Chapter 3

Management Information Systems
TOPICS

- Management Information Systems (MIS)
- Sources of Management Information
- Outputs of a Management Information System
- Characteristics of a Management Information System
- Financial MIS
- Manufacturing MIS
- Marketing MIS
- Human Resource MIS
Management Information Systems (MIS)

Management Information Systems (MIS) is an organized method of providing past, present, and projection information relating to internal operations and external intelligence. It supports the planning, control, and operational functions of an organization by furnishing uniform in the proper timeframe to assist the decision-making process (by Walter I Kennevan).

In other words…..

“MIS is using technology to create business value.”
Management Information Systems (MIS)
Sources of Management Information System
Corporate databases of internal data

Databases of external data

Corporate intranet

Decision support systems

Executive support systems

Expert systems

Employees

Business transactions

Transaction processing systems

Databases of valid transactions

Management information systems

Application databases

Operational databases

Input and error list

Scheduled reports

Drill-down reports

Exception reports

Demand reports

Key-indicator reports

Application databases

Transaction processing systems

Business transactions
Outputs of a Management Information System

- **Scheduled reports**
  - Produced periodically, or on a schedule (daily, weekly, monthly)

- **Key-indicator report**
  - Summarizes the previous day’s critical activities
  - Typically available at the beginning of each day

- **Demand report**
  - Gives certain information at a manager’s request

- **Exception report**
  - Automatically produced when a situation is unusual or requires management action

- **Drill Down Report**
### Scheduled Report Example

**Daily Sales Detail Report**

<table>
<thead>
<tr>
<th>Order #</th>
<th>Customer ID</th>
<th>Sales Rep ID</th>
<th>Ship Date</th>
<th>Quantity</th>
<th>Item #</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>P12453</td>
<td>C89321</td>
<td>CAR</td>
<td>08/12/96</td>
<td>144</td>
<td>P1234</td>
<td>$3,214</td>
</tr>
<tr>
<td>P12453</td>
<td>C89321</td>
<td>CAR</td>
<td>08/12/96</td>
<td>288</td>
<td>P3214</td>
<td>$5,660</td>
</tr>
<tr>
<td>P12453</td>
<td>C03214</td>
<td>GWA</td>
<td>08/13/96</td>
<td>12</td>
<td>P4902</td>
<td>$1,224</td>
</tr>
<tr>
<td>P12455</td>
<td>C52313</td>
<td>SAK</td>
<td>08/12/96</td>
<td>24</td>
<td>P4012</td>
<td>$2,448</td>
</tr>
<tr>
<td>P12456</td>
<td>C34123</td>
<td>JMW</td>
<td>08/13/96</td>
<td>144</td>
<td>P3214</td>
<td>$720</td>
</tr>
</tbody>
</table>
# Key Indicator Report Example

<table>
<thead>
<tr>
<th>Daily Sales Key Indicator Report</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Total Orders Month to Date</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Forecasted Sales for the Month</strong></td>
</tr>
</tbody>
</table>
### Demand Report Example

**Daily Sales by Sales Rep Summary Report**

Prepared: 08/10/xx

<table>
<thead>
<tr>
<th>Sales Rep ID</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR</td>
<td>$42,345</td>
</tr>
<tr>
<td>GWA</td>
<td>$38,950</td>
</tr>
<tr>
<td>SAK</td>
<td>$22,100</td>
</tr>
<tr>
<td>JWN</td>
<td>$12,350</td>
</tr>
</tbody>
</table>
## Exception Report Example

### Daily Sales Exception Report – ORDERS OVER $10,000

**Prepared: 08/10/xx**

<table>
<thead>
<tr>
<th>Order #</th>
<th>Customer ID</th>
<th>Sales Rep ID</th>
<th>Ship Date</th>
<th>Quantity</th>
<th>Item #</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>P12453</td>
<td>C89321</td>
<td>CAR</td>
<td>08/12/96</td>
<td>144</td>
<td>P1234</td>
<td>$13,214</td>
</tr>
<tr>
<td>P12453</td>
<td>C89321</td>
<td>CAR</td>
<td>08/12/96</td>
<td>288</td>
<td>P3214</td>
<td>$15,660</td>
</tr>
<tr>
<td>P12453</td>
<td>C03214</td>
<td>GWA</td>
<td>08/13/96</td>
<td>12</td>
<td>P4902</td>
<td>$11,224</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>
**Outputs of a Management Information System**

**Earnings by Quarter (Millions)**

<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th>Forecast</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2\textsuperscript{ND} Qtr 1999</strong></td>
<td>$12.6</td>
<td>$11.8</td>
<td>6.8%</td>
</tr>
<tr>
<td><strong>1\textsuperscript{st} Qtr 1999</strong></td>
<td>$10.8</td>
<td>$10.7</td>
<td>0.9%</td>
</tr>
<tr>
<td><strong>4\textsuperscript{th} Qtr 1998</strong></td>
<td>$14.3</td>
<td>$14.5</td>
<td>-1.4%</td>
</tr>
<tr>
<td><strong>3\textsuperscript{rd} Qtr 1998</strong></td>
<td>$12.8</td>
<td>$13.3</td>
<td>-3.0%</td>
</tr>
</tbody>
</table>

**Drill Down Reports**
Provide detailed data about a situation.
Characteristics of a Management Information System

- Produces reports in a fixed and standardized format.
- Produces reports in hard copy (Hard-copy) or in electronic files (soft-copy).
- Uses data stored within the computer system and can incorporate data from external systems.
- Users can create reports in the desired format. 
Characteristics of a Management Information System

- Supports management in carrying out various tasks to achieve the goals of the organization.
- Managers are able to compare the results obtained with the goals set and determine problems and solutions.
- Information that occurs in the organization must be created as a system of the organization's MIS.
- Staff in the organization can search and use it according to their personal computer.
- Data that is used in the organization is gathered and used digitally according to the work standards in the MIS of the organization in the intranet.
- Staff in the organization can use the system to search and use it according to their personal computer.
Functional Aspects

- MIS is an integrated collection of functional information systems, each supporting particular functional areas.
An Organization’s MIS

- Financial MIS
- Accounting MIS
- Marketing MIS
- Human Resources MIS

Databases of valid transactions

Databases of external data

Business transactions

Transaction processing systems

Internet

Extranet

Drill down reports
- Exception reports
- Demand reports
- Key-indicator reports
- Scheduled reports

Etc.
Financial MIS

- Provides financial information to all financial managers within an organization.
Transaction processing systems

Databases of valid transactions for each TPS

Financial MIS

Financial DSS

Databases of internal data

Databases of external data

Financial statements

Uses and management of funds

Financial statistics for control

Operational databases

Financial applications databases

Internet or Extranet
Inputs to the Financial Information System

- **Strategic plan or corporate policies**
  - Contains major financial objectives and often projects financial needs.

- **Transaction processing system (TPS)**
  - Important financial information collected from almost every TPS - payroll, inventory control, order processing, accounts payable, accounts receivable, general ledger.

- **External sources**
  - Annual reports and financial statements of competitors and general news items.
Financial MIS Subsystems and Outputs

- **Financial subsystems**
  - Profit/loss and cost systems
  - Auditing
    - Internal auditing
    - External auditing
  - Uses and management of funds
Manufacturing MIS
Quality control reports
Process control reports
JIT reports
MRP reports
Production schedule
CAD output

Manufacturing DSS
Manufacturing applications databases
Manufacturing ES
Inputs to the Manufacturing MIS

- Strategic plan or corporate policies.
- The TPS:
  - Order processing
  - Inventory data
  - Receiving and inspecting data
  - Personnel data
  - Production process
- External sources
Manufacturing MIS Subsystems and Outputs

- Design and engineering
- Master production scheduling
- Inventory control
- Manufacturing resource planning
- Just-in-time inventory and manufacturing
- Process control
- Computer-integrated manufacturing (CIM)
- Quality control and testing
Marketing MIS

- Supports managerial activities in product development, distribution, pricing decisions, and promotional effectiveness
Business transactions → Transaction processing systems → Databases of valid transactions for each TPS → Marketing MIS → Manufacturing DSS

Operational databases → Databases of internal data

Marketing applications databases:
- Sales by customer
- Sales by salesperson
- Sales by product
- Pricing report
- Total service calls
- Customer satisfaction

Manufacturing ES → Databases of external data
Inputs to Marketing MIS

- Strategic plan and corporate policies
- The TPS
- External sources:
  - The competition
  - The market
Marketing MIS Subsystems and Outputs

- Marketing research
- Product development
- Promotion and advertising
- Product pricing
Human Resource MIS

- Concerned with all of the activities related to employees and potential employees of the organization
Benefit reports
Salary surveys
Scheduling reports
Training test scores
Job applicant profiles
Needs and planning reports

Manufacturing DSS

Human resource applications databases

Manufacturing ES

Human Resource MIS

Databases of external data
Databases of internal data
Databases of valid transactions for each TPS

Operational databases

Transaction processing systems

Business transactions
Inputs to the Human Resource MIS

- Strategic plan or corporate policies
- The TPS:
  - Payroll data
  - Order processing data
  - Personnel data
- External sources
Human Resource MIS Subsystems and Outputs

- Human resource planning
- Personnel selection and recruiting
- Training and skills inventory
- Scheduling and job placement
- Wage and salary administration
Other MISs

- **Accounting MISs**
  - Provides aggregated information on accounts payable, accounts receivable, payroll, and other applications.

- **Geographic information systems (GISs)**
  - Enables managers to pair pre-drawn maps or map outlines with tabular data to describe aspects of a particular geographic region.
Summary & Question