# Enhancing Decision Making

- **Describe different types of decisions and the decision-making process.**

- **Assess how information systems support the activities of managers and management decision making.**

- **Demonstrate how decision-support systems (DSS) differ from MIS and how they provide value to the business.**
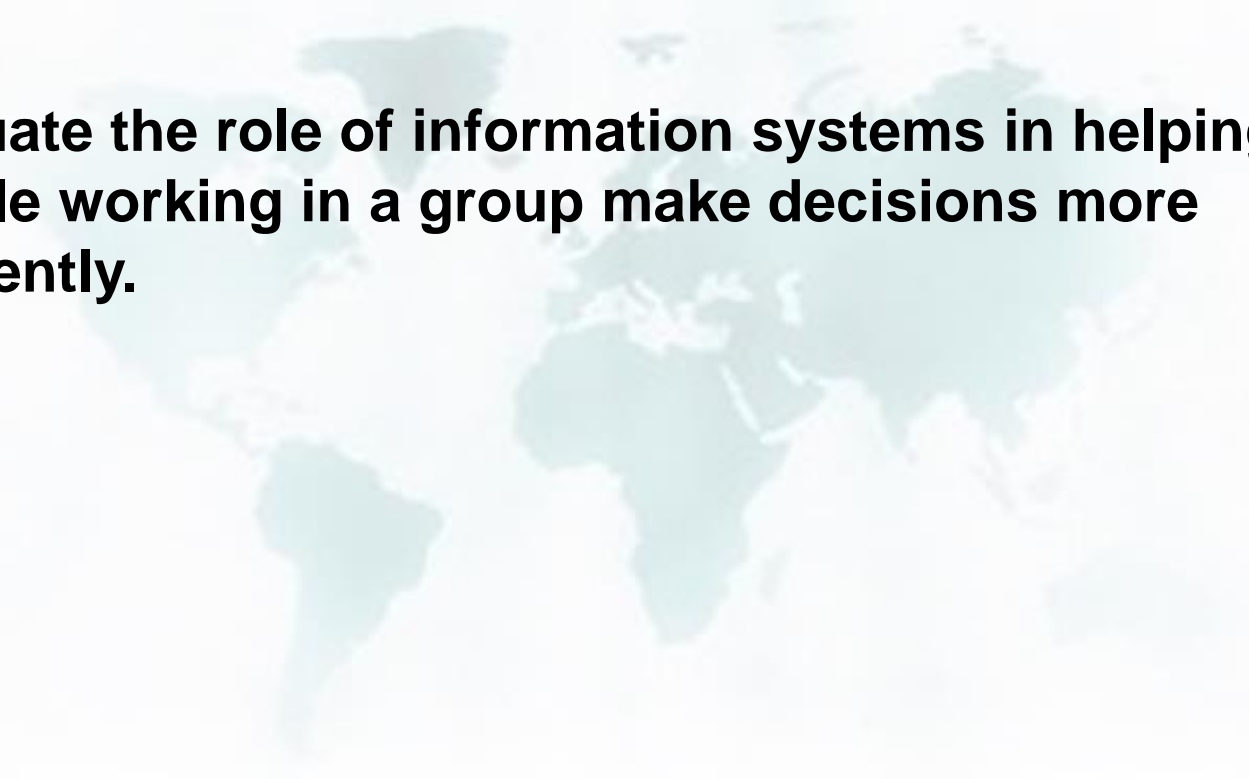
- **Demonstrate how executive support systems (ESS) help senior managers make better decisions.**

- **Evaluate the role of information systems in helping people working in a group make decisions more efficiently.**

**Example of Supply Chain**

- **Problem:** **Cost pressures, complex supply chain.**

- Solutions: **Deploy modeling and optimization software** to maximize return on investment and predict the most successful supply chain.

- **Modeling software fueled with data from Oracle data warehouse** improved efficiency and reduced costs.

- Demonstrates IT's role in restructuring a supply chain.

- Illustrates digital technology improving decision making through information systems.

- **Senior managers:**

  - Make many unstructured decisions

  - E.g. Should we enter a new market?

- **Middle managers:**

  - Make more structured decisions but these may include unstructured components

  - E.g. Why is order fulfillment report showing decline in Minneapolis?

- **Operational managers, rank and file employees**

  - Make more structured decisions

  - E.g. Does customer meet criteria for credit?

- **Information systems can only assist in some of the roles played by managers**

- **Classical model of management**

  - Five functions of managers

    - Planning, organizing, coordinating, deciding, and controlling

- **More contemporary behavioral models**

  - Actual behavior of managers appears to be less systematic, more informal, less reflective, more reactive, and less well organized than in classical model

  - Mintzberg's behavioral model of managers defines 10 managerial roles falling into 3 categories

- **Three main reasons why investments in information technology do not always produce positive results**

  1. **Information quality**

     - High-quality decisions require high-quality information

  2. **Management filters**

     - Managers have selective attention and have variety of biases that reject information that does not conform to prior conceptions

  3. **Organizational culture**

     - Strong forces within organizations resist making decisions calling for major change

- **Management information systems (MIS)**

  - Help managers monitor and control business by providing information on firm's performance and address structured problems

  - Typically produce fixed, regularly scheduled reports based on data from TPS

    - E.g. **exception reports**: Highlighting exceptional conditions, such as sales quotas below anticipated level

  - E.g. **California Pizza Kitchen MIS**

    - For each restaurant, compares amount of ingredients used per ordered menu item to predefined portion measurements and identifies restaurants with out-of-line portions

- **Model:**

  - Abstract representation that illustrates components or relationships of phenomenon; may be physical, mathematical, or verbal model

  - **Statistical models**

  - **Optimization models**

  - **Forecasting models**

  - **Sensitivity analysis models**

# Sensitivity Analysis

| Total fixed costs | 19000 |
|---|---|
| Variable cost per unit | 3 |
| Average sales price | 17 |
| Contribution margin | 14 |
| Break-even point | 1357 |

| | | | Variable Cost per Unit | | | |
|---|---|---|---|---|---|---|
| Sales | 1357 | 2 | 3 | 4 | 5 | 6 |
| Price | 14 | 1583 | 1727 | 1900 | 2111 | 2375 |
| | 15 | 1462 | 1583 | 1727 | 1900 | 2111 |
| | 16 | 1357 | 1462 | 1583 | 1727 | 1900 |
| | 17 | 1267 | 1357 | 1462 | 1583 | 1727 |
| | 18 | 1188 | 1267 | 1357 | 1462 | 1583 |

This table displays the results of a sensitivity analysis of the effect of changing the sales price of a necktie and the cost per unit on the product's break-even point. It answers the question, "What happens to the break-even point if the sales price and the cost to make each unit increase or decrease?"

## Figure 12-4

- **Using spreadsheet pivot tables to support decision making**

  - Online Management Training Inc. (OMT Inc.), sells online management training books and streaming online videos to corporations and individuals

  - Records of online transactions can be analyzed using Excel to help business decisions, e.g.:

    - Where do most customers come from?

    - Where are average purchases higher?

    - What time of day do people buy?

    - What kinds of ads work best?

# Sample List of Transactions for Online Management Training Inc.



This list shows a portion of the order transactions for Online Management Training Inc. (OMT Inc.) on October 28, 2006.

**Figure 12-5**

- **Microsoft Excel spreadsheet software**

  - **Pivot table**:

    - Categorizes and summarizes data very quickly

    - Displays two or more dimensions of data in a convenient format

  - **PivotTable Wizard has three elements**

    - Empty PivotTable:

      - With labels for rows, columns, and data areas

    - PivotTable Field List

      - Lists fields in list or database

    - PivotTable Toolbar