Modern Systems Analysis and Design

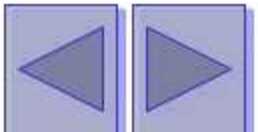
Fifth Edition

Chapter 2: Planning

Identifying and Selecting Systems Development Projects

Learning Objectives

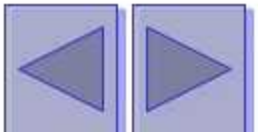
- ✓ Describe the project identification and selection process
- ✓ Describe the corporate strategic planning and information systems planning process
- ✓ Explain the relationship between corporate strategic planning and information systems planning



Learning Objectives

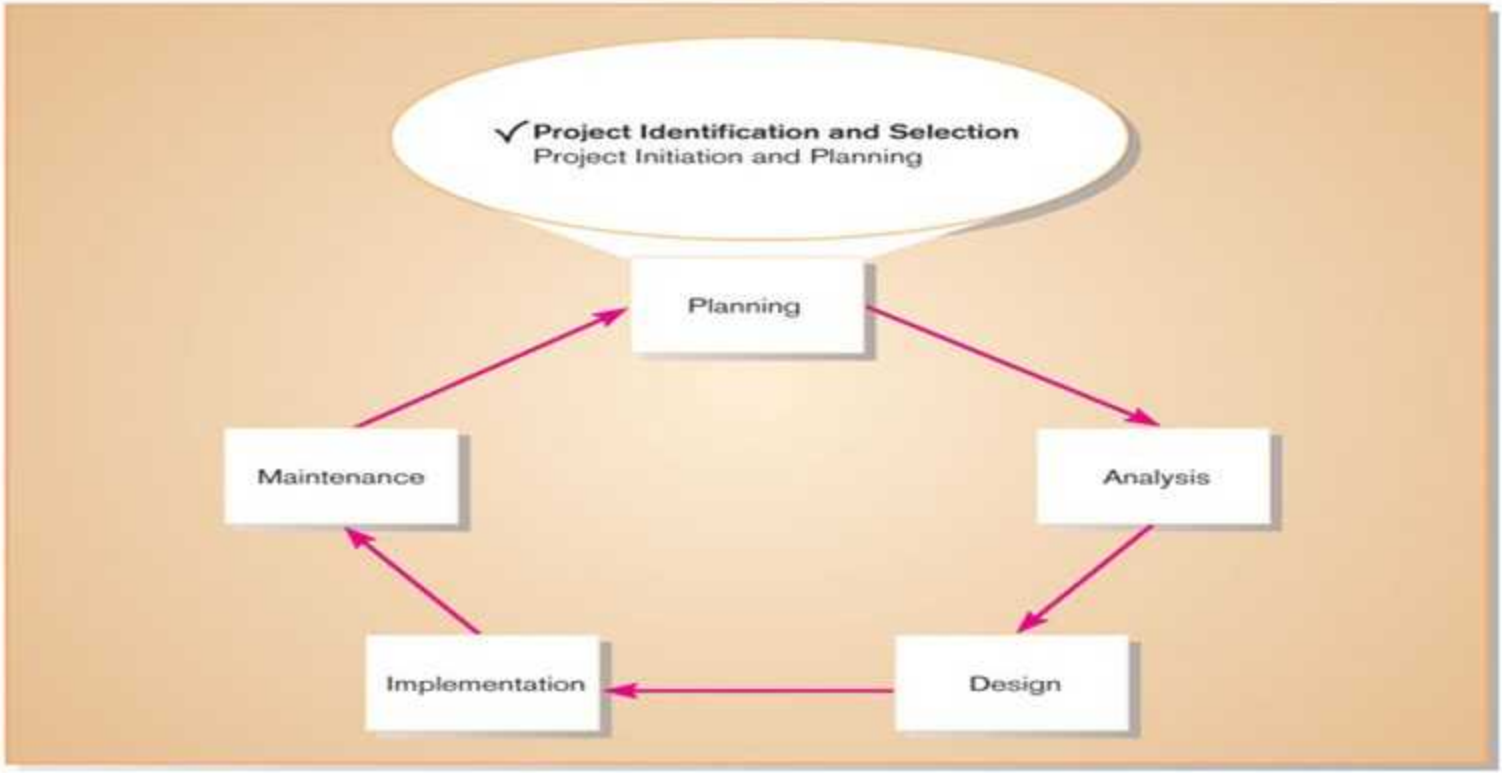
- ✓ Describe how information systems planning can be used to assist in identifying and selecting systems development projects
- ✓ Analyze information systems planning matrices to determine affinity between information systems and IS projects and to forecast the impact of IS projects on business objectives
- ✓ Describe the three classes of Internet electronic commerce applications:

  Internet, Intranets and Extranets



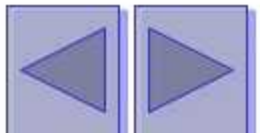
Identifying and Selecting Systems Development Projects

Figure 4-1 Systems development life cycle with project identification and selection highlighted



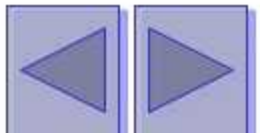
Identifying and Selecting IS Development Projects

- *Identifying potential development projects.*
  - Identification from a stakeholder group.
  - Each stakeholder group brings their own perspective and motivation to the IS decision
- **The Process activities of identifying and selecting IS Development Projects:**
  1. identifying potential IS development project,
  2. classifying and Ranking IS development projects, and
  3. selecting the IS development project.
- Sources of projects (who?)
  - Management and business units
  - Managers who want to make a system more efficient or less costly
  - Formal planning groups



Identifying and Selecting IS Development Projects

- Projects are identified by
  - Top management
  - Steering committee
  - User departments
  - Development group or senior IS staff
- Bottom-up Identification
  - Business unit or IS group
  - Don't reflect overall goals of the organization
- Top-Down Identification
  - Senior management or steering committee
  - Focus is on global needs of organization

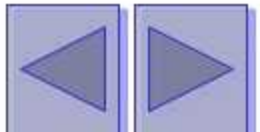


The Process of Identifying and Selecting IS Development Projects

Table 4-1 Characteristics of Alternative Methods for Making Information Systems Identification and Selection Decisions

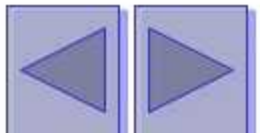
Selection Method	*Characteristics*
Top Management	Greater strategic focus
	Largest project size
	Longest project duration
Steering Committee	Cross-functional focus
	Greater organizational change
	Formal cost-benefit analysis
	Larger and riskier projects
User Department	Narrow, nonstrategic focus
	Faster development
	Fewer users, management layers, and business functions
Development Group	Integration with existing systems focus
	Fewer development delays
	Less concern with cost-benefit analysis

(*Source:* Adapted from McKeen, Guimaraes, and Wetherbe, 1994.)



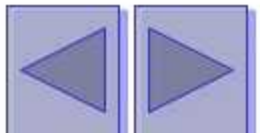
Identifying and Selecting IS Development Projects

- **Classifying and Ranking IS Development Projects**
  - Performed by top management, steering committee, business units of IS development group
  - Value chain analysis is often used
    - Method to analyze an organization's activities to determine where value is added and costs are incurred
- Some criteria should be considered when classifying and ranking projects are:
  - Value chain analysis.
  - Strategic alignment (how much the project help the organization in achieving its strategies).
  - Potential benefits.
  - Resource availability.
  - Project size and duration.
  - Technical difficulties and risks.



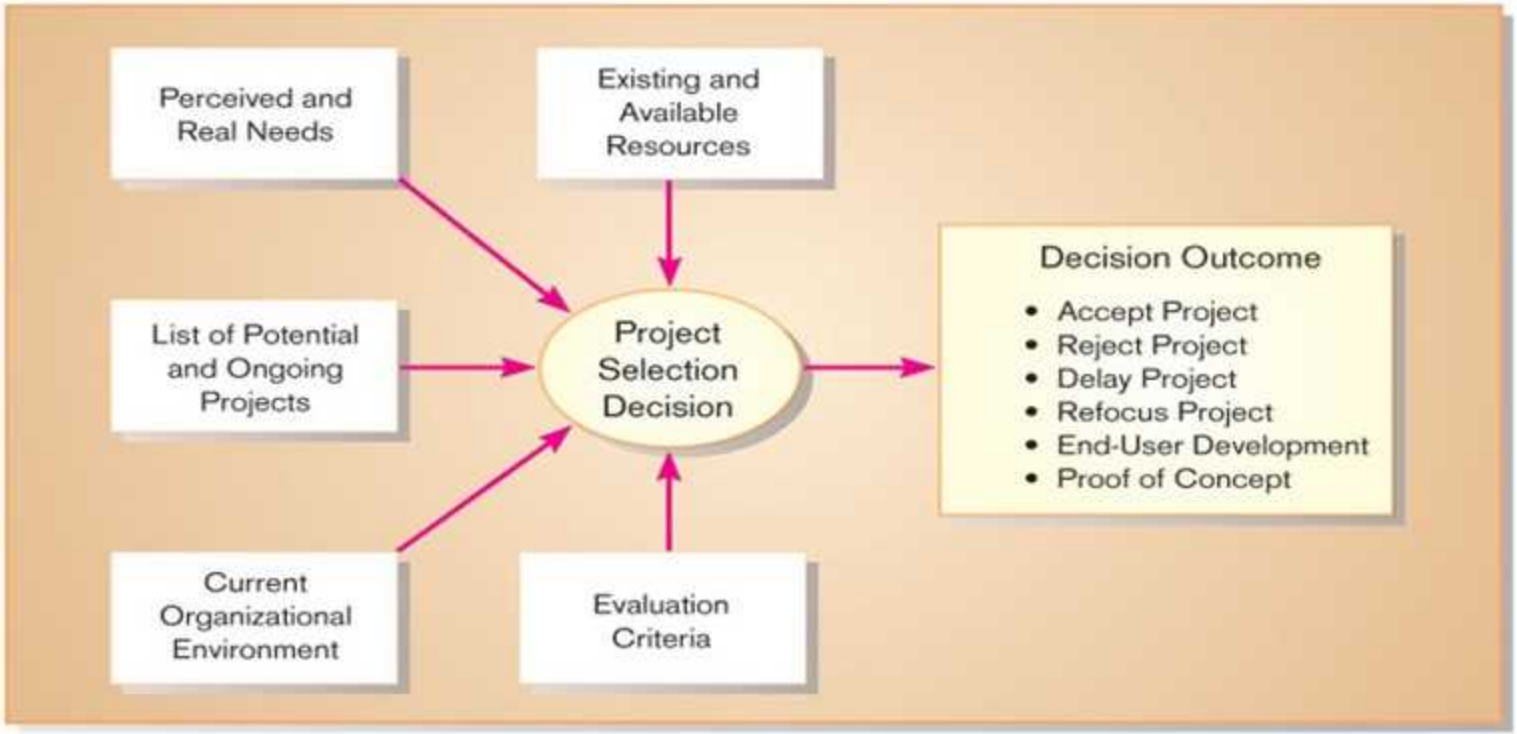
Identifying and Selecting IS Development Projects

- Selecting IS Development Projects
  - Consider both short- and long-term projects.
  - Select those most likely to achieve business objectives.
  - Is a very important and ongoing activity.
  - Projects most likely to achieve business objectives are selected
  - Decision requires consideration of:
    - Perceived and real needs
    - Current organizational environment
    - Existing and available resources
    - Evaluation criteria



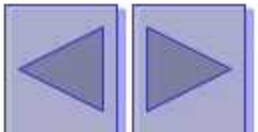
The Process of Identifying and Selecting IS Development Projects

Figure 4-3 Project selection decisions must consider numerous factors and can have numerous outcomes.



Identifying and Selecting IS Development Projects

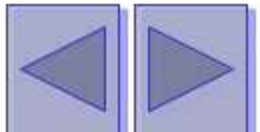
- Selecting IS Development Projects decision outcomes:
  - Project Acceptance
  - Project Rejection
  - Delay
  - Refocus
  - End-User Development
  - Proof of Concept



The Process of Identifying and Selecting IS Development Projects

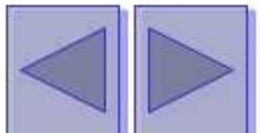
TABLE 4-2 Possible Evaluation Criteria When Classifying and Ranking Projects

Evaluation Criteria	*Description*
Value Chain Analysis	Extent to which activities add value and costs when developing products and/or services
Strategic Alignment	Extent to which the project is viewed as helping the organization achieve its strategic objectives and long-term goals
Potential Benefits	Extent to which the project is viewed as improving profits, customer service, and so forth and the duration of these benefits
Resource Availability	Amount and type of resources the project requires and their availability
Project Size/Duration	Number of individuals and the length of time needed to complete the project
Technical Difficulty/Risks	Level of technical difficulty to successfully complete the project within given time and resource constraints



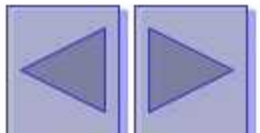
Identifying and Selecting IS Development Projects

- Deliverables and Outcomes
  - Primary deliverable from the first part of the planning phase is a schedule of specific IS development projects coming from both top-down and bottom-up sources to move into the next phase of the planning phase: Project Initiation and Planning.
  - Outcome of the next part of the planning phase – project initiation and planning – is the assurance that careful consideration was given to project selection and each project can help the organization reach its goals. Clear understanding of project's relation to organizational objectives and the project role of achieving these objectives.



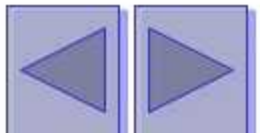
Identifying and Selecting IS Development Projects

- Knowledge of overall organizational business strategy will:
  - Improve project selection and identification process
  - Provide sound guidance throughout the systems development life cycle



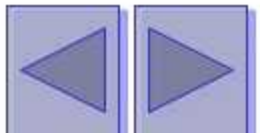
Corporate and Information Systems Planning

- Traditional Project Identification and Selection
  - Solves isolated problems
  - Focuses on business processes
  - Does not easily allow for organizational change
- Planning-Based Approach to Project Identification and Selection
  - Focuses on present and future information needs
  - Information needs change slower than business processes



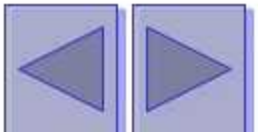
Corporate and Information Systems Planning

- Need for planning
  - Improperly planned projects result in systems that cannot be shared across an organization
  - As business processes change, lack of integration will hamper strategy and business process changes



Corporate and Information Systems Planning

- Corporate Strategic Planning
  - An ongoing Process that defines the **mission, objectives** and **strategies** of an organization.
  - CSP results in several outcomes
    - **Mission Statement**
    - **Objective Statement**
    - **Competitive Strategy**



Corporate and Information Systems Planning

- Corporate Strategic Planning
  - Mission Statement
    - A statement that makes it clear what business a company is in.
  - Statement of Objectives
    - A series of statements that express an organization's qualitative and quantitative goals for reaching a desired future position
    - Objectives are critical success factors

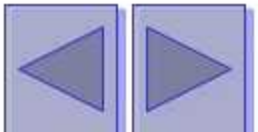


Figure 4-7
Mission statement (Pine Valley Furniture)

Pine valley Furniture

Figure 4-8 Statement of corporate objectives (Pine Valley Furniture)

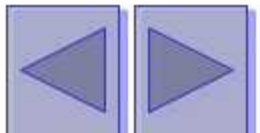
Pine Valley Furniture
Statement of Objectives

1. PVF will strive to increase market share and profitability (prime objective).
2. PVF will be considered a market leader in customer service.
3. PVF will be innovative in the use of technology to help bring new products to market faster than our competition.
4. PVF will employ the fewest number of the highest-quality people necessary to accomplish our prime objective.
5. PVF will create an environment that values diversity in gender, race, values, and culture among employees, suppliers, and customers.

Statement of Objective

Corporate and Information Systems Planning

- Corporate Strategic Planning
  - Competitive Strategy
    - The method by which an organization attempts to achieve its mission and objectives(such as lower cost producer, product differentiation, or product focus)

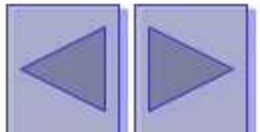


Corporate Strategic Planning

TABLE 4-3 Generic Competitive Strategies

Strategy	*Description*
Low-Cost Producer	This strategy reflects competing in an industry on the basis of product or service cost to the consumer. For example, in the automobile industry, the South Korean–produced Hyundai is a product line that competes on the basis of low cost.
Product Differentiation	This competitive strategy reflects capitalizing on a key product criterion requested by the market (for example, high quality, style, performance, roominess). In the automobile industry, many manufacturers are trying to differentiate their products on the basis of quality (for example, "At Ford, quality is job one.").
Product Focus or Niche	This strategy is similar to both the low-cost and differentiation strategies but with a much narrower market focus. For example, a niche market in the automobile industry is the convertible sports car market. Within this market, some manufacturers may employ a low-cost strategy while others may employ a differentiation strategy based on performance or style.

(*Source:* Adapted from Porter, 1980.)



Corporate and Information Systems Planning

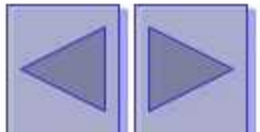
- Information Systems Planning (ISP)
  - An orderly means of assessing the information needs of an organization and defining the systems, databases and technologies that will best satisfy those needs
  - Three key activities:
    - Describe the Current Situation
    - Describe the Target (or Future) Situation
    - Develop a Transition Plan and Strategy

Corporate and Information Systems Planning

- Information Systems Planning

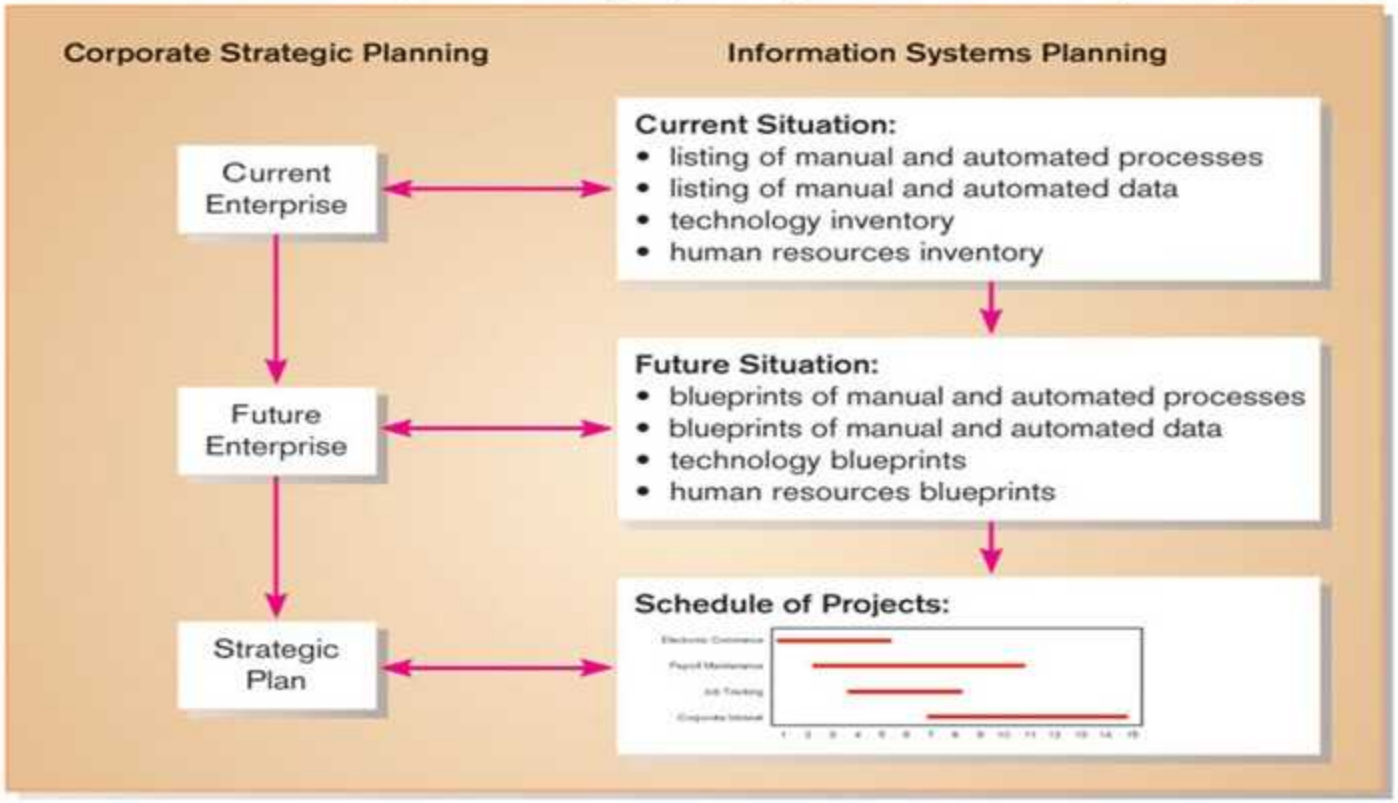
1. Describing the Current Situation

- Top-down Planning
  - Generic methodology that attempts to gain a broad understanding of the information system needs of the entire organization, advantages of this approach are broader perspective, improved integration, improved management support, and better understanding.
- Bottom-up Planning
  - Generic methodology that identifies and defines IS development projects based upon solving operational business problems or taking advantage of some business opportunities.



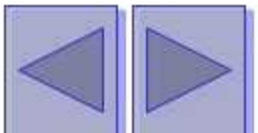
Information Systems Planning

Figure 4-10
Parallel activities of corporate strategic planning and information systems planning



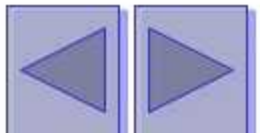
Corporate and Information Systems Planning

- Describing the Current Situation (Continued)
  - Planning team is chartered to model existing situation
  - Identification of Organizational:
    - Locations
    - Units
    - Functions
    - Processes
    - Data
    - Information Systems



Corporate and Information Systems Planning

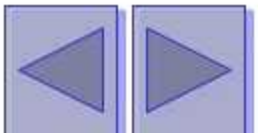
- Describing the Current Situation (Continued)
  - Matrices are developed to cross-reference units
    - Location-to-Function
    - Location-to-Unit
    - Unit-to-Function
    - Function-to-Objective
    - Function-to-Process
    - Function-to-Data Entity
    - Process-to-Data Entity
    - Process-to-Information System
    - Data Entity-to-Information System
    - Information System-to-Objective



Corporate and Information Systems Planning

2. Describing the Target Situation

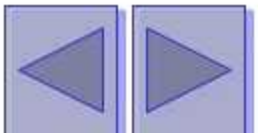
- Update list of organizational locations, functions, etc. to reflect desired locations, functions, etc.
- Matrices are updated to reflect future states
- Planners focus on differences between current lists and future lists and matrices



Corporate and Information Systems Planning

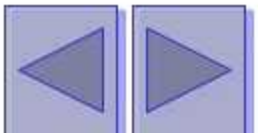
3. Developing a Transition Strategy and Plans

- Broad, comprehensive document that looks at both short and long-term organizational development needs
- Consists of a series of projects



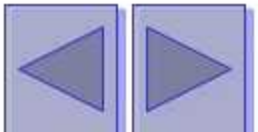
Electronic Commerce Applications

- Development process for Internet projects is no different than other projects
- Special issues need to be taken into account. such issues are (user, connection speed, and access method)
- Electronic Commerce (EC)
  - Internet based communication designed to support business activities



Internet Development

- Internet
  - Worldwide network of networks used for electronic commerce
- Intranet
  - Internet-based communication to support business activities within a single organization
- Extranet
  - Internet-based communication to support business-to-business activities



Internet Development

- Electronic Data Interchange (EDI)
  - The use of telecommunications technologies to transfer business documents directly between organizations
- Internet vs. Intranet/Extranet Apps
  - Intranet/Extranet – developer knows how application will be run and used
  - Internet – developer faces various unknowns such as where is the user located and who is that user, connection speed, and access method (browser, web enabled cellular phone or TV.)