

MANAGEMENT INFORMATION SYSTEMS 8/E
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Chapter 14

The Virtual Office

Objectives

- Be aware of the shift in office work from fixed locations to employees' homes and other locations, and know the impact it is having on the organization and society.
- Know the different applications that are collectively known as office automation.
- Understand the role that office automation applications play in problem solving.

Introduction

- Automation began in the factory
 - Numerical control (NC)
 - Direct numerical control (DNC)
 - CAD/CAM
 - Robotics
- Office automation (OA) began with IBM in the 1960's
 - Word processing
 - Magnetic Tape/Selectric Typewriter
- Office automation systems are characterized by communication

Office Automation (OA)

- Formal and informal electronic systems
- Communication of information
- Persons inside and outside the firm are affected
- Used by managers, professionals, secretaries, and clerical employees
 - managers and professionals are collectively known as knowledge workers

The Virtual Office

- Office work can be done at virtually any geographic location
- Must be linked by electronic communication
- Impact
 - Emerged with the appearance of low cost microprocessors
 - Teleprocessing
 - Telecommuting

Advantages of the Virtual Office

- Reduced facility costs
- Reduced equipment cost
- Formal communications network
- Reduced work stoppages
- Social contributions
 - Those unable to leave their homes can now work in new ways

Disadvantages of the Virtual Office

- Sense of not belonging
- Fear of job loss
- Low morale
- Family tension

These are disadvantages to the employee!

Recommended Virtual Office Strategy

- Provide computer resources
- Provide access to information sources
- Provide noncomputer supplies
- Arrange to forward phone calls
- Utilize conference calls
- Schedule regular meetings
- Follow a work routine

Virtual Organization

- Extends idea of a virtual office to an entire organization
- No ties to physical location
- Three I Economy
 - Information
 - Ideas
 - Intelligence

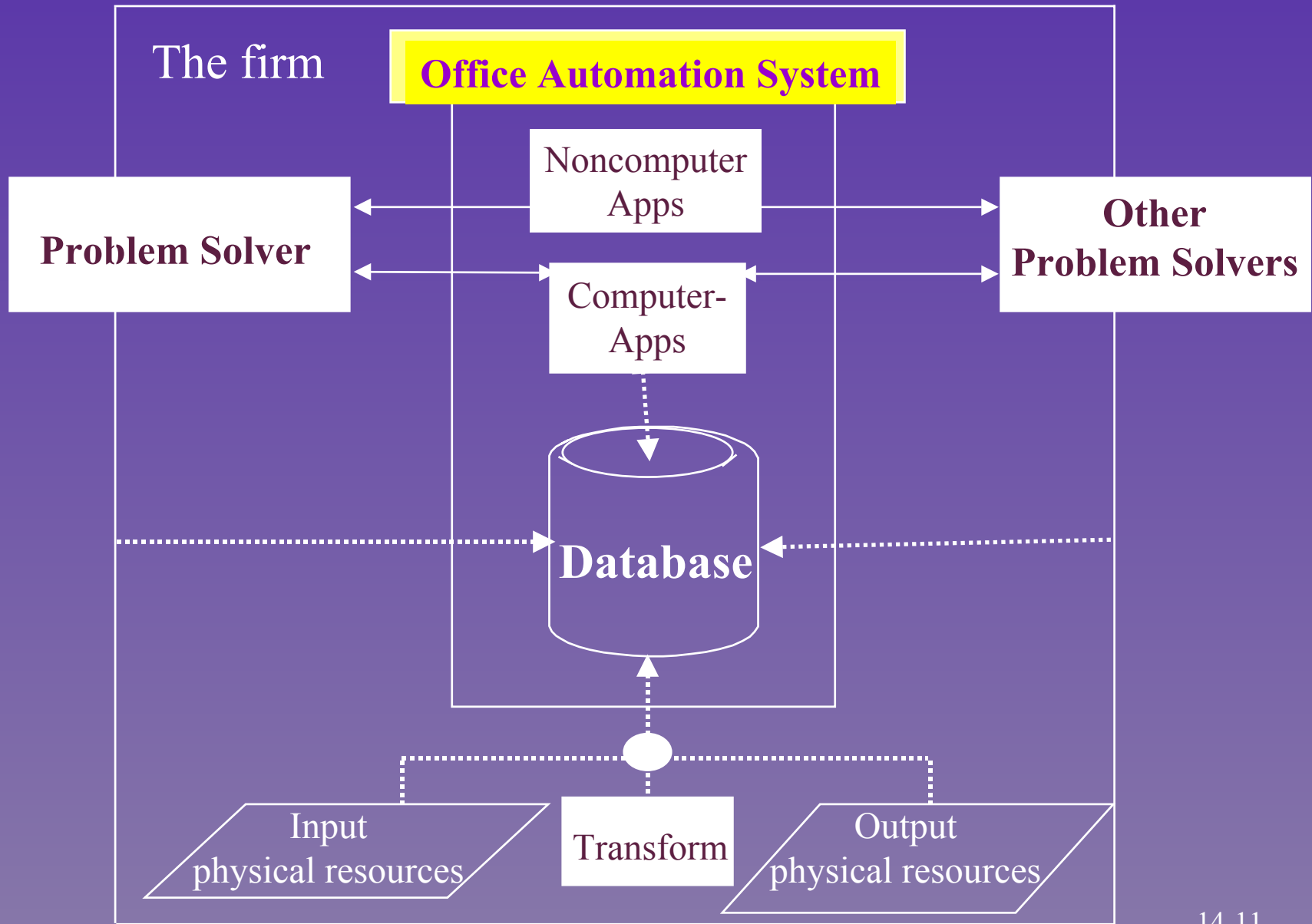
OA Model

- Information and communication
 - No data
- Computer and noncomputer applications
- "Other problem solvers"
 - Internal
 - Environmental

An OA Model

Environment

Communications  Information 



Environment

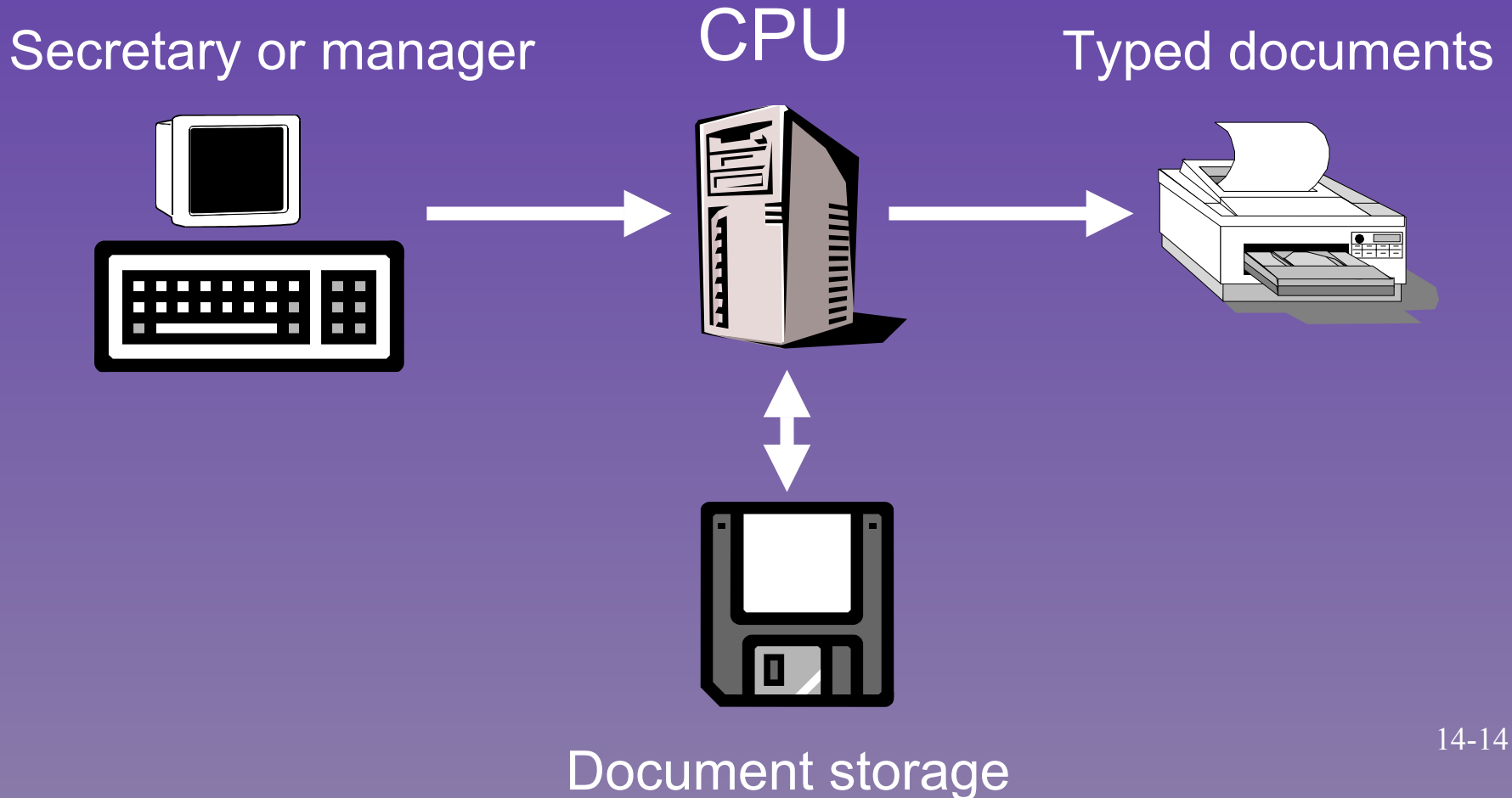
Office Automation (OA) Applications

- Word processing
- Electronic and voice mail
- Computer calendaring
- Audio conferencing
- Video conferencing
- Computer conferencing
- FAX
- Videotex
- Imaging
- Desktop publishing

Word Processing

- Use of a computer to perform automatically many of the tasks necessary to prepare typed or printed documents
- Contribution to managers is the preparation of more effective communications

A Word Processing System



Electronic Mail (E-mail)

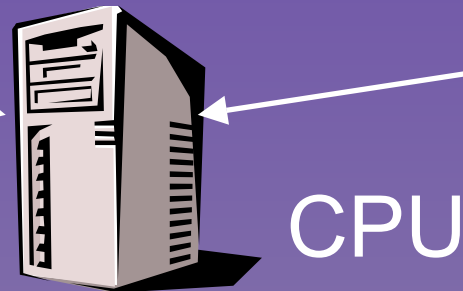
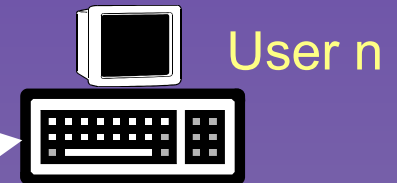
- Use of a computer network that allows users to send, store and retrieve messages using terminals and storage devices
- Good when two-way conversation is not needed
- Easy asynchronous communication
- Eliminates phone tag

An Electronic Mail System

Mail display and entry

Mail display and entry

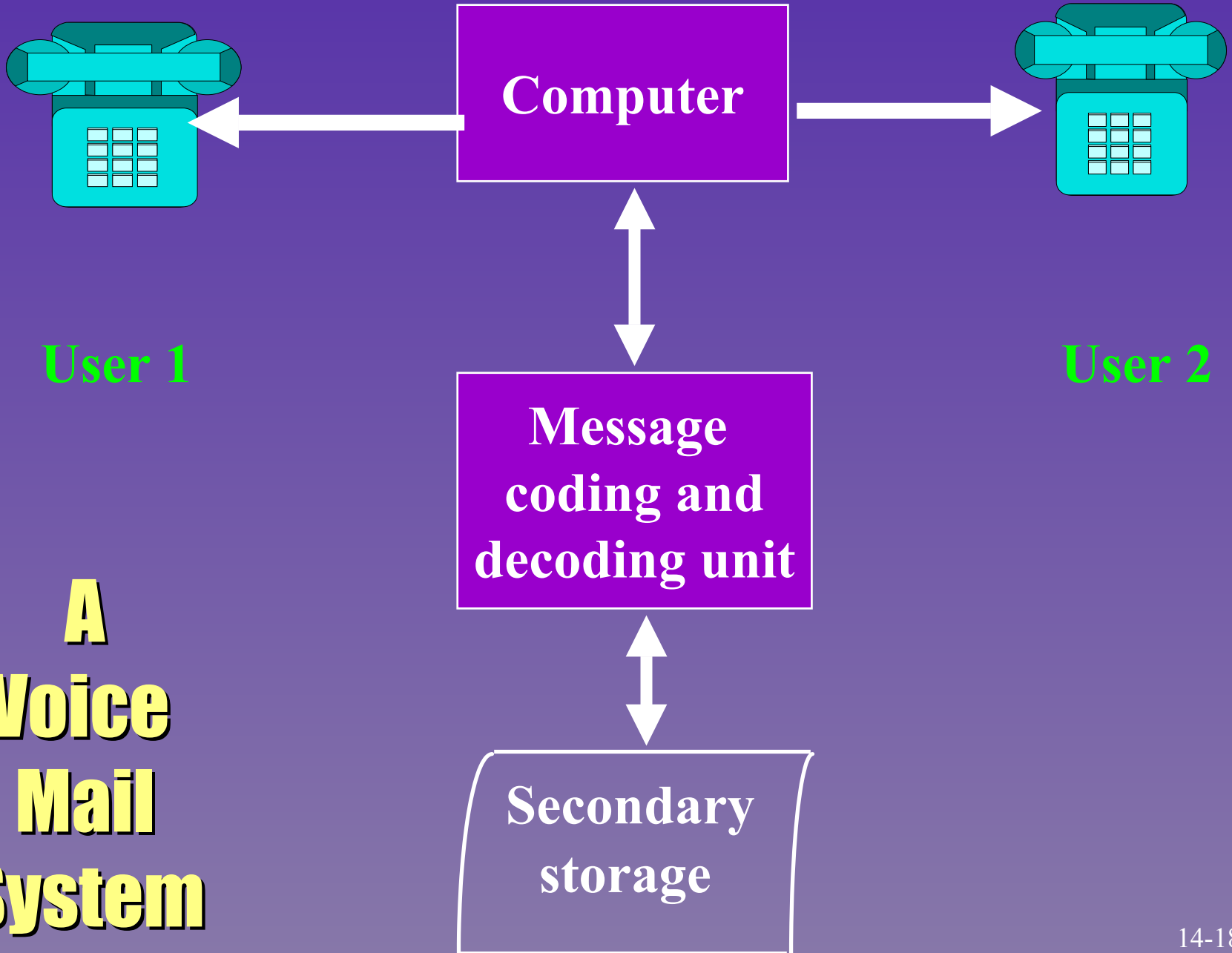
Mail display and entry



Voice Mail

- Like e-mail except messages are sent and received over telephone systems in audio form
- Requires computers with an ability to store audio messages digitally and convert them back upon retrieval
- Managers do not have to type
- Less equipment and infrastructure than e-mail

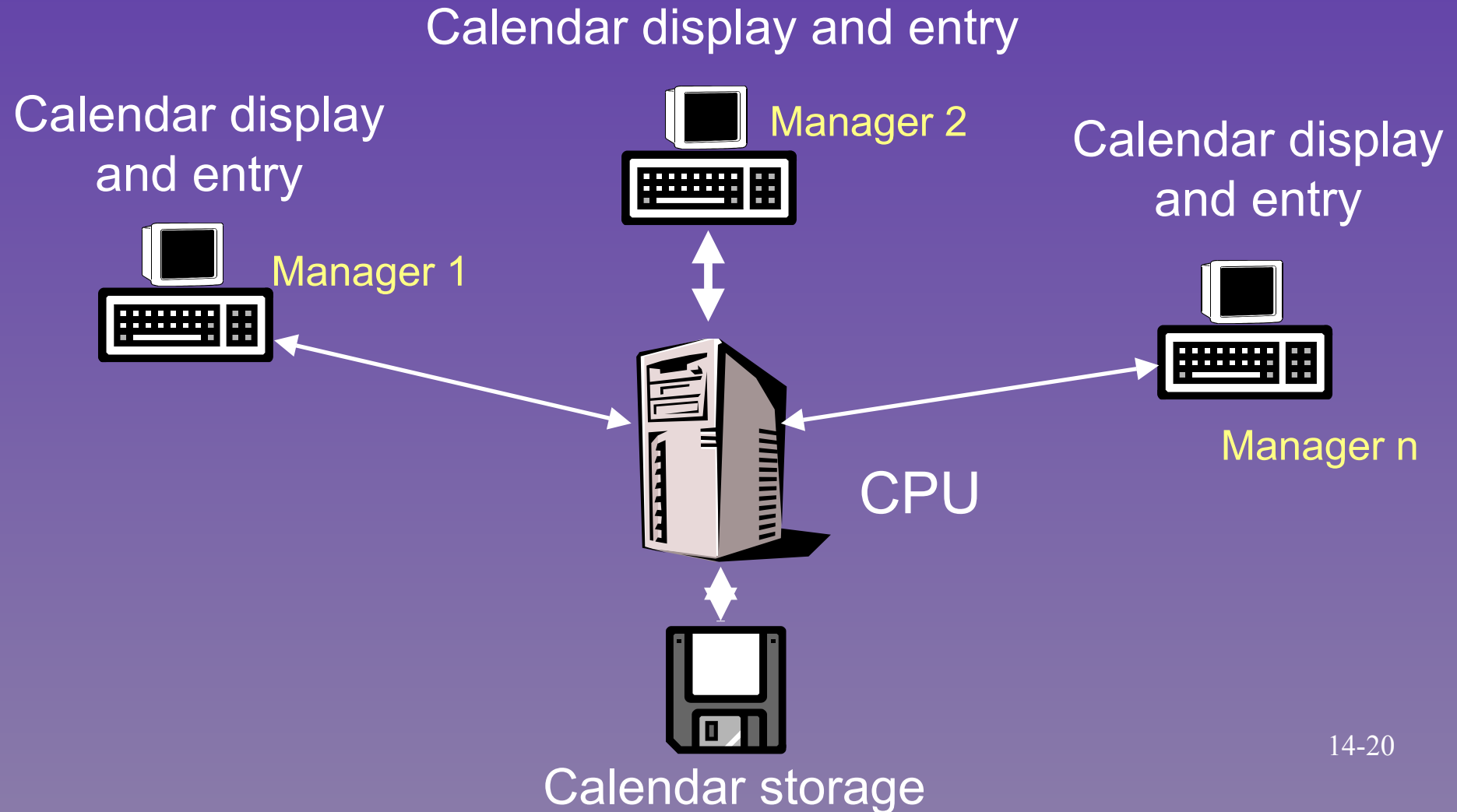
**A
Voice
Mail
System**



Electronic Calendaring

- Use of a networked computer to store and retrieve a manager's appointment calendar
- Allows other managers' calendars to be accessed
- Facilitates scheduling
- Does not communicate problem-solving information

An Electronic Calendaring System



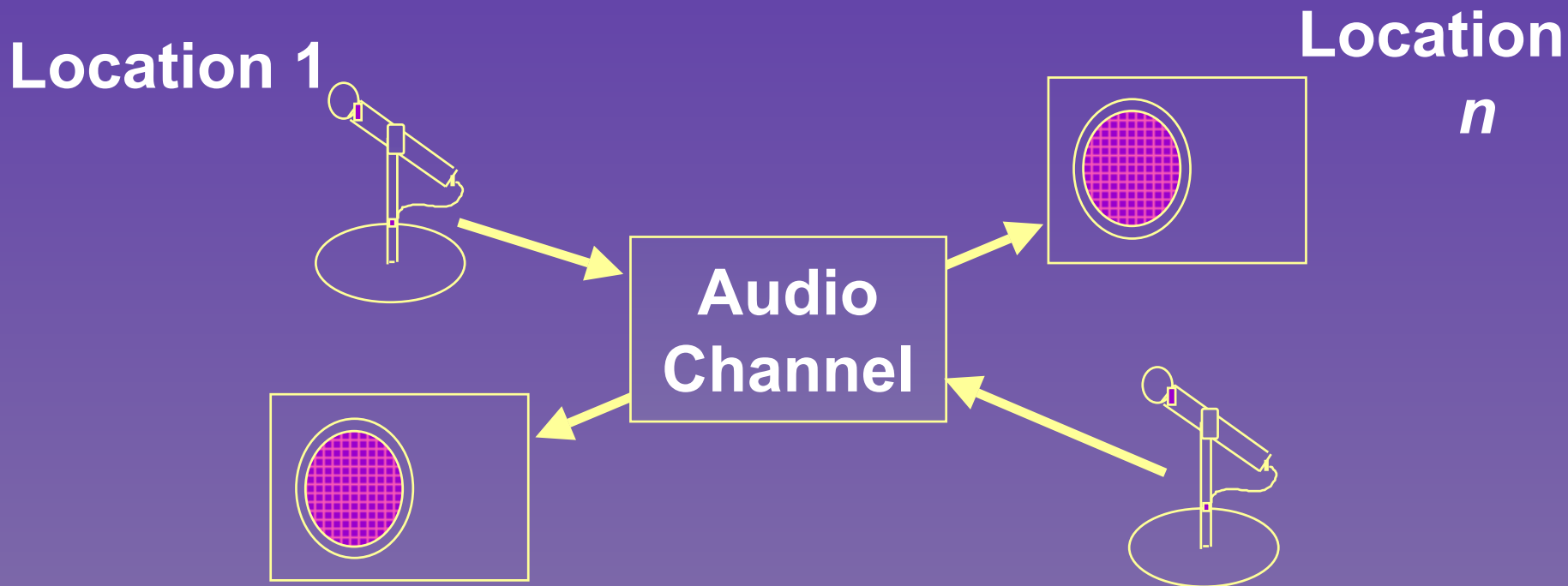
Audio Conferencing

- Uses voice communications equipment to establish an audio link between geographically dispersed people
- Conference call was first form of this system

Rules for Added Efficiency in Audio Conferencing

- Have a moderator
- Keep participants to a manageable size
- Send an agenda first
- Identify yourself when speaking
- Keep a taped record
- Distribute a hard copy transcript or meeting minutes

An Audio Conferencing System



Video Conferencing

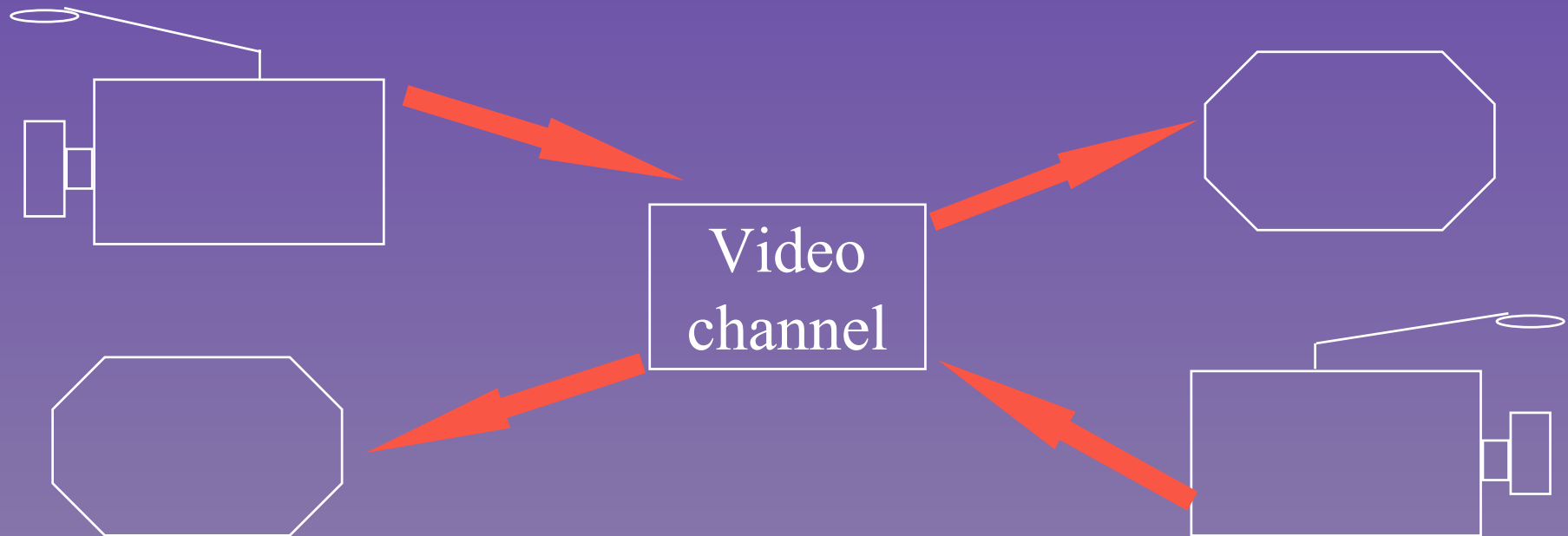
- Use of television equipment to link geographically dispersed conference participants
- Three general configurations
 - One-way video and audio
 - One-way video and two-way audio
 - Two-way video and audio

Video Conferencing

Location 1



A. One-way video transmission



B. Two-way video transmission

Desktop Video Conferencing

- Video and audio equipment are attached to each workstation in the network enabling the two-way communication of picture and sound
- Technical concerns
 - Many desktop computers are powerful enough already
 - Requires high-speed communications network
 - Cost is typically less than \$1,000 for the additional equipment to make a standard PC a desktop video station

Computer Conferencing

- Uses a networked computer that allows participants with some common characteristic to exchange information regarding a particular topic
- One of the largest was an IBM PC computer conference
 - Over 4,000 topic areas
 - Over 40,000 members
- Computers must be networked together

Teleconferencing

- +Incorporates all other conferencing techniques
- +Includes:
 - audio
 - video
 - computer conferencing

FAX

Uses special equipment that can read a document at one end of a communication channel and make a copy at the other end



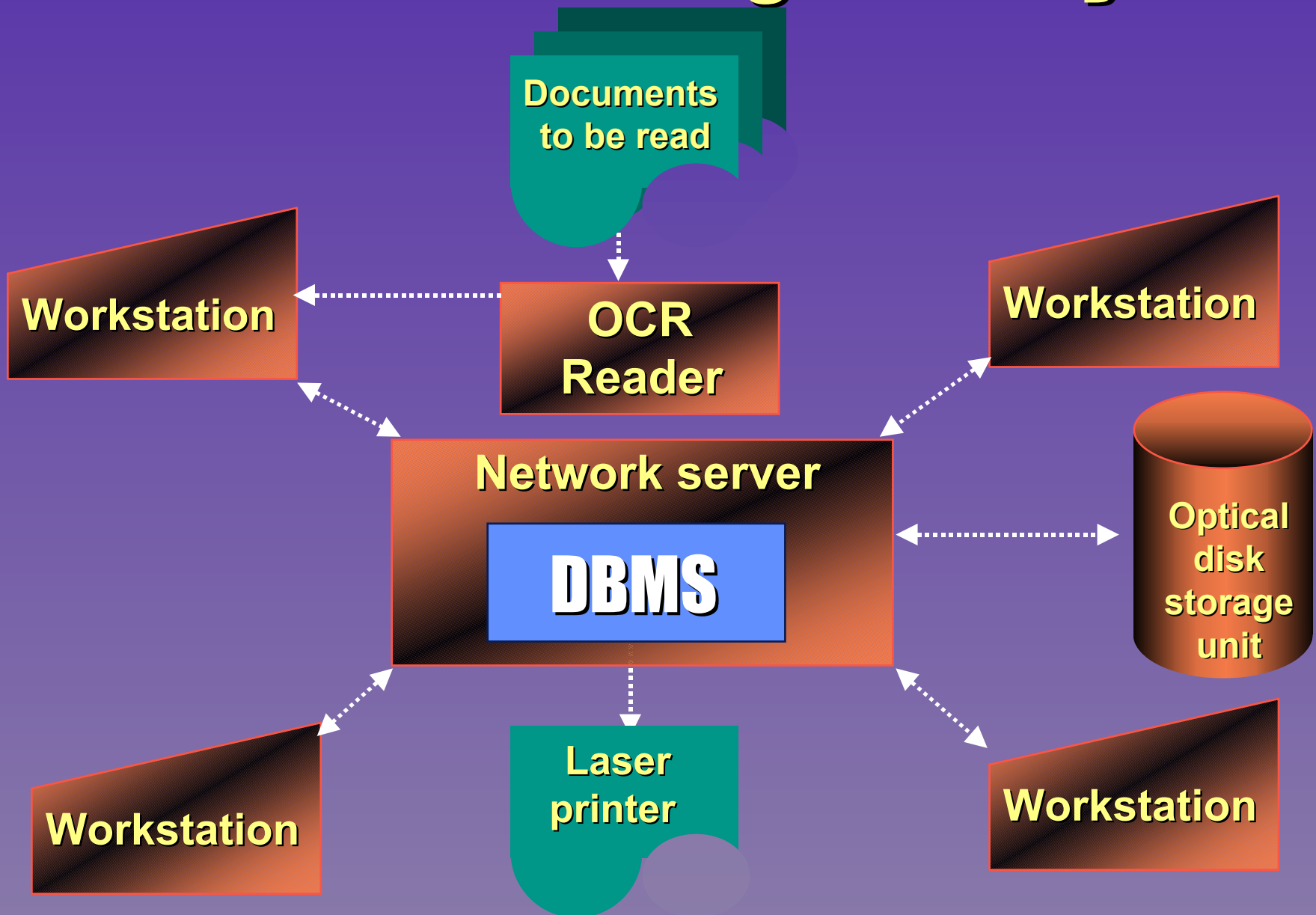
Videotex

- Uses a computer to store and display a stored narrative and graphic material on a CRT screen
 - Can be created in the firm's own computer
 - Can be owned by a service and accessed by the firm (such as the Dow Jones News / Retrieval Service)
 - Can be owned by other firms

Imaging

- Uses optical character recognition (OCR) to convert data on paper to a digital format for storage in a secondary storage device
- Performed by a document management (DM) system
- Conserves space since documents are not stored in paper form

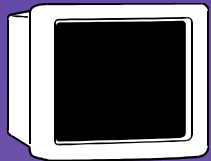
A Document Management System



Desktop Publishing

- Uses a computer to prepare output that is very close in quality to that produced by a typesetter
- Requires high resolution monitor and printing devices
- Three areas of applications
 - administrative
 - technical
 - corporate

Desk-Top Publishing System



High-resolution
screen

Keyboard



Microcomputer



Laser printer
output



Document
storage

OA and Virtual Office in Perspective

- Aimed at the heart of business problem solving
 - Supplements interpersonal communications
 - Provides opportunity for better communications

Summary

- Early OA was directed at secretarial staff and clerks
- Communication needs of managers and knowledge workers were recognized
- Virtual office concept emerged
- Goal of OA is increased productivity

Summary (cont.)

- Variety of applications
 - Word processing
 - E-mail
 - Voice mail
 - Electronic calendaring
 - Audio conferencing
 - Video conferencing
 - Computer conferencing
 - Fax
 - Videotex

Case Study

1. Virtual employees may experience increased family tension because the employee is constantly at home, i.e. does not provide a break from the home setting by going to office.

A) true

B) false

2. Which of the following is true concerning the communications of virtual employees?

A) Communications are only accomplished via computers.

B) Formal communications, as opposed to informal communications, become more important.

C) Communication happens infrequently, usually less than once a week.