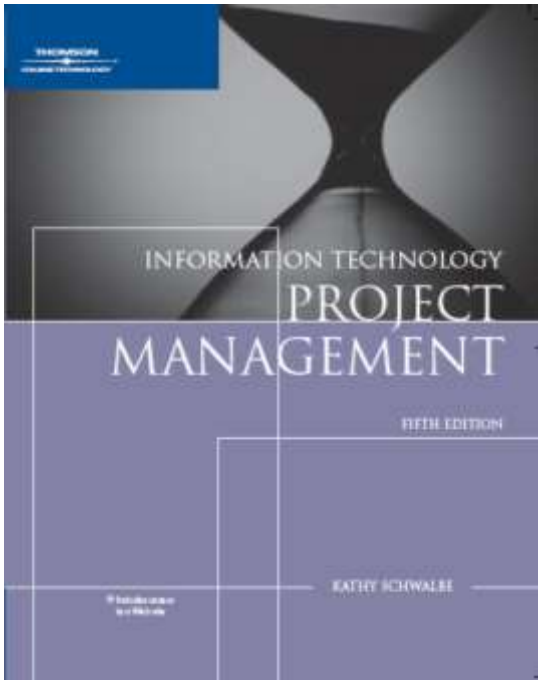
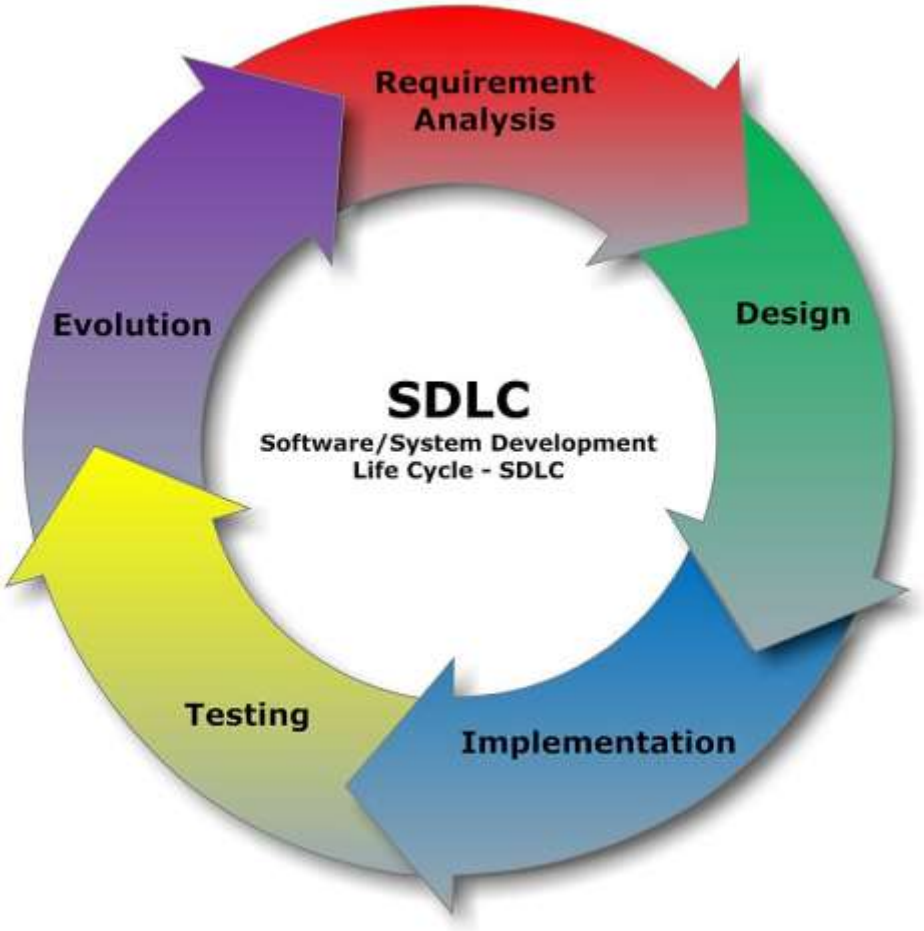
Chapter 1:
Introduction to Project Management

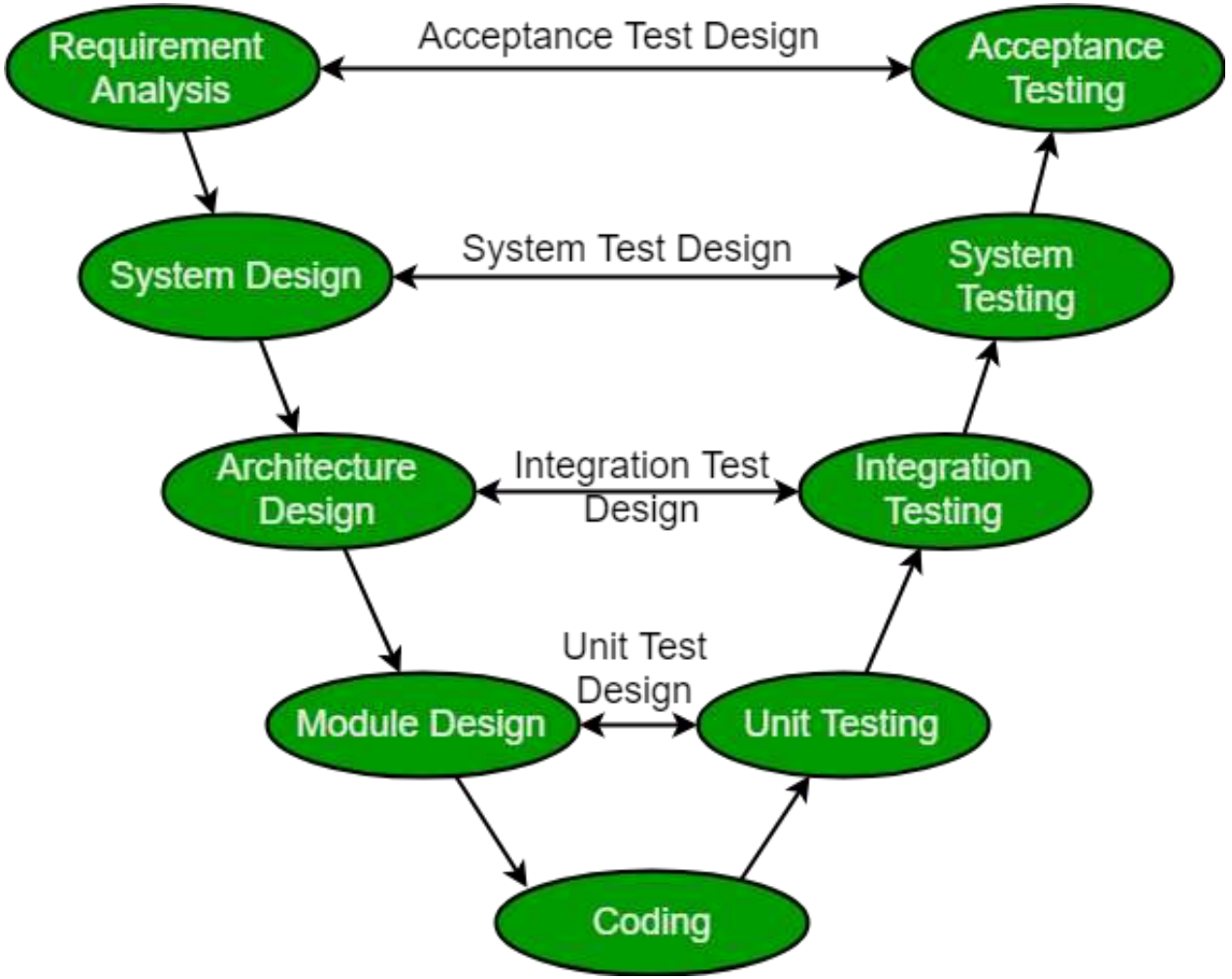
Information Technology Project Management



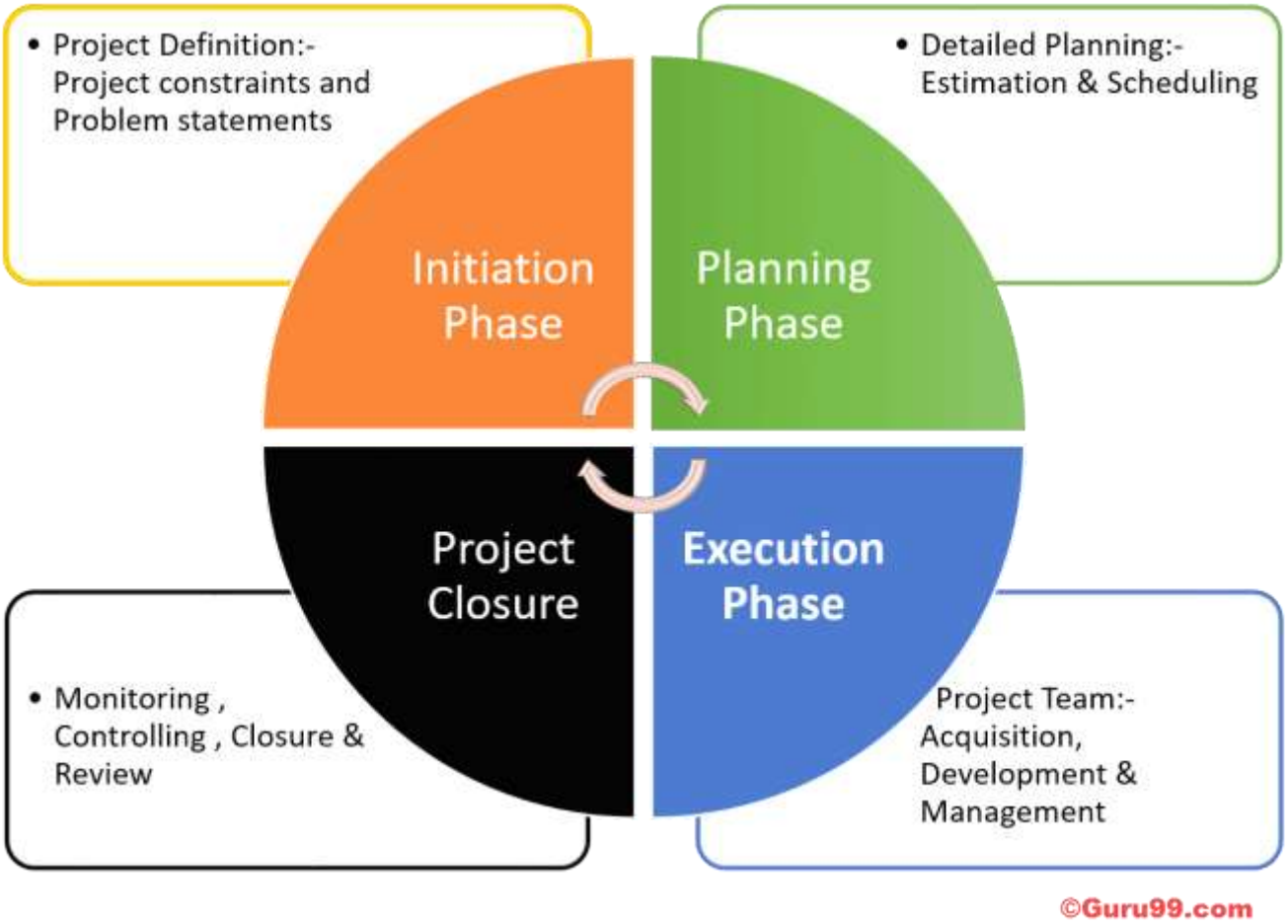
SDLC


Requirement Analysis
Design
Implementation
Testing
Evolution
SDLC
Software/System Development Life Cycle - SDLC

V-Model


Requirement Analysis
Acceptance Test Design
Acceptance Testing
System Design
System Test Design
System Testing
Architecture Design
Integration Test Design
Integration Testing
Unit Test Design
Module Design
Unit Testing
Coding

Project Management Phase



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

Introduction

- Many organizations today have a new or renewed interest in project management
- Computer hardware, software, networks, and the use of interdisciplinary and global work teams have radically changed the work environment
- The U.S. spends $2.3 trillion on projects every year, or one-quarter of its gross domestic product, and the world as a whole spends nearly $10 trillion of its $40.7 gross product on projects of all kinds

Advantages of Using Formal Project Management

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

What Is a Project?

- A **project** is “a temporary endeavor undertaken to create a unique product, service, or result” (PMBOK® Guide, Third Edition, 2004, p. 5)
- 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
- A cross-functional task force in a company decides what Voice-over-Internet-Protocol (VoIP) system to purchase and how it will be implemented

Media Snapshot: Where IT Matters

- In 2006, Baseline Magazine published "Where I.T. Matters: How 10 Technologies Transformed 10 Industries" as a retort to Nicholas Carr's ideas (author of "IT Doesn't Matter")
  - VoIP has transformed the telecommunications industry and broadband Internet access
  - Global Positioning Systems (GPS) has changed the farming industry
  - Digital supply chain has changed the entertainment industry's distribution system

Project Attributes

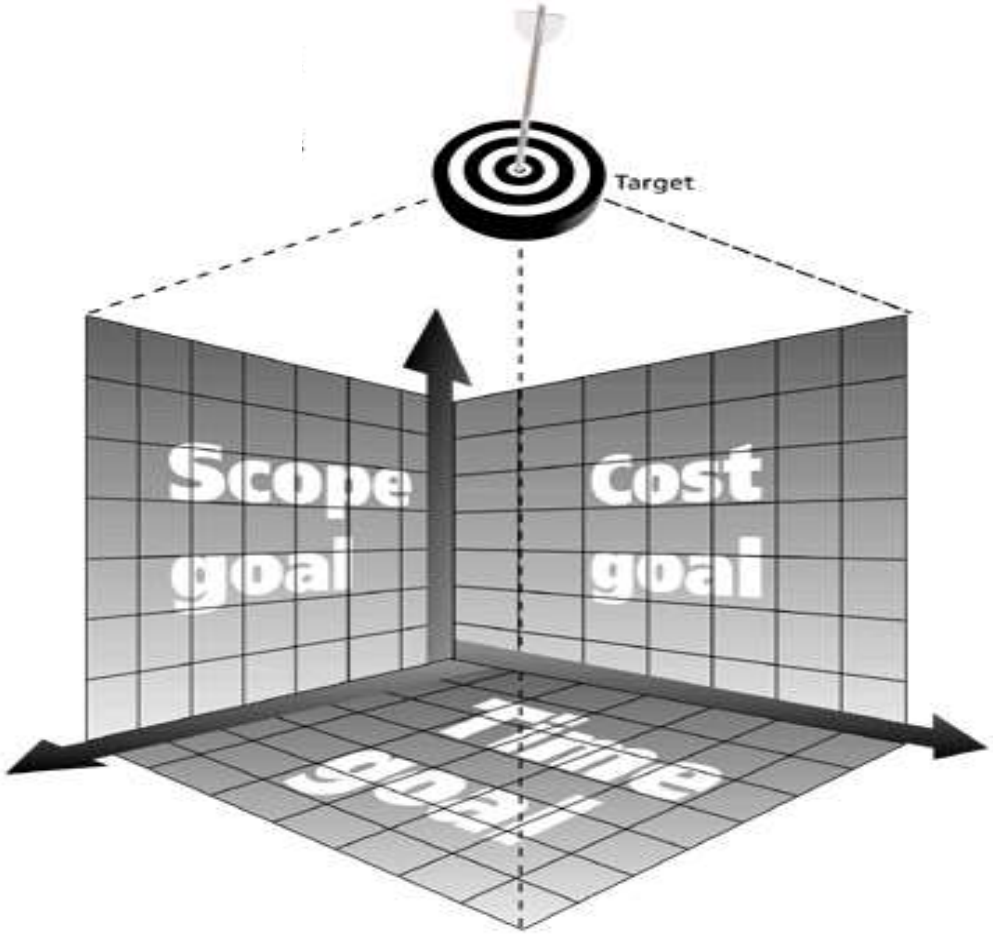
- A project:
  - Has a unique purpose
  - Is temporary
  - Is developed using progressive elaboration
  - Requires resources, often from various areas
  - Should have a primary customer or sponsor
    - The **project sponsor** usually provides the direction and funding for the project
  - Involves uncertainty

Project 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 (PMBOK® Guide, Third Edition, 2004, p. 16)
- Program managers oversee programs and often act as bosses for project managers

Figure 1-1: The Triple Constraint of Project Management

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

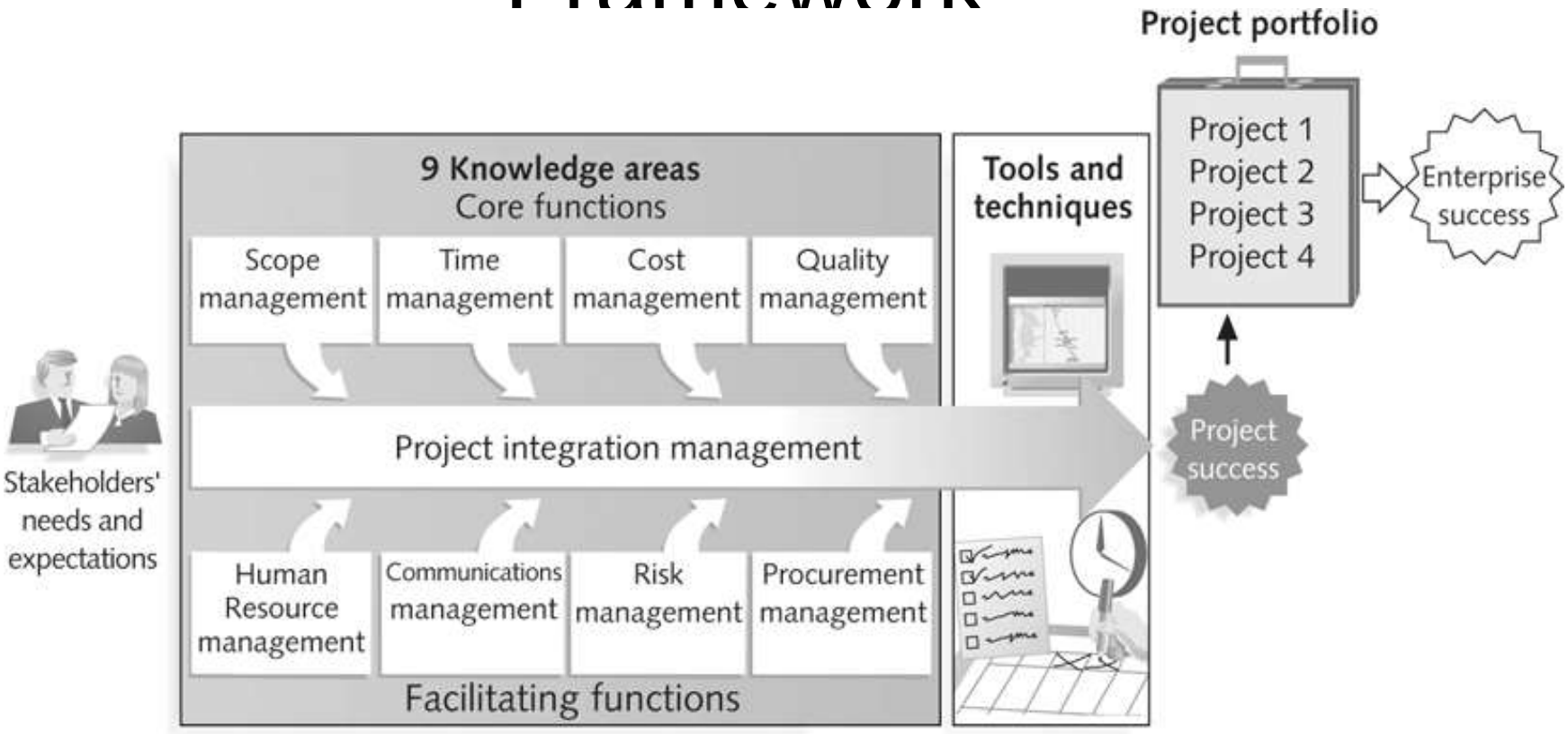


What is Project Management?

- **Project management** is “the application of knowledge, skills, tools and techniques to project activities to meet project requirements” (PMBOK® Guide, Third Edition, 2004, p. 8)

- Project managers strive to meet the **triple constraint** by balancing project scope, time, and cost goals

Figure 1-2: Project Management Framework



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

Nine Project Management Knowledge Areas

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

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)
  - See Table 1-1 for many more

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

What Went Right? Improved Project Performance

- The Standish Group's CHAOS studies show improvements in IT projects in the past decade

Measure	**1994 Data**	**2002 Data**	**Result**
Successful projects	16%	34%	Doubled
Failed projects	31%	15%	Halved
Money wasted on challenged and failed projects	$140 B out of $250 B	$55 B out of $255 B	More than halved

Why the Improvements?

"The reasons for the increase in successful projects vary. First, the average cost of a project has been more than cut in half. Better tools have been created to monitor and control progress and **better skilled project managers with better management processes** are being used. The fact that there are processes is significant in itself."*

*The Standish Group, "CHAOS 2001: A Recipe for Success" (2001).

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

Table 1-2: 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).

What the Winners Do

- Recent research findings show that companies that excel in project delivery capability:
  - Use an integrated project management toolbox (use standard/advanced PM tools and lots of templates)
  - Grow project leaders, emphasizing business and soft skills
  - Develop a streamlined project delivery process
  - Measure project health using metrics, like customer satisfaction or return on investment

Program and Project Portfolio Management

- A **program** is “a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually” (PMBOK® Guide, Third Edition, 2004, p. 16)

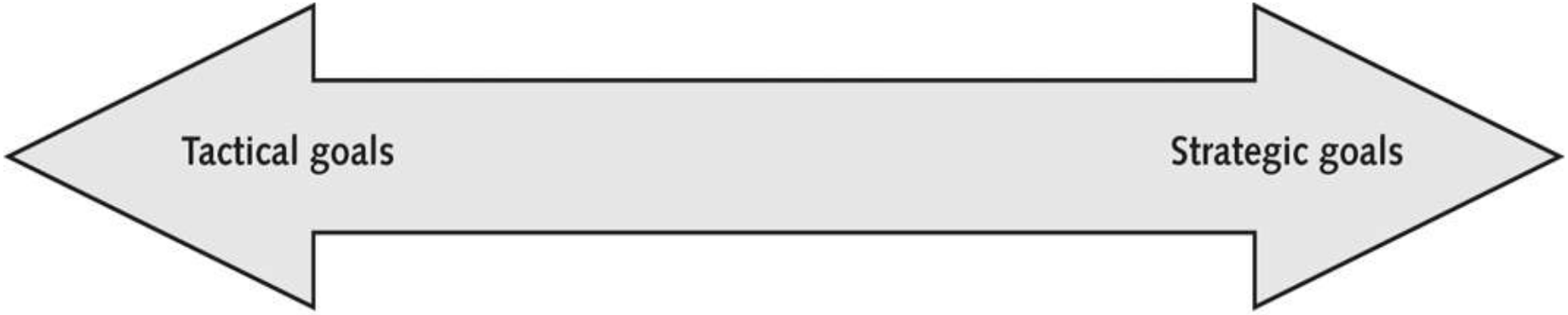
- A **program manager** provides leadership and direction for the project managers heading the projects within the program

- Examples of common programs in the IT field: infrastructure, applications development, and user support

Project Portfolio Management

- As part of **project portfolio management**, organizations group and manage projects and programs as a portfolio of investments that contribute to the entire enterprise's success
- Portfolio managers help their organizations make wise investment decisions by helping to select and analyze projects from a strategic perspective

Figure 1-3: Project Management Compared to Project Portfolio Management



Project management
- Are we carrying out projects well?
- Are projects on time and on budget?
- Do project stakeholders know what they should be doing?

Project portfolio management
- Are we working on the right projects?
- Are we investing in the right areas?
- Do we have the right resources to be competitive?

Best Practice

- A **best practice** is “an optimal way recognized by industry to achieve a stated goal or objective”*
- Robert Butrick suggests that organizations need to follow basic principles of project management, including these two mentioned earlier in this chapter
  - Make sure your projects are driven by your strategy; be able to demonstrate how each project you undertake fits your business strategy, and screen out unwanted projects as soon as possible
  - Engage your stakeholders; ignoring stakeholders often leads to project failure
    - Be sure to engage stakeholders at all stages of a project, and encourage teamwork and commitment at all times

Figure 1-4: Sample Project Portfolio Approach

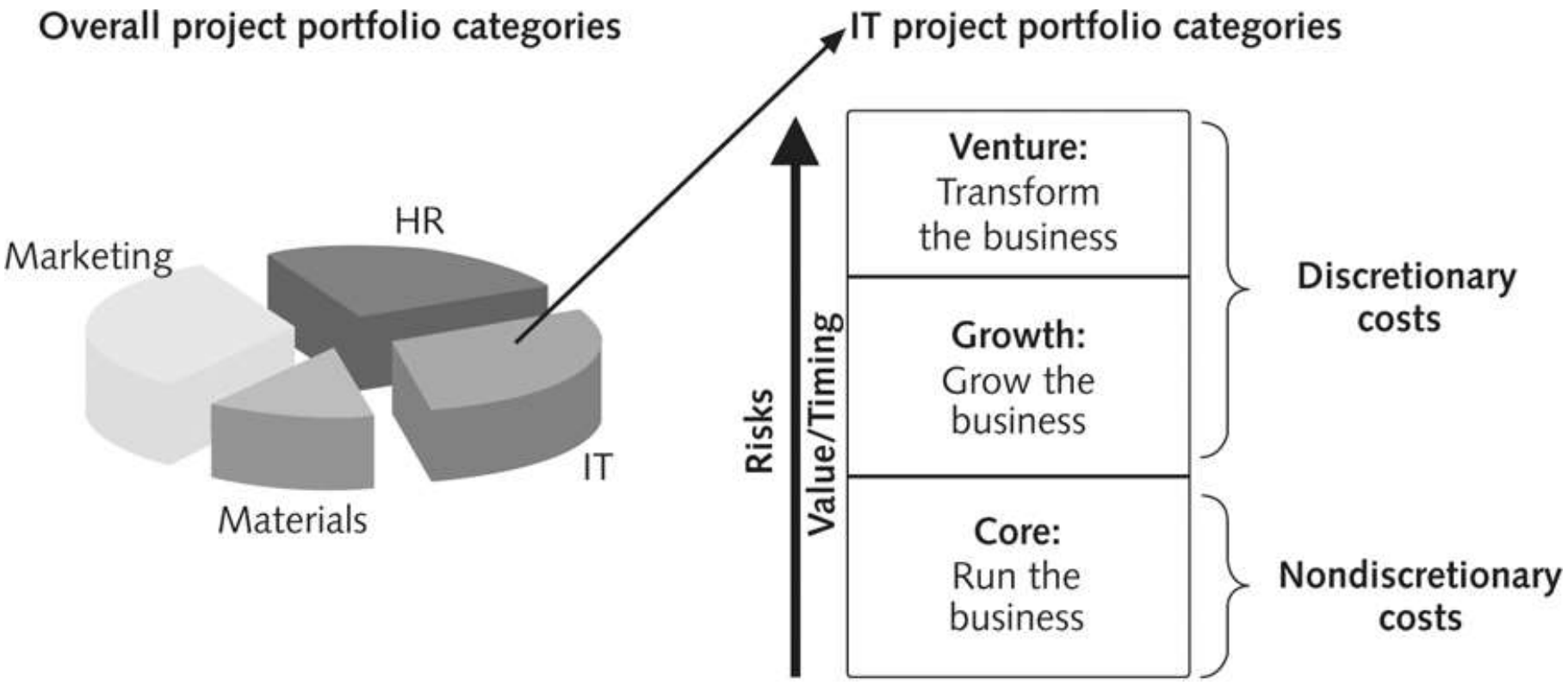
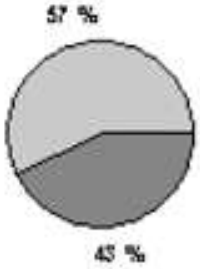


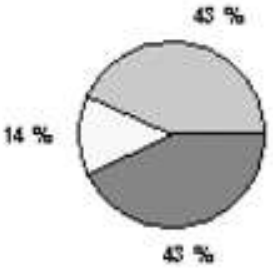
Figure 1-5: Sample Project Portfolio Management Screen Showing Project Health

PLANVIEW

Project Health (Effort Based)



Schedule Variance	Project Count
On Target	4
In Trouble	3



Cost Variance	Project Count
On Target	3
At Risk	1
In Trouble	3

Work Id	Project	% Complete	Schedule Variance		Cost Variance		Budget Variance		Risk Pct	
0000051	Upgrade Sales Staff Laptop PC's	100.0 %	✓	0.0	▲	-74.0	▲	-74.0	✓	-
CAW-035	CRM Website	75.8 %	✓	8.0	✓	18.0	✓	18.0	●	39.7 %
CW-2002	MyMystic.com Customer Website	97.0 %	●	-120.0	●	-343.0	●	-263.0	✓	-
PARMS-0	PARMS Implementation	50.4 %	●	-440.0	●	-192.0	✓	-8.0	✓	3.9 %
POS-2002	PlanView and SAP Financial Integration	98.6 %	✓	0.0	●	-221.0	●	-221.0	✓	-
SSR-012	Strategic Systems Review	0.0 %	✓	0.0	✓	0.0	▲	-72.0	▲	15.9 %
TAU-2002	Tax Accounting Update 2002	24.9 %	●	-119.0	✓	-15.0	✓	33.0	✓	0

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

Table 1-3: 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

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

- In a 2006 survey by CIO.com, IT executives ranked project/program management the skills that would be the most in demand in the next two to five years

Table 1-4: Top IT Skills (partial list)

SKILL	PERCENTAGE OF RESPONDENTS
Project/program management	60%
Business process management	55%
Business analysis	53%
Application development	52%
Database management	49%
Security	42%
Enterprise architect	41%
Strategist/internal consultant	40%

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

History of Project Management

- Some people argue that building the Egyptian pyramids was a project, as was building the Great Wall of China
- Most people consider the ***Manhattan Project*** to be the first project to use “modern” project management
- This three-year, $2 billion (in 1946 dollars) project had a separate project manager and a technical manager

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

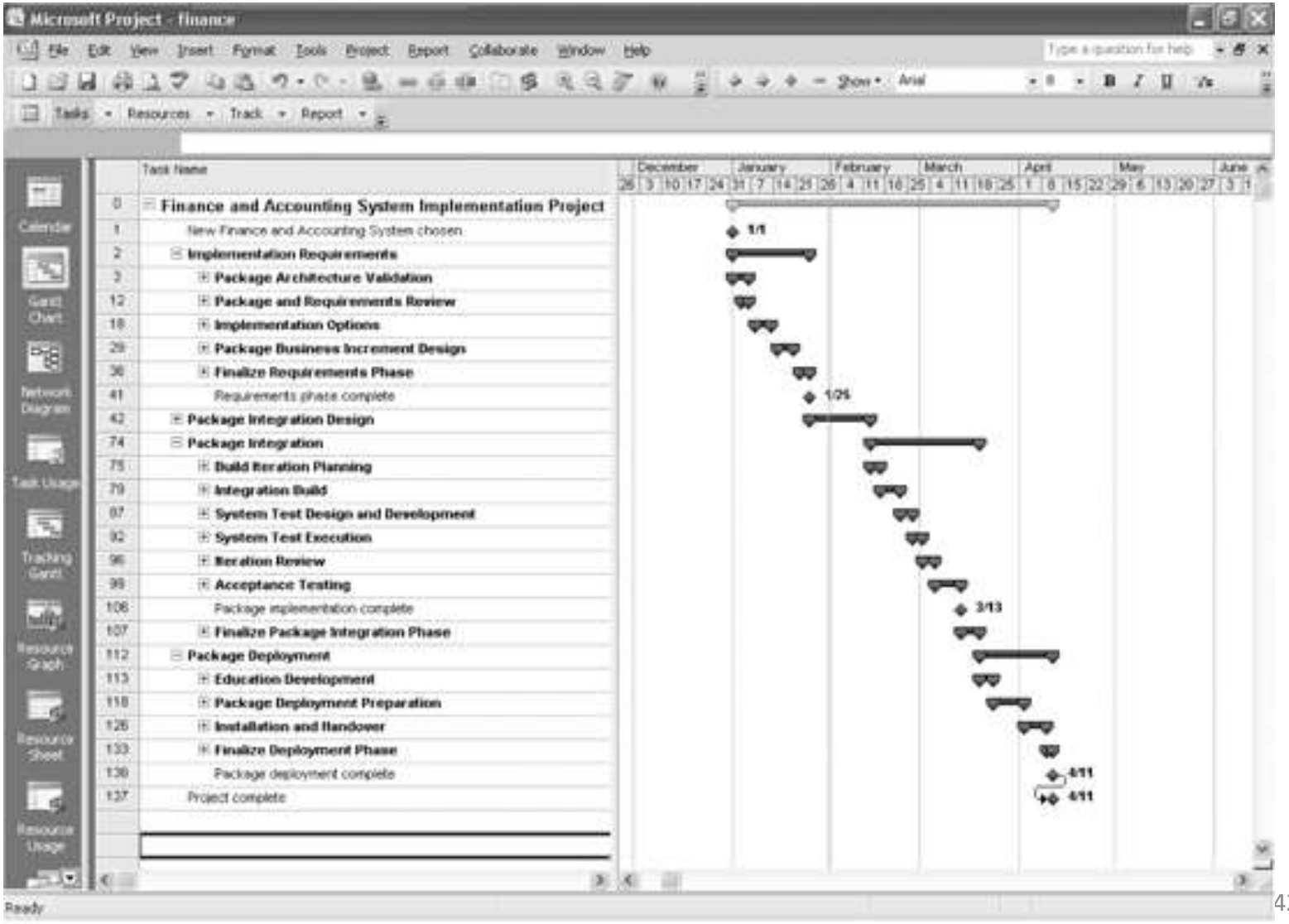
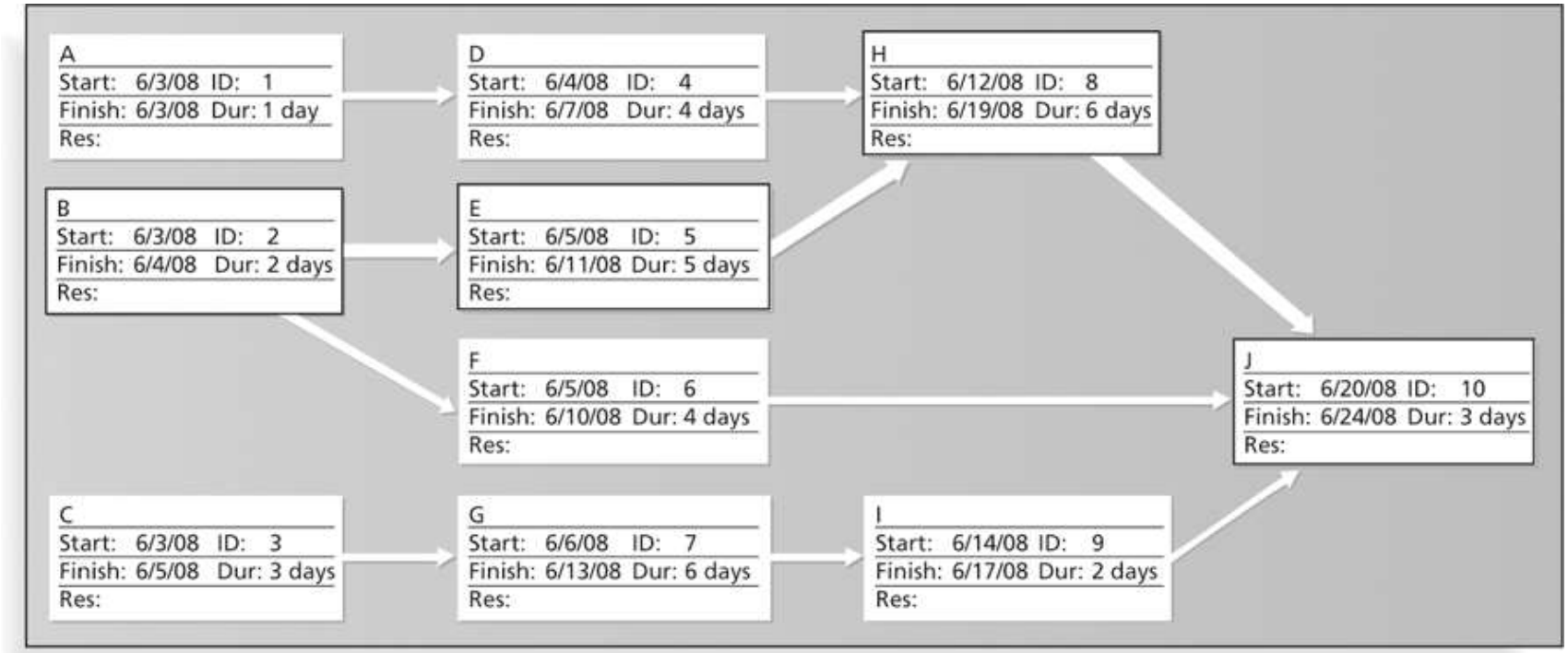


Figure 1-7: Sample Network Diagram in Microsoft Project



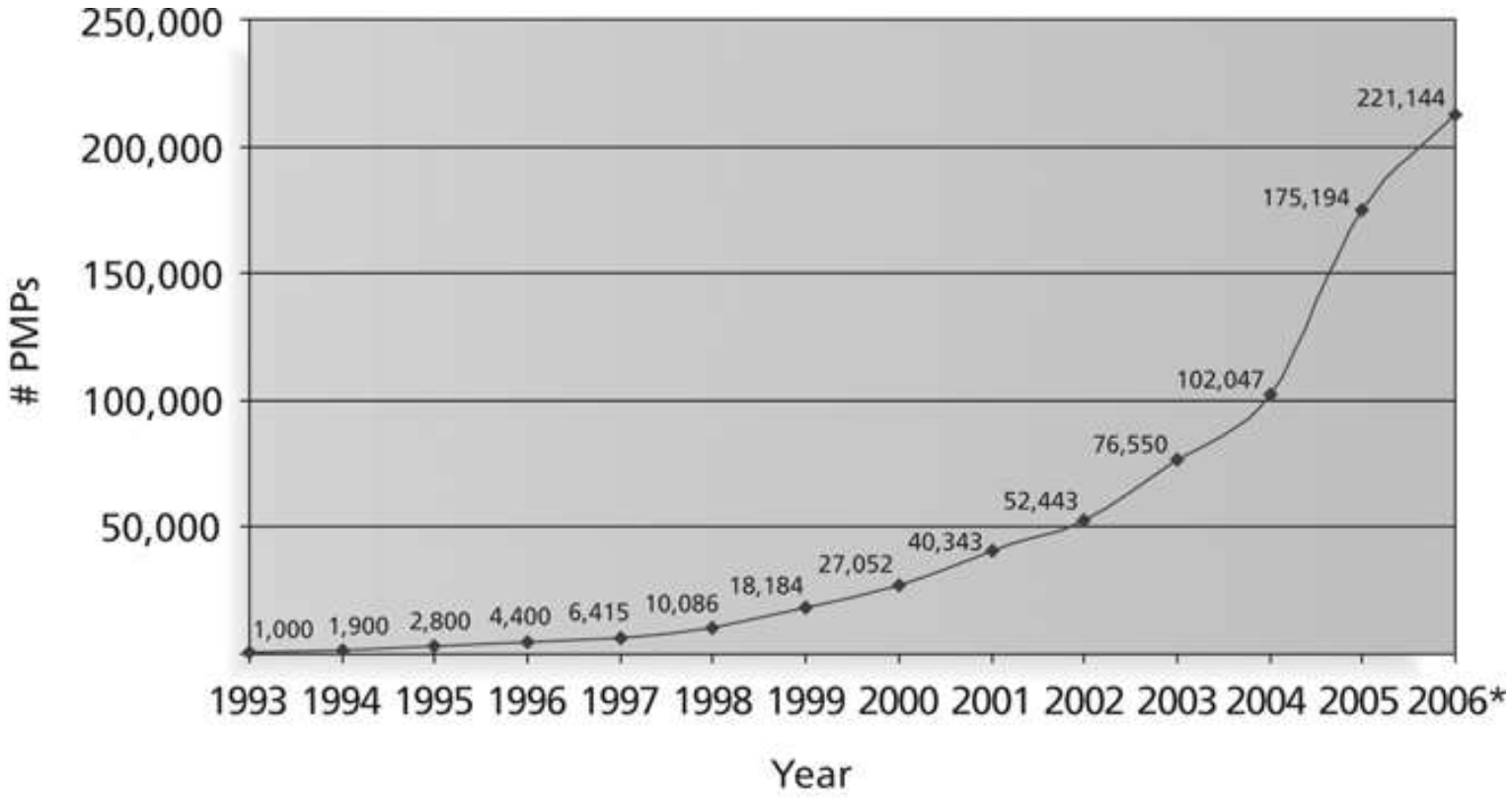
The Project Management Institute

- The Project Management Institute (PMI) is an international professional society for project managers founded in 1969
- PMI has continued to attract and retain members, reporting 225,432 members worldwide by 12/31/06
- There are specific interest groups in many areas like engineering, financial services, health care, IT, etc.
- Project management research and certification programs continue to grow

Project Management Certification

- PMI provides certification as a **Project Management Professional** (**PMP**)
- A PMP has documented sufficient project experience, has agreed to follow a code of ethics, and has passed the PMP exam
- The number of people earning PMP certification is increasing quickly
- PMI and other organizations are offering new certification programs (see Appendix B)

Figure 1-8: Growth in PMP Certification, 1993-2006



*As of December 31, 2006

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

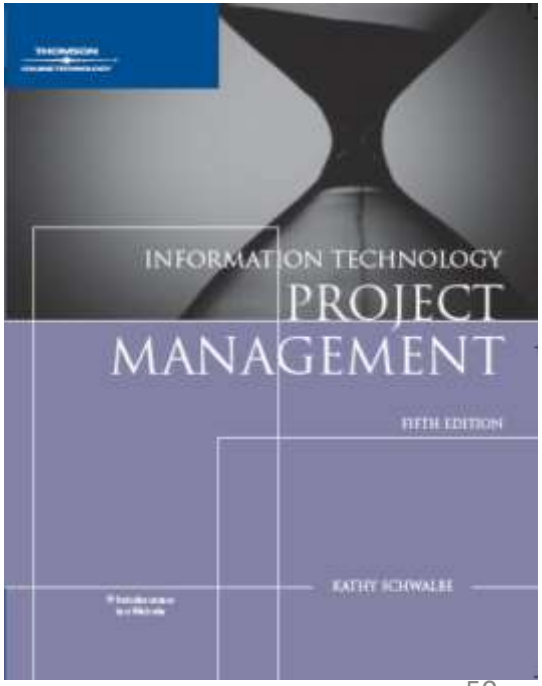
- There are hundreds of different products to assist in performing project management
- Three main categories of tools
  - Low-end tools: handle single or smaller projects well, cost under $200 per user
  - Midrange tools: handle multiple projects and users, cost $200-600 per user, Project 2007 most 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

Chapter 2:
The Project Management and Information Technology Context

Information Technology Project Management, Fifth Edition



Learning Objectives

- Describe the systems view of project management and how it applies to information technology projects
- Understand organizations, including the four frames, organizational structures, and organizational culture
- Explain why stakeholder management and top management commitment are critical for a project's success

Learning Objectives (continued)

- Understand the concept of a project phase and the project life cycle and distinguish between project development and product development
- Discuss the unique attributes and diverse nature of information technology projects

Projects Cannot Be Run in Isolation

- Projects must operate in a broad organizational environment
- Project managers need to use **systems thinking**
  - Taking a holistic view of carrying out projects within the context of the organization
- Senior managers must make sure projects continue to support current business needs

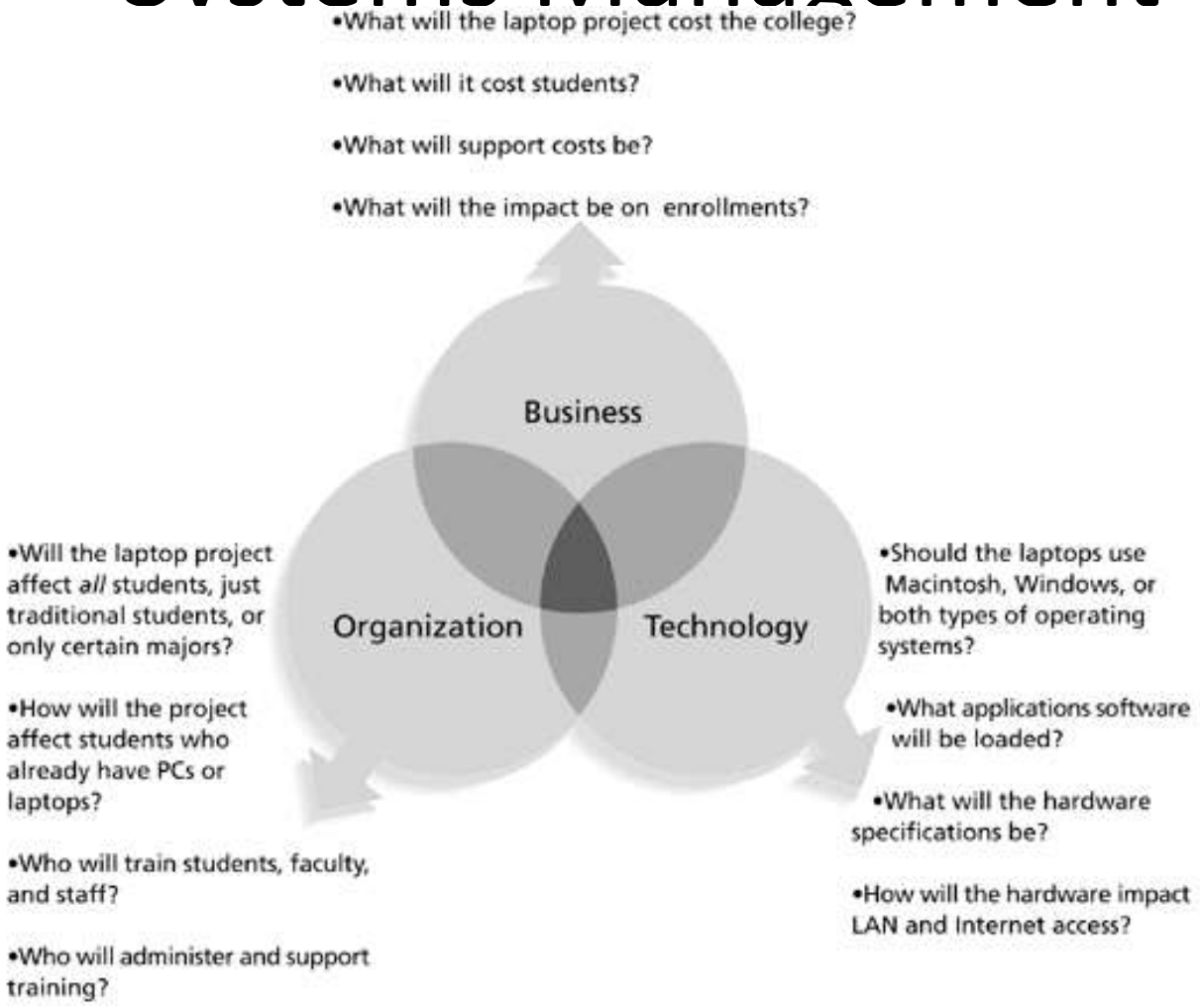
A Systems View of Project Management

- A **systems approach** emerged in the 1950s to describe a more analytical approach to management and problem solving
- Three parts include:
  - **Systems philosophy**: an overall model for thinking about things as systems
  - **Systems analysis**: problem-solving approach
  - **Systems management**: address business, technological, and organizational issues before making changes to systems

Media Snapshot

- The Press Association Ltd, the largest news agency in the United Kingdom, hired a consulting firm to help turn things around after management noticed its profit margins were sliding
- The consultants suggested using a holistic view and a top-down strategy to make sure projects supported key business goals
- They also suggested releasing short-term results to accrue benefits on an incremental basis and reviewing projects on a regular basis to ensure strategic alignment

Figure 2-1: Three Sphere Model for Systems Management



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Understanding Organizations

Structural frame: Focuses on roles and responsibilities, coordination and control. Organization charts help define this frame.	**Human resources frame:** Focuses on providing harmony between needs of the organization and needs of people.
Political frame: Assumes organizations are coalitions composed of varied individuals and interest groups. Conflict and power are key issues.	**Symbolic frame:** Focuses on symbols and meanings related to events. Culture is important.

What Went Wrong?

Many enterprise resource planning (ERP) projects fail due to organizational issues, not technical issues. For example, Sobey's Canadian grocery store chain abandoned its two-year, $90 million ERP system due to organizational problems.

As Dalhousie University Associate Professor Sunny Marche states, "The problem of building an integrated system that can accommodate different people is a very serious challenge. You can't divorce technology from the sociocultural issues. They have an equal role." Sobey's ERP system shut down for five days and employees were scrambling to stock potentially empty shelves in several stores for weeks. The system failure cost Sobey's more than $90 million and caused shareholders to take an 82-cent after-tax hit per share.*

*Hoare, Eva. "Software hardships," The Herald, Halifax, Nova Scotia (2001).

Organizational Structures

- Three basic organization structures
  - **Functional:** functional managers report to the CEO
  - **Project:** program managers report to the CEO
  - **Matrix:** middle ground between functional and project structures; personnel often report to two or more bosses; structure can be weak, balanced, or strong matrix

Figure 2-2: Functional, Project, and Matrix Organizational Structures

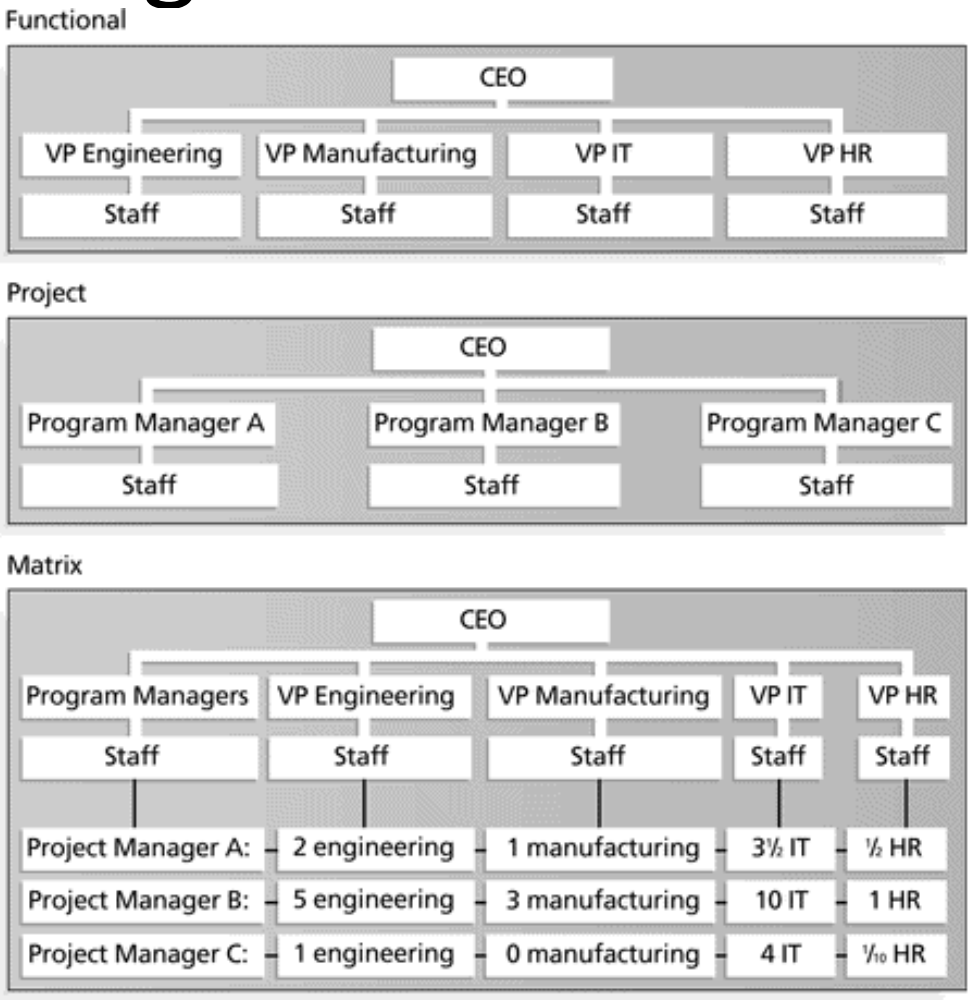

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Table 2-1: Organizational Structure Influences on Projects

Project Characteristics	**Organizational Structure Type**				
	Functional	**Matrix**			**Project**
		Weak Matrix	***Balanced Matrix***	***Strong Matrix***	
Project manager's authority	Little or none	Limited	Low to Moderate	Moderate to high	High to almost total
Percent of performing organization's personnel assigned full-time to project work	Virtually none	0-25%	15-60%	50-95%	85-100%
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
Common title for project manager's role	Project Coordinator/ Project Leader	Project Coordinator/ Project Leader	Project Manager/ Project Officer	Project Manager/ Program Manager	Project Manager/ Program Manager
Project management administrative staff	Part-time	Part-time	Part-time	Full-time	Full-time

PMBOK® Guide, 2000, 19, and *PMBOK® Guide 2004*, 28.

Organizational Culture

- **Organizational culture** is a set of shared assumptions, values, and behaviors that characterize the functioning of an organization
- Many experts believe the underlying causes of many companies' problems are not the structure or staff, but the culture

Ten Characteristics of Organizational Culture

- Member identity*
- Group emphasis*
- People focus
- Unit integration*
- Control
- Risk tolerance*
- Reward criteria*
- Conflict tolerance*
- Means-ends orientation
- Open-systems focus*

*Project work is most successful in an organizational culture where these items are strong/high and other items are balanced

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Stakeholder Management

- Project managers must take time to identify, understand, and manage relationships with all project stakeholders
- Using the four frames of organizations can help meet stakeholder needs and expectations
- Senior executives/top management are very important stakeholders

Best Practice

- **IT governance** addresses the authority and control for key IT activities in organizations, including IT infrastructure, IT use, and project management
- A lack of IT governance can be dangerous, as evidenced by three well-publicized IT project failures in Australia (Sydney Water's customer relationship management system, the Royal Melbourne Institute of Technology's academic management system, and One.Tel's billing system)

Need for Organizational Commitment to Information Technology (IT)

- If the organization has a negative attitude toward IT, it will be difficult for an IT project to succeed
- Having a Chief Information Officer (CIO) at a high level in the organization helps IT projects
- Assigning non-IT people to IT projects also encourages more commitment

Need for Organizational Standards

- Standards and guidelines help project managers be more effective
- Senior management can encourage:
  - The use of standard forms and software for project management
  - The development and use of guidelines for writing project plans or providing status information
  - The creation of a project management office or center of excellence

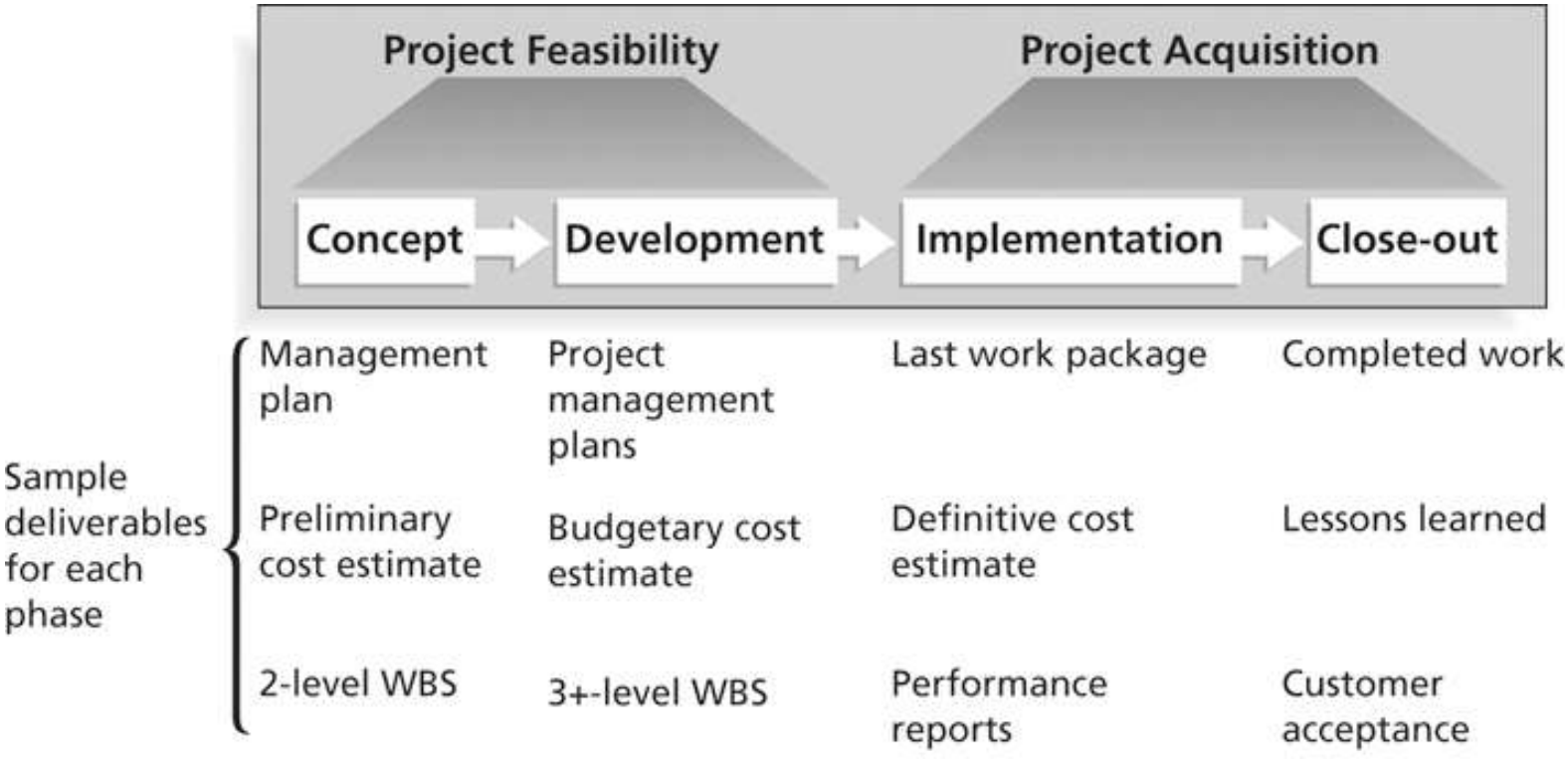
Project Phases and the Project Life Cycle

- A **project life cycle** is a collection of project phases that defines:
  - What work will be performed in each phase
  - What deliverables will be produced and when
  - Who is involved in each phase
  - How management will control and approve work produced in each phase
- A **deliverable** is a product or service produced or provided as part of a project

More on Project Phases

- In early phases of a project life cycle:
  - Resource needs are usually lowest
  - The level of uncertainty (risk) is highest
  - Project stakeholders have the greatest opportunity to influence the project
- In middle phases of a project life cycle:
  - The certainty of completing a project improves
  - More resources are needed
- The final phase of a project life cycle focuses on:
  - Ensuring that project requirements were met

Figure 2-3: Phases of the Traditional Project Life Cycle



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Product Life Cycles

- Products also have life cycles
- The **Systems Development Life Cycle (SDLC)** is a framework for describing the phases involved in developing and maintaining information systems
- Systems development projects can follow:
  - **Predictive life cycle**: the scope of the project can be clearly articulated and the schedule and cost can be predicted
  - **Adaptive Software Development (ASD) life cycle**: requirements cannot be clearly expressed, projects are mission driven and component based, using time-based cycles to meet target dates

Predictive Life Cycle Models

- Waterfall model: has well-defined, linear stages of systems development and support
- Spiral model: shows that software is developed using an iterative or spiral approach rather than a linear approach
- Incremental build model: provides for progressive development of operational software
- Prototyping model: used for developing prototypes to clarify user requirements
- Rapid Application Development (RAD) model:

The Importance of Project Phases and Management Reviews

- A project should successfully pass through each of the project phases in order to continue on to the next
- Management reviews, also called **phase exits** or **kill points**, should occur after each phase to evaluate the project's progress, likely success, and continued compatibility with organizational goals

What Went Right?

"The real improvement that I saw was in our ability to—in the words of Thomas Edison—know when to stop beating a dead horse.…Edison's key to success was that he failed fairly often; but as he said, he could recognize a dead horse before it started to smell...In information technology we ride dead horses—failing projects—a long time before we give up. But what we are seeing now is that we are able to get off them; able to reduce cost overrun and time overrun. That's where the major impact came on the success rate."*

Many organizations, like Huntington Bancshares, Inc., use an **executive steering committee** to help keep projects on track.

*Cabanis, Jeannette, "'A Major Impact': The Standish Group's Jim Johnson On Project Management and IT Project Success," PM Network, PMI, Sep.1998, p. 7

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The Context of IT Projects

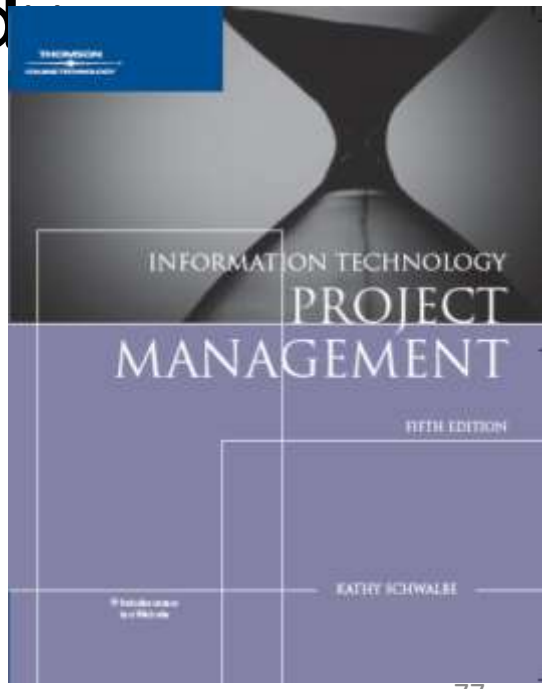
- IT projects can be very diverse in terms of size, complexity, products produced, application area, and resource requirements
- IT project team members often have diverse backgrounds and skill sets
- IT projects use diverse technologies that change rapidly; even within one technology area, people must be highly specialized

Chapter Summary

- Project managers need to take a systems approach when working on projects
- Organizations have four different frames: structural, human resources, political, and symbolic
- The structure and culture of an organization have strong implications for project managers
- Projects should successfully pass through each phase of the project life cycle
- Project managers need to consider several factors due to the unique context of information technology projects

Chapter 3:
The Project Management Process Groups: A Case Stud

Information Technology Project Management, Fifth Edition



Learning Objectives

- Describe the five project management (PM) process groups, the typical level of activity for each, and the interactions among them
- Understand how the PM process groups relate to the PM knowledge areas
- Discuss how organizations develop information technology PM methodologies to meet their needs

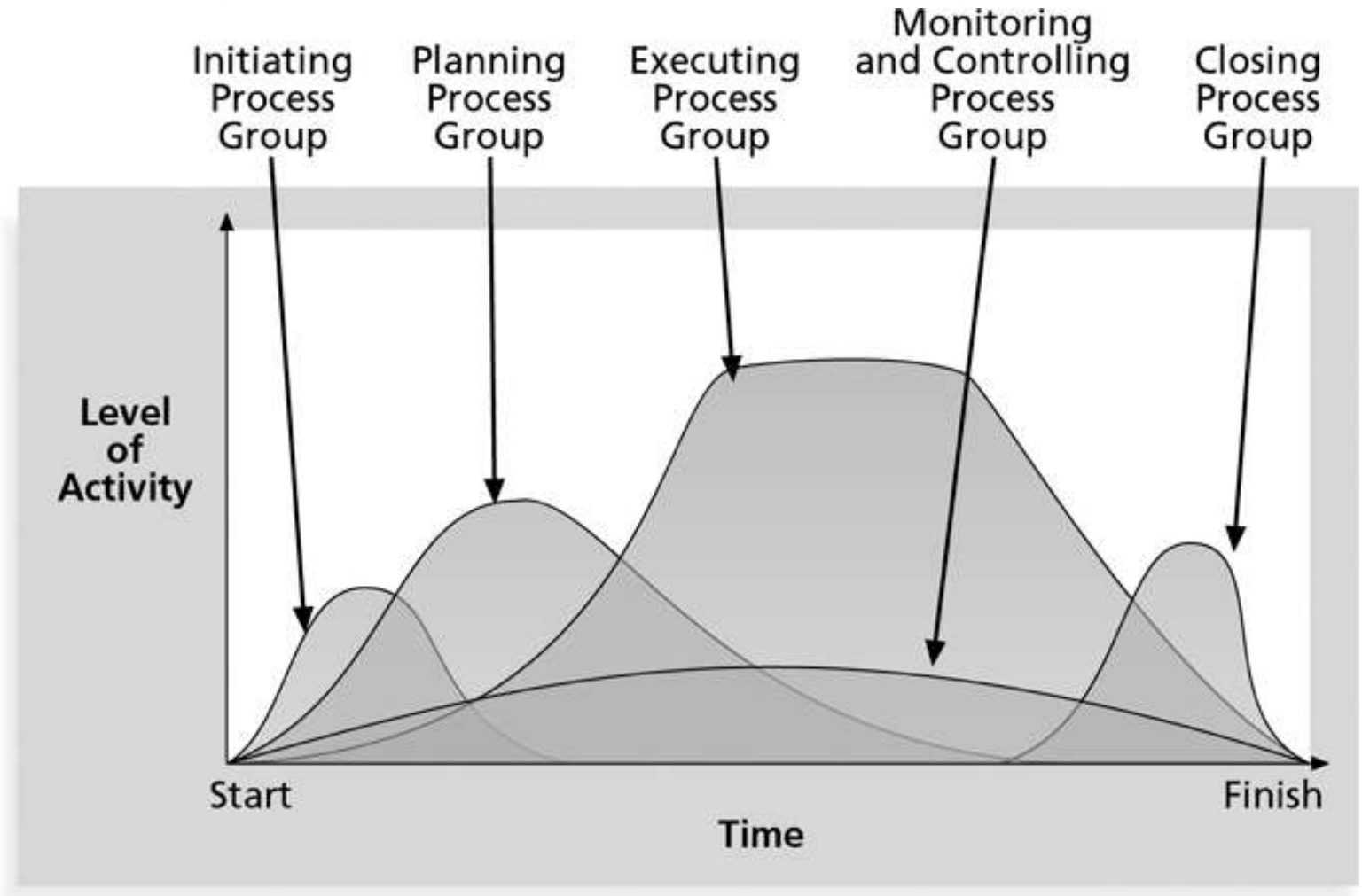
Learning Objectives (continued)

- Review a case study of an organization applying the PM process groups to manage an information technology project, and understand the contribution that effective project initiation, project planning, project execution, project monitoring and controlling, and project closing make to project success

Project Management Process Groups

- A **process** is a series of actions directed toward a particular result
- Project management can be viewed as a number of interlinked processes
- The project management process groups include:
  - Initiating processes
  - Planning processes
  - Executing processes
  - Monitoring and controlling processes
  - Closing processes

Figure 3-1: Level of Activity and Overlap of Process Groups Over Time



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What Went Wrong?

- Philip A. Pell, PMP, commented on how the U.S. IRS needed to improve its project management process. “Pure and simple, good, methodology-centric, predictable, and repeatable project management is the SINGLE greatest factor in the success (or in this case failure) of any project… The project manager is ultimately responsible for the success or failure of the project.”*
- In 2006, the IRS lost over $320 million due to a botched fraud-detection system project

*Comments posted on CIO Magazine Web site on article “For the IRS, There’s No EZ Fix,” (April 1, 2004).

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Media Snapshot

Just as information technology projects need to follow the project management process groups, so do other projects, such as the production of a movie. Processes involved in making movies might include screenwriting (initiating), producing (planning), acting and directing (executing), editing (monitoring and controlling), and releasing the movie to theaters (closing). Many people enjoy watching the extra features on a DVD that describe how these processes lead to the creation of a movie… This acted "…not as promotional filler but as a serious and meticulously detailed examination of the entire filmmaking process."* Project managers in any field know how important it is to follow a good process.

*Jacks, Brian, "Lord of the Rings: The Two Towers Extended Edition (New Line)", Underground Online (accessed from *www.ugo.com* August 4, 2004).

Mapping the Process Groups to the Knowledge Areas

- You can map the main activities of each PM process group into the nine knowledge areas using the PMBOK® Guide 2004
- Note that there are activities from each knowledge area under the planning and monitoring and controlling process groups
- All initiating activities are part of the project integration management knowledge area

Table 3-1: Relationships Among Process Groups and Knowledge Areas (PMBOK® Guide 2004, p. 69)

KNOWLEDGE AREA	PROJECT MANAGEMENT PROCESS GROUPS				
	INITIATING	PLANNING	EXECUTING	MONITORING & CONTROLLING	CLOSING
Project Integration Management	Develop project charter, Develop preliminary project scope statement	Develop project management plan	Direct and manage project execution	Monitor and control project work, Integrated change control	Close project
Project Scope Management		Scope planning, Scope definition, Create WBS		Scope verification, Scope control	
Project Time Management		Activity definition, Activity sequencing, Activity resource estimating, Activity duration estimating, Schedule development		Schedule control	
Project Cost Management		Cost estimating, Cost budgeting		Cost control	

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Table 3-1: Relationships Among Process Groups and Knowledge Areas (continued)

KNOWLEDGE AREA	PROJECT MANAGEMENT PROCESS GROUPS				
	INITIATING	PLANNING	EXECUTING	MONITORING & CONTROLLING	CLOSING
Project Quality Management		Quality planning	Perform quality assurance	Perform quality control	
Project Human Resource Management		Human resource planning	Acquire project team, Develop project team	Manage project team	
Project Communications Management		Communications planning	Information distribution	Performance reporting, Manage stakeholders	
Project Risk Management		Risk management planning, Risk identification, Qualitative risk analysis, Quantitative risk analysis, Risk response planning		Risk monitoring and control	
Project Procurement Management		Plan purchases and acquisitions, Plan contracting	Request seller responses, Select sellers	Contract administration	Contract closure

PMBOK® Guide Third Edition, 2004, p. 69

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Developing an IT Project Management Methodology

- Just as projects are unique, so are approaches to project management
- Many organizations develop their own project management methodologies, especially for IT projects; a **methodology** describes how things should be done
- Blue Cross Blue Shield of Michigan used the PMBOK as a guide in developing their IT project management methodology
- Six Sigma projects and the Rational Unified Process (RUP) framework use project

What Went Right?

Jordan Telecom (JT), Jordan's only telecom operator, introduced new customized project management processes to improve efficiency and reduce costs in its Information Technology department…JT created three lines of processes based on the size of the project: high, medium, or low. ..Rula Ammuri, JT's Chief Information Officer, believes this new methodology will result in a 40-50 percent increase in productivity."*

*Al-Tamimi, Fairooz, "Jordanian Company Uses PMI Methods to 'Go Global,' Improve Productivity," PMI Today (August 2004).

Case Study: JWD Consulting's Project Management Intranet Site

- This case study provides an example of what's involved in initiating, planning, executing, controlling, and closing an IT project
- You can download templates for creating your own project management documents from the companion Web site for this text
- Note: This case study provides a big picture view of managing a project; later chapters provide detailed information on each knowledge area

Project Initiation

- Initiating a project includes recognizing and starting a new project or project phase
- Some organizations use a pre-initiation phase, while others include items like developing a business case as part of initiation
- The main goal is to formally select and start off projects
- Key outputs include:
  - Assigning the project manager
  - Identifying key stakeholders
  - Completing a business case
  - Completing a project charter and getting signatures

Project Initiation Documents

- Business case: see pp. 91-93
- Charter: see pp. 94-95
- Note: Every organization has its own variations of what documents are required for project initiation
  - It's important to identify the need for projects, who the stakeholders are, and what the main goals are for the project

Project Planning

- The main purpose of project planning is to guide execution
- Every knowledge area includes planning information (see Table 3-5 on pp. 96-97)
- Key outputs included in the JWD project include:
  - A team contract
  - A project scope statement
  - A work breakdown structure (WBS)
  - A project schedule, in the form of a Gantt chart with all dependencies and resources entered
  - A list of prioritized risks (part of a risk register)

Figure 3-4: JWD Consulting Intranet Site Project Baseline Gantt Chart

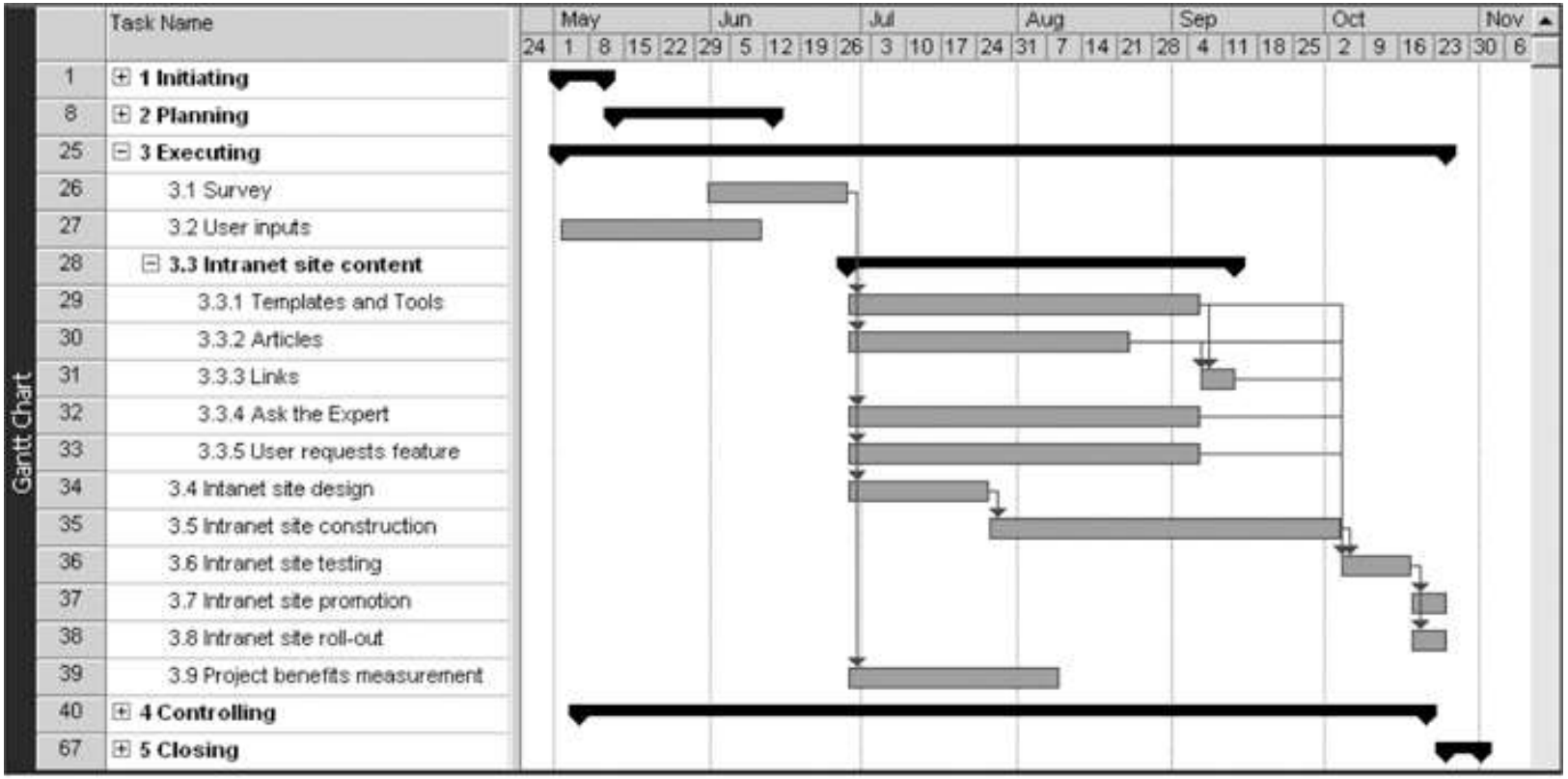

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Table 3-8: List of Prioritized Risks

Ranking	Potential Risk
1	Lack of inputs from internal consultants
2	Lack of inputs from client representatives
3	Security of new system
4	Outsourcing/purchasing for the article retrieval and "Ask the Expert" features
5	Outsourcing/purchasing for processing online payment transactions
6	Organizing the templates and examples in a useful fashion
7	Providing an efficient search feature
8	Getting good feedback from Michael Chen and other senior consultants
9	Effectively promoting the new system
10	Realizing the benefits of the new system within one year

Project Executing

- Usually takes the most time and resources to perform project execution
- Project managers must use their leadership skills to handle the many challenges that occur during project execution
- Table 3-9 on pp. 106-107 lists the executing processes and outputs; many project sponsors and customers focus on deliverables related to providing the products, services, or results desired from the project
- A milestone report (example on pp. 108-109) can help focus on completing major milestones

Table 3-10: Part of Milestone

Milestone	Date	Status	Responsible	Issues/Comments
Initiating				
Project manager determined/assigned	May 2	Completed	Joe	
Business case created	May 6	Completed	Erica	
Project charter signed	May 10	Completed	Erica	
Planning				
Project kickoff meeting held	May 13	Completed	Erica	Went well
Team contract signed	May 13	Completed	Erica	
Scope statement completed	May 27	Completed	Erica	
WBS completed	May 31	Completed	Erica	
List of prioritized risks completed	June 3	Completed	Erica	Reviewed with sponsor and team
Schedule and cost baseline completed	June 13	Completed	Erica	
Executing				
Survey completed	June 28		Erica	Poor response so far!
Intranet site design completed	July 26		Kevin	
Project benefits measurement completed	August 9		Erica	

Best Practice

- One way to learn about best practices in project management is by studying recipients of PMI's Project of the Year award
- The Quartier international de Montreal (QIM), Montreal's international district, was a 66-acre urban revitalization project in the heart of downtown Montreal
- This $90 million, five-year project turned a once unpopular area into a thriving section of the city with a booming real estate market, and generated $770 million in related

Project Monitoring and Controlling

- Involves measuring progress toward project objectives, monitoring deviation from the plan, and taking correction actions
- Affects all other process groups and occurs during all phases of the project life cycle
- Outputs include performance reports, requested changes, and updates to various plans

Project Closing

- Involves gaining stakeholder and customer acceptance of the final products and services
- Even if projects are not completed, they should be closed out to learn from the past
- Outputs include project archives and lessons learned, part of organizational process assets
- Most projects also include a final report and presentation to the sponsor/senior management