Chapter 10
Organizational Information Systems
1. Explain the purpose of transaction processing systems.
2. Explain the types of support information systems can provide for each functional area of the organization.
3. Identify advantages and drawbacks to businesses implementing an enterprise resource planning system.
4. Describe the three main business processes supported by ERP systems.
10.1 Transaction Processing Systems (TPS)

- Transaction
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- Transaction
- Transaction Processing System (TPS)
  - Source Data Automation
10.1 Transaction Processing Systems (TPS)

- Transaction
- Transaction Processing System (TPS)
  - Source Data Automation
  - Batch Processing
10.1 Transaction Processing Systems (TPS)

- Transaction
- Transaction Processing System (TPS)
  - Source Data Automation
  - Batch Processing
- Online Transaction Processing (OLTP)
Transaction Processing Systems (TPS)

- Transaction Processing System (TPS)
  - Continuous ‘real-time’ data collection
  - Efficiently handle high volumes of data and large variations in those volumes
  - Avoid errors and downtime
  - Record results accurately and securely
  - Maintain privacy and security
  - Source data automation
  - Batch processing
FIGURE 10.1 How transaction processing systems manage data.

Business event or transaction → Transaction processing system → Organization's database

Detailed reports

FAIS = Functional area information system
DSS = Decision support system
BI = Business intelligence
ES = Expert system

Dashboards
10.2 Functional Area
Information Systems

- Accounting and Finance
- Marketing
- Production/Operations Management
- Human Resource Management
Information Systems for Accounting and Finance

- Financial Planning and Budgeting
- Managing Financial Transactions
- Investment Management
- Control and Auditing
Financial Planning and Budgeting

- Financial Planning and Budgeting
  - Financial and economic forecasting
Financial Planning and Budgeting

- Financial Planning and Budgeting
  - Financial and economic forecasting
  - Budgeting
Managing Financial Transactions

• Managing Financial Transactions
Managing Financial Transactions

- Managing Financial Transactions
  - Global stock exchanges
Managing Financial Transactions

• Managing Financial Transactions
  – Global stock exchanges
  – Managing multiple currencies
Managing Financial Transactions

- Managing Financial Transactions
  - Global stock exchanges
  - Managing multiple currencies
  - Virtual close
Managing Financial Transactions

- Managing Financial Transactions
  - Global stock exchanges
  - Managing multiple currencies
  - Virtual close
  - Expense management automation (EMA)
Control and Auditing

• Control and Auditing
Control and Auditing

• Control and Auditing
  – Budgetary control
Control and Auditing

- Control and Auditing
  - Budgetary control
- Auditing
  - Monitor how the organization’s monies are being spent
  - Access the organization’s financial health
Control and Auditing

• Control and Auditing
  – Budgetary control
  – Auditing
    • Two basic purposes of Audits
      – Monitor how the organization’s monies are being spent
      – Access the organization’s financial health
  – Financial ratio analysis
Information Systems for Production/Operations Management

- In-House Logistics and Materials Management
- Inventory Management
- Quality Control
- Planning Production and Operations
- Computer-Integrated Manufacturing
- Product Life Cycle Management
Information Systems for Human Resource Management

• Recruitment
Information Systems for Human Resource Management

- Recruitment
- Development
Information Systems for Human Resource Management

- Recruitment
- Development
- Planning and Management
FIGURE 10.2 Examples of information systems supporting the functional areas.

<table>
<thead>
<tr>
<th>STRATEGIC</th>
<th>TACTICAL</th>
<th>OPERATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profitability Planning</td>
<td>Financial Planning</td>
<td>Employment Planning, Outsourcing</td>
</tr>
<tr>
<td>Auditing, Budgeting</td>
<td>Investment Management</td>
<td>Benefits Administration, Performance Evaluation</td>
</tr>
<tr>
<td>Payroll, Accounts Payable, Accounts Receivable</td>
<td>Manage Cash, Manage Financial Transactions</td>
<td>Maintain Employee Records</td>
</tr>
<tr>
<td>ACCOUNTING</td>
<td>FINANCE</td>
<td>HUMAN RESOURCES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PRODUCTION/OPERATIONS</td>
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<td></td>
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<tr>
<td>Sales Forecasting, Advertising Planning</td>
<td>Quality Control, Inventory Management</td>
<td>Customer Relations, Sales Force Automation</td>
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<td></td>
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</tbody>
</table>
10.3 Enterprise Resource Planning (ERP) Systems

- SAP
- QuickBooks
10.3 Enterprise Resource Planning (ERP) Systems

- ERP II Systems
10.3 Enterprise Resource Planning (ERP) Systems

- ERP II Systems
- Enterprise Application Integration (EAI)
  - Middleware
Core ERP Modules

• Financial Management
• Operations Management
• Human Resource Management
Extended ERP Modules

- Customer Relationship Management (CRM)
- Supply Chain Management (SCM)
- Business Intelligence (BI)
- E-Business
FIGURE 10.3 ERP II system.
Major Benefits of ERP Systems

- Organizational flexibility and agility
Major Benefits of ERP Systems

- Organizational flexibility and agility
- Decision support
Major Benefits of ERP Systems

- Organizational flexibility and agility
- Decision support
- Quality and efficiency
Major Limitations of ERP Implementations

• Since ERP’s are based on best practices. You may have to change the software.
Major Limitations of ERP Implementations

• Since ERP’s are based on best practices. You may have to change the software.
• ERP systems can be complex, expensive, and time-consuming to implement.
Major Causes of ERP Implementation Failure

- Failure to involve affected employees in the planning and development phases and in change management processes
- Trying to do too much too fast in the conversion process
- Insufficient training in the new work tasks required by the ERP system
- The failure to perform proper data conversion and testing for the new system
Implementing ERP Systems

- Implementation Approaches
  - Vanilla approach
Implementing ERP Systems

- Implementation Approaches
  - Vanilla approach
  - Custom approach
Implementing ERP Systems

- Implementation Approaches
  - Vanilla approach
  - Custom approach
  - Best of breed approach
Software-as-a-Service ERP Implementation (cloud based)
Three major advantages of using a cloud-based ERP system are:

• The system can be used from any location that provides Internet access.
• Companies using cloud-based ERP avoid the initial hardware and software expenses that are typical of on-premise implementations.
• Cloud-based ERP solutions are scalable, meaning it is possible to extend ERP support to new business processes and new business partners (e.g., suppliers) by purchasing new ERP modules.
Three major disadvantages of using cloud-based ERP systems are:

• It is not clear whether cloud-based ERP systems are more secure than on-premise systems
• Companies that adopt cloud-based ERP systems sacrifice their control over a strategic IT resource
• Lack of control over IT resources when the ERP system experiences problems
10.4 ERP Support for Business Processes
10.4 ERP Support for Business Processes

- The Procurement, Fulfillment, and Production Processes
  - The Procurement Process
FIGURE 10.4 Departments and documents flow in the procurement process.

- **Departments**
  - **Warehouse**
    - Purchase requisition
  - **Purchasing**
    - Purchase order
  - **Warehouse**
    - Packing list
    - Goods receipt document
  - **Accounting**
    - Invoice (received)
    - Payment (sent)
10.4 ERP Support for Business Processes

• The Procurement, Fulfillment, and Production Processes
  – The Procurement Process
  – The Fulfillment Process (order-to-cash)
FIGURE 10.5 Departments and documents flow in the fulfillment process.
10.4 ERP Support for Business Processes

- The Procurement, Fulfillment, and Production Processes
  - The Procurement Process
  - The Fulfillment Process (order-to-cash)
  - The Production Process (make-to-stock and make-to-order)
10.4 ERP Support for Business Processes

- The Procurement, Fulfillment, and Production Processes
  - The Procurement Process
  - The Fulfillment Process
  - The Production Process

- Interorganizational Processes: Enterprise Resource Planning Software can allow other companies to communicate with it through Supply Chain Management and Customer Relationship Management
FIGURE 10.6 Departments and documents flow in the production process.

Documents involved:
- Warehouse: Planned order
- Production: Production order, Material withdrawal slip
- Warehouse: Material withdrawal slip
- Production: Production order
- Warehouse: Goods receipt
FIGURE 10.7 Integrated processes with ERP systems.
10.5 Reports
10.5 Reports

- Routine Reports
10.5 Reports

- Routine Reports
- Ad-hoc (on-demand) Reports
10.5 Reports

- Routine Reports
- Ad-hoc (on-demand) Reports
  - Drill-down reports
10.5 Reports

- **Routine Reports**
- **Ad-hoc (on-demand) Reports**
  - Drill-down reports
  - Key-indicator reports
10.5 Reports

- Routine Reports
- Ad-hoc (on-demand) Reports
  - Drill-down reports
  - Key-indicator reports
  - Comparative reports
10.5 Reports

- **Routine Reports**
- **Ad-hoc (on-demand) Reports**
  - Drill-down reports
  - Key-indicator reports
  - Comparative reports
- **Exception Reports**
Chapter 10

Organizational Information Systems

The End