

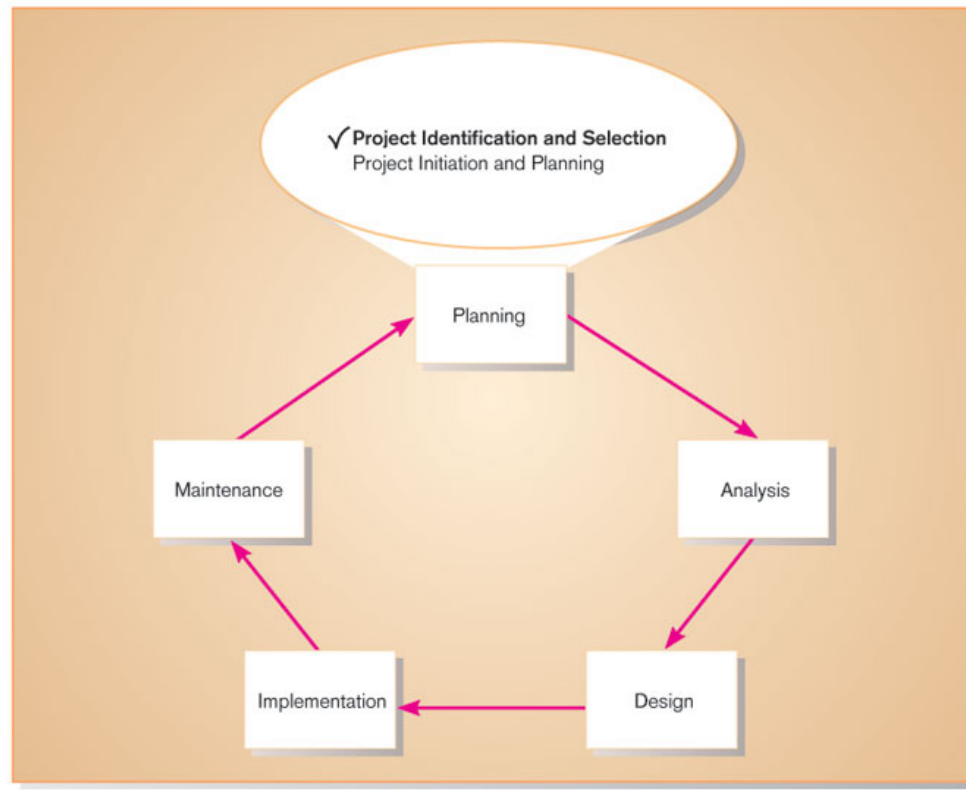
Concept Formation

Identifying and Selecting Systems Development Projects

Learning Objectives

- ✓ Describe the project identification and selection process.
- ✓ Describe corporate strategic planning and information systems planning.
- ✓ Explain the relationship between corporate strategic planning and IS planning.
- ✓ Describe how IS planning can assist in system development project identification and selection.
- ✓ Analyze IS planning matrices.
- ✓ Describe three classes of E-Commerce applications.

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



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Project Identification Tasks

- Identifying potential development projects
 - Identification from a stakeholder group
- Classifying and ranking potential IS projects
 - Using value chain analysis or other evaluation criteria
- Selecting projects
 - Based on various factors

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Each stakeholder group brings their own perspective and motivation to the IS decision.

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

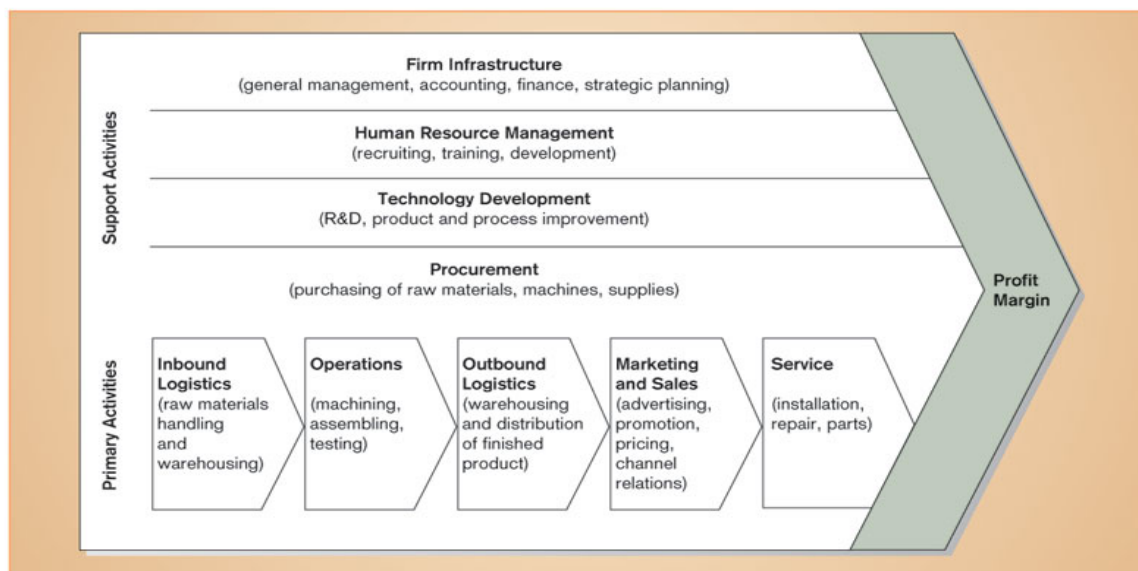
<i>Selection Method</i>	<i>Characteristics</i>
Top Management	Greater strategic focus Largest project size Longest project duration
Steering Committee	Cross-functional focus Greater organizational change Formal cost-benefit analysis Larger and riskier projects
User Department	Narrow, nonstrategic focus 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.)

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Value chain analysis: analyzing an organization's activities to determine where value is added to products/services and the costs incurred for doing so.

Figure 4-2 Organizational value chain

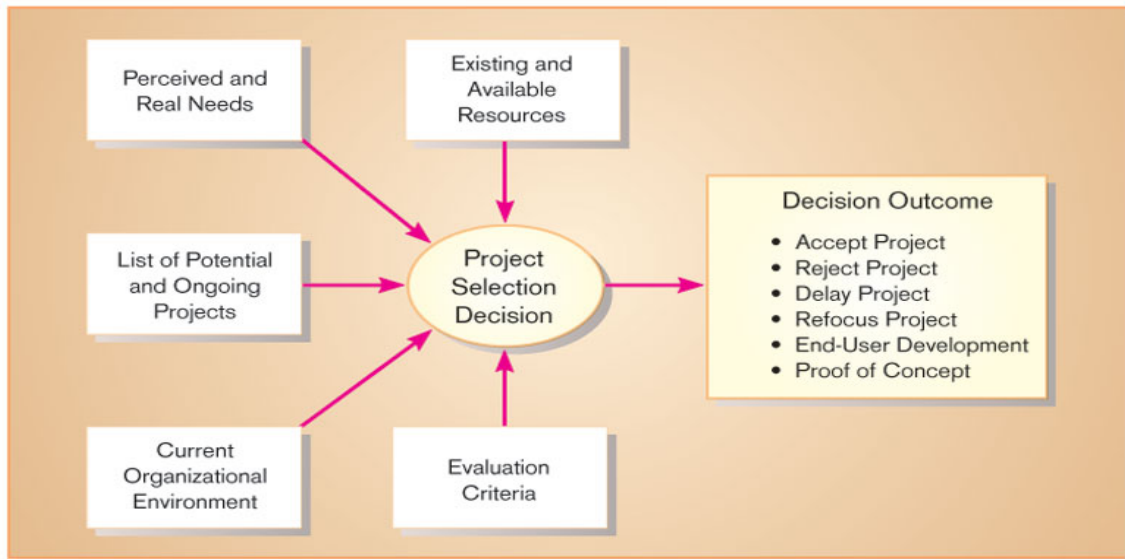


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Factors for Project Selection

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



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Multicriteria Analysis

Figure 4-4 Alternative projects and system design decisions can be assisted using weighted multicriteria analysis.

Criteria	Weight	Alternative A		Alternative B		Alternative C	
	Rating	Score	Rating	Score	Rating	Score	
Requirements							
Real-time data entry	18	5	90	5	90	5	90
Automatic reorder	18	1	18	5	90	5	90
Real-time data query	14	1	14	5	70	5	70
	50		122		250		250
Constraints							
Developer costs	15	4	60	5	75	3	45
Hardware costs	15	4	60	4	60	3	45
Operating costs	15	5	75	1	15	5	75
Ease of training	5	5	25	3	15	3	15
	50		220		165		180
Total	100		342		415		430

Each requirement or constraint: Score = weight X rating
 Each alternative: sum scores across requirements/constraints
 Alternative with highest score wins

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Corporate Strategic Planning

- Ongoing process that defines mission, objectives, and strategies of an organization
- Corporate strategy involves:
 - Mission statement
 - Objective statements
 - Description of competitive strategy

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Mission Statement

Figure 4-7

Mission statement (Pine Valley Furniture)



Concise
statement
about the main
business of
the
organization

Statement of Objectives

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



A series of statements that express quantitative and qualitative goals for the future position of an organization

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Competitive Strategy

- The method by which the organization will attempt to satisfy its mission and objectives
- Main types:
 - Low-cost producer
 - Product differentiation
 - Product focus or niche

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Information Systems Planning (ISP)

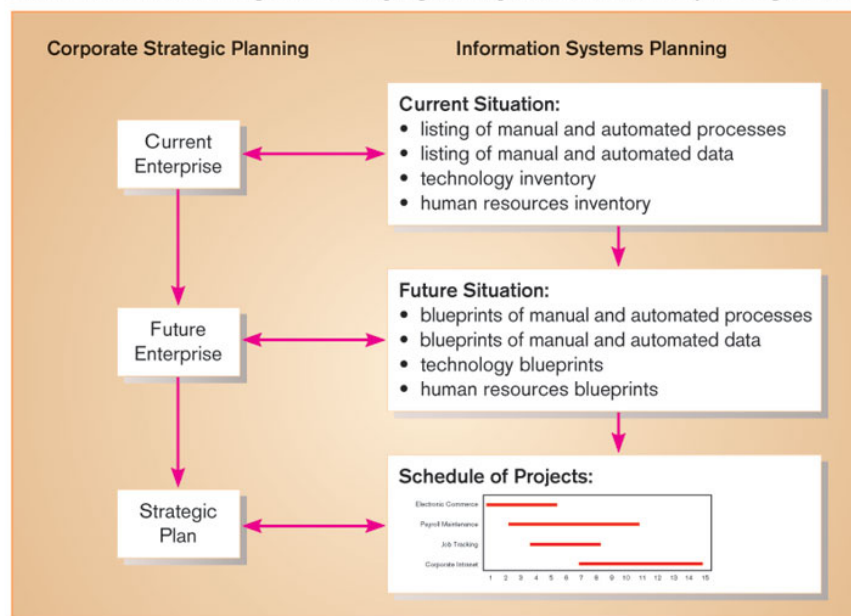
- An orderly means of assessing the information needs of an organization and defining systems, databases, and technologies that will best meet those needs
- ISP must be done in accordance with the organization's mission, objectives, and competitive strategy.

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Strategic and IS Planning Relationships

Figure 4-10

Parallel activities of corporate strategic planning and information systems planning



IS planning must be kept in line with corporate strategic planning.

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Approaches to IS Planning

- Top-down planning
 - Attempts to gain a broad understanding of information system needs of the entire organization
- Bottom-up planning
 - Identifies IS development projects based on solving specific operational business problems or taking advantage of specific opportunities

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Benefits of Top-Down Planning

- Broader perspective
- Improved integration
- Improved management support
- Better understanding

But, bottom-up planning can be faster and less costly, so may be beneficial in certain circumstances

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Identifying Functions, Processes, and Data Entities

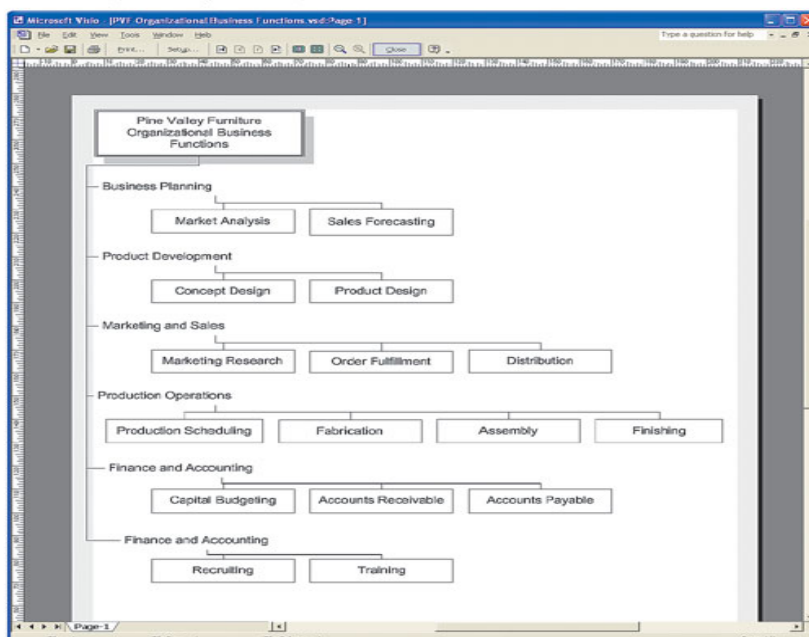
Figure 4-11 Information systems planning information (Pine Valley Furniture)

FUNCTIONS:	DATA ENTITIES:	INFORMATION SYSTEMS:
<ul style="list-style-type: none">• business planning• product development• marketing and sales• production operations• finance and accounting• human resources...	<ul style="list-style-type: none">• customer• product• vendor• raw material• order• invoice• equipment...	<ul style="list-style-type: none">• payroll processing• accounts payable• accounts receivable• time card processing• inventory management...

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Functional Decomposition

Figure 4-12 Functional decomposition of information systems planning information (Pine Valley Furniture)



Decomposition:
breaking
high-level
abstract
information into
smaller units for
more detailed
planning

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IS Planning Matrix

Figure 4-13 Data Entity-to-Function matrix (Pine Valley Furniture)

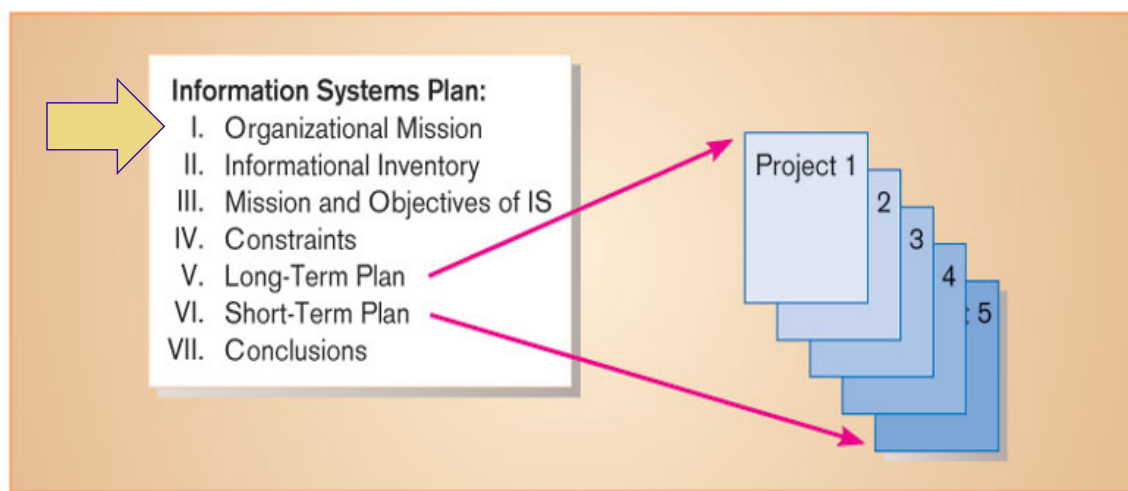
	Customer	Product	Vendor	Raw Material	Order	Work Center	Equipment	Employees	Invoice	Work Order	...
Marketing and Sales											
Marketing Research	X	X									
Order Fulfillment	X	X			X				X		
Distribution	X	X									
Production Operation											
Production Scheduling						X	X	X		X	
Fabrication						X	X	X		X	
Assembly						X	X	X		X	
Finishing						X	X	X		X	
Finance and Accounting											
Capital Budgeting					X	X	X				
Accounts Receivable	X	X	X	X	X				X		
Accounts Payable											
...											

Matrices describe relationships between pairs of organizational elements (location, function, business unit, objective, process, data, information system).

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IS Plan Components

Figure 4-16 Systems development projects flow from the information systems plan.

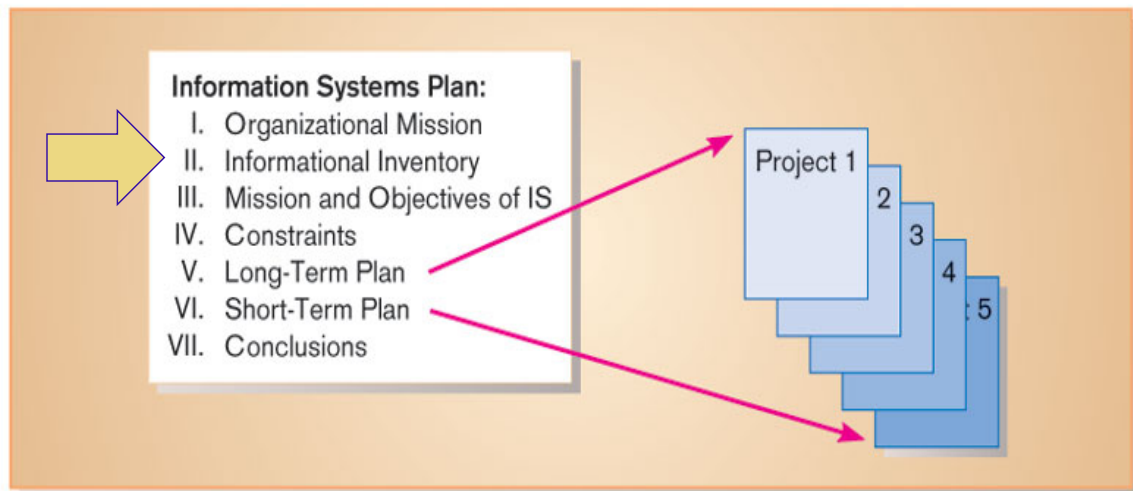


Briefly describe mission, objectives, and strategy of the organization

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IS Plan Components (cont.)

Figure 4-16 Systems development projects flow from the information systems plan.

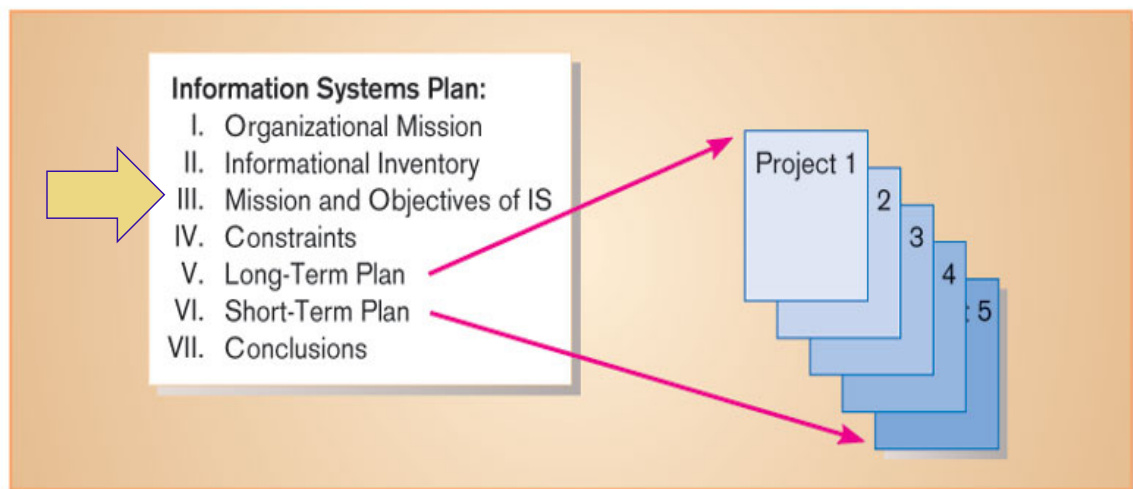


Provide summary of current and future processes, functions, data entities, and information needs of the enterprise

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IS Plan Components (cont.)

Figure 4-16 Systems development projects flow from the information systems plan.

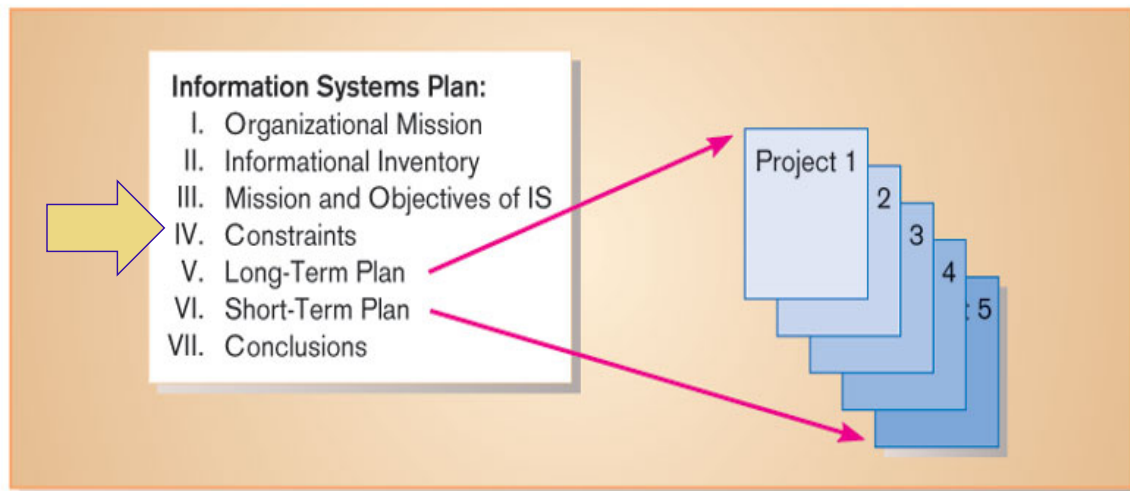


Describe primary role IS will play in the organization to transform enterprise from current to future state

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IS Plan Components (cont.)

Figure 4-16 Systems development projects flow from the information systems plan.

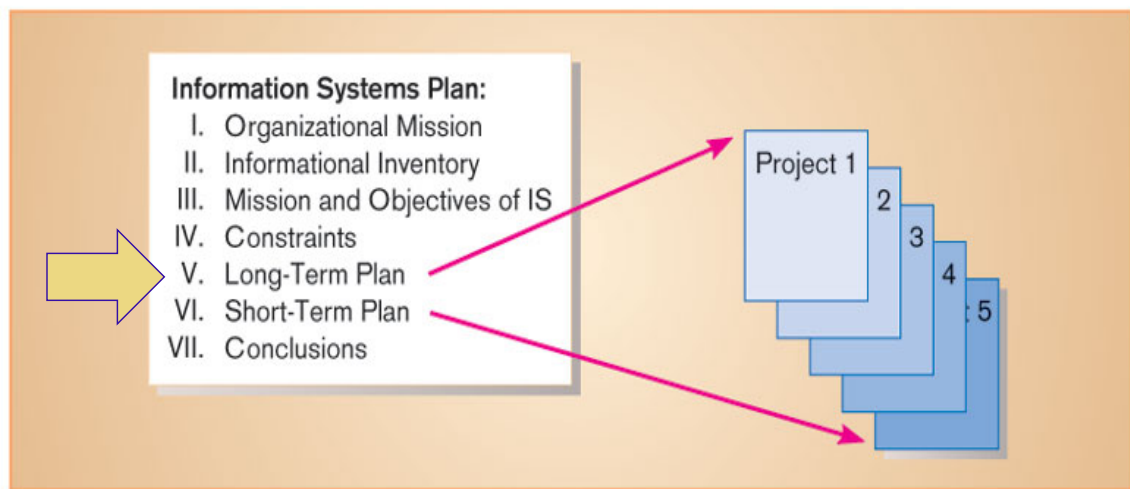


Describe limitations imposed by technology and current levels of financial, technical, and personnel resources

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IS Plan Components (cont.)

Figure 4-16 Systems development projects flow from the information systems plan.

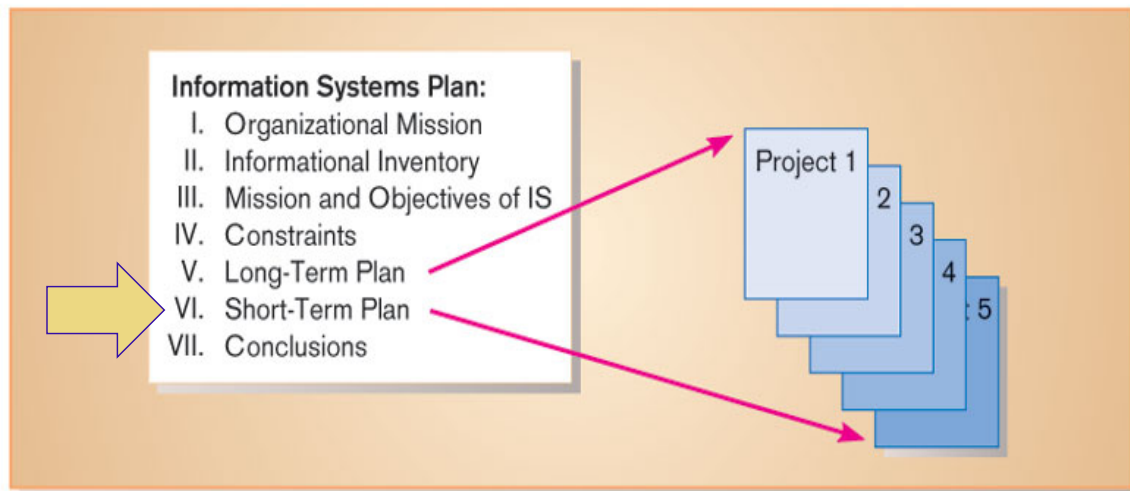


Summarize overall information systems needs in the company and set long-term strategies for filling the needs

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IS Plan Components (cont.)

Figure 4-16 Systems development projects flow from the information systems plan.

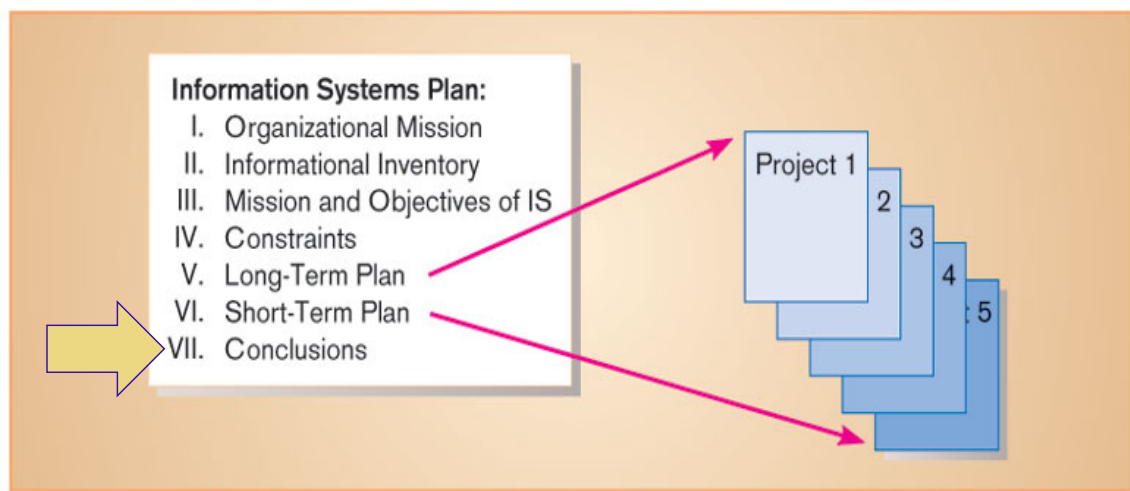


Show detailed inventory of present projects and systems and detailed plan for the current year

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IS Plan Components (cont.)

Figure 4-16 Systems development projects flow from the information systems plan.



Describe unknown but likely events that can affect the plan, presently known business change elements, and description of their impact on the plan

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Electronic Commerce Applications

- The Internet
 - A large worldwide network of networks that use a common protocol to communicate with each other
- Electronic Commerce
 - Internet-based communications to support day-to-day business activities

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Three Modes of E-Commerce

- Internet-based
 - Supports business activities between a business and individual consumers
- Intranet-based
 - Supports business activities within a single organization
- Extranet-based
 - Supports business-to-business activities
 - A form of Electronic Data Interchange (EDI) – use of telecommunications for direct transfer of business documents between organizations

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Issues in Internet Application Development

Table 4-5

Unknowns That Must Be Dealt with When Designing and Building Internet Applications

User	<ul style="list-style-type: none">• Concern: Who is the user?• Example: Where is the user located? What is the user's expertise, education, or expectations?
Connection Speed	<ul style="list-style-type: none">• Concern: What is the speed of the connection and what information can be effectively displayed?• Example: Modem, Cable Modem, DSL, Satellite, Broadband, Cellular
Access Method	<ul style="list-style-type: none">• Concern: What is the method of accessing the net?• Example: Web browser, Personal Digital Assistant (PDA), Web-enabled Cellular Phone, Web-enabled Television

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Summary

- In this chapter you learned how to:
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 - ✓ Describe how IS planning can assist in system development project identification and selection.
 - ✓ Analyze IS planning matrices.
 - ✓ Describe three classes of E-Commerce applications.

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