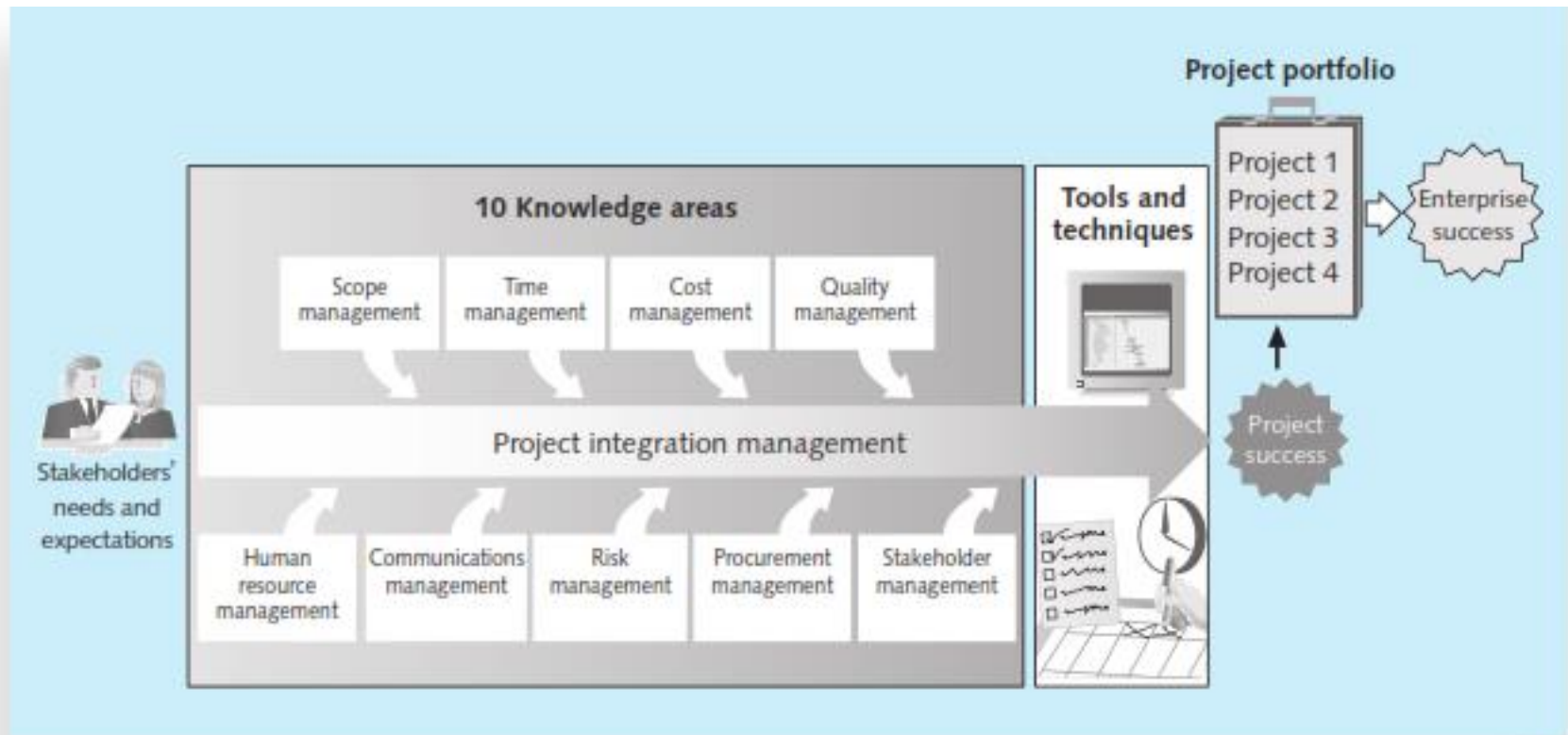
Successful project management means meeting all three goals (scope, time, and cost) – and satisfying the project's sponsor!



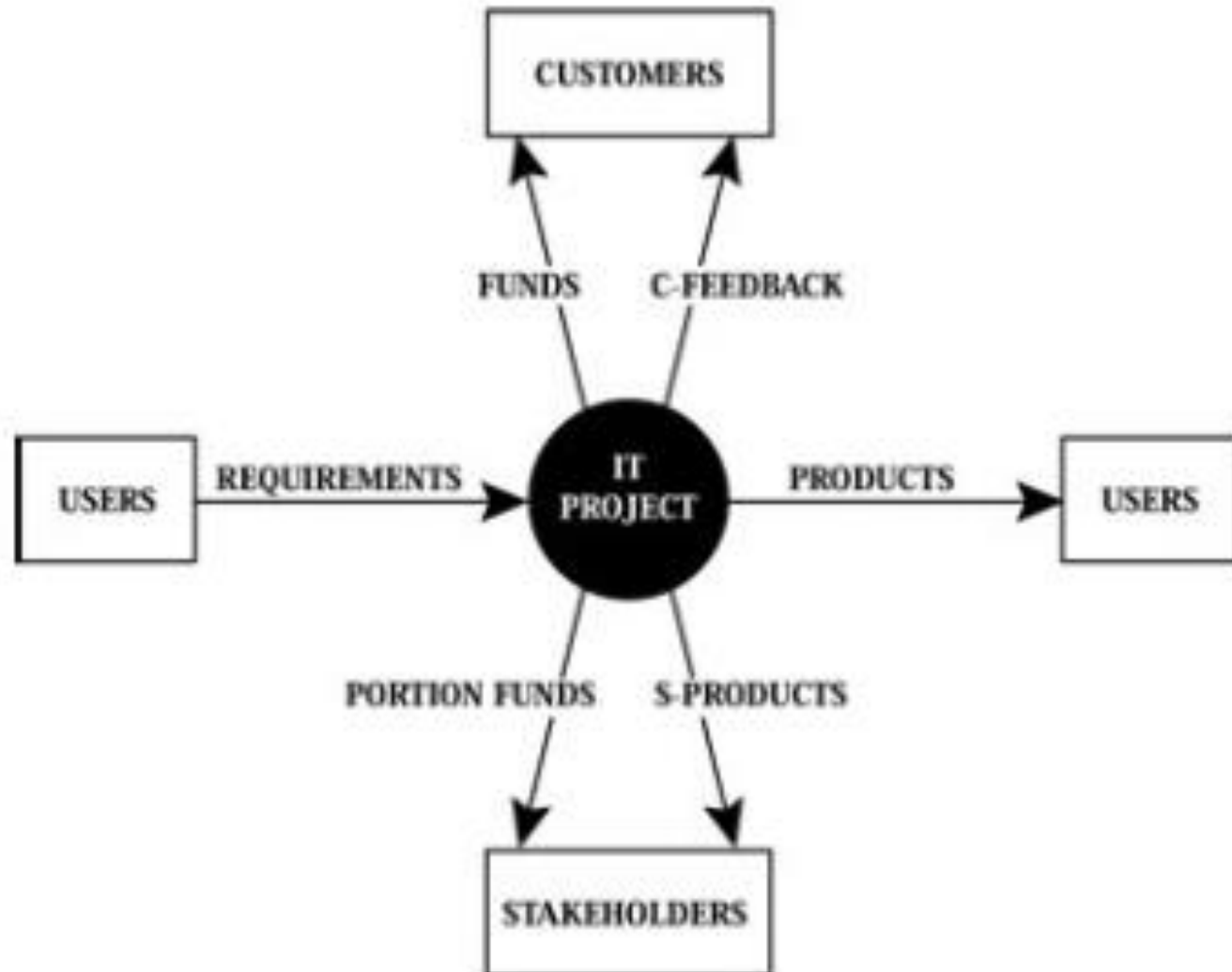
What is Project Management?

- **Project management** is “the application of knowledge, skills, tools and techniques to project activities to meet project requirements”
- Project managers strive to meet the **triple constraint** by balancing project scope, time, and cost goals

Project Management Framework



Relationship among user, stakeholders and customers



Project Stakeholders

- **Stakeholders** are the people involved in or affected by project activities
- Stakeholders include:
 - The project sponsor
 - The project manager
 - The project team
 - Support staff
 - Customers
 - Users
 - Suppliers
 - Opponents to the project

Allocation of IT project Resources

Phase	Allocation (%)
Study and planning	8
System requirements analysis	6
System design	7
Infrastructure and prototype model	5
Reuse planning and Internet	6
Software requirements analysis	8
Software design	8
Software coding and testing	15
Software integration testing	10
System integration testing	15
System deployment	10
Audits	2

Project Management Knowledge Areas

- Project scope management involves defining and managing all the work required to complete the project successfully.
- Project time management includes estimating how long it will take to complete the work, developing an acceptable project schedule, and ensuring timely completion of the project.
- Project cost management consists of preparing and managing the budget for the project.
- Project quality management ensures that the project will satisfy the stated or implied needs for which it was undertaken.

Project Management Knowledge Areas

- Project human resource management is concerned with making effective use of the people involved with the project.
- Project communications management involves generating, collecting, disseminating, and storing project information.
- Project risk management includes identifying, analyzing, and responding to risks related to the project.
- Project procurement management involves acquiring or procuring goods and services for a project from outside the performing organization.

Project Management Knowledge Areas

- Project stakeholder management includes identifying and analyzing stakeholder needs while managing and controlling their engagement throughout the life of the project.
- Project integration management is an overarching function that affects and is affected by all of the other knowledge areas.

Project Management Tools and Techniques

- **Project management tools and techniques** assist project managers and their teams in various aspects of project management
- Some specific ones include:
 - Project charter, scope statement, and WBS (scope)
 - Gantt charts, network diagrams, critical path analysis, and critical chain scheduling (time)
 - Cost estimates and earned value management (cost)

Super Tools

- “Super tools” are those tools that have high use and high potential for improving project success, such as:
 - Software for task scheduling (such as project management software)
 - Scope statements
 - Requirements analyses
 - Lessons-learned reports
- Tools already extensively used that have been found to improve project importance include:
 - Progress reports
 - Kick-off meetings
 - Gantt charts
 - Change requests

Project Success

- There are several ways to define project success
 - The project met scope, time, and cost goals
 - The project satisfied the customer/sponsor
 - The results of the project met its main objective, such as making or saving a certain amount of money, providing a good return on investment, or simply making the sponsors happy

What Helps Projects Succeed?*

1. Executive support
2. User involvement
3. Experienced project manager
4. Clear business objectives
5. Minimized scope
6. Standard software infrastructure
7. Firm basic requirements
8. Formal methodology
9. Reliable estimates
10. Other criteria, such as small milestones, proper planning, competent staff, and ownership

*The Standish Group, "Extreme CHAOS," (2001).

Suggested Skills for Project Managers

- Project managers need a wide variety of skills
- They should:
 - Be comfortable with change
 - Understand the organizations they work in and with
 - Be able to lead teams to accomplish project goals

The Role of the Project Manager

- Job descriptions vary, but most include responsibilities like planning, scheduling, coordinating, and working with people to achieve project goals
- Remember that 97% of successful projects were led by experienced project managers, who can often help influence success factors

Suggested Skills for Project Managers

- The Project Management Body of Knowledge
- Application area knowledge, standards, and regulations
- Project environment knowledge
- General management knowledge and skills
- Soft skills or human relations skills

Ten Most Important Skills and Competencies for Project Managers

1. People skills
2. Leadership
3. Listening
4. Integrity, ethical behavior, consistent
5. Strong at building trust
6. Verbal communication
7. Strong at building teams
8. Conflict resolution, conflict management
9. Critical thinking, problem solving
10. Understands, balances priorities

Project-Related Characteristics

- Achieves the objectives and goals of the project within the established schedule, budget, and procedures
- Develops IT projects on budget and on time to the complete satisfaction of the users
- Has experience in related or similar projects
- Can control project outcomes by measuring and evaluating performance against established objectives and standards
- Develops and executes contingency plans to meet unforeseen circumstances and problem

Team-Related Characteristics

- Has good communication and managerial skills
- Is able to plan, organize, lead, motivate, and delegate proper responsibilities to team members
- Respects team members and has their confidence and respect•
- Shares success with the team members•
- Selects the right person for the right job•
- Shows appreciation to good workers•
- Gets others in the organization to accept his or her ideas and carry out his or her plans

Team-Related Characteristics

- Delegates duties and maintains control
- Believes in professionally training people for their delegated jobs
- Considers himself or herself as a part of the team
- Creates structured discipline
- Recognizes individual differences and takes advantage of individual strengths
- Provides work that stimulates a feeling of personal respect and professional growth
- Allows sufficient time for ideas to develop and mature

Team-Related Characteristics

- Allows free time and encourages openness
- Understands the team members and creates effective communication
- Monitors his or her team members on a regular basis for the following types of people and takes necessary actions:
 - People who waste their time and that of others
 - Opportunists who steal others' ideas
 - Critical people who find only mistakes in others' work
 - Idle people who are unproductive
 - Egotistic people who brag about themselves
 - Gossips who spread rumors

Project-Related Characteristics

- Develops and implements decisions relating to planning
- Is willing to redefine goals, responsibilities, and schedules as necessary to get the project back on track in case the schedule slips or the project is over budget
- Establishes and meets real priorities and deadlines
- Believes in good planning to reduce pressure and stress and increase productivity
- Establishes long-term and short-term planning

Different Skills Needed in Different Situations

- Large projects: leadership, relevant prior experience, planning, people skills, verbal communication, and team-building skills are most important
- High uncertainty projects: risk management, expectation management, leadership, people skills, and planning skills are most important
- Very novel projects: leadership, people skills, having vision and goals, self-confidence, expectations management, and listening skills are most important

Importance of Leadership Skills

- Effective project managers provide leadership by example
- A **leader** focuses on long-term goals and big-picture objectives while inspiring people to reach those goals
- A **manager** deals with the day-to-day details of meeting specific goals
- Project managers often take on the role of both leader and manager

Careers for IT Project Managers

- Computerworld's annual forecast survey supports this career projection.
- IT executives listed the “nine hottest skills” they planned to hire for in 2012.
- Programming and application development took over first place from project management, mainly due to the increased need for programmers of mobile devices.
- Managers also noted that they were looking for “working” project managers and business analysts who could get projects done.

The Project Management Profession

- The profession of project management is growing at a very rapid pace
- It is helpful to understand the history of the field, the role of professional societies like the Project Management Institute, and the growth in project management software

Figure 1-6: Sample Gantt Chart Created with Project 2007

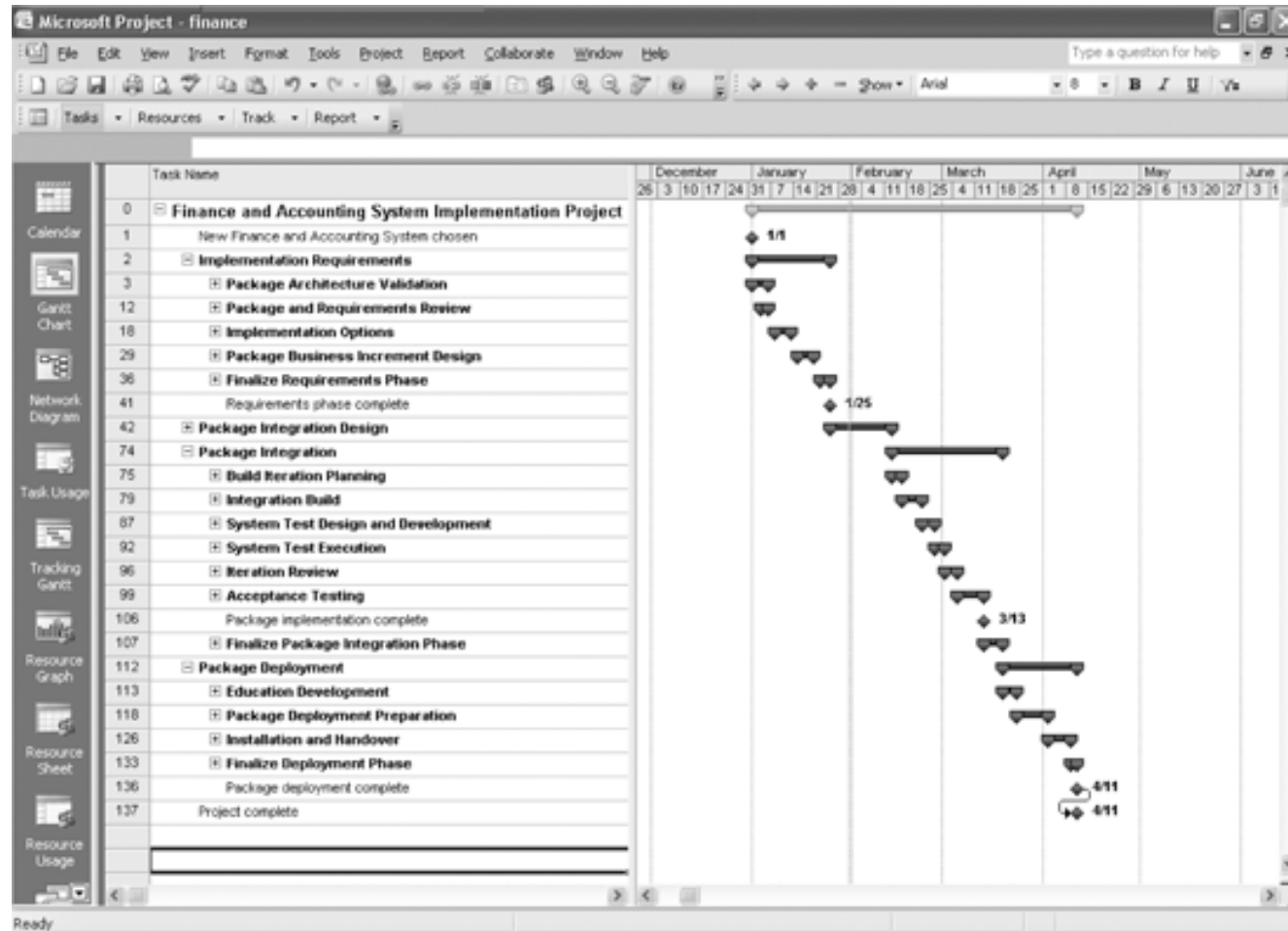
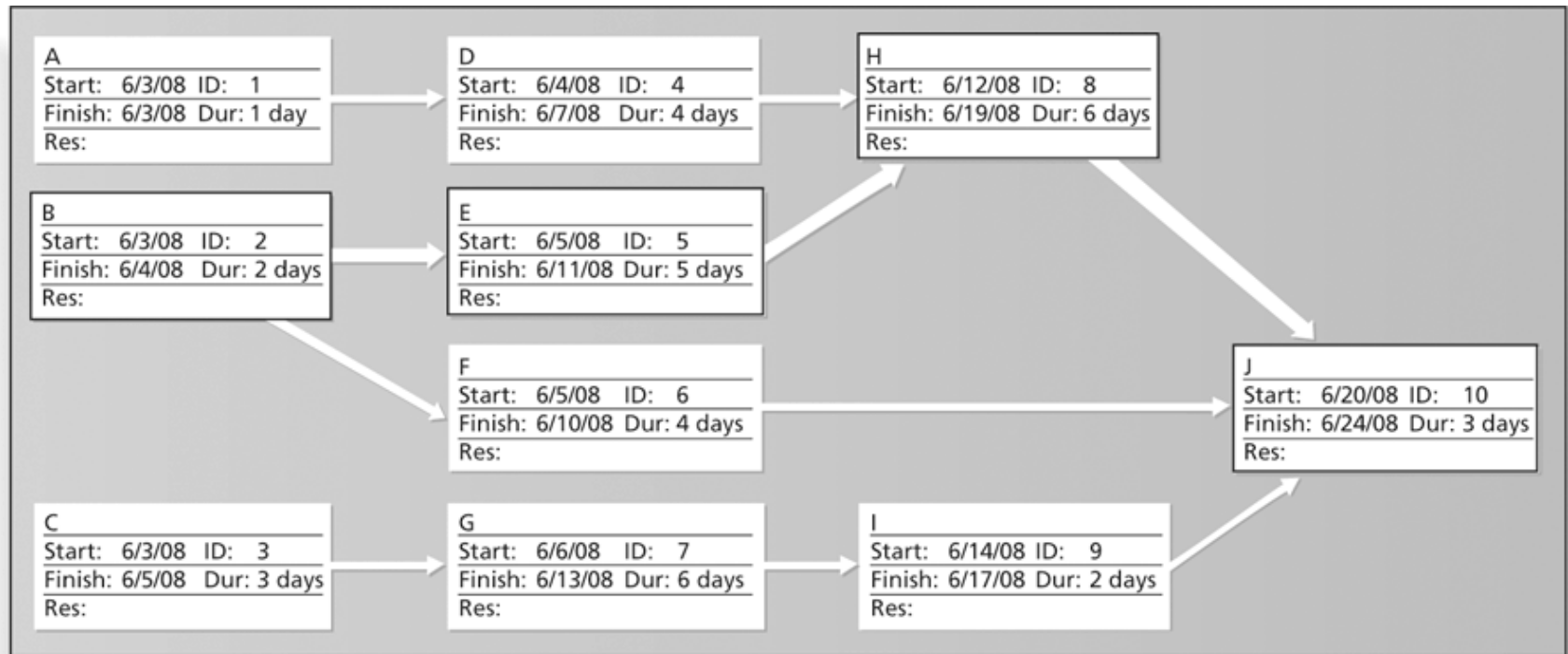


Figure 1-7: Sample Network Diagram in Microsoft Project



Ethics in Project Management

- **Ethics**, loosely defined, is a set of principles that guide our decision making based on personal values of what is “right” and “wrong”
- Project managers often face ethical dilemmas
- In order to earn PMP certification, applicants must agree to PMI’s Code of Ethics and Professional Conduct
- Several questions on the PMP exam are related to professional responsibility, including ethics

Project Management Software

- There are hundreds of different products to assist in performing project management
- Three main categories of tools
 - Low-end tools: handle single or smaller projects well, cost under \$200 per user
 - Midrange tools: handle multiple projects and users, cost \$200-600 per user, Project 2007 most popular
 - High-end tools: also called enterprise project management software, often licensed on a per-user basis, like VPMi Enterprise Online (www.vcsonline.com); see front cover for trial version information
- See the Project Management Center Web site or Top Ten Reviews for links to many companies that provide project management software

Chapter Summary

- A project is a temporary endeavor undertaken to create a unique product, service, or result
- Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements
- A program is a group of related projects managed in a coordinated way; project portfolio management involves organizing and managing projects and programs as a portfolio of investments
- Project managers play a key role in helping projects and organizations succeed
- The project management profession continues to grow and mature