

# The Project Management and Information Technology Context

**Managing Information Technology Projects,  
Sixth Edition  
Schwalbe**

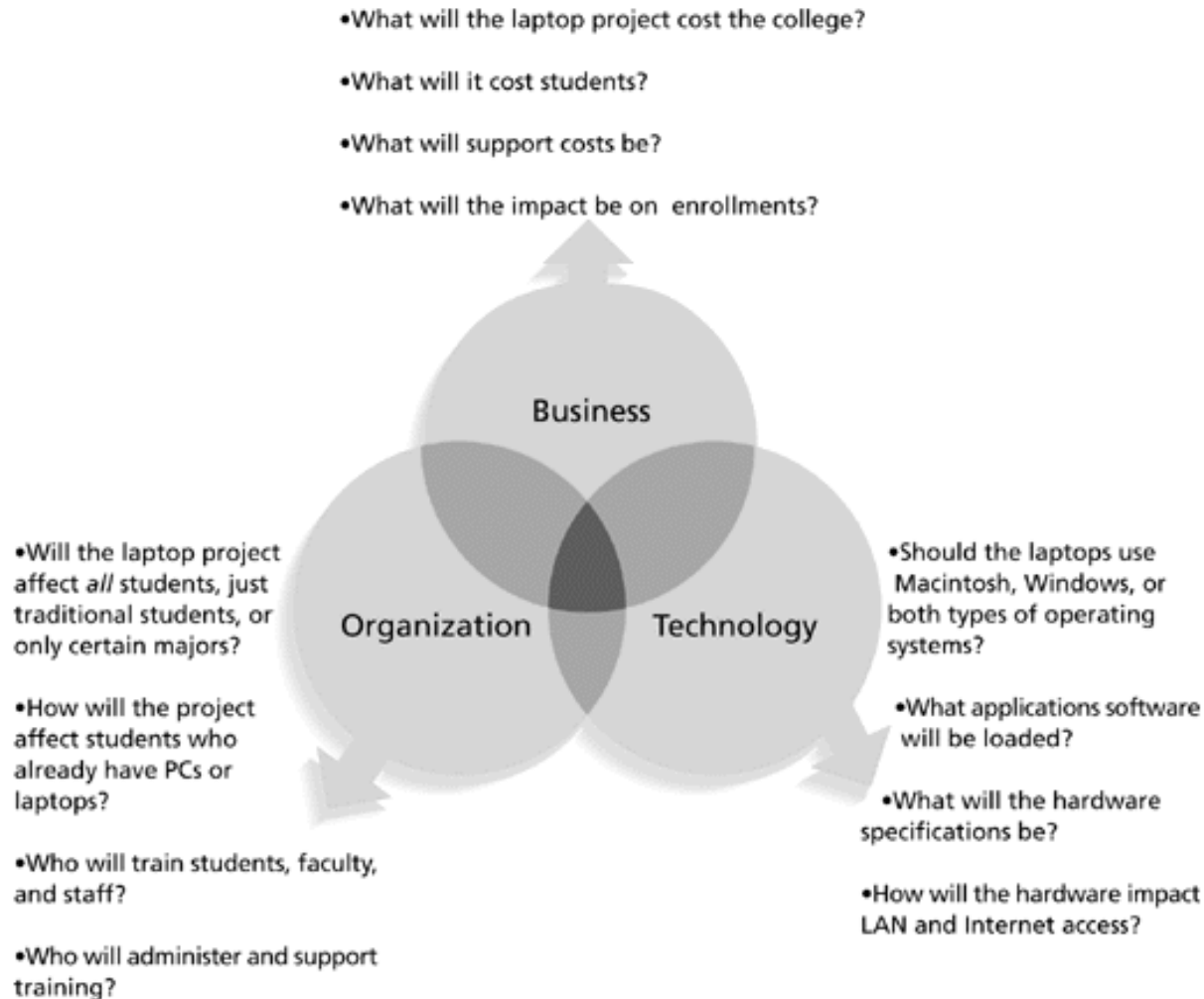
# Projects Cannot Be Run in Isolation

- 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

# Three Sphere Model for Systems Management



# 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.

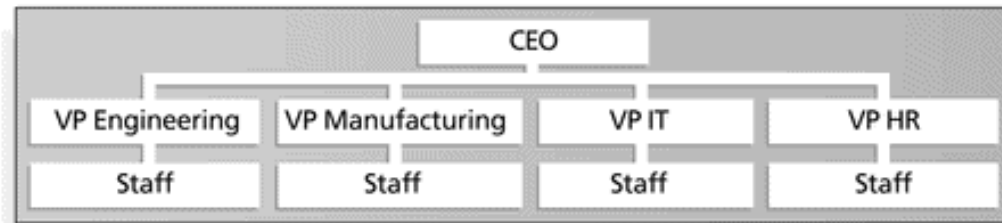
**Symbolic frame:** Focuses on symbols and meanings related to events. Culture is important.

# Organizational Structures

- 3 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

# Functional, Project, and Matrix Organizational Structures

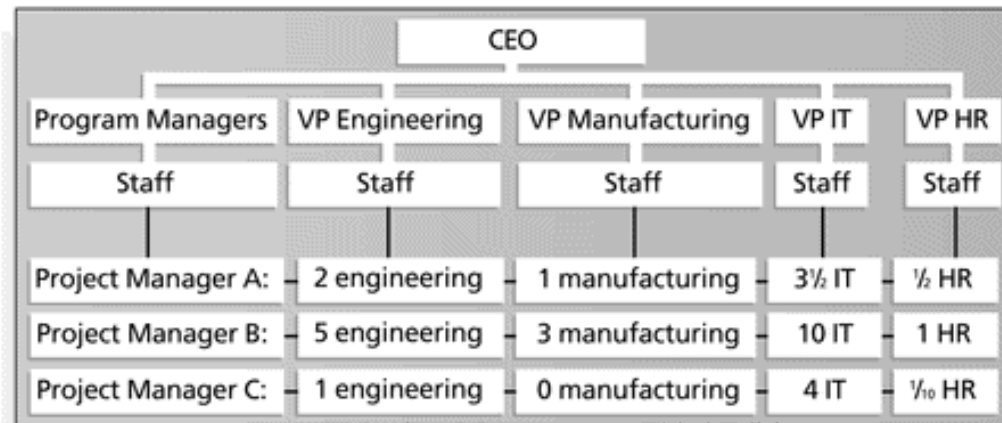
Functional



Project



Matrix



# Organizational Structure Influences on Projects

Project Characteristics	Organizational Structure Type				
	Functional	Matrix			Project
		<i>Weak Matrix</i>	<i>Balanced Matrix</i>	<i>Strong Matrix</i>	
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.*

•IT Project Management, Third Edition.

•07 de febrero de 2011

Kathy Schwalbe. According with  
PMBOK® Guide



# 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

# 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

# The Importance of Top Management Commitment

- People in top management positions are key stakeholders in projects
- A very important factor in helping project managers successfully lead projects is the level of commitment and support they receive from top management
- Without top management commitment, many projects will fail
- Some projects have a senior manager called a **champion** who acts as a key proponent for a project

# How Top Management Can Help Project Managers

- Providing adequate resources
- Approving unique project needs in a timely manner
- Getting cooperation from other parts of the organization
- Mentoring and coaching on leadership issues

# IT Governance

- **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.

# 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



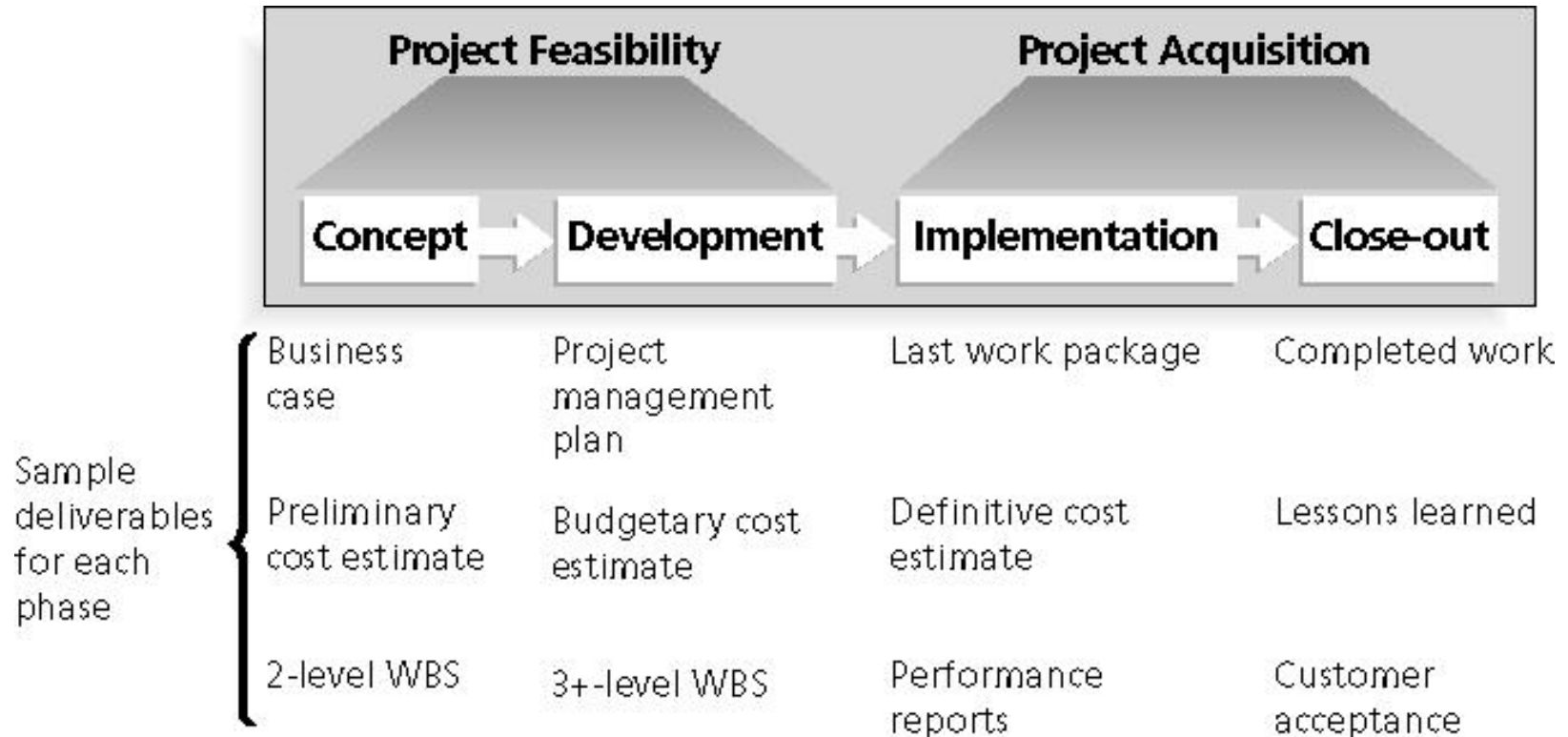
# Project Phases and the Project Life Cycle

- 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
  - The sponsor approves completion of the project

# Phases of the Traditional Project Life Cycle



# 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: used to produce systems quickly without sacrificing quality

# Agile Software Development

- Agile software development has become popular to describe new approaches that focus on close collaboration between programming teams and business experts
- Visit [www.agilealliance.org](http://www.agilealliance.org) for information
- See the companion Web site for Suggested Readings

# 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

# 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



# Recent Trends Affecting IT Project Management

- Globalization: lower trade and political barriers and the digital revolution have made it possible to interact almost instantaneously with billions of other people across the planet
- Outsourcing: **outsourcing** is when an organization acquires goods and/or sources from an outside source; **offshoring** is sometimes used to describe outsourcing from another country
- Virtual teams: a **virtual team** is a group of individuals who work across time and space using communication technologies

# Important Issues and Suggestions Related to Globalization

- Issues
  - Communications
  - Trust
  - Common work practices
  - Tools
- Suggestions
  - Employ greater project discipline
  - Think global but act local
  - Keep project momentum going
  - Use newer tools and technology

# Outsourcing

- Organizations remain competitive by using outsourcing to their advantage, such as finding ways to reduce costs
- Their next challenge is to make strategic IT investments with outsourcing by improving their enterprise architecture to ensure that IT infrastructure and business processes are integrated and standardized (see Suggested Readings)
- Project managers should become more familiar with negotiating contracts and other outsourcing issues

# Virtual Teams Advantages

- Increasing competitiveness and responsiveness by having a team of workers available 24/7
- Lowering costs because many virtual workers do not require office space or support beyond their home offices
- Providing more expertise and flexibility by having team members from across the globe working any time of day or night
- Increasing the work/life balance for team members by eliminating fixed office hours and the need to travel to work

# Virtual Team Disadvantages

- Isolating team members
- Increasing the potential for communications problems
- Reducing the ability for team members to network and transfer information informally
- Increasing the dependence on technology to accomplish work
- See text for a list of factors that help virtual teams succeed, including team processes, trust/relationships, leadership style, and team member selection

# 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
- Recent trends affecting IT project management include globalization, outsourcing, and virtual teams