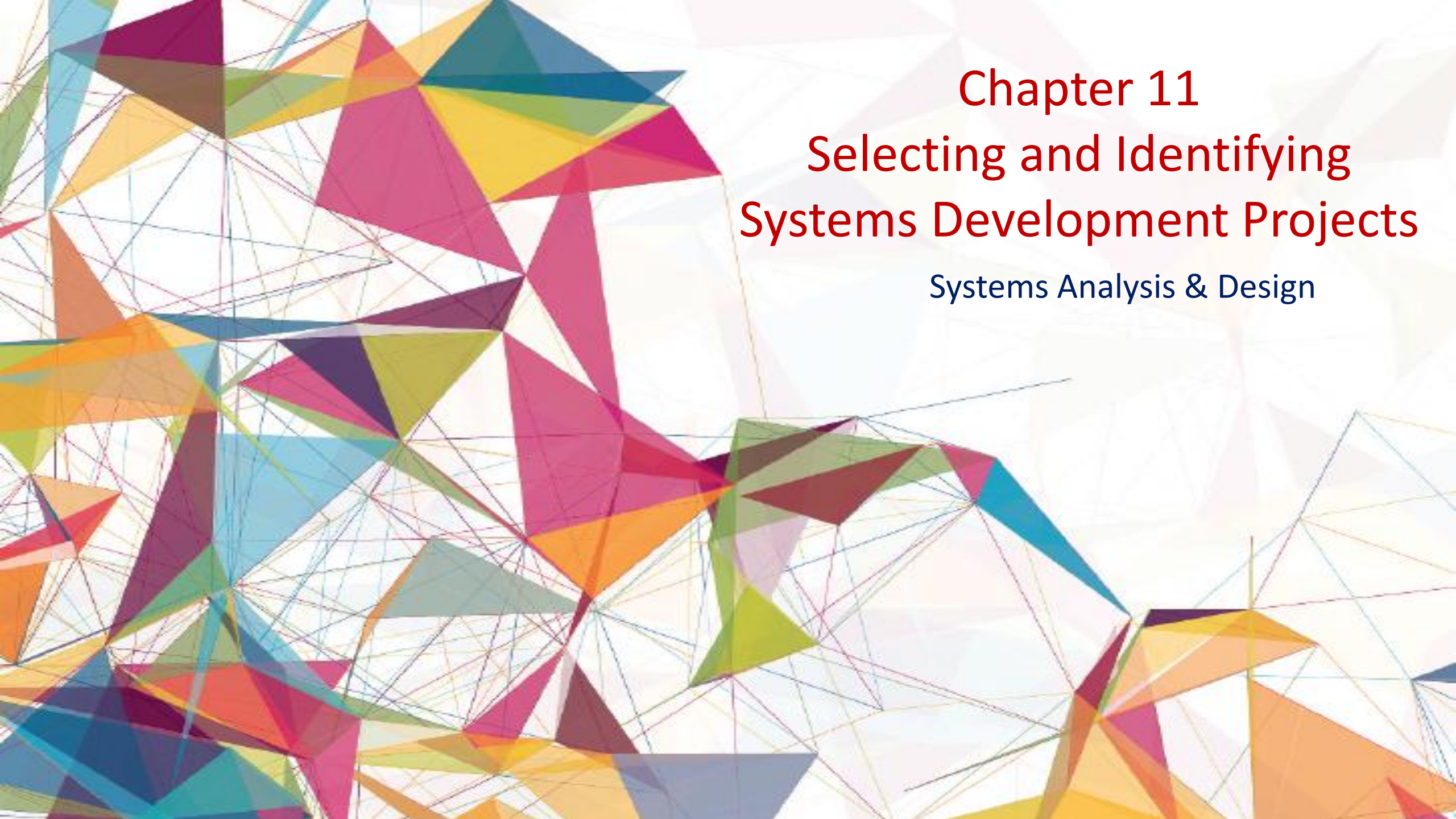

Chapter 11
Selecting and Identifying Systems Development Projects

Systems Analysis & Design

Learning Objectives

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After studying this chapter, you should be able to:

- Describe the project identification and selection process,
- Describe the corporate strategic planning and information systems planning process,
- Describe the three classes of Internet electronic commerce applications: business to-consumer, business-to-employee, and business-to-business.

Introduction

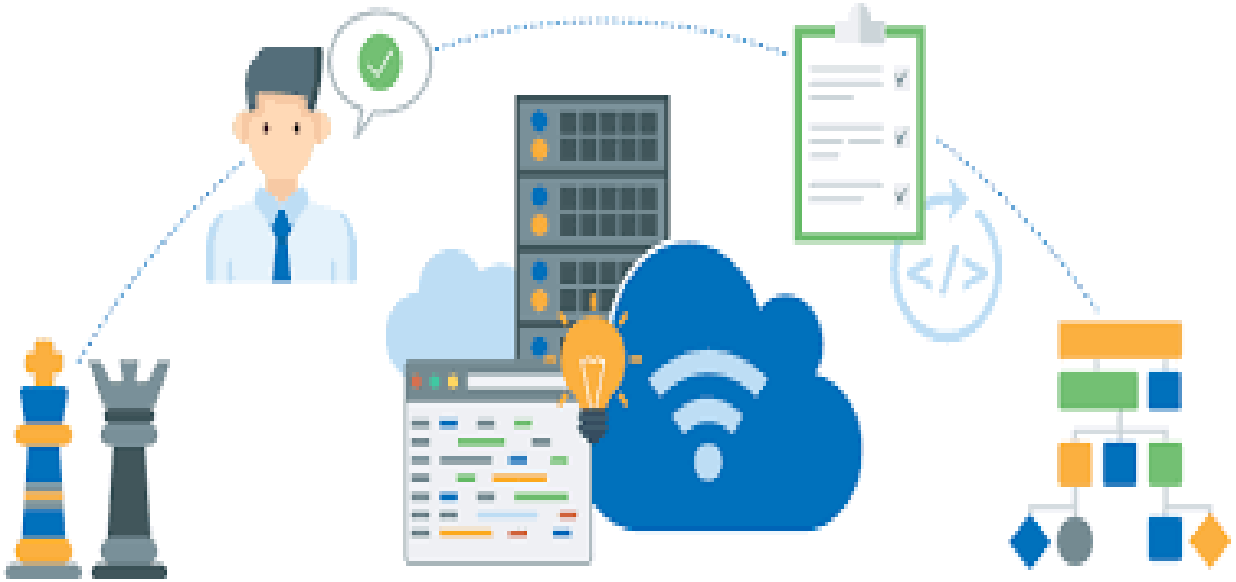
- Nonintegrated systems used in the past—often referred to as "**islands of information**"—are being replaced with cooperative, integrated enterprise systems that can easily support information sharing.

- The use of enterprise resource planning (ERP) systems from companies such as SAP and Oracle, has enabled the linking of these "islands" in many organizations.

- The use of the Internet continues to evolve to support business activities, systems integration has become a top concern of organizations

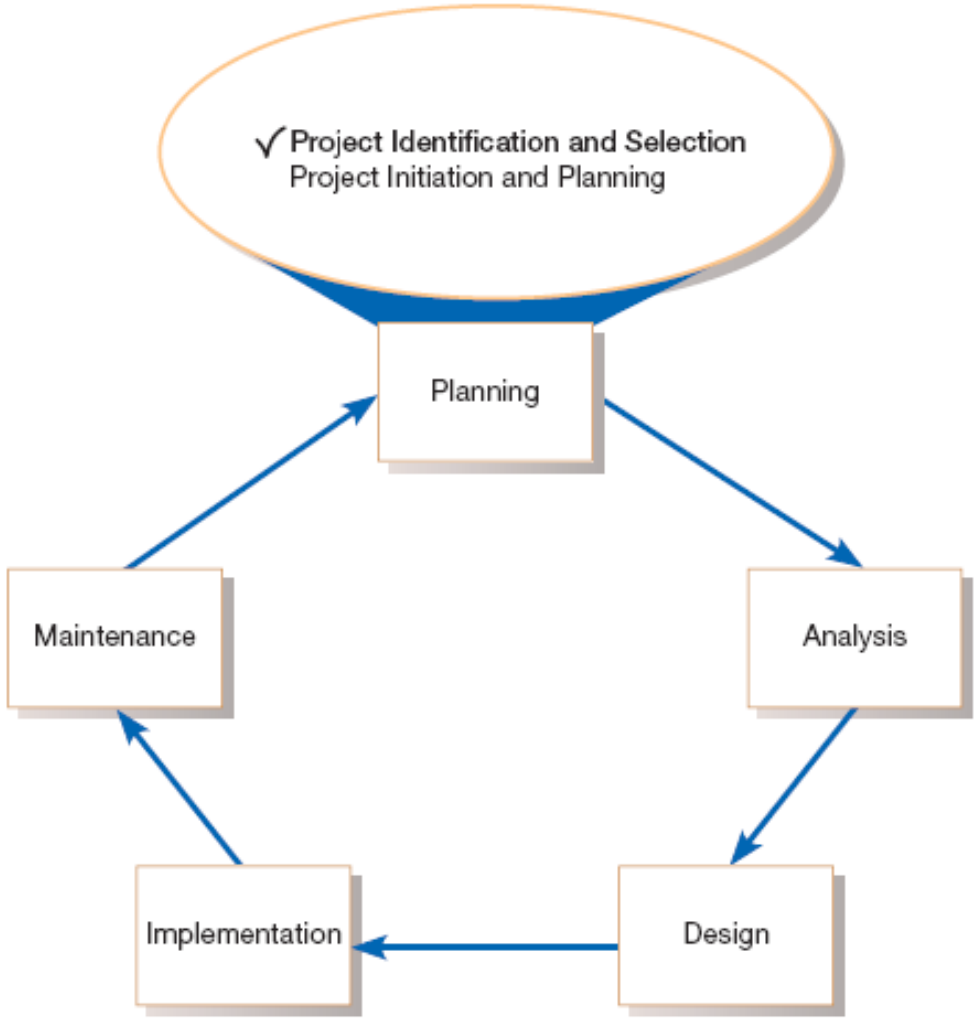
- A formal process for identifying and selecting projects for acquisition, development, and maintenance of information systems reduces substantial resources for most organizations.

- The first phase of the systems development life cycle—project identification and selection—deals with this issue



Identifying and Selecting Systems Development Projects

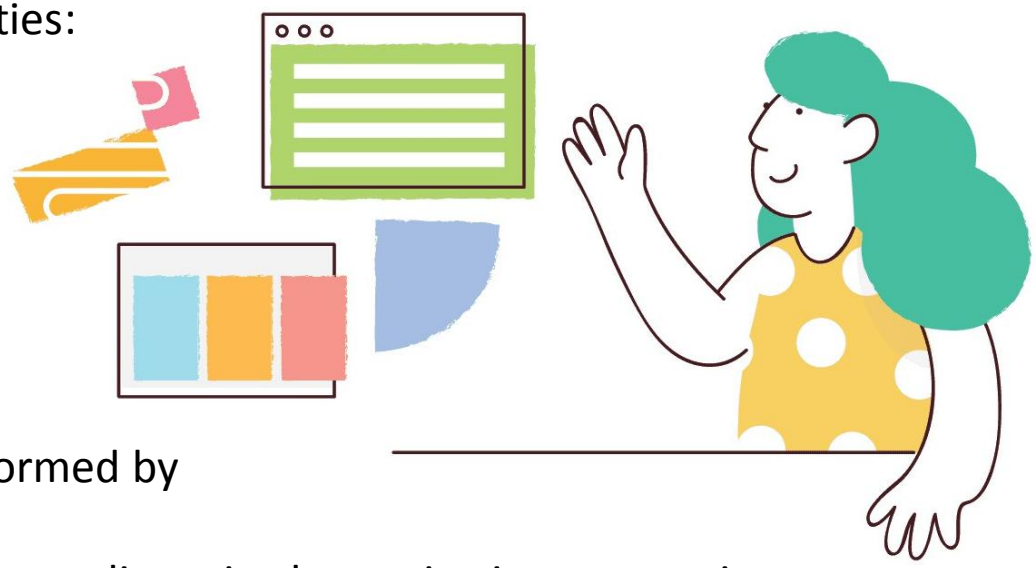
- The first phase of the SDLC is planning, consisting of project identification and selection, and project initiation and planning.
- Those projects most likely produce significant organizational benefits, given available resources, are selected for subsequent development activities.
- In some organizations, project identification and selection is a very formal process in which projects are outcomes of a larger overall planning process.
- Alternatively, a small organization may use informal project selection processes that allow the highest-ranking IS manager to independently select projects or allow individual business units to decide on projects after agreeing to provide project funding.



Process of Identifying and Selecting IS Development Projects

Project identification and selection consists of three primary activities:

1. Identifying potential development projects
2. Classifying and ranking IS development projects
3. Selecting IS development projects



Identifying potential development projects.

Organizations vary in identifying projects. This process can be performed by

- A key member of top management, either the CEO of a small- or medium sized organization or a senior executive in a larger organization;
- A steering committee, composed of a cross section of managers with an interest in systems;
- User departments, in which either the head of the requesting unit or a committee from the requesting department decides which projects to submit (often you, as a systems analyst, will help users prepare such requests); or
- The development group or a senior IS manager.

Process of Identifying and Selecting IS Development Projects

Characteristics of Top-down and Bottom-up Projects Selection

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

Identifying and Selecting Systems Development Projects

Classifying and ranking IS development projects

- Focus on assessing the relative merit of potential projects.

- Ranking projects can be performed by top managers, a steering committee, business units, or the IS development group.

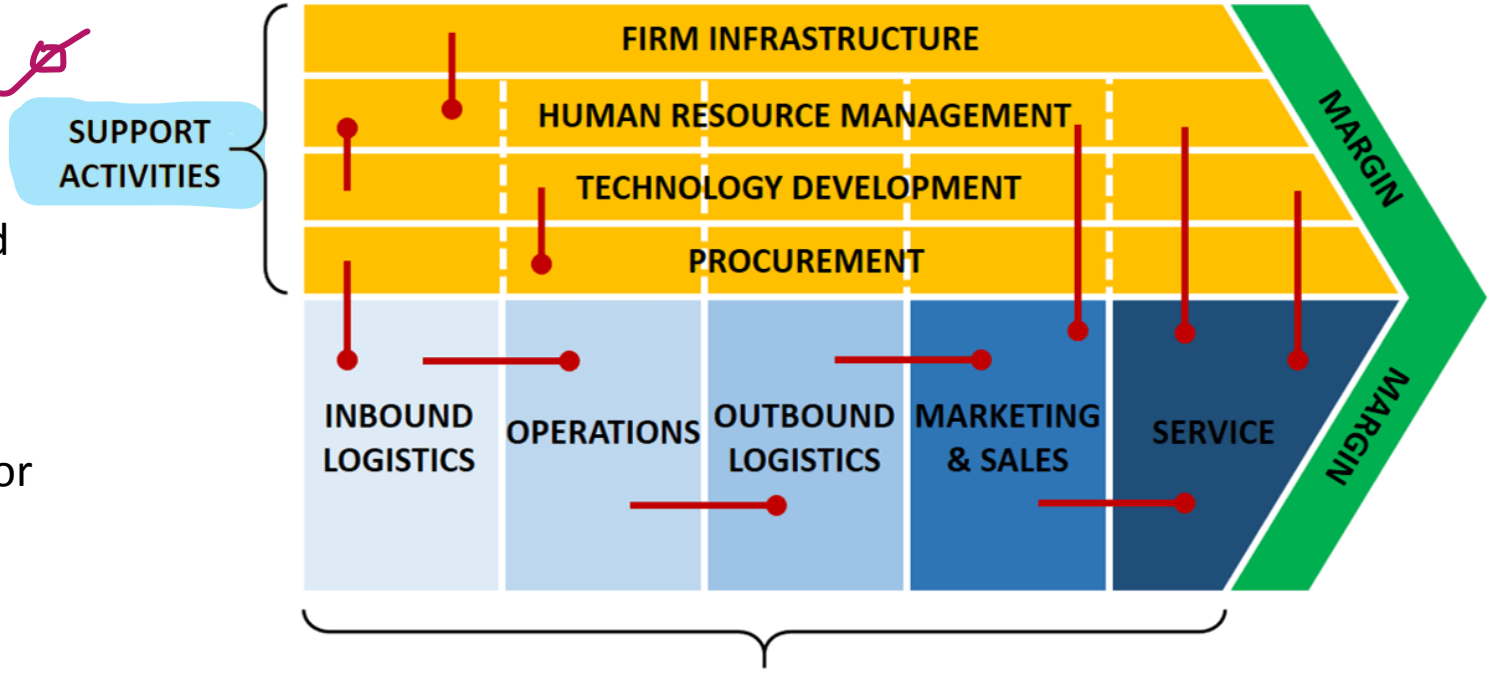
Evaluation Criteria	Description
Value Chain Analysis	Extent to which activities add value and costs when developing products and/or services
Strategic Alignment	Extent to which the project is viewed as helping the organization achieve its strategic objectives and long-term goals
Potential Benefits	Extent 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 Systems Development Projects

Value chain analysis

Analyzing an organization's activities to determine where value is added to products and/or services and the costs incurred for these products or services

It involves a comparison with the activities, added value, and costs of other organizations for the purpose of making improvements in the organization's operations and performance.



Transform Raw Materials into Products

Storage and Distribution of Products

Marketing, Sales, and Customer Support

Identifying and Selecting Systems Development Projects

Selecting IS development projects.

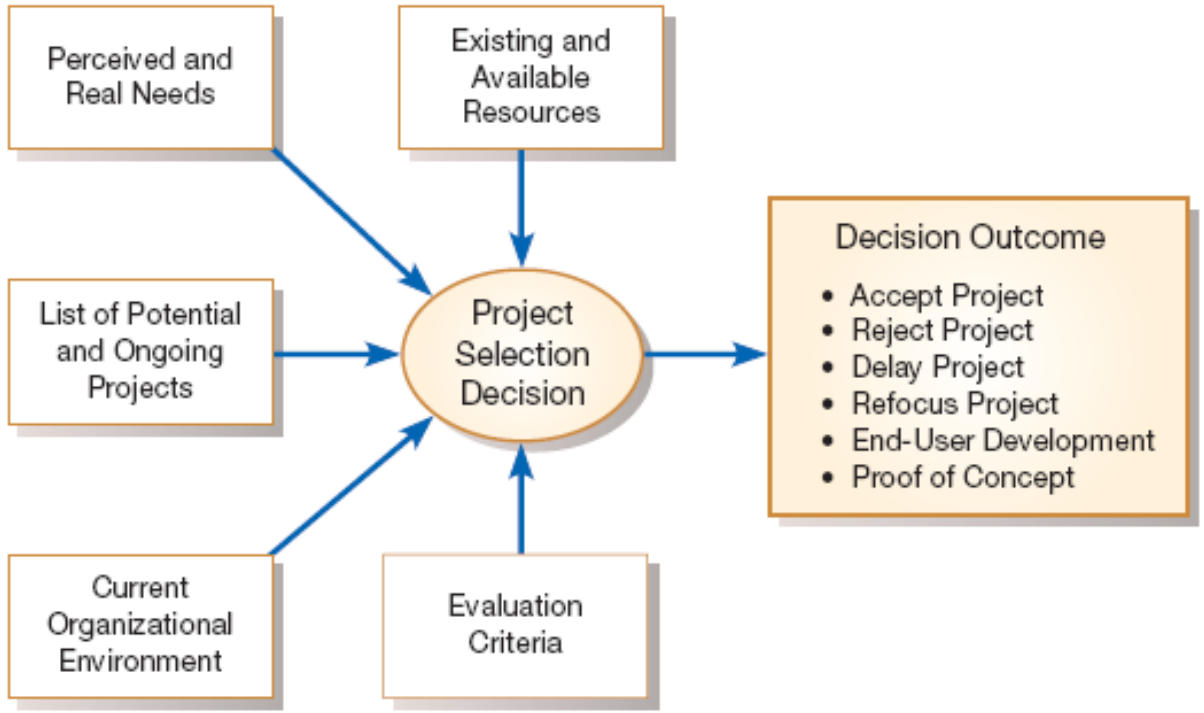
- Project selection is a process of considering both short- and long-term projects and selecting those most likely to achieve business objectives.

- As business conditions change over time, the relative importance of any single project may substantially change.

Acceptance of a project usually means that funding to conduct the next phase of the SDLC has been approved.

Rejection means that the project will no longer be considered for development.

Conditionally accepted; they may be accepted pending the approval or availability of needed resources



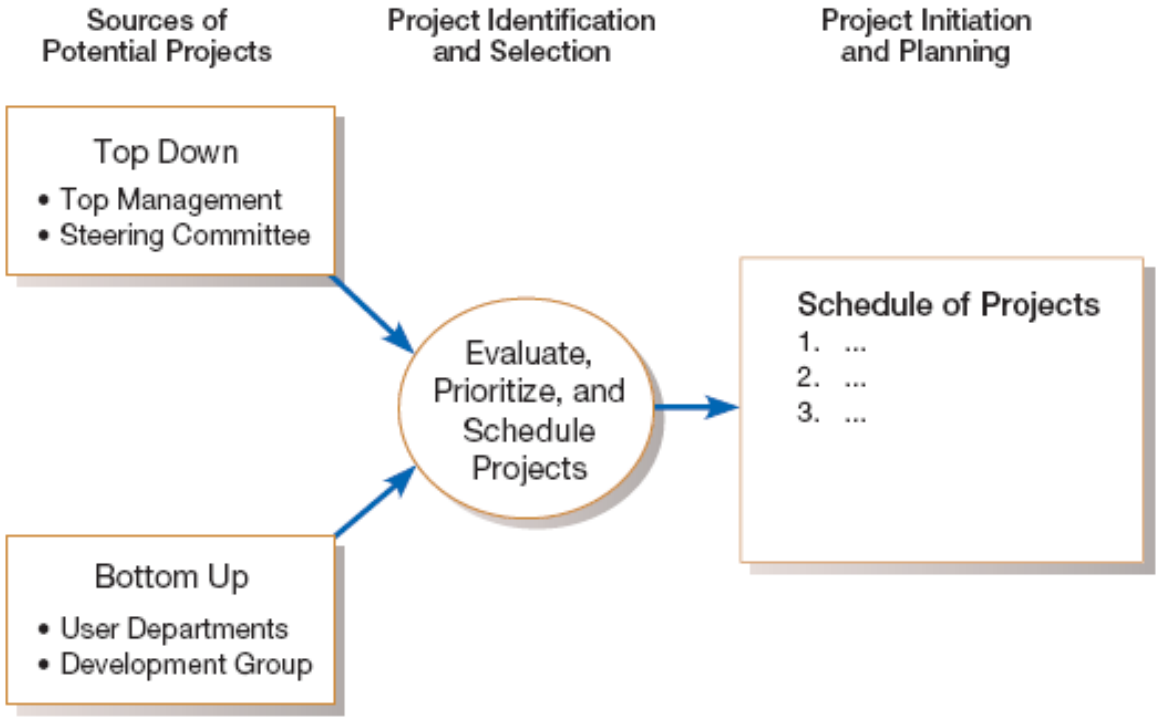
Identifying and Selecting Systems Development Projects

Deliverable and outcome

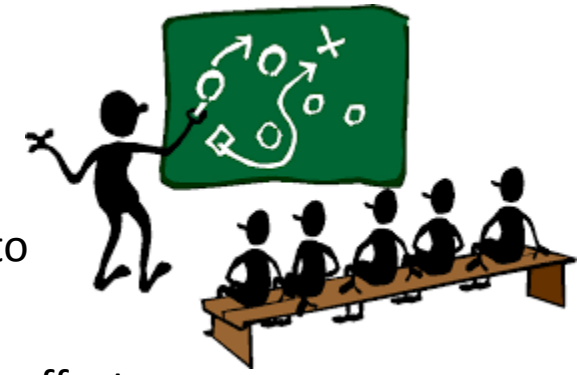
- The primary deliverable from the first part of the planning phase is a schedule of specific IS development projects, coming from both top-down and bottom-up sources, to move into the next part of the planning phase—project initiation and planning

- An outcome of this phase is the assurance that careful consideration was given to project selection, with a clear understanding of how each project can help the organization reach its objectives.

- Due to the principle of **incremental commitment**, a selected project does not necessarily result in a working system. After each subsequent SDLC phase, reassessment project to determine whether the business conditions have changed or whether a more detailed understanding of a system's costs, benefits, and risks would suggest that the project is not as worthy as previously thought.



Corporate and Information System Planning



- organizations have not traditionally used a systematic planning process when determining how to allocate IS resources.
- Instead, projects have often resulted from attempts to solve isolated organizational problems. In effect, organizations have asked the question: “What procedure (application program) is required to solve this particular problem as it exists today?”

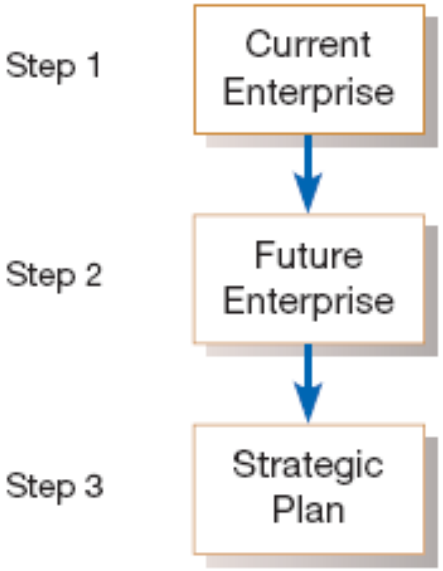
The need for improved information systems project identification and selection is required when we consider factors such as the following:

- The cost of information systems has risen steadily and approaches 40 percent of total expenses in some organizations.
- Many systems cannot handle applications that cross organizational boundaries.
- Many systems often do not address the critical problems of the business as a whole or support strategic applications.
- Data redundancy is often out of control, and users may have little confidence in the quality of data.
- Systems maintenance costs are out of control as old, poorly planned systems must constantly be revised.
- Application backlogs often extend three years or more, and frustrated end users are forced to create (or purchase) their own systems, often creating redundant databases and incompatible systems in the process.

Corporate Strategic Planning

- The process of developing and refining models of the current and future enterprise as well as a transition strategy is often referred to as **corporate strategic planning**.

- During corporate strategic planning, executives typically develop a **mission statement**, **statements of future corporate objectives**, and **strategies designed** to help the organization reach its objectives.



Step 1

Focuses on gaining an understanding of the current enterprise. If you don't know where you are, it is impossible to tell where you are going.

Step 2

Top management must determine where it wants the enterprise to be in the future.

Step 3

After gaining an understanding of the current and future enterprise, a strategic plan can be developed to guide this transition.

Mission Statement

- The **mission statement** of a company typically states in very simple terms what business the company is in.

For Example:

- The mission statement clearly state that PVF is in the business of constructing and selling high-quality wood furniture to the general public, businesses, and institutions such as universities and hospitals.

- It is also clear that PVF is not in the business of fabricating steel file cabinets or selling its products through wholesale distributors.

Objective Statements

- **Objective statements** refer to "broad and timeless" goals for the organization.
- Objectives are series of statements that express an organization's qualitative and quantitative goals for reaching a desired future position.
- Objectives are often referred to as ***critical success factors.***

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.

Competitive Strategy

- A **competitive strategy** is the method by which an organization attempts to achieve its mission and objectives.
- In essence, the strategy is an organization's game plan for playing in the competitive business world.

It is only through the clear understanding of the organizational mission, objectives, and strategies that IS development projects should be identified and selected.

Generic Competitive Strategy

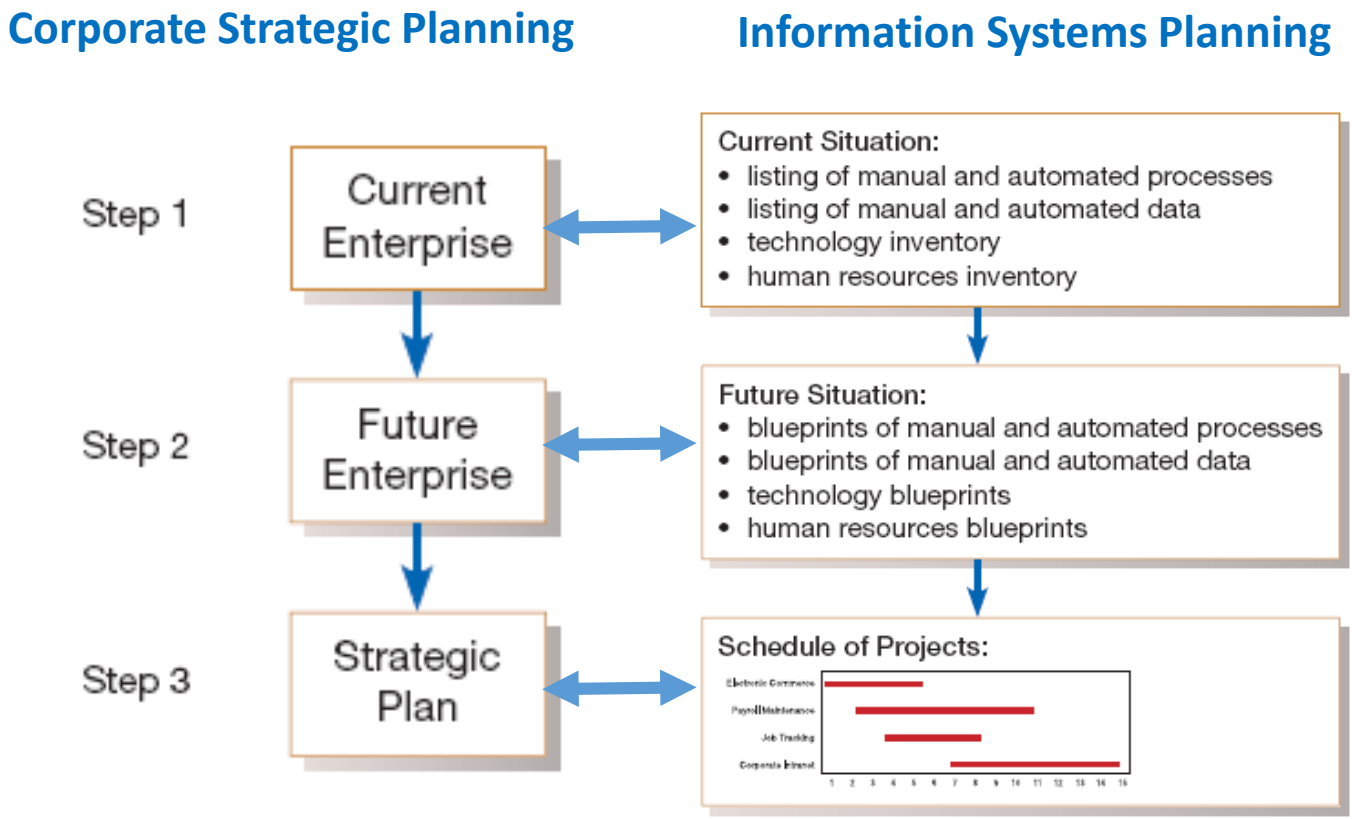
Strategy	Description
Low-Cost Producer	This strategy reflects competing in an industry on the basis of product or service cost to the consumer. For example, in the automobile industry, the South Korean–produced Hyundai is a product line that competes on the basis of low cost.
Product Differentiation	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 (e.g., "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 and others may employ a differentiation strategy based on performance or style.

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.

- ISP must be done in accordance with the organization's mission, objectives, and competitive strategy.



Approaches to IS Planning

Top-down planning

- Attempts to gain a broad understanding of information system needs of the entire organization
- This approach gives High-Level perspective of organization and the approach begins by conducting an extensive analysis of the organization's mission, objectives, and strategy and determining the information requirements needed to meet each objective.

Advantage	Description
Broader Perspective	If not viewed from the top, information systems may be implemented without first understanding the business from general management's viewpoint.
Improved Integration	If not viewed from the top, totally new management information systems may be implemented rather than planning how to evolve existing systems.
Improved Management Support	If not viewed from the top, planners may lack sufficient management acceptance of the role of information systems in helping them achieve business objectives.
Better Understanding	If not viewed from the top, planners may lack the understanding necessary to implement information systems across the entire business rather than simply to individual operating units.

Approaches to IS Planning

Identifies IS development projects based on solving specific operational business problems or taking advantage of specific opportunities

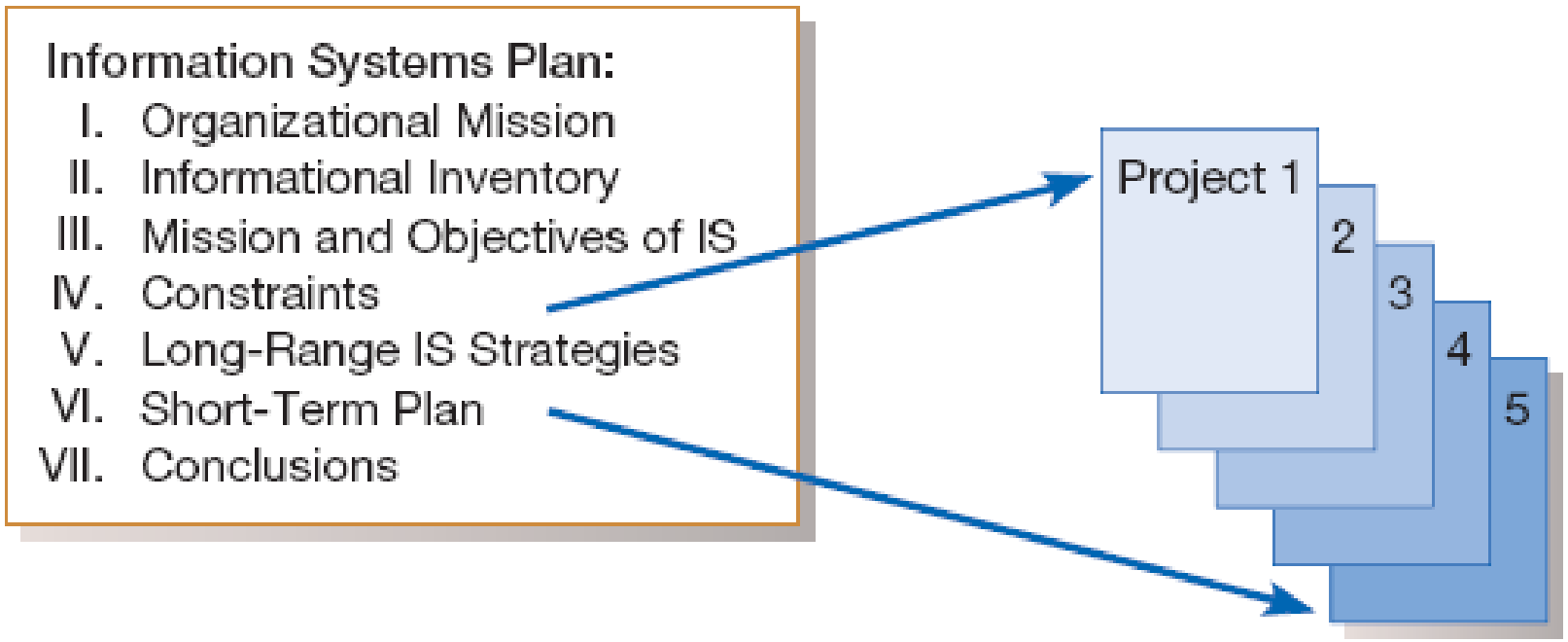
Bottom-up approach for creating IS plans can be faster and less costly; it also has the advantage of identifying immediate organizational problems.

Bottom-up approach often fails to view the informational needs of the *entire* organization

Bottom-up planning

Information System Plan

ISP is a detailed process and an integral part of deciding how to best deploy information systems and technologies to help reach organizational goals.



E-Commerce Apps. (Identifying & Selecting Projects)

Identifying and selecting systems development projects for an Internet-based electronic commerce application is no different from the process followed for more traditional applications.

1. Identifying potential development projects
2. Classifying and ranking IS development projects
3. Selecting IS development projects

Internet Basics

Internet

The name **Internet** is derived from the concept of "**internetworking**"; that is, connecting host computers and their networks to form an even larger, global network.

A large, worldwide network of networks that use a common protocol to communicate with each other.

The interconnected networks include computers running Windows, Linux, IOS, and many other network and computer types. The Internet stands as the most prominent representation of **global networking**.

HTTP means HyperText Transfer Protocol. **HTTP** is the underlying protocol used by the World Wide Web and this protocol defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands

E-Commerce Applications

Electronic commerce (EC)

Internet-based communication to support day-to-day business activities.

Types of E-Commerce

Business-to-consumer (B2C)

Electronic commerce between businesses and consumers.

Business-to-business (B2B)

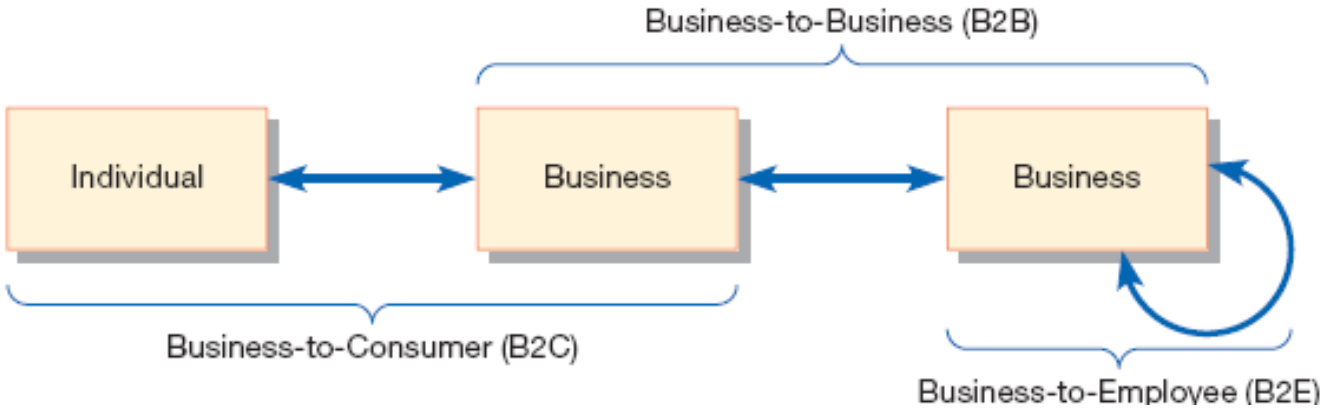
Electronic commerce between business partners, such as suppliers and intermediaries.

Business-to-employee (B2E)

Electronic commerce between businesses and their employees, This type of E-commerce also called Intranet.

Electronic data interchange (EDI)

The use of telecommunications technologies to directly transfer business documents between organizations.



Issues in Internet Applications Development

User	• Concern: Who is the user? • Example: Where is the user located? What is the user's expertise or education? What are the user's 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, Tablet, Web-enabled Television