Learning Objectives

• Understand the role of planning for development.
• Understand the development process.
• Understand the implementing applications.

Planning

Two popular approaches

The Scenario Approach
A planning approach for managers, employees and planners to create scenarios of what an organization will be like in the future and identify the role IT can play in these scenarios.

Planning for Competitive Advantage
Involves an evaluation of the potential benefits and risks a company faces when using E-business strategies and technologies for competitive advantage.

Planning (continued)

E-Business Planning
Focuses on discovering innovative approaches to satisfying a company’s customer value and business value goals. The E-business planning process has three major components:
1. Strategy Development
2. Resource Management
3. Technology Architecture

Planning (continued)

IT Architecture
Conceptual design, or blueprint created by the strategic planning process including the following:
• Technology Platform
• Data Resources
• Applications Architecture
• E-business and E-commerce
• IT Organization

Planning (continued)

Integrates business strategy development and business process engineering to produce E-business and E-commerce applications using the resources of the IT architecture, component development technologies and a repository of business models and application components.
Planning (continued)

It is a process!

Implementation Activities: Managing the introduction and implementation of changes in business processes, organizational structure, job assignments and work relationships resulting from E-business strategies and applications such as E-commerce initiatives, reengineering projects, supply chain alliances and the introduction of new technologies.

End-User Involvement: Reduce end user resistance and maximize acceptance of E-business changes by stakeholders.

Change Management: People, processes and technology factors involved in managing the implementation of E-business or other IT based changes to an organization.

Development

Systems Approach

1) Recognize and define a problem using systems thinking.
2) Develop and evaluate alternative systems solutions.
3) Select the system solution that best meets your requirements.
4) Design the selected system solution.
5) Implement and evaluate the success of the designed system.

Development (continued)

- Seeing *interrelationships* among systems rather than linear cause-and-effect chains whenever events occur.
- Seeing *processes* of change among systems rather than discrete instances of change.

Development (continued)

1. Break a complex problem into pieces
2. Design solution for each piece.
3. Integrate solutions into one complete system.
Development (continued)

How do we do this?
Multi-step process called the information systems development cycle (SDCL)

1) Systems Investigation
   Product: Feasibility Study
2) Systems Analysis
   Product: Functional Requirements
3) Systems Design
   Product: System Specifications
4) Systems Implementation
   Product: Operational System
5) Systems Maintenance
   Product: Improved System

Development (continued)

Economic Feasibility
Can we afford it?

Organizational Feasibility
Is it a good fit?

Technical Feasibility
Does the capability exist?

Operational Feasibility
Will it be accepted?

Systems Investigation

Define Requirements

Key Areas of Systems Analysis

Organizational

Systems Analysis

Functional Requirements

Present System

Development (continued)

What are the components of a system?
• Input - What types and forms of data are available?
• Output - What information is needed by end users?
• Processing - What operations are required?
   What software can most effectively support those operations?
• Storage - Does the application use previously stored data?
   Does it create data that needs to be stored for future use?
• Control - What controls are needed to protect against accidental damage?

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Development (continued)
Implementation Activities

- Acquisition of hardware, software, and services.
- Software Development
- End User Training
- System Documentation
- System Conversion

Implementation (continued)

Hardware Evaluation Factors
- Performance
- Cost
- Reliability
- Compatibility
- Technology
- Connectivity
- Scalability
- Support
- Software

Software Evaluation Factors
- Quality
- Flexibility
- Security
- Connectivity
- Language
- Documentation
- Hardware
- Efficiency

Implementation (continued)

System Conversion Alternatives

<table>
<thead>
<tr>
<th>Old System</th>
<th>Parallel</th>
<th>New System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old System</td>
<td>Pilot</td>
<td>New System</td>
</tr>
<tr>
<td>Old System</td>
<td>Phased</td>
<td>New System</td>
</tr>
<tr>
<td>Old System</td>
<td>Cut and Run</td>
<td>New System</td>
</tr>
</tbody>
</table>

Implementation (continued)

Role of Prototyping

An original or model on which something is patterned and/or a full-scale and usually functional form of a new type or design of a construction (e.g. an airplane).” Webster’s Dictionary

Why prototype an airplane?
Why prototype a new information system?

Implementation (continued)
Implementation (continued)

- If it makes sense for a manufacturing company to build a prototype to determine the best possible product, why not use prototyping to determine the best possible system?
- An IS prototype is like saying to a user, “do you like what you see?”
- It makes the development process faster and easier for systems analysts, especially for projects where end user requirements are hard to define
- It has opened up the application development process to end users because it simplifies and accelerates systems design

Implementation (continued)

End User

Development

Controls
What controls are needed?

Input
What data is required?

Processing
What operations on the input is required?

Output
What information is needed?

Storage
Will the application need to store data?

Implementation (continued)

Implementation Activities

Acquisition
Development and Modification
System Testing
End User Training

System Documentation
Conversion