

Modern Systems Analysis and Design

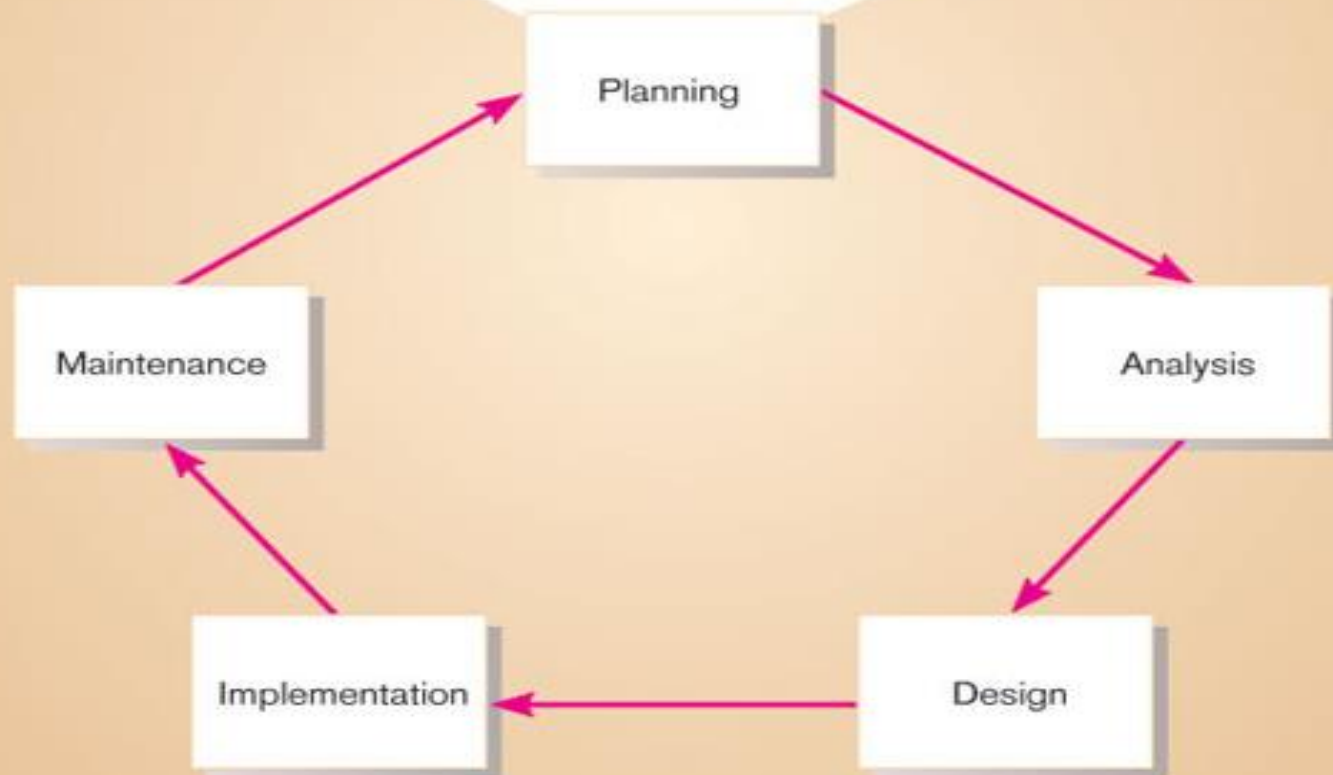
Chapter 4

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**.

✓ **Project Identification and Selection**
Project Initiation and Planning



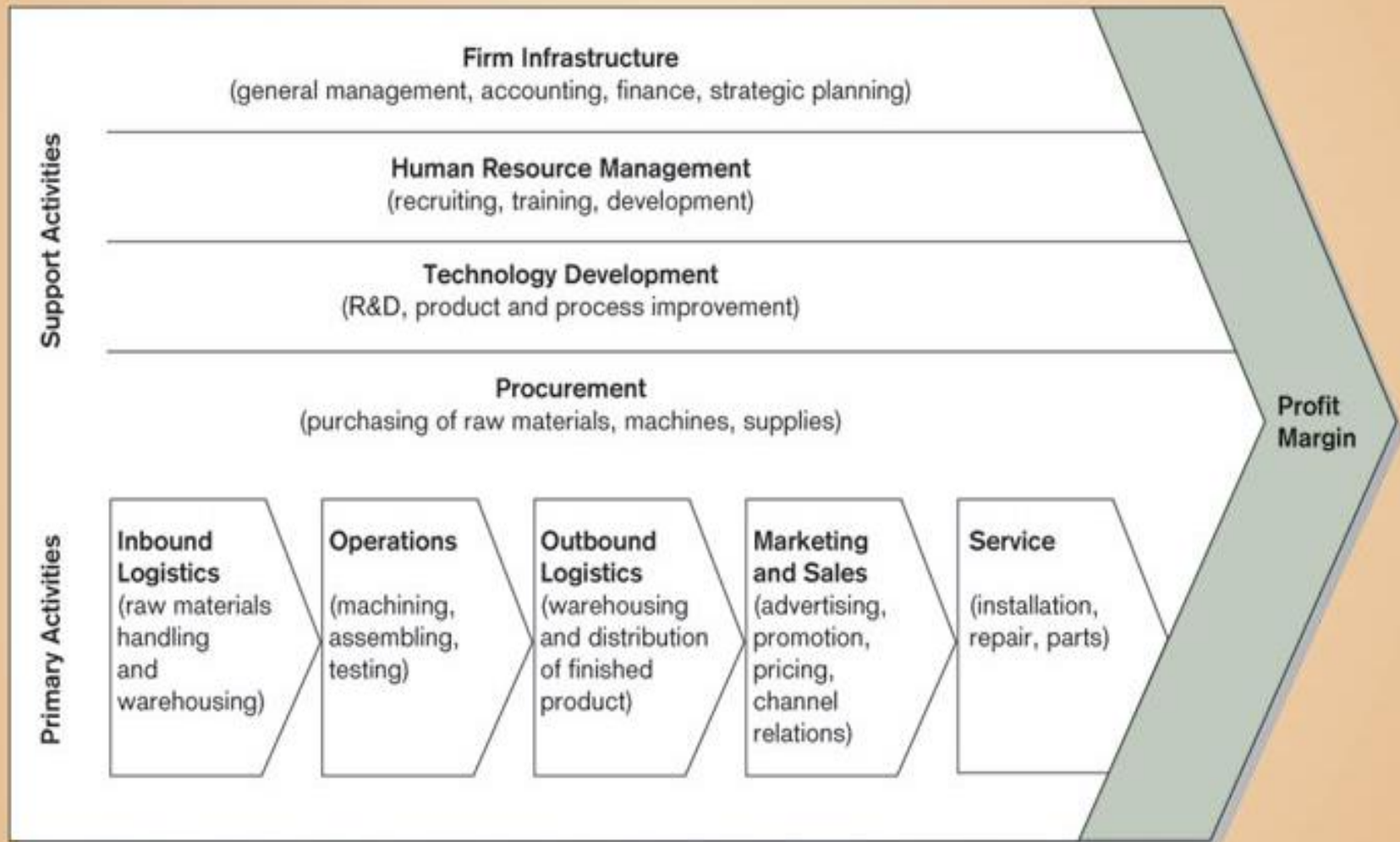
Project Identification Tasks

- ▶ **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**

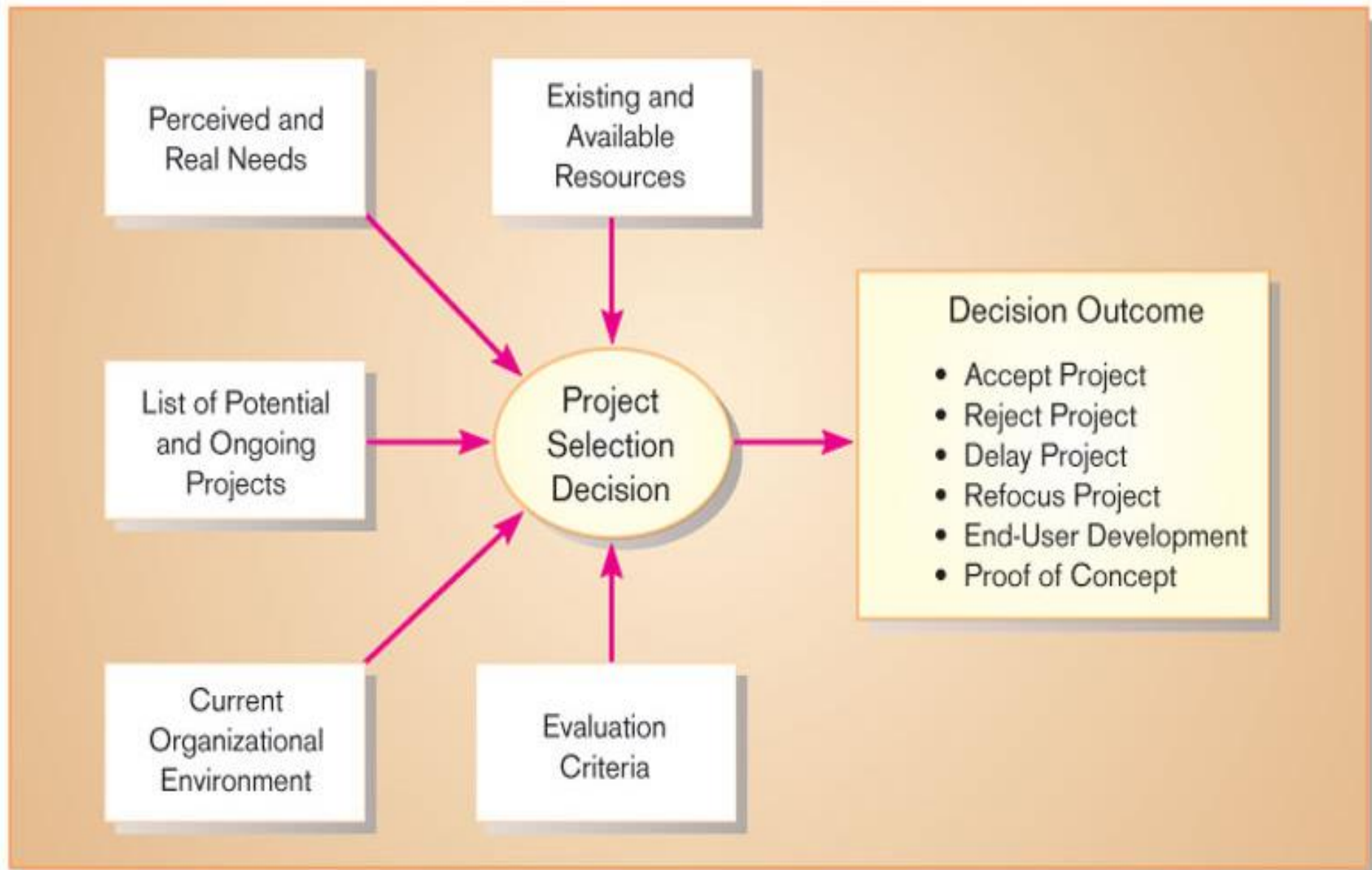
Each stakeholder group **brings their own perspective and motivation** to the IS decision.

<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

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



Factors for Project Selection



Multicriteria Analysis

Criteria	Weight Rating	Alternative A		Alternative B		Alternative C	
		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	<u>14</u>	1	<u>14</u>	5	<u>70</u>	5	<u>70</u>
	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	<u>5</u>	5	<u>25</u>	3	<u>15</u>	3	<u>15</u>
	50		220		165		180
Total	100		342		415		430

Each requirement or constraint: $\text{Score} = \text{weight} \times \text{rating}$
 Each alternative: sum scores across requirements/constraints
 Alternative with highest score wins

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

Mission Statement

Mission statement (Pine Valley Furniture)

Pine Valley Furniture
Corporate Mission Statement

We are in the business of designing, fabricating, and selling to retail stores high-quality wood furniture for household, office, and institutional use. We value quality in our products and in our relationships with customers and suppliers. We consider our employees our most critical resource.

Concise
statement about
the main business
of the
organization

Statement of Objectives

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.

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

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

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.**

Strategic and IS Planning Relationships

Corporate Strategic Planning

Current Enterprise

Future Enterprise

Strategic Plan

Information Systems Planning

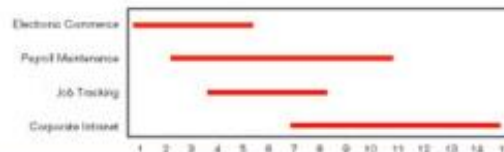
Current Situation:

- listing of manual and automated processes
- listing of manual and automated data
- technology inventory
- human resources inventory

Future Situation:

- blueprints of manual and automated processes
- blueprints of manual and automated data
- technology blueprints
- human resources blueprints

Schedule of Projects:



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

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

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

Identifying Functions, Processes, and Data Entities

FUNCTIONS:

- business planning
- product development
- marketing and sales
- production operations
- finance and accounting
- human resources

...

DATA ENTITIES:

- customer
- product
- vendor
- raw material
- order
- invoice
- equipment

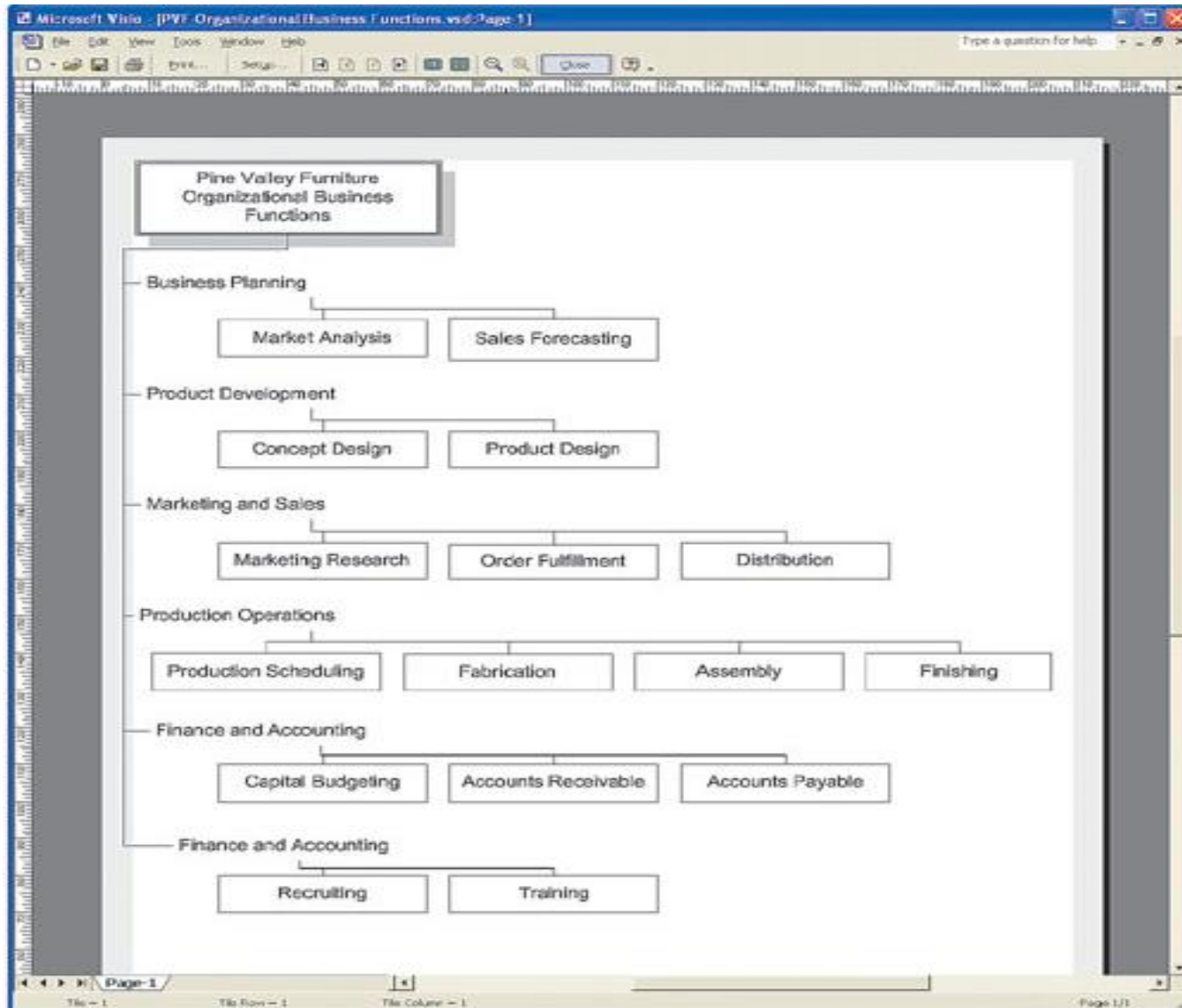
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INFORMATION SYSTEMS:

- payroll processing
- accounts payable
- accounts receivable
- time card processing
- inventory management

...

Functional Decomposition



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

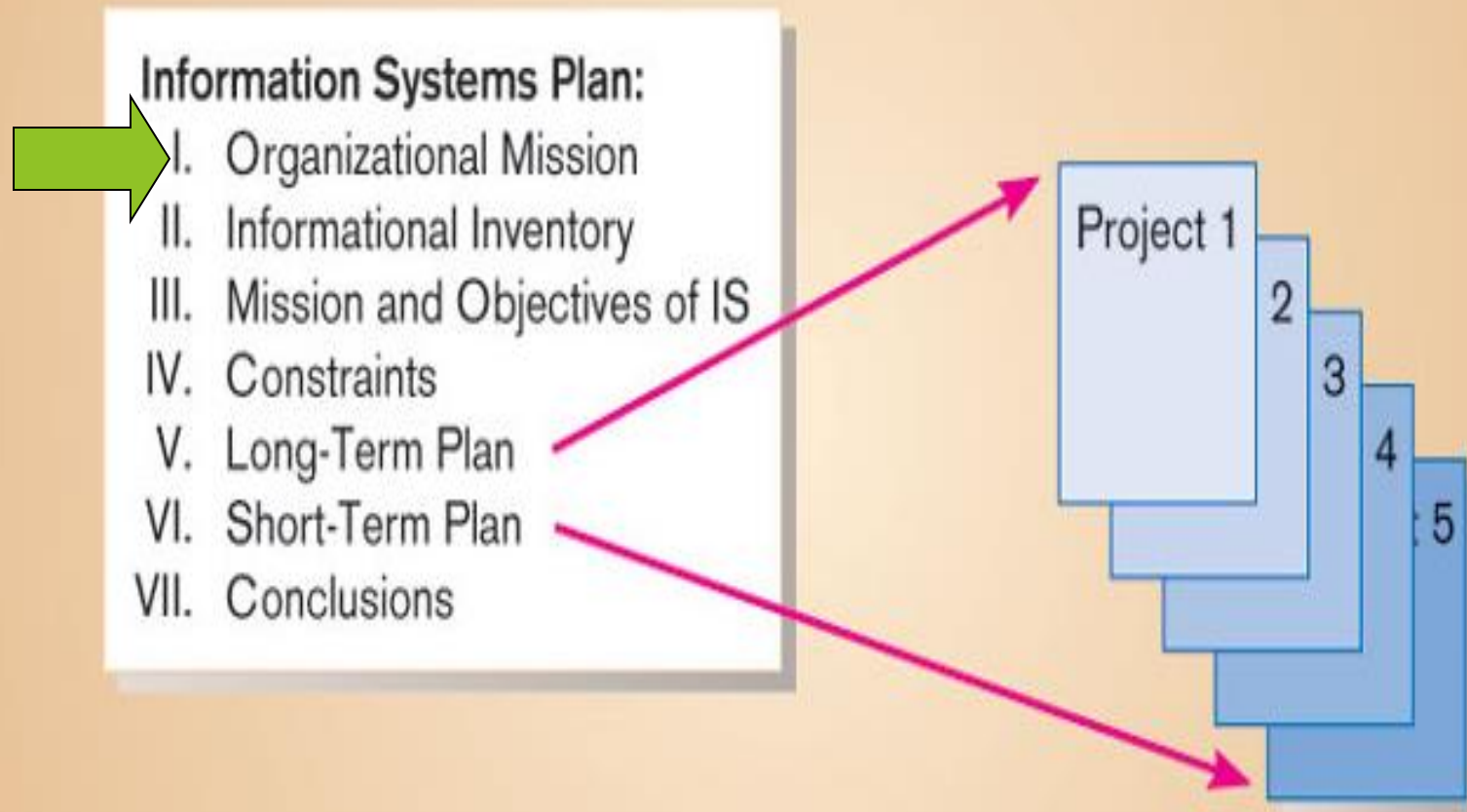
IS Planning Matrix

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

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IS Plan Components

Briefly describe mission, objectives, and strategy of the organization



IS Plan Components (cont.)

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

Information Systems Plan:

- 
- I. Organizational Mission
 - II. Informational Inventory
 - III. Mission and Objectives of IS
 - IV. Constraints
 - V. Long-Term Plan
 - VI. Short-Term Plan
 - VII. Conclusions

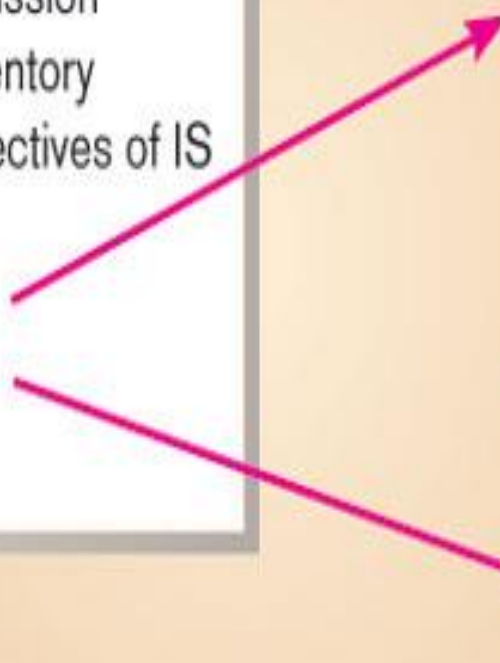
Project 1

2

3

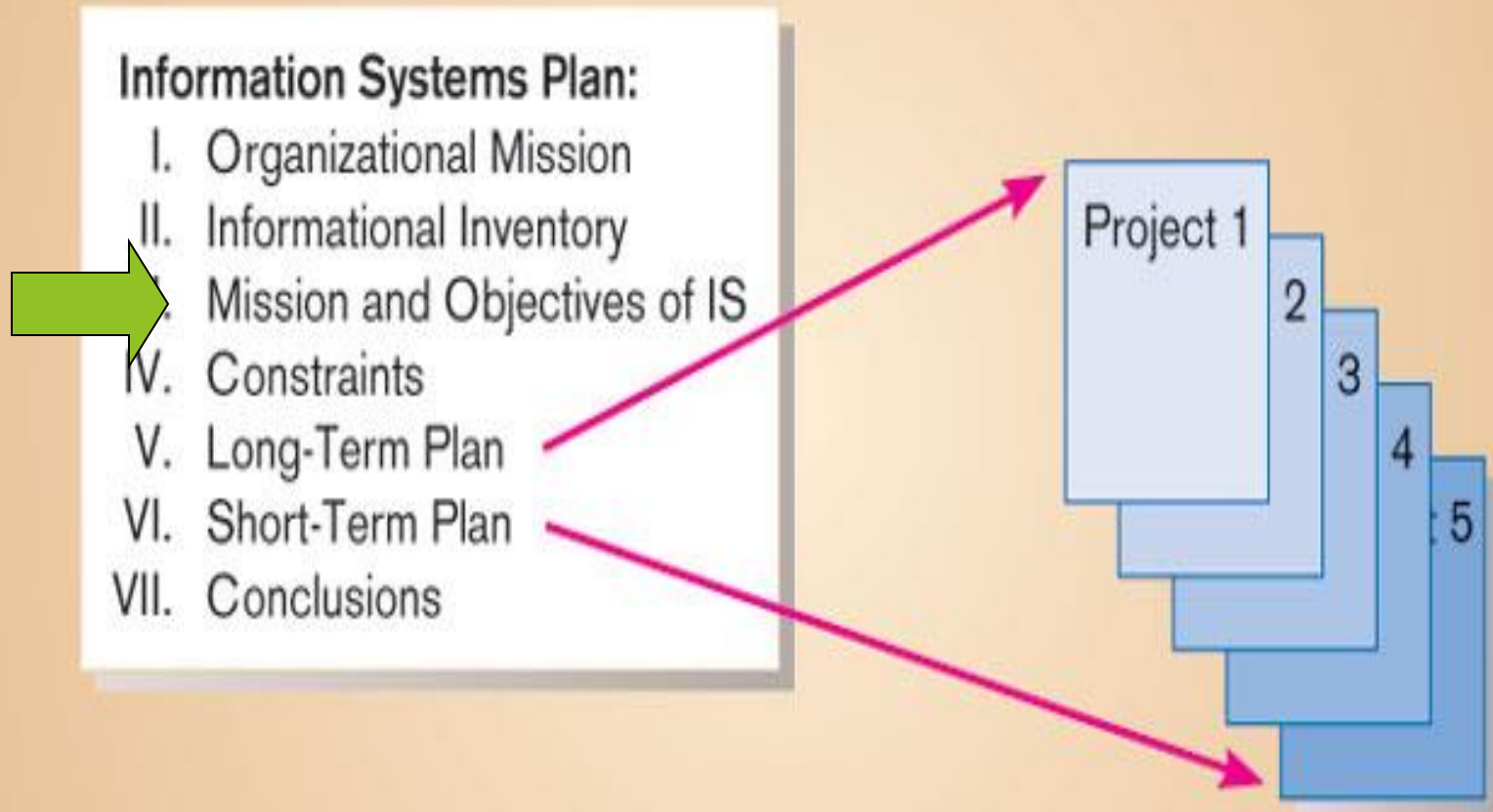
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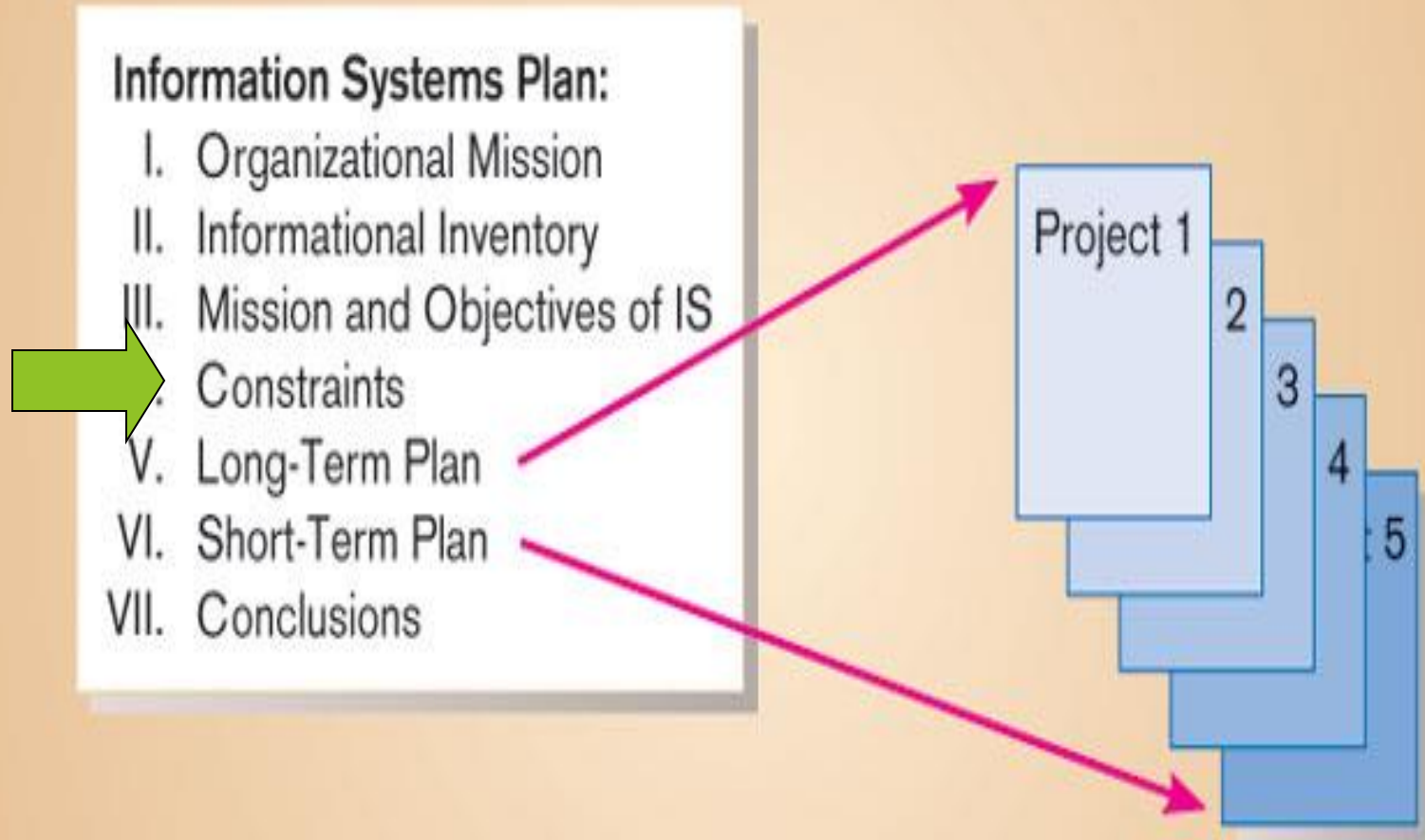
IS Plan Components (cont.)

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



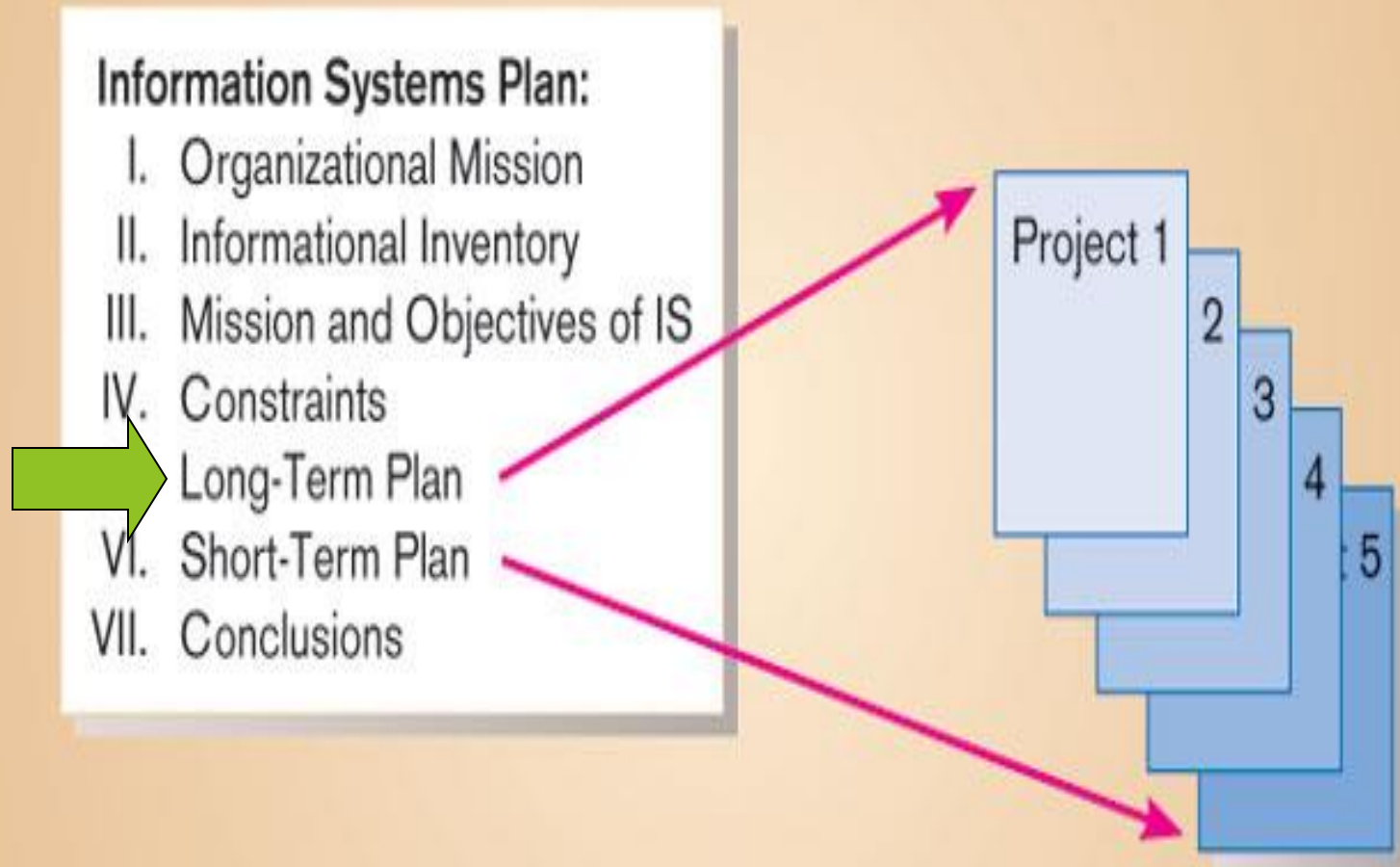
IS Plan Components (cont.)

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



IS Plan Components (cont.)

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

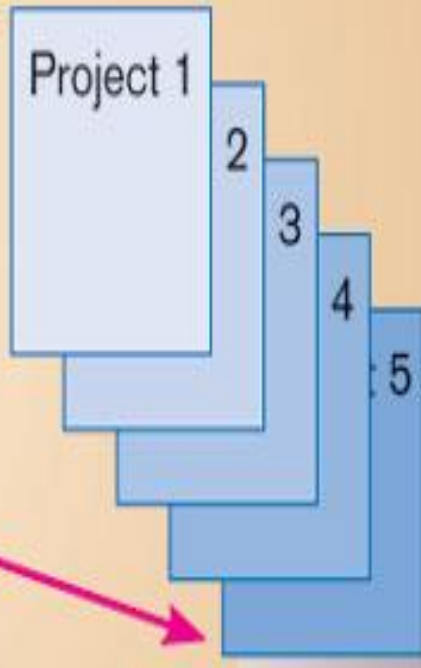


IS Plan Components (cont.)

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

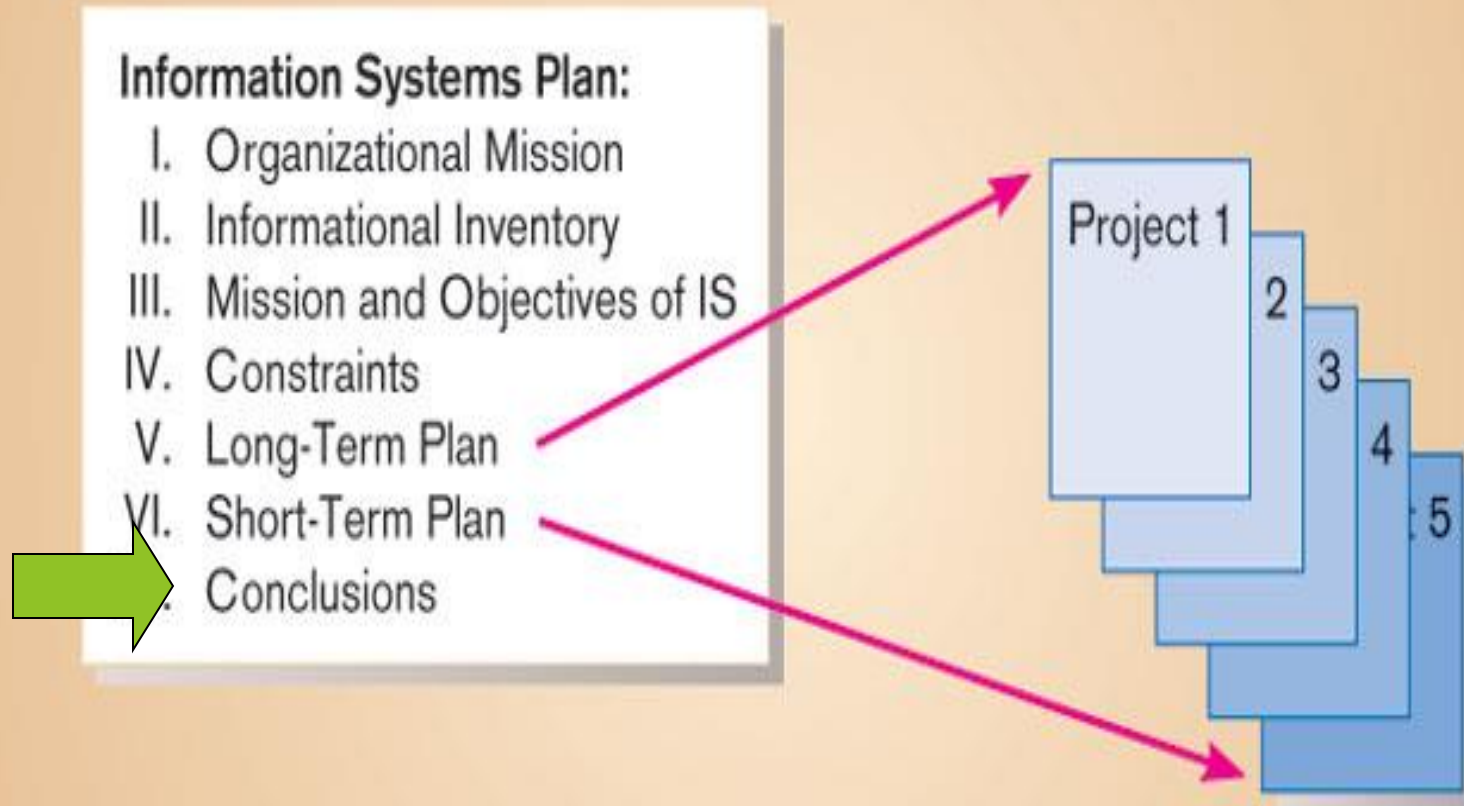
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IS Plan Components (cont.)

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



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

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

Issues in Internet Application Development

User

- Concern: Who is the user?
- Example: Where is the user located? What is the user's expertise, education, or expectations?

Connection Speed

- 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

- Concern: What is the method of accessing the net?
- Example: Web browser, Personal Digital Assistant (PDA), Web-enabled Cellular Phone, Web-enabled Television

Summary

- ▶ In this chapter you learned how to:
 - ✓ Describe the project identification and selection process.
 - ✓ Describe corporate strategic planning and information systems planning.
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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.