THE NEW INFORMATION TECHNOLOGY (IT) INFRASTRUCTURE FOR THE DIGITAL FIRM

Enterprise Networking and Internetworking

Enterprise Networking

- **Arrangement of organization's hardware, software, network, and data resources**

- **Creates a company-wide network linking many smaller networks**

Internetworking

- **Links separate networks into an interconnected network**

THE NEW INFORMATION TECHNOLOGY (IT) INFRASTRUCTURE
FOR THE DIGITAL FIRM

The New Information Technology (IT) Infrastructure

Figure 9-1

THE INTERNET: INFORMATION TECHNOLOGY (IT) INFRASTRUCTURE FOR THE DIGITAL FIRM
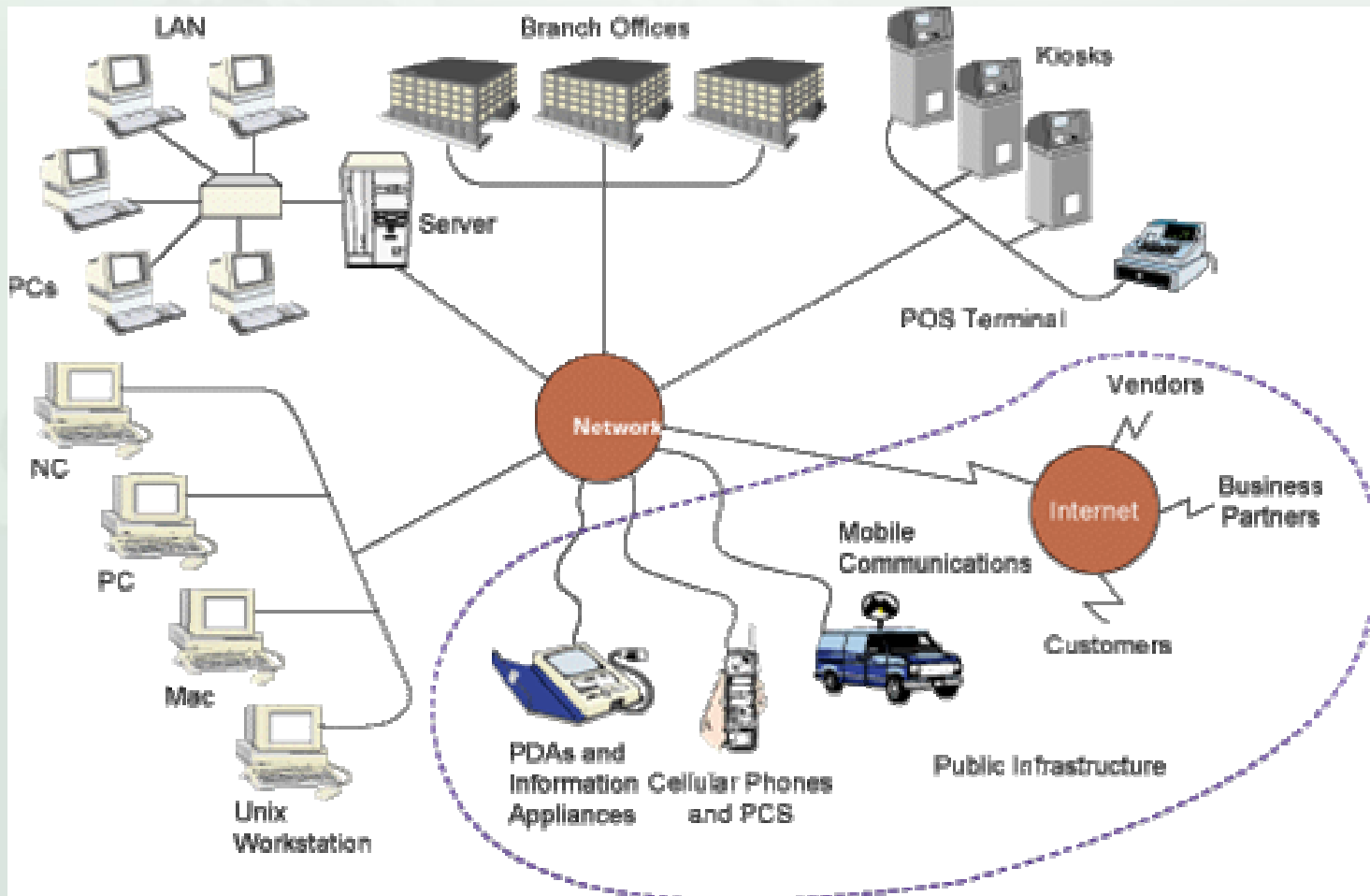
Internet Tools for Communication

Electronic Mail (E-Mail)

- **Connects people worldwide**

- **Creates productivity gain**

Usenet Newsgroups

- **On-line discussion groups using electronic bulletin boards**

THE INTERNET: INFORMATION TECHNOLOGY (IT) INFRASTRUCTURE
FOR THE DIGITAL FIRM
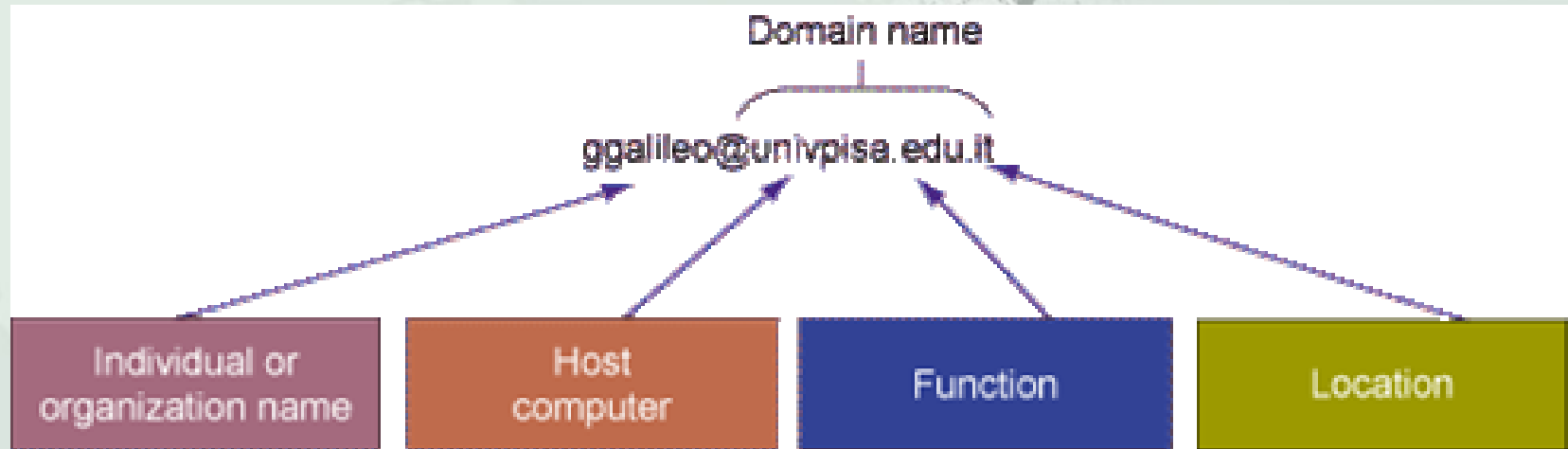
Analysis of an Internet Address

Figure 9-4

Internet Tools for Communication

LISTSERV

- **E-mail broadcast from mailing list servers**

Chatting

- **Live, interactive conversations over public network**

Internet Tools for Communication

Instant messaging

- **Service that allows participants to create their own private chat channels**

Internet telephony

- **Two-way voice transmission over the Internet**

THE INTERNET: INFORMATION TECHNOLOGY (IT) INFRASTRUCTURE FOR THE DIGITAL FIRM
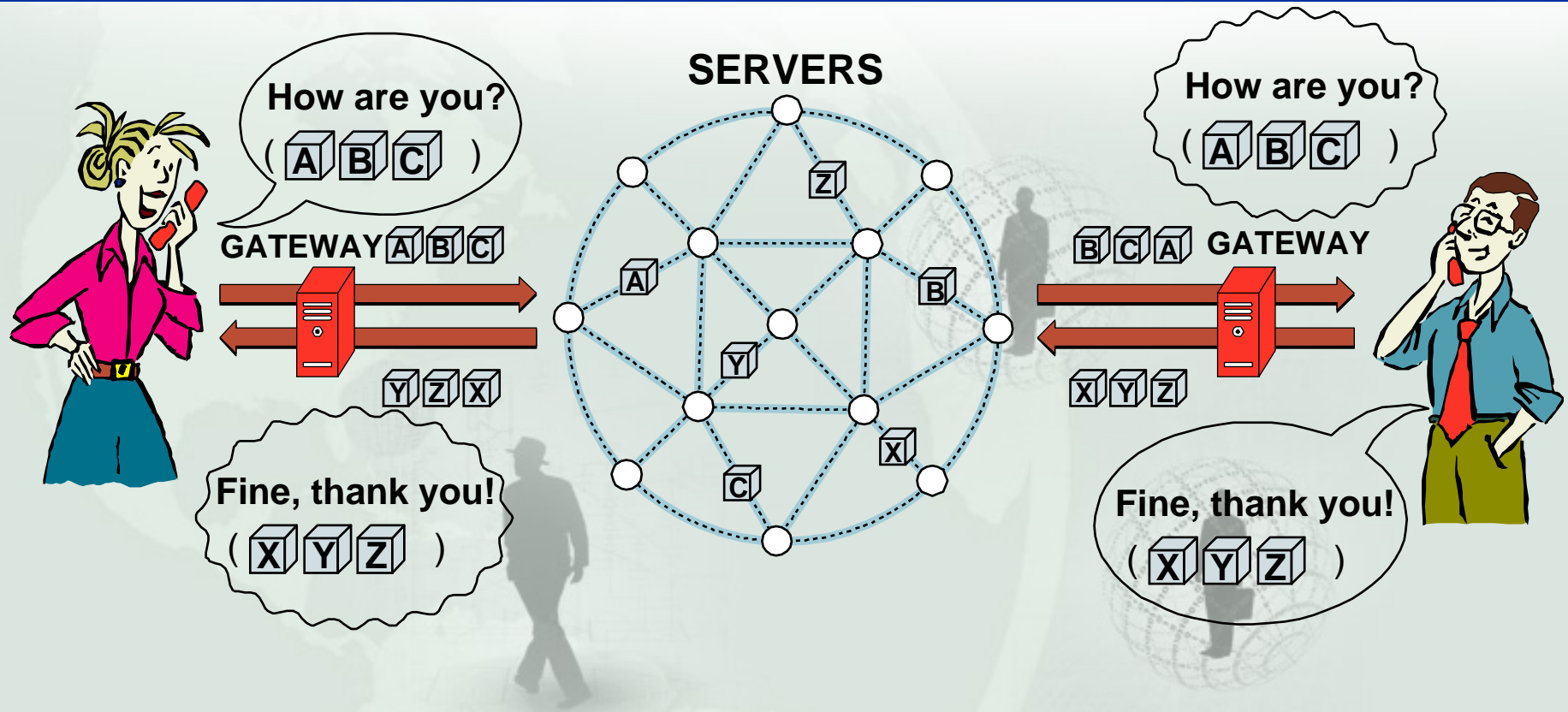

Figure 9-5

Next Generation Networks and Internet 2

Internet2 and Next Generation Networks

- **Research networks with new protocols and transmission speeds**

- **Provide infrastructures for supporting high bandwidth Internet applications**

THE WORLD WIDE WEB

Overview

- **Based on a standard hypertext language called hypertext markup language (HTML)**

- **Combines text, hypermedia, graphics, and sound**

- **Handles all types of digital communication**

- **Uses graphical user interfaces for easy viewing**

Searching for Information on the Web

Search Engine

- **Locates specific sites or information on Internet**

Shopping Bot

- **Software with varying levels of built-in intelligence**

- **Helps electronic commerce shoppers locate and evaluate products or services**

Searching for Information on the Web

"Push" technology

- **Information broadcast directly to user based on pre-specified interests**

Multicasting

- **Transmission of data to a selected group of recipients**

Intranets and Extranets

Firewall

- **Hardware or software placed between an organization's internal network and external network**

- **Prevents outsiders from invading private networks**

Extranets

- **Private intranets extended to authorized users outside company**

THE WORLD WIDE WEB

Model of an Extranet

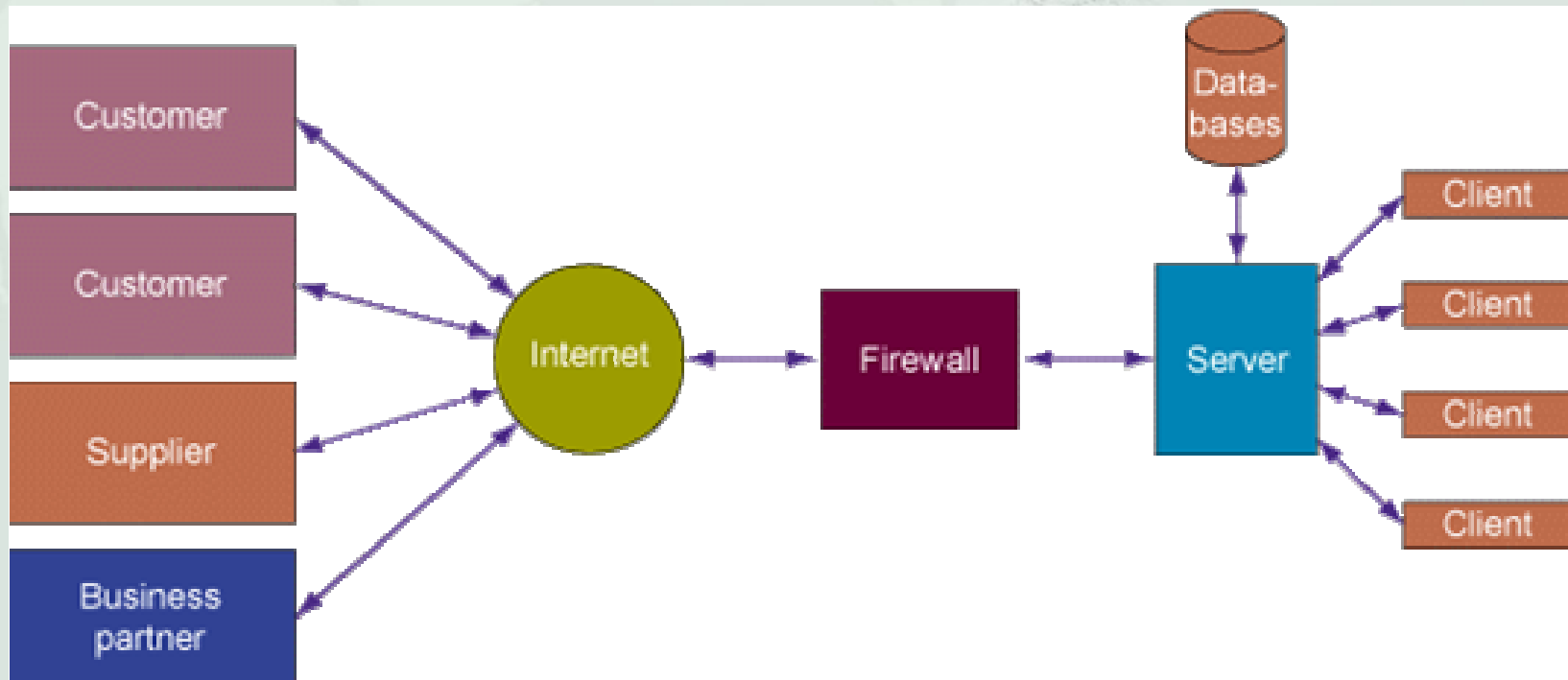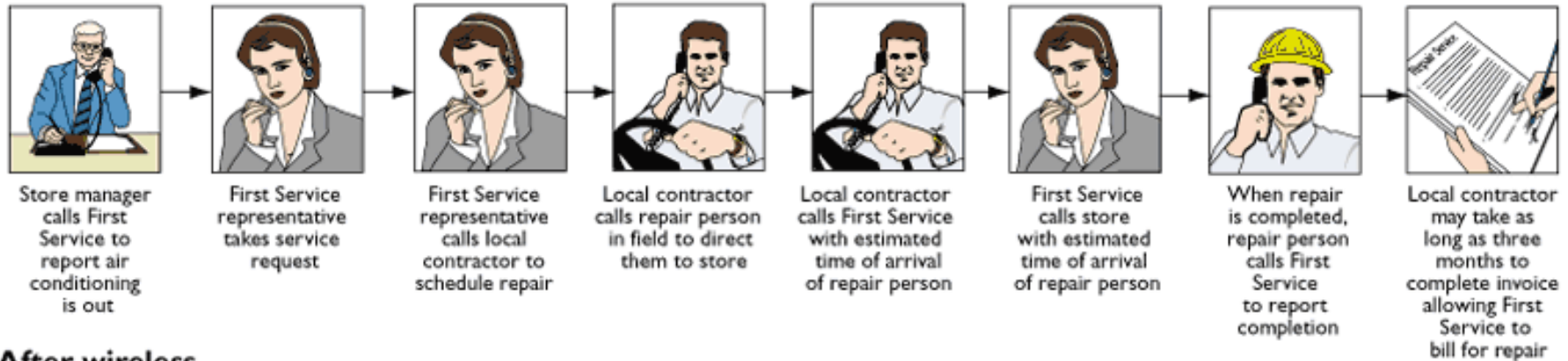**Figure 9-6**

The Wireless Web

- **Web-based applications**

- **Enables users to access digital information from the Internet**

- **Wireless Web Standards:**
  - **Wireless Application Protocol (WAP)**
  - **WML (Wireless Markup Language)**
  - **Microbrowser**
  - **I-mode**
  - **M-Commerce Challenges**
  - **Voice portals**

Before wireless

| Store manager calls First Service to report air conditioning is out | First Service representative takes service request | First Service representative calls local contractor to schedule repair | Local contractor calls repair person in field to direct them to store | Local contractor calls First Service with estimated time of arrival of repair person | First Service calls store with estimated time of arrival of repair person | When repair is completed, repair person calls First Service to report completion | Local contractor may take as long as three months to complete invoice allowing First Service to bill for repair |

After wireless

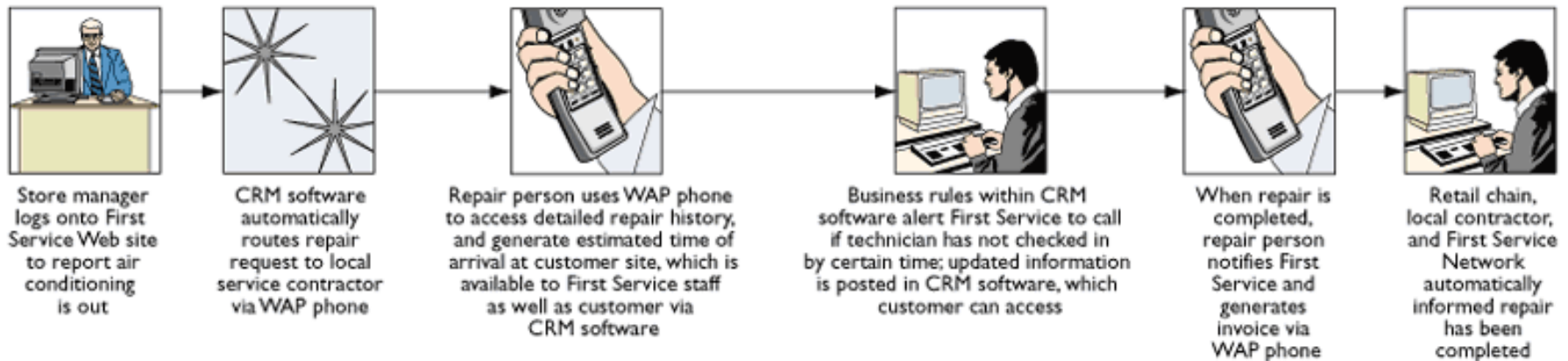| Store manager logs onto First Service Web site to report air conditioning is out | CRM software automatically routes repair request to local service contractor via WAP phone | Repair person uses WAP phone to access detailed repair history, and generate estimated time of arrival at customer site, which is available to First Service staff as well as customer via CRM software | Business rules within CRM software alert First Service to call if technician has not checked in by certain time; updated information is posted in CRM software, which customer can access | When repair is completed, repair person notifies First Service and generates invoice via WAP phone | Retail chain, local contractor, and First Service Network automatically informed repair has been completed |

Figure 9-7

The Challenge of Managing the New Information Technology Infrastructure

- **Loss of management control**

- **Connectivity and application integration challenges**

- **Organizational change requirements**

- **Hidden costs of enterprise computing**

- **Scalability, reliability, and security downtime**

MANAGEMENT ISSUES AND DECISIONS

Some Solutions

- **Change management**

- **Education and training**

- **Data administration disciplines**

- **Planning for connectivity and application integration**