**Objectives**

- Use the IS development process and the model of information systems components (last topic) and this topic as problem-solving frameworks to help you propose information systems solutions to simple business problems.
- Describe and give examples to illustrate how you might use each of the steps of the information system development cycle to develop and implement an E-Business system.

**Objectives (cont.)**

- Explain how prototyping improves the process of systems development for end users and IS specialists.
- Identify the activities involved in the implementation of new information systems.
- Describe several evaluation factors that should be considered in evaluating the acquisition of hardware, software, and IS services.
- Identify some of the challenges involved in the implementation process for managing technological change.

**Figure 1-1 A Dichotomy of Information Work**

<table>
<thead>
<tr>
<th>Procedure-Based (Type I)</th>
<th>Goal-Based (Type II)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• High volume of transactions</td>
<td>• Low volume of transactions</td>
</tr>
<tr>
<td>• Low cost/value per transaction</td>
<td>• High value/size per transaction</td>
</tr>
<tr>
<td>• Well-structured procedures</td>
<td>• IL-structured procedures</td>
</tr>
<tr>
<td>• Output measures defined</td>
<td>• Output measures less defined</td>
</tr>
<tr>
<td>• Focus on process</td>
<td>• Focus on problems and goals</td>
</tr>
<tr>
<td>• Focus on efficiency</td>
<td>• Focus on effectiveness</td>
</tr>
<tr>
<td>• Handling of “data”</td>
<td>• Handling of concepts</td>
</tr>
<tr>
<td>• Predominantly clerical workers</td>
<td>• Managers and professionals</td>
</tr>
<tr>
<td>• Examples from banking</td>
<td>• Examples from banking</td>
</tr>
<tr>
<td>&quot;Back office&quot;</td>
<td>Loan department</td>
</tr>
<tr>
<td>Mortgage servicing</td>
<td>Asset/liability management</td>
</tr>
<tr>
<td>Payroll processing</td>
<td>Planning department</td>
</tr>
<tr>
<td>Check processing</td>
<td>Corporate banking</td>
</tr>
</tbody>
</table>

**Figure: Components of the DSS**

**MODELING ENTERPRISE DATA**

- Enterprise View
- Conceptual Data Models
- Logical Models
- Physical Models
- Production System
- User Environment

**Tasks**

- DBMS: Database Management Systems
- MBMS: Module Base Management Systems
- DGMS: Dialogue Management Systems

**Software System**

- The DSS
- User
**Figure 1-3 Three Levels of DSS Technology**

Specific DSS Applications

DSS Generator

DSS Tools

**Systems Approach to Problem Solving**

Define the Problem

Develop Alternative Solutions

Select the Solution

Design the Solution

Implement the Solution

**Systems Implementation**

Product: Operational System

**Systems Investigation**

Product: Feasibility Study

**Systems Analysis**

Product: Functional Requirements

**Systems Design**

Product: System Specifications

**Systems Implementation**

Product: Operational System

**Systems Maintenance**

Product: Improved System

**Prototyping Process**

Identify an End User’s Information Requirements

Develop Information System Prototypes

Revise the Prototypes to Better Meet End User Requirements

Use and Maintain the Accepted System

**Decision-making Process**

Is there a problem?

What are the alternatives?

Which should you choose?

Is the choice working?

End User Development

Controls
What controls are needed?

Data
What data is required?

Processing
What operations on the input is required?

Storage
Will the application need to store data?

Design
What information is needed?

Systems Investigation
(Feasibility Study)

Economic Feasibility
Can we afford it?

Organizational Feasibility
Is it a good fit?

Operational Feasibility
Will it be accepted?

Technical Feasibility
Does the capability exist?

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?

Systems Analysis

Organizational

Key Areas of Systems Analysis

Present System

Functional/User Requirements

Systems Design

User Interface Design
Screen, Form, Report and Dialog Design

Data Design
Data Element Structure Design

Process Design
Program and Procedure Design

Logical and Physical Designs

Computer-Aided Systems Engineering
(CASE)

Planning Toolkit
Analysis Toolkit
Design Toolkit
Information Integrator

Server Repository

Workstation Repositories

Code Generation Toolset
Database Generation Toolset
System Interface

The Implementation Process

Implementation Activities
Acquisition
Development and Modification
System Testing
Conversion
End User Training

Development and Modification
System Testing
Conversion
End User Training
Evaluating Hardware and Software

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

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

Installation Conversion Methods: 4 Ps

- Parallel
- Pilot
- Phased
- Plunge/Direct

Managing Organizational Change

- Change Management
- Educate and Train
- Organizational Design
- Measurement and Rewards
- User Involvement
- Core Competencies and Business Models Development

Summary

- Business professionals and IS specialists use a systems approach to help them develop information system solutions to meet E-Business needs.
- Prototyping is a major alternative methodology to the traditional information system development cycle. It includes the use of prototyping tools and methodologies, which promote an iterative, interactive process.

Summary (cont)

- The application development capabilities built into many end user software packages have made it easier for end users to develop their own E-Business applications.
- The implementation process for IS projects involves acquisition, testing, documentation, training, installation, and conversion.
- Business professionals should know how to evaluate IT products for acquisition. IT vendor proposals should be based on specifications developed during the design phase.

Summary (cont)

- Implementation activities include managing the introduction and implementation of changes in the business processes, organizational structures, job assignments, and work relationships resulting from E-Business initiatives.