

Systems Analysis and Design

Presented by: Professor
Issam Moghrabi

APPLICATION DESIGN WORKSHOP

**MARCH 18-22, 2012
DAY 1 – SET 1**



Systems Analysis and Design

Overview

- ◆ **Systems analysis** – process of understanding in detail what a system should accomplish
- ◆ **Systems design** – process of specifying in detail how components of an information system should be physically implemented
- ◆ **Systems analyst** – uses analysis and design techniques to solve business problems using information technology

Systems Analysis and Design

The Analyst as a Business Problem Solver

- ◆ Has computer technology knowledge and programming expertise
- ◆ Understands business problems
- ◆ Uses logical methods for solving problems
- ◆ Has fundamental curiosity
- ◆ Wants to make things better
- ◆ Is more of a business problem solver than a technical programmer

Systems Analysis and Design

Analyst's Approach to Problem Solving

Research and understand the problem

Verify benefits of solving problem outweigh the costs

Define the requirements for solving the problem

Develop a set of possible solutions (alternatives)

Decide which solution is best and recommend

Define the details of the chosen solution

Implement the solution

Monitor to ensure desired results

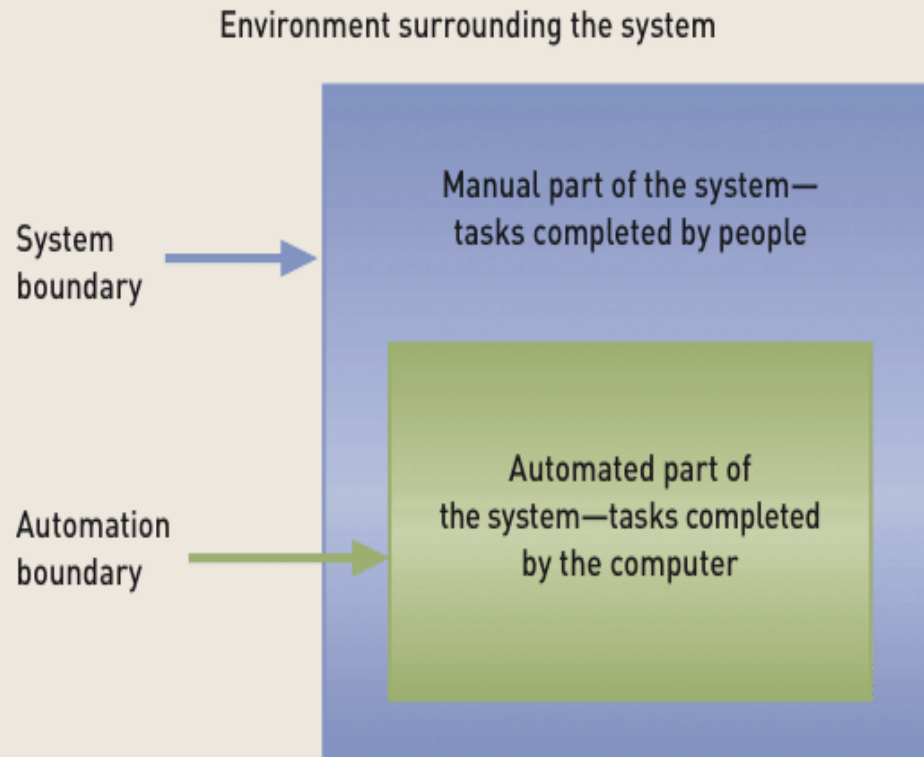
Systems Analysis and Design

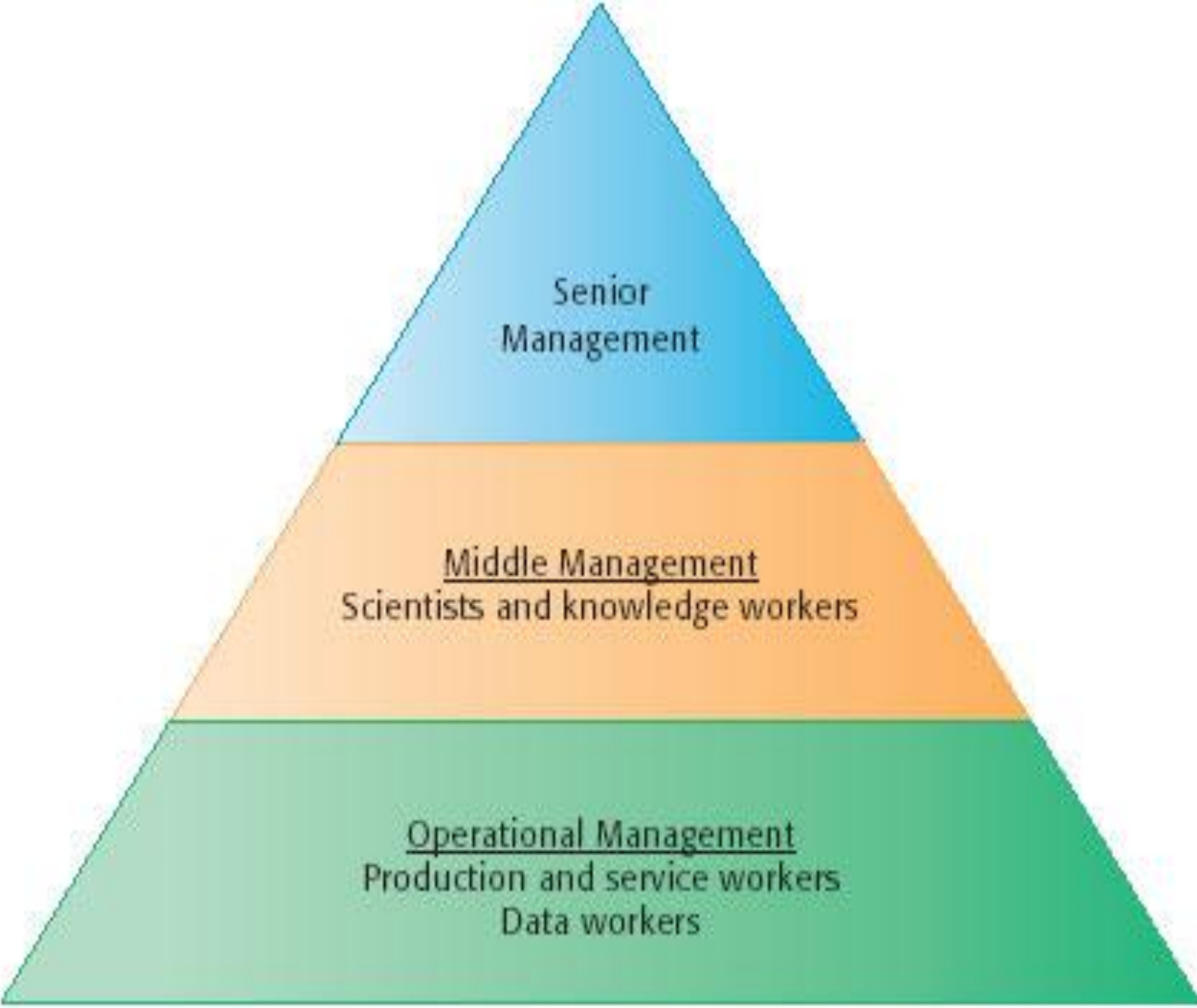
Systems That Solve Business Problems

- ◆ **System** – interrelated components functioning together to achieve an outcome
- ◆ **Information systems** – collection of interrelated components that collect, process, store, and provide as output information needed to complete tasks
- ◆ **Subsystem** – part of a larger system
- ◆ **Supersystem** – larger system that contains subsystems
- ◆ **Functional decomposition** – dividing a system into smaller subsystems and components

Systems Analysis and Design

System Boundary vs. Automation Boundary





Senior
Management

Middle Management
Scientists and knowledge workers

Operational Management
Production and service workers
Data workers

Systems Analysis and Design

Types of Information Systems

- ◆ Transaction processing systems (TPS)
 - Capture and record information about organization's transactions
- ◆ Management information systems (MIS)
 - Take information captured by TPS
 - Produce reports for planning and control
- ◆ Decision support / knowledge-based systems (DSS/KBS)
 - Explore impact of available options or decisions (what-if scenarios)
 - Automate routine decision making

Systems Analysis and Design

Types of Information Systems (continued)

◆ Enterprise applications

- Highly integrated systems that support company-wide operations and data
- Often combine aspects of TPS, MIS, DSS/KBS
- Today's fashion
- Links all IS of the enterprise under one umbrella

◆ Communication support systems

- Facilitate communication internally and with customers and suppliers

◆ Office support systems

- Help employees create and share documents

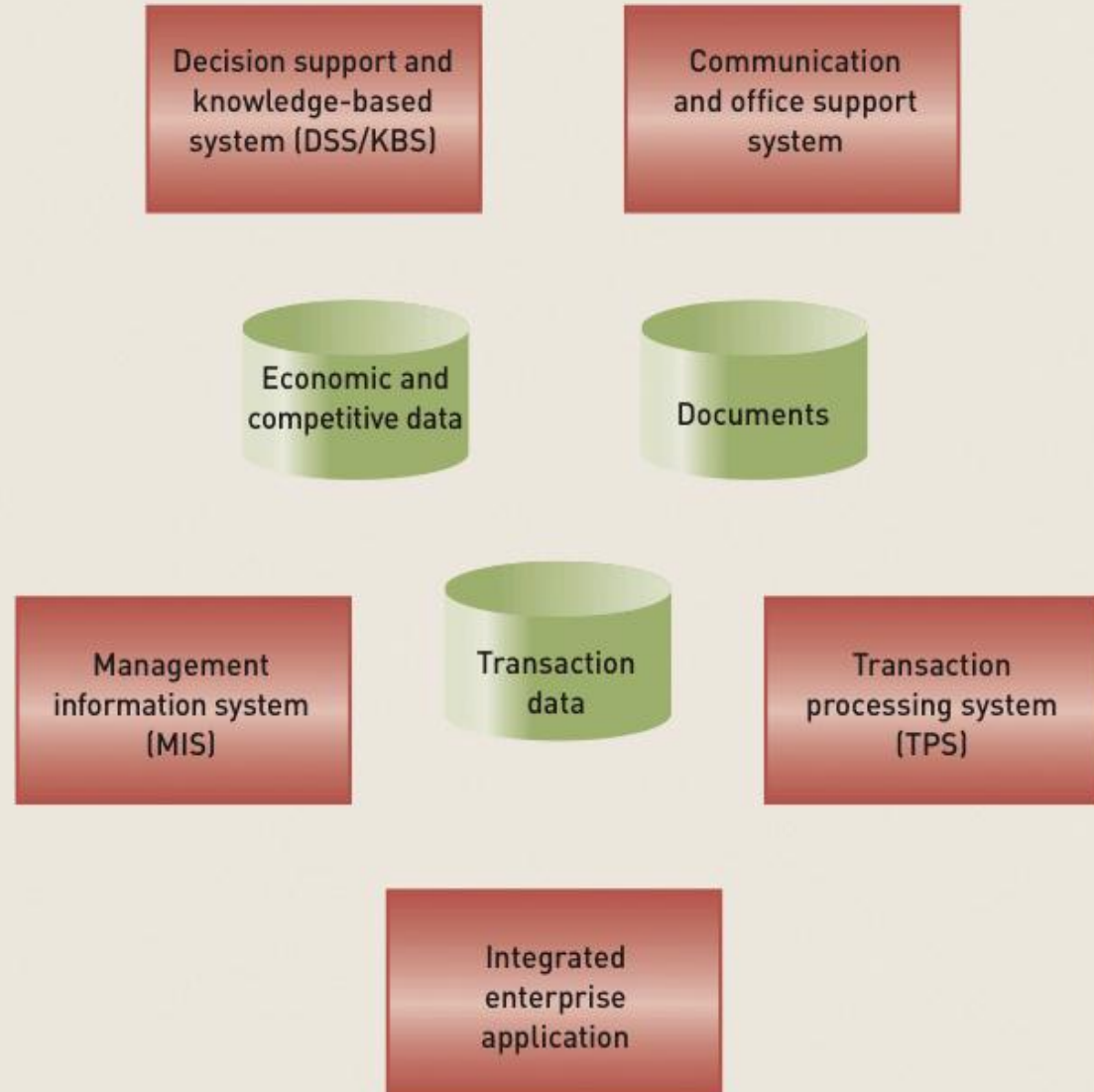
Systems Analysis and Design

How about functional classification?

- ◆ Based on the 4 basic business functions

Systems Analysis and Design

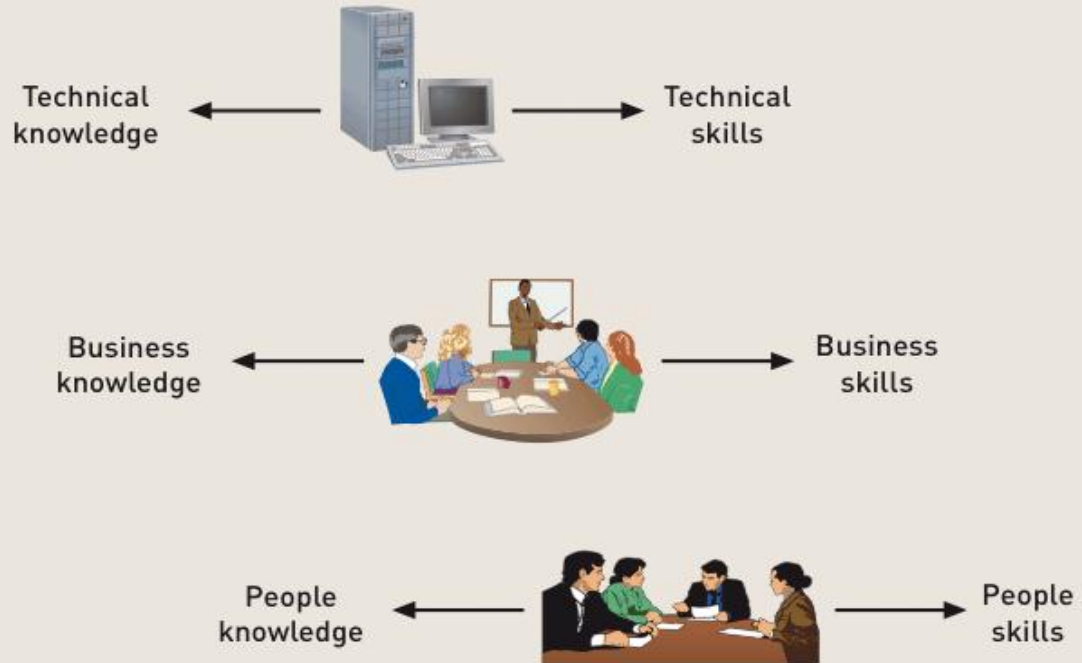
Types of Information Systems (continued)



Systems Analysis and Design

Required Skills of the Systems Analyst

Knowledge and skills required of a systems analyst



Systems Analysis and Design

SYSTEM ANALYST SHOULD

- ◆ Be communicative
- ◆ Be patient
- ◆ Be presentable
- ◆ Have business knowledge/skills
- ◆ Know system analysis principles
- ◆ Know technology
- ◆ Have ethics and credibility