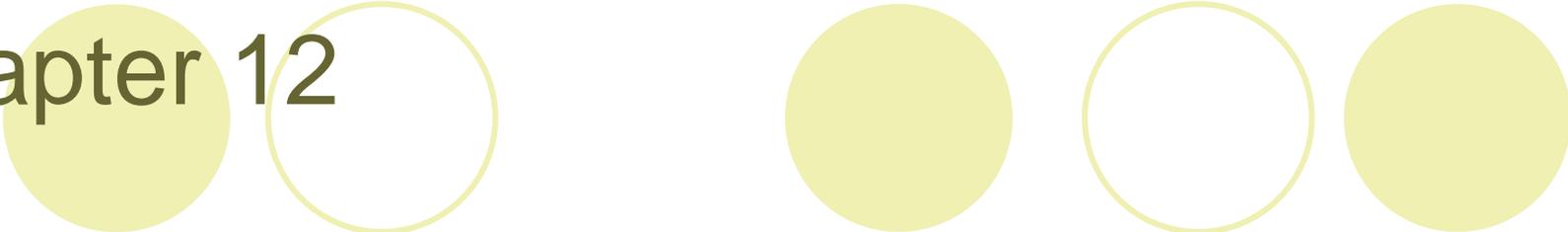


# Chapter 12



# Management Decision Support and Intelligent Systems

**Information Technology For Management 6<sup>th</sup> Edition**

Turban, Leidner, McLean, Wetherbe

Lecture Slides by L. Beaubien, Providence College

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Chapter 12



# Management

**Management** is a process by which organizational goals (*outputs*) are achieved through the use of corporate resources (*inputs*). These organizational decisions (*processes*) are typically made by managers.

- A manager's role can be categorized into:
  - **Interpersonal** - figurehead, leader, liaison
  - **Informational** - monitor, disseminator, spokesperson
  - **Decisional** - entrepreneur, problem solver, resource coordinator, and negotiator

**Information systems support all three roles especially decisional.**

# Managers and Decision Making

A **decision** refers to a choice made between alternatives. Decision making in organizations can be classified into two broad categories: **problem solving** and **opportunity exploitation**.

- Why Managers Need the Support of Information Technology. It is very difficult to make good decisions without valid, timely and relevant information.
  - Number of **alternatives** to be considered is increasing
  - Many decisions are made under **time** pressure.
  - Due to **uncertainty** in the decision environment, it is frequently necessary to conduct a sophisticated analysis.
  - It is often necessary to rapidly access **remote** information.

**Can we make better decisions?**

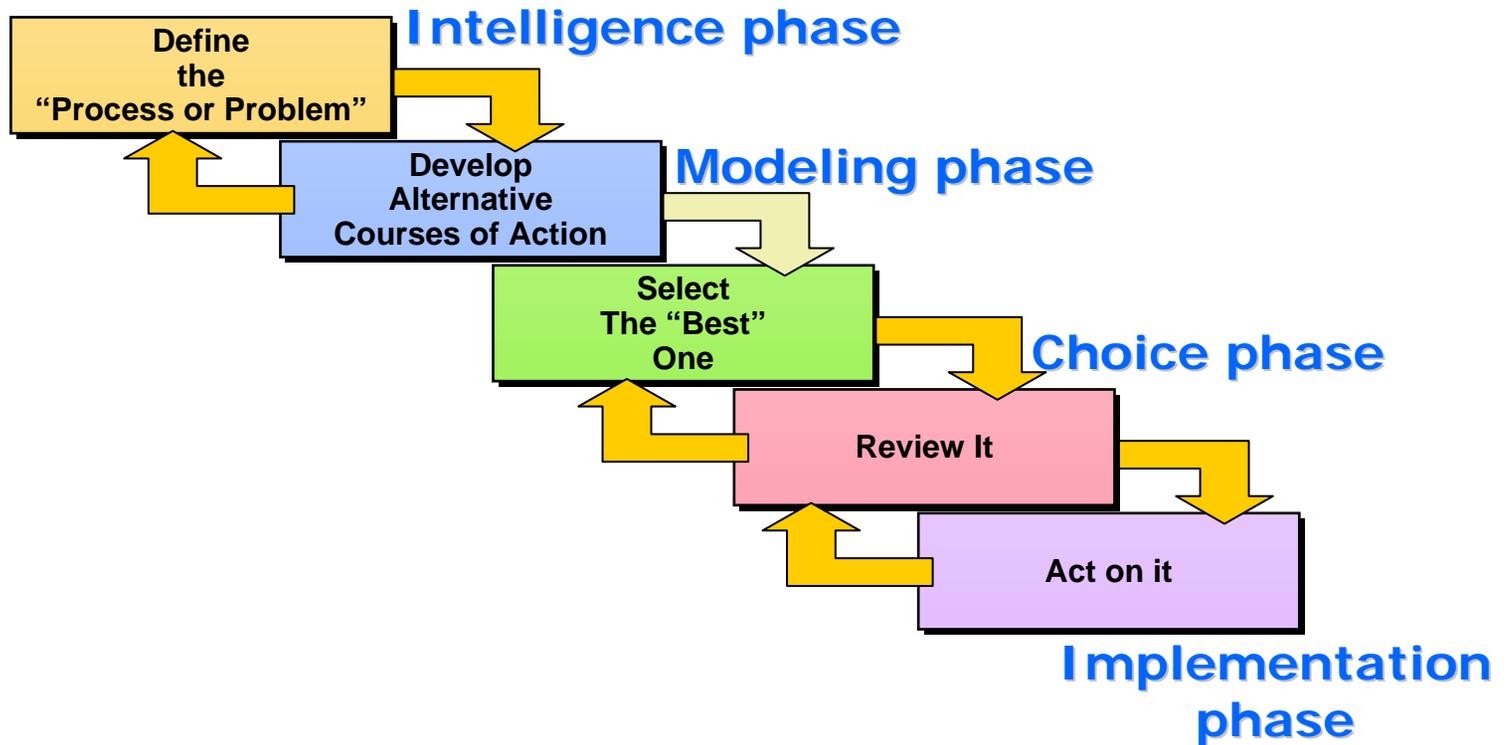
# Management Support Systems

Discovery, communication and collaboration tools provide indirect support to decision making, however there are several other information technologies used to directly support decision making.

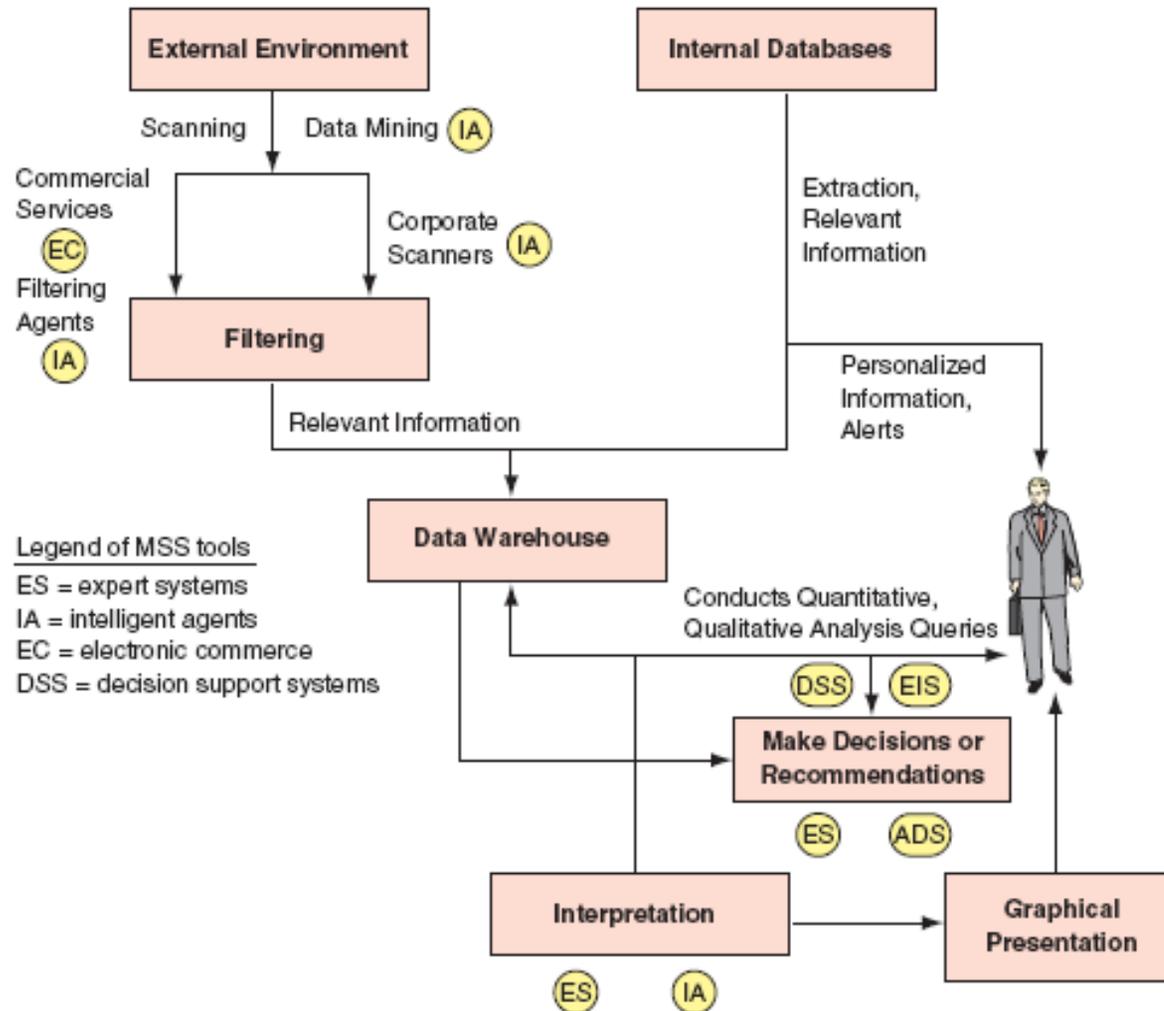
- **Decision Support Systems (DSS)** provide support primarily to analytical, quantitative types of decisions.
- **Executive (Enterprise) Support Systems (ESS)** support the informational roles of executives.
- **Group Decision Support Systems** supports managers and staff working in groups.
- **Intelligent Systems**

# Decision Process

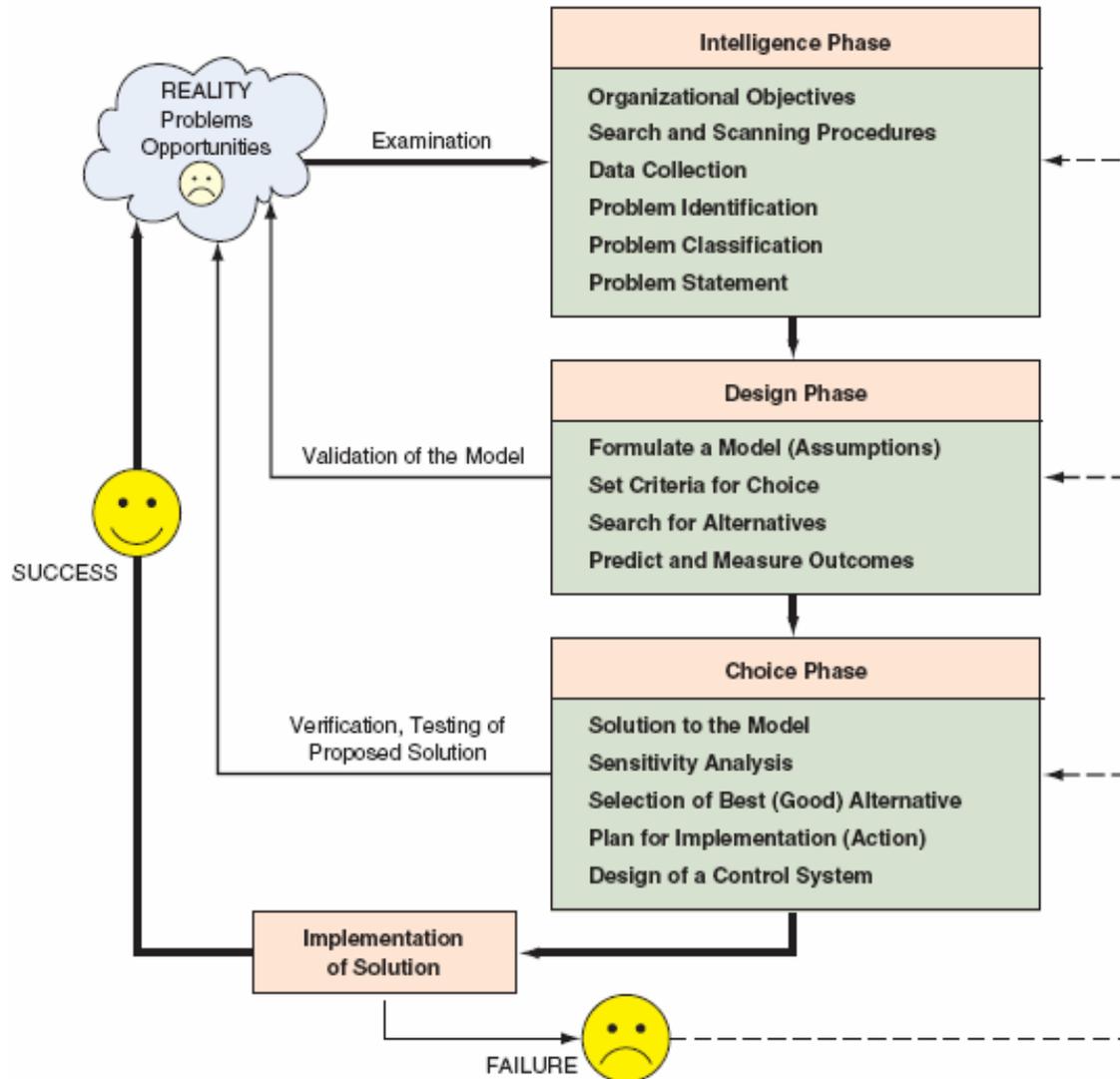
Decision makers goes through a fairly systematic process.



# Decision Process



# Decision Complexity



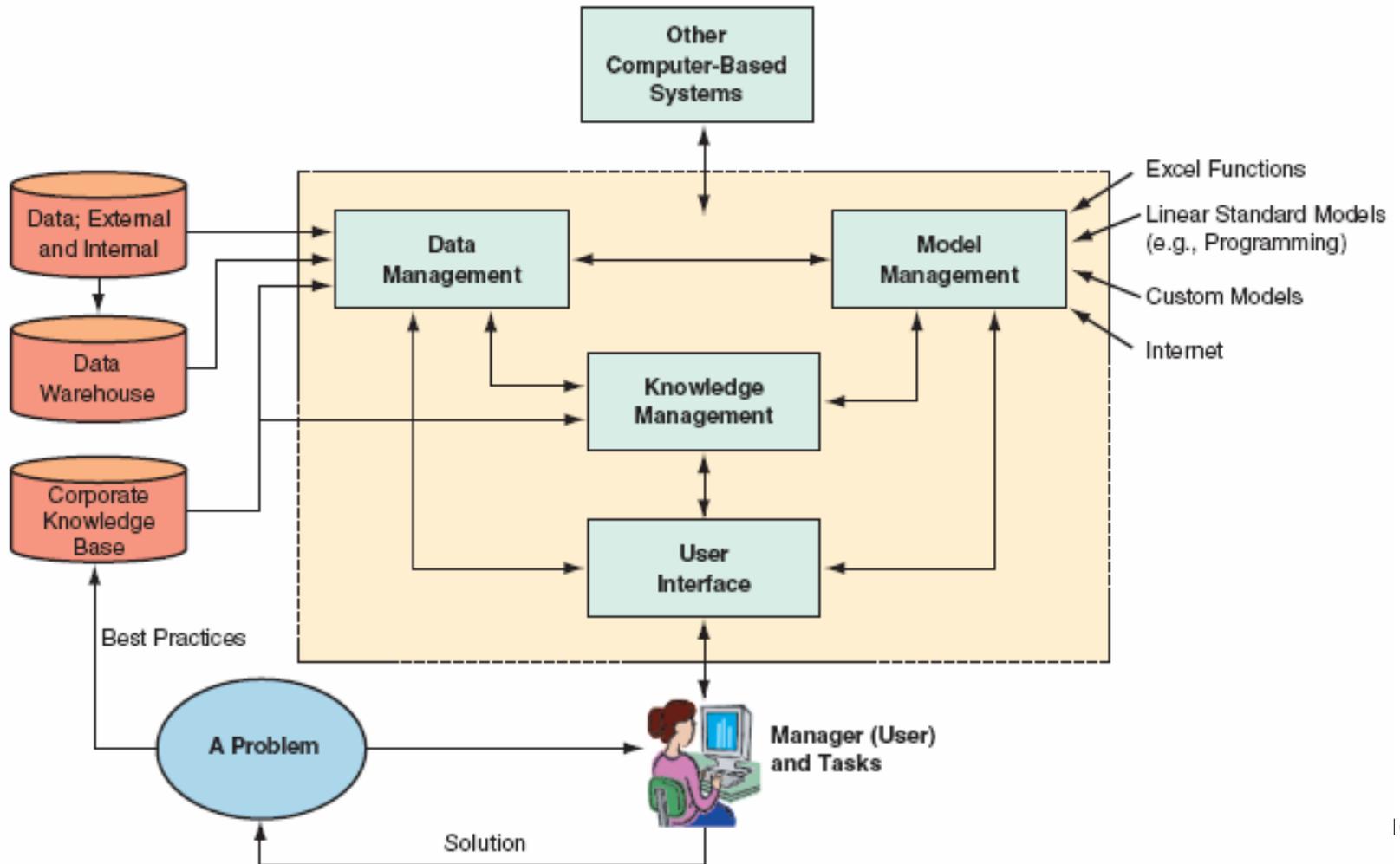
# Characteristics and Capabilities of DSSs

- **Sensitivity analysis** is the study of the impact that changes in one (or more) parts of a model have on other parts.
- **What-if analysis** is the study of the impact of a change in the assumptions (input data) on the proposed solution.
- **Goal-seeking analysis** is the study that attempts to find the value of the inputs necessary to achieve a desired level of output.

# Structure and Components of DSSs

- **Data management subsystem** contain all the data that flow from several sources.
- **Model management subsystem** contains completed models and the building blocks necessary to develop DSS applications.
- **User interface** covers all aspects of the communications between a user and the DSS.
- **Users** are the persons faced with the problem or decision that the DSS is designed to support.
- **Knowledge-based subsystems** provide the required expertise for solving some aspects of the problem.

# DSS Process



# Organizational Decision Support System (ODSS)

- **Organizational Decision Support System (ODSS)** is a DSS that focuses on an *organizational* task or activity involving a *sequence* of operations and decision makers and provides the following:
  - It affects several organizational units or corporate problems;
  - It cuts across organizational functions or hierarchical layers;
  - It involves computer-based and (usually) communications technologies.

# Executive Information (Support) Systems

- **Executive information system (EIS)** also known as an **executive support system (ESS)**, is a computer-based technology designed specifically for the information needs of top executives and provides for:
  - Rapid access to timely information;
  - Direct access to management reports;
  - Very user friendly and supported by graphics.
  - **Exception reporting** – reporting of only the results that deviate from a set of standards.
  - **Drill down reporting** – investigating information in increasing detail.
  - Easily connected within online information services and e-mail.
  - Include analysis support, communications, office automation and intelligence support.