Management Information Systems

Chapter 7

Management Information Systems

Compiled By:
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Muhammad Kashif Shaikh

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MIS Books

- **Text Book**

1. **Management Information System, 8th Edition**
   By: James A. O' Brien , George Marakas

- **Reference Books**

1. **Management Information System, 9th Edition**
   By: Kenneth C. Laudon, Jane P. Laudon
2. **Introduction to Information Systems: Supporting and Transforming Business**
   By: Rainer, Turban, Potter, 1st Edition

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Marks Distribution

- Mid Term   _____   15
- Assignment + Class Performance +
  Quiz + Presentation + Report   _____   5
- Semester Final Paper   _____   80
- **Total Marks**   _____   **100**

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Marks Distribution [Sessional]

- Class Test   _____ 10 Points
- Assignment   _____ 10 Points
- Class Presentation _____ 15 Points
- Project   _____ 15 Points
- **Total Points**   _____ **50 Points**

- *Performance Bonus*   _____ *10 Points*

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Management Information Systems

MIS Website

- **http://www.ssuet.edu.pk/courses/hs107/mis**

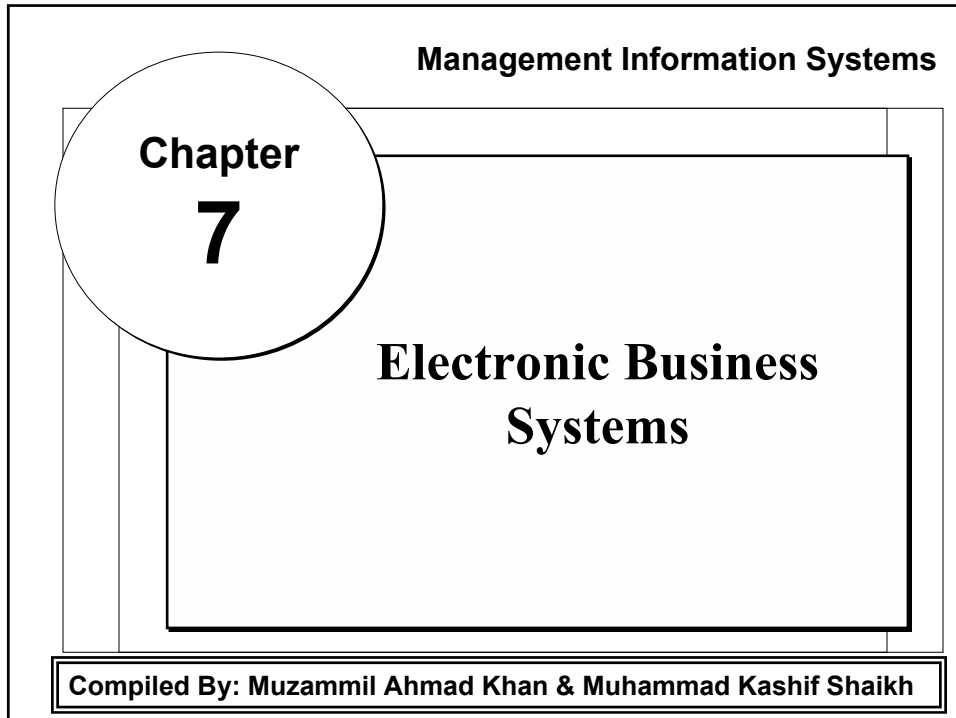- **http://taimoor/hs107/mis**

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Management Information Systems

Chapter

7

Electronic Business Systems

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Learning Objectives

- Identify the following cross-functional enterprise systems, and give examples of how they can provide significant business value to a company
  - Enterprise application integration
  - Transaction processing systems
  - Enterprise collaboration systems

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Learning Objectives

- Give examples of how Internet and other information technologies support business processes within the business functions of
  - Accounting
  - Finance
  - Human resource management
  - Marketing
  - Production
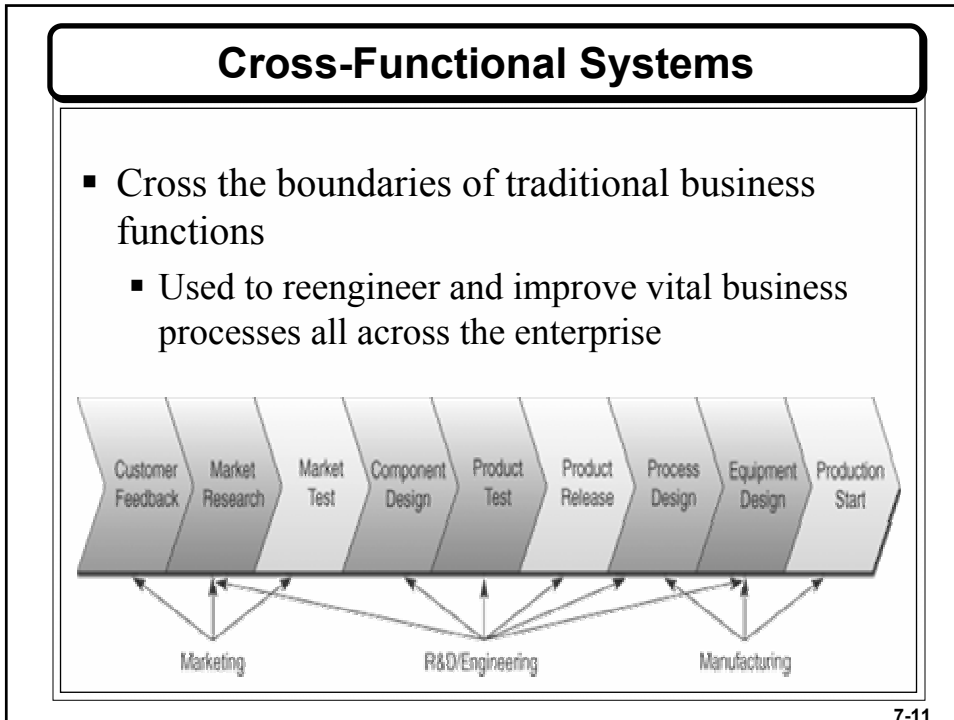 - Operations management

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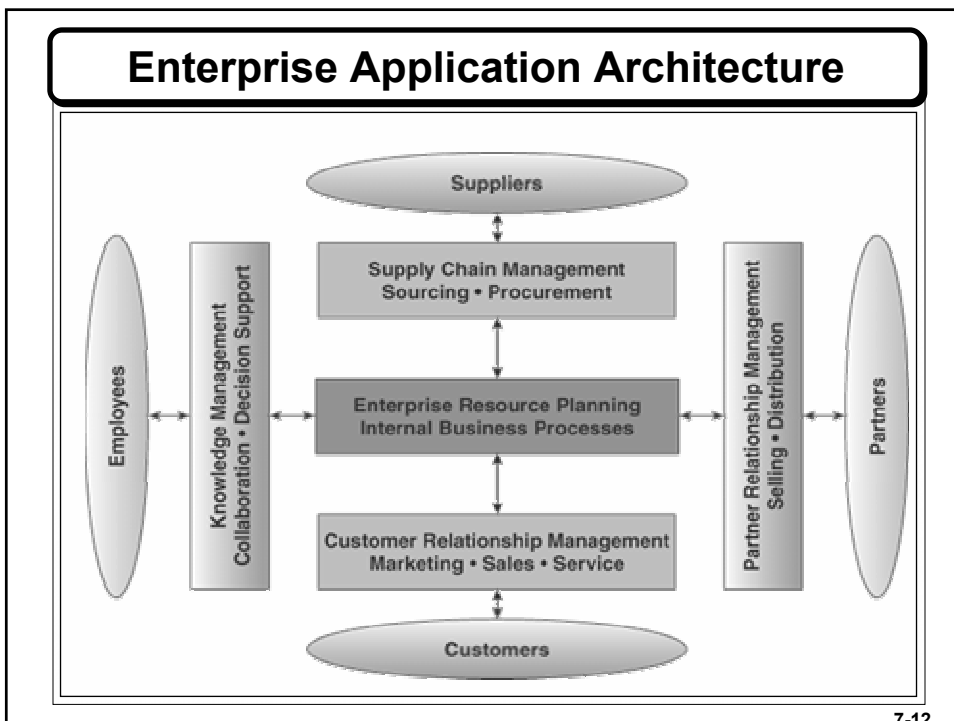
Enterprise Business Systems

- E-business means using the Internet, other networks, and IT to support
  - Electronic commerce
  - Enterprise communications and collaboration
  - Web-enabled business processes

- E-commerce is the buying, selling, and marketing of products, services, and information over the Internet and other networks

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Cross-Functional Systems

- Cross the boundaries of traditional business functions
  - Used to reengineer and improve vital business processes all across the enterprise

Customer Feedback | Market Research | Market Test | Component Design | Product Test | Product Release | Process Design | Equipment Design | Production Start

Marketing   R&D/Engineering   Manufacturing

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Enterprise Application Architecture

Suppliers

Supply Chain Management
Sourcing • Procurement

Knowledge Management
Collaboration • Decision Support

Partner Relationship Management
Selling • Distribution

Employees

Partners

Enterprise Resource Planning
Internal Business Processes

Customer Relationship Management
Marketing • Sales • Service

Customers

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Enterprise Application Architecture

- Provides a conceptual framework
  - Helps visualize the basic components, processes, and interfaces of major e-business applications
- Focuses on accomplishing fundamental business processes in concert with
  - Customers
  - Suppliers
  - Partners
  - Employees

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Enterprise Application Architecture

- Enterprise Resource Planning (ERP)
  - Concentrates on the efficiency of internal production, distribution, and financial processes
- Customer Relationship Management (CRM)
  - Focuses on acquiring and retaining profitable customers via marketing, sales, and services
- Partner Relationship Management (PRM)
  - Aims at acquiring and retaining partners who can enhance the selling and distribution of products and services
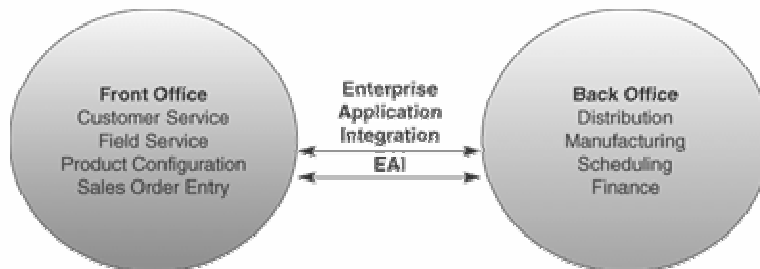
7-14

Enterprise Application Architecture

- Supply Chain Management (SCM)
  - Focuses on developing the most efficient and effective sourcing and procurement processes

- Knowledge Management (KM)
  - Focuses on facilitating internal group collaboration and decision support

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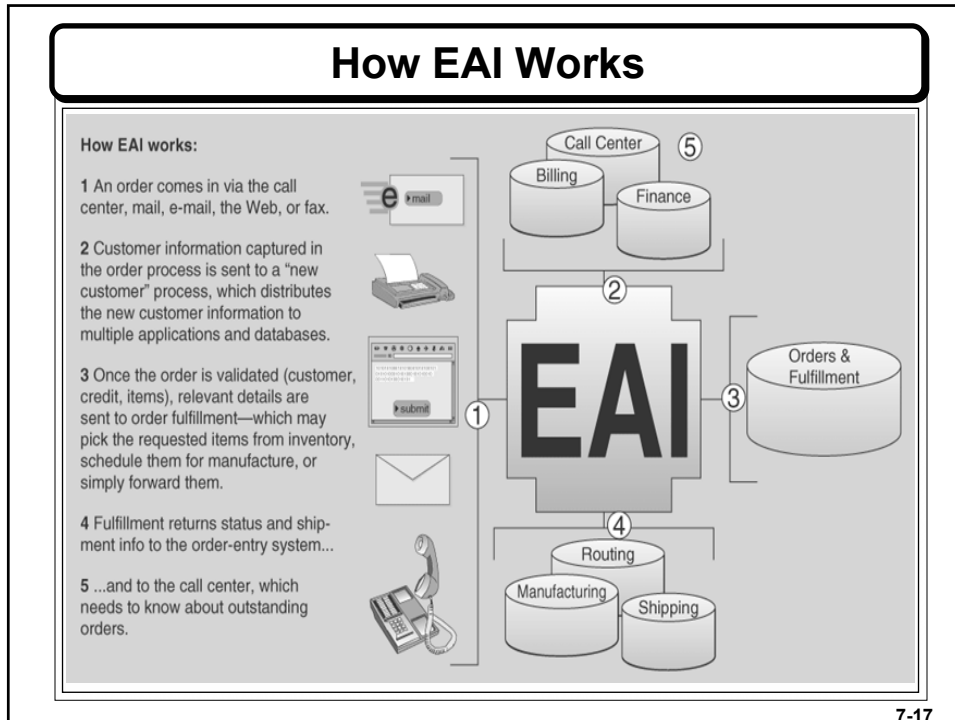**Compiled By: Muzammil Ahmad Khan and Kashif Shaikh**

Enterprise Application Integration

- EAI software connects cross-functional systems
- Serves as middleware to provide
  - Data conversion
  - Communication between systems
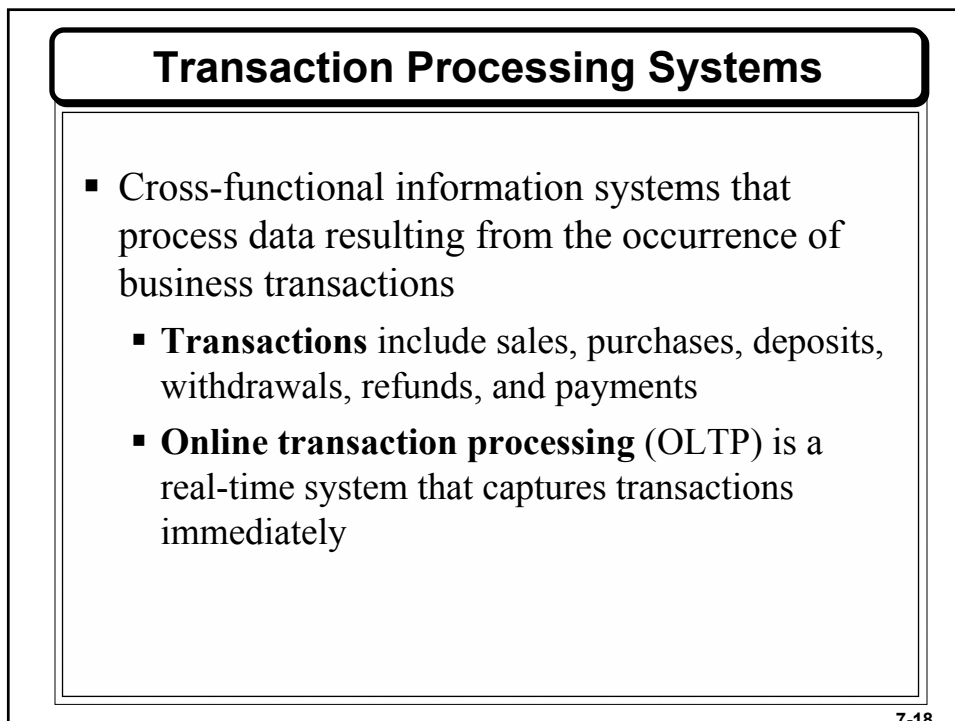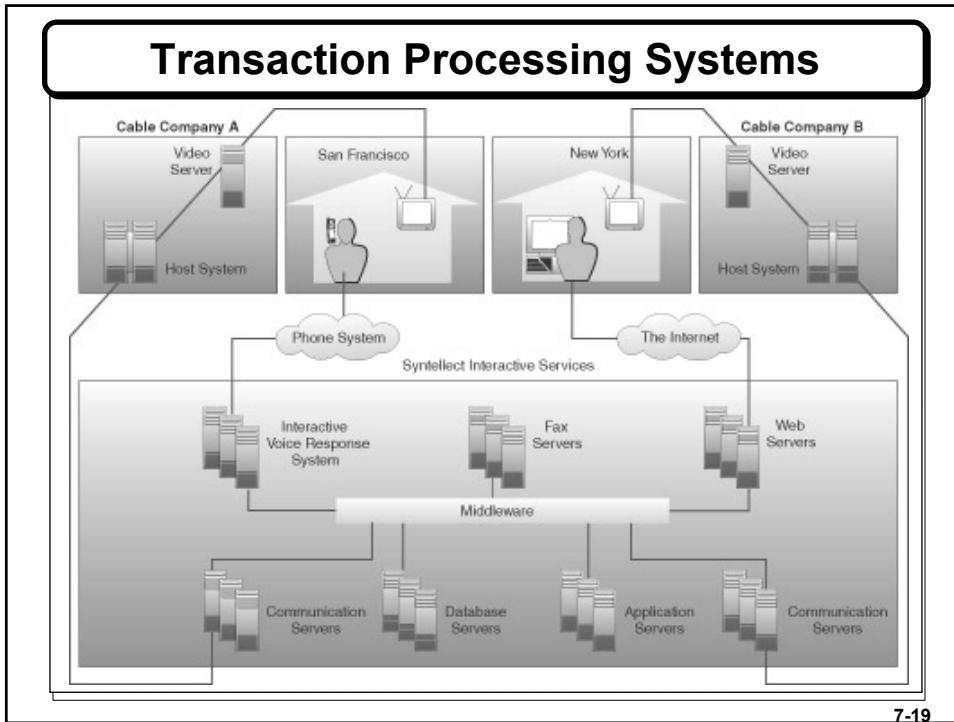 - Access to system interfaces

Front Office
Customer Service
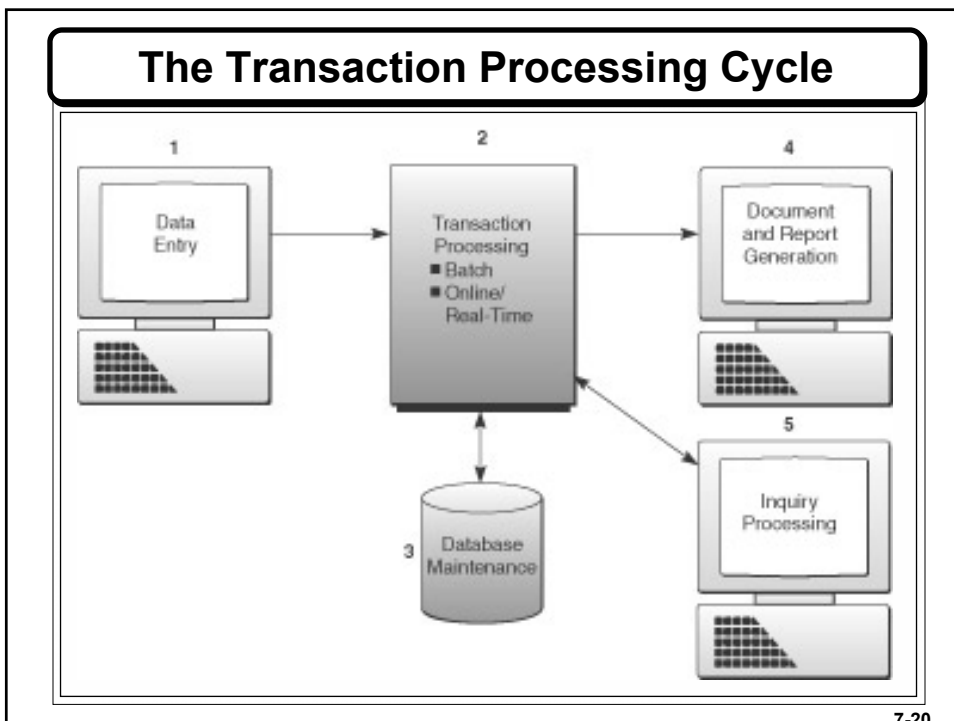Field Service
Product Configuration
Sales Order Entry

Enterprise
Application
Integration
EAI

Back Office
Distribution
Manufacturing
Scheduling
Finance

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How EAI Works

How EAI works:

1 An order comes in via the call center, mail, e-mail, the Web, or fax.

2 Customer information captured in the order process is sent to a "new customer" process, which distributes the new customer information to multiple applications and databases.

3 Once the order is validated (customer, credit, items), relevant details are sent to order fulfillment—which may pick the requested items from inventory, schedule them for manufacture, or simply forward them.

4 Fulfillment returns status and shipment info to the order-entry system...

5 ...and to the call center, which needs to know about outstanding orders.

Call Center ⑤
Billing
Finance
② ③
EAI ①
Orders & Fulfillment
④
Routing
Manufacturing
Shipping

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Transaction Processing Systems

- Cross-functional information systems that process data resulting from the occurrence of business transactions
  - **Transactions** include sales, purchases, deposits, withdrawals, refunds, and payments
  - **Online transaction processing** (OLTP) is a real-time system that captures transactions immediately

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Transaction Processing Systems

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The Transaction Processing Cycle

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Enterprise Collaboration Systems (ECS)

- EC systems are cross-functional information systems that enhance team and workgroup
  - Communication
  - Coordination
  - Collaboration
- Systems may include
  - Networked PC workstations
  - Servers
  - Databases
  - Groupware and application packages

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ECS Tools

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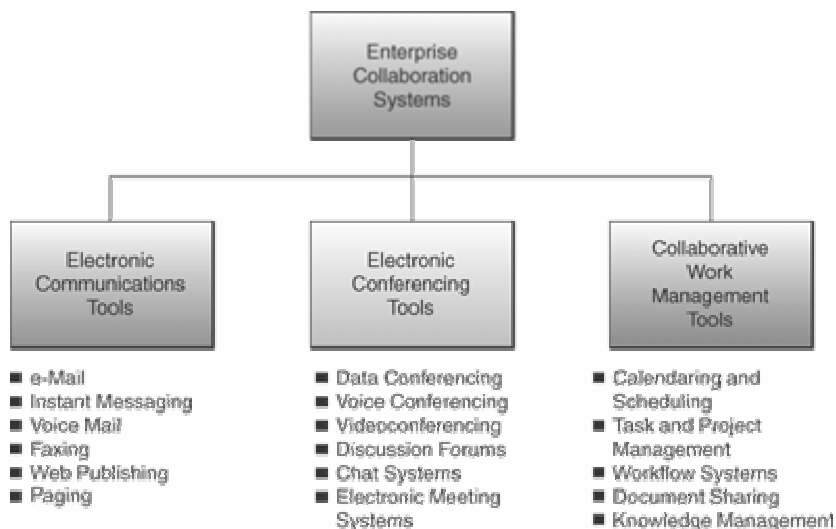
Functional Business Systems

- A variety of types of information systems that support the business functions of
  - Accounting
  - Finance
  - Marketing
  - Operations management
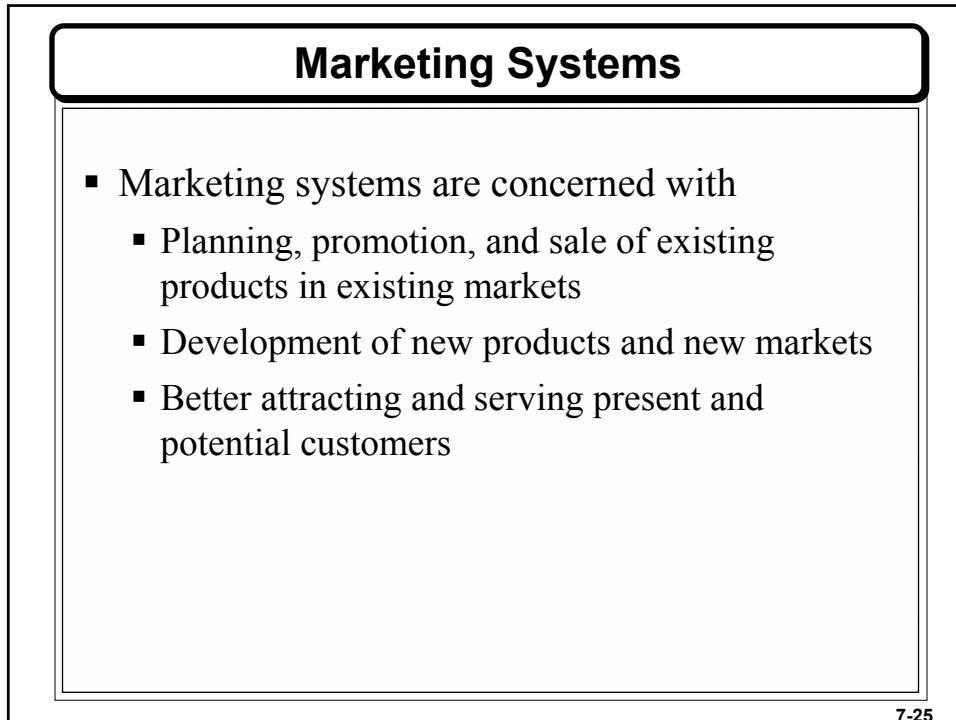 - Human resource management

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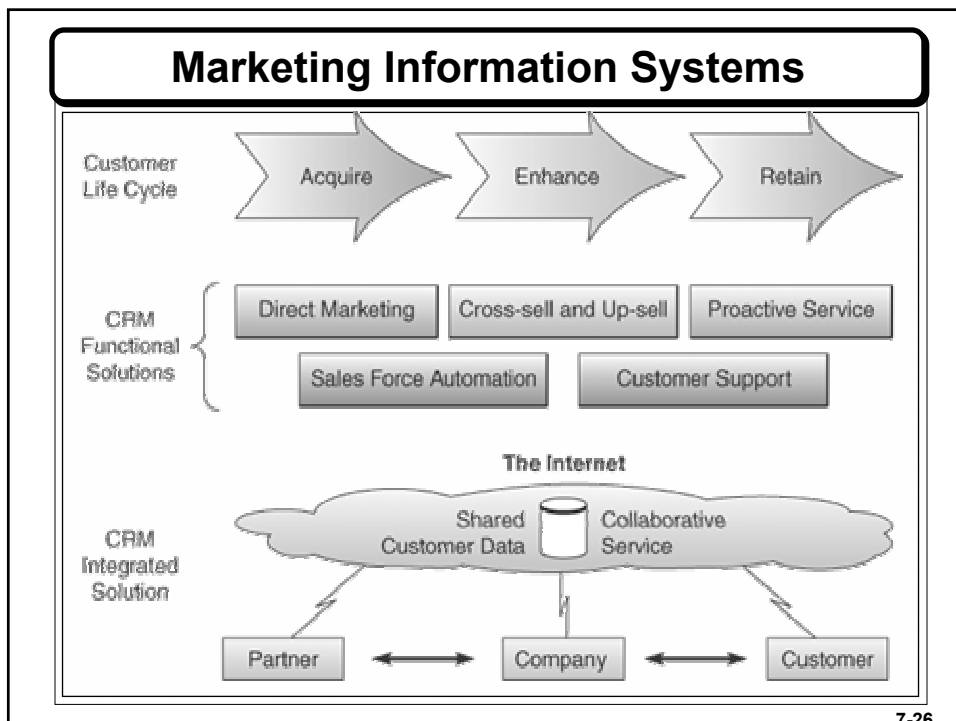

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IT in Business

Marketing
- Customer relationship management
- Interactive marketing
- Sales force automation

Production/Operations
- Manufacturing resource planning
- Manufacturing execution systems
- Process control

Functional Business Systems

Human Resource Management
- Compensation analysis
- Employee skills inventory
- Personnel requirements forecasting

Accounting
- Order processing
- Inventory control
- Accounts receivable
- Accounts payable
- Payroll
- General ledger

Finance
- Cash management
- Credit management
- Investment management
- Capital budgeting
- Financial forecasting

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Management Information Systems

Marketing Systems

- Marketing systems are concerned with
  - Planning, promotion, and sale of existing products in existing markets
  - Development of new products and new markets
  - Better attracting and serving present and potential customers

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Marketing Information Systems

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Interactive Marketing

- Interactive Marketing
  - A customer-focused marketing process
  - Uses the Internet, intranets, and extranets
  - Establishes two-way transactions between a business and its customers or potential customers
- Goal
  - Profitably use networks to attract and keep customers
  - Get customers to help create, purchase, and improve products and services

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Targeted Marketing

- An advertising and promotion management concept with five targeting components

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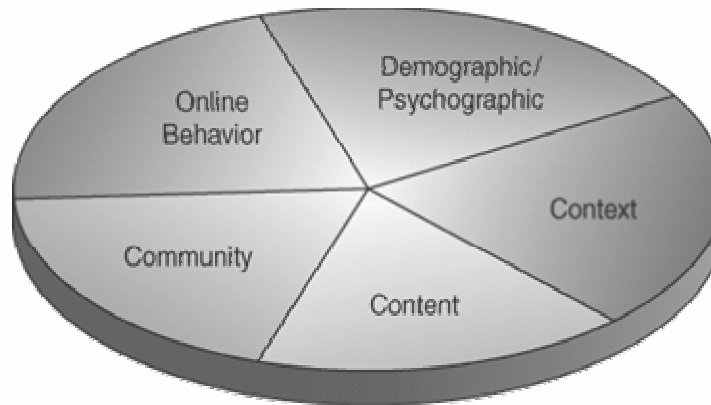
Targeted Marketing Components

- **Community:** customized ads to appeal to specific virtual communities
- **Content:** ads placed on a variety of selected websites, aimed at a specific audience
- **Context:** ads placed on web pages that are relevant to a product or service
- **Demographic/Psychographic:** web marketing aimed at specific types or classes of people
- **Online behavior:** promotions tailored to each visit to a site by an individual

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Sales Force Automation

- Outfit sales force with notebook computers, web browsers, and sales contact software
  - Connect them to marketing websites and the company intranet
- Goals
  - Increase personal productivity
  - Speed up capture and analysis of sales data
  - Gain strategic advantage

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Manufacturing Information Systems

- Supports the production/operations functions
  - Includes all activities concerned with planning and control of the processes producing goods or services

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Computer-Integrated Manufacturing

Manufacturing Resource Planning Systems	Manufacturing Execution Systems	Engineering Systems
Production Forecasting	Shop Floor Scheduling	Computer-Aided Design
Production Scheduling	Shop Floor Control	Computer-Aided Engineering
Material Requirements Planning	Machine Control	Computer-Aided Process Planning
Capacity Planning	Robotics Control	
Production Cost Control	Process Control	Product Simulation and Prototyping
Quality Control		

Enterprise Resource Planning

Computer-Integrated Manufacturing

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CIM Objectives

- **Simplify** production processes, product designs, and factory organization

- **Automate** production processes and the business functions that support them

- **Integrate** all production and support processes using
  - Networks
  - Cross-functional business software
  - Other information technologies

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CIM Systems

- Computer-aided manufacturing (CAM)
  - Automate the production process

- Manufacturing execution systems (MES)
  - Performance monitoring information systems for factory floor operations

- Process control
  - Control ongoing physical processes

- Machine control
  - Controls the actions of machines

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Human Resource Management (HRM)

- Information systems designed to support
  - Planning to meet personnel needs
  - Development of employees to their full potential
  - Control of all personnel policies and programs

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HRM Systems

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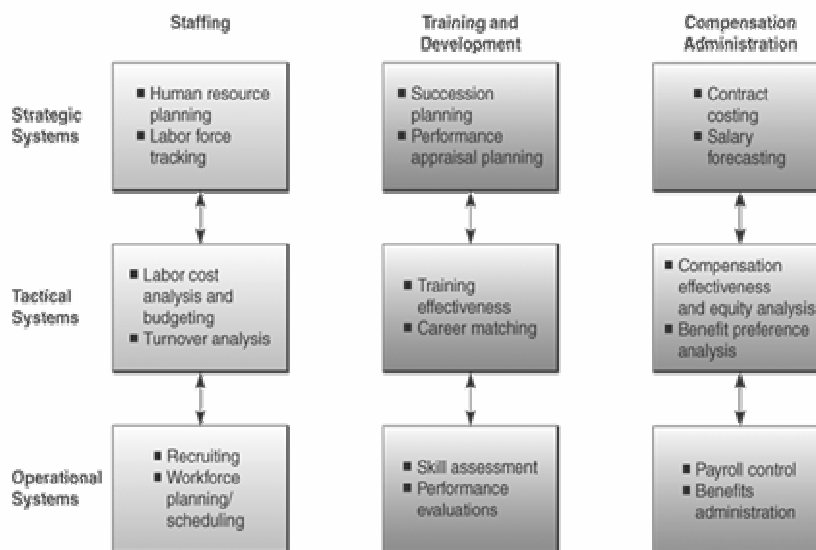
HRM and the Internet

- Recruiting employees using the corporate website and commercial recruiting services

- Posting messages in selected Internet newsgroups

- Communicating with job applicants via e-mail

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HRM and Corporate Intranets

- Corporate intranet uses
    - Process common HRM transactions
    - Allow around-the-clock HRM services
    - Disseminate information faster than through previous company channels
    - Collect information from employees online
    - Allow HRM tasks to be performed with little HRM department intervention
    - Training

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Employee Self-Service

- Intranet applications can allow employees to
  - View benefits
  - Enter travel and expense reports
  - Verify employment and salary information
  - Access and update personal information
  - Enter time-sensitive data

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Accounting Information Systems

- The oldest and most widely used information system in business
  - Records and reports business transactions and economic events
  - Produces financial statements
  - Forecasts future conditions

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Management Information Systems

Accounting Information Systems

- Typically consists of
  - Order processing
  - Inventory control
  - Accounts receivable
  - Accounts payable
  - Payroll
  - General ledger systems

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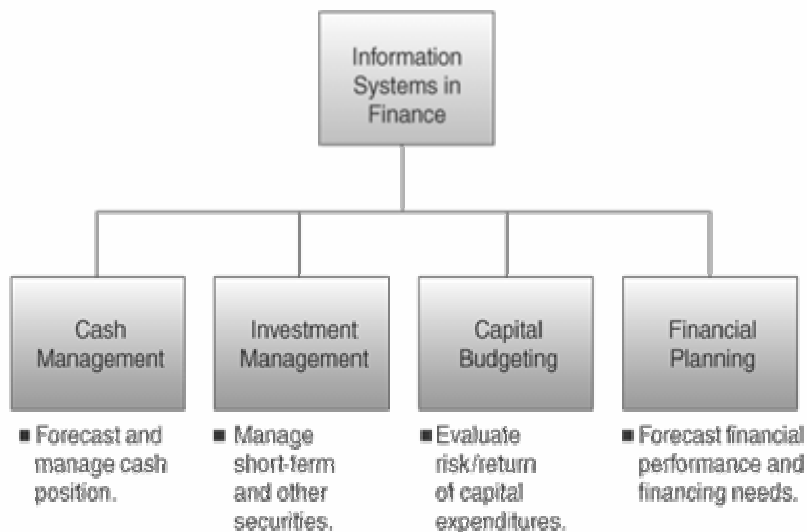**Compiled By: Muzammil Ahmad Khan and Kashif Shaikh**

Accounting Information Systems

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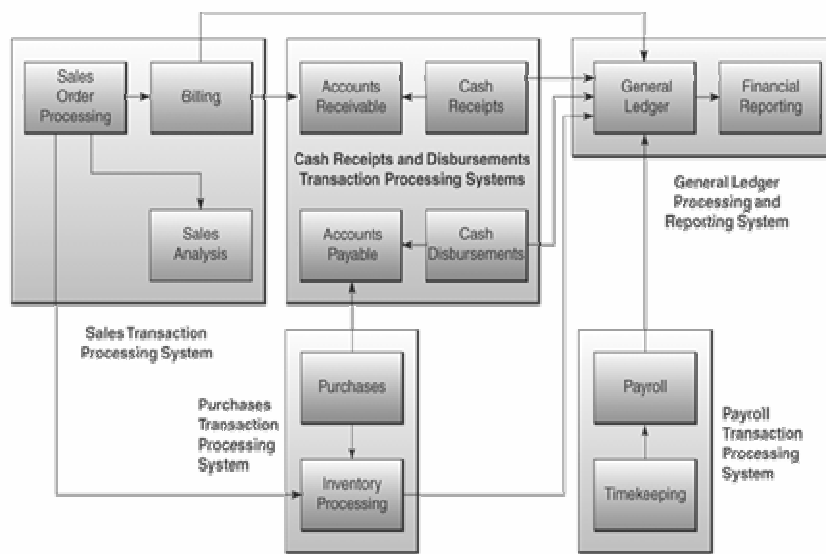
Financial Management Systems

- Supports business managers and professionals making decisions concerning
  - The financing of a business
  - The allocation and control of financial resources within a business

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Financial Management System Example

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ERP: The Business Backbone

- ERP is a cross-functional enterprise backbone that integrates and automates processes within
  - Manufacturing
  - Logistics
  - Distribution
  - Accounting
  - Finance
  - Human resources

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What is ERP?

- Enterprise resource planning is a cross-functional enterprise system
  - An integrated suite of software modules
  - Supports basic internal business processes
  - Facilitates business, supplier, and customer information flows

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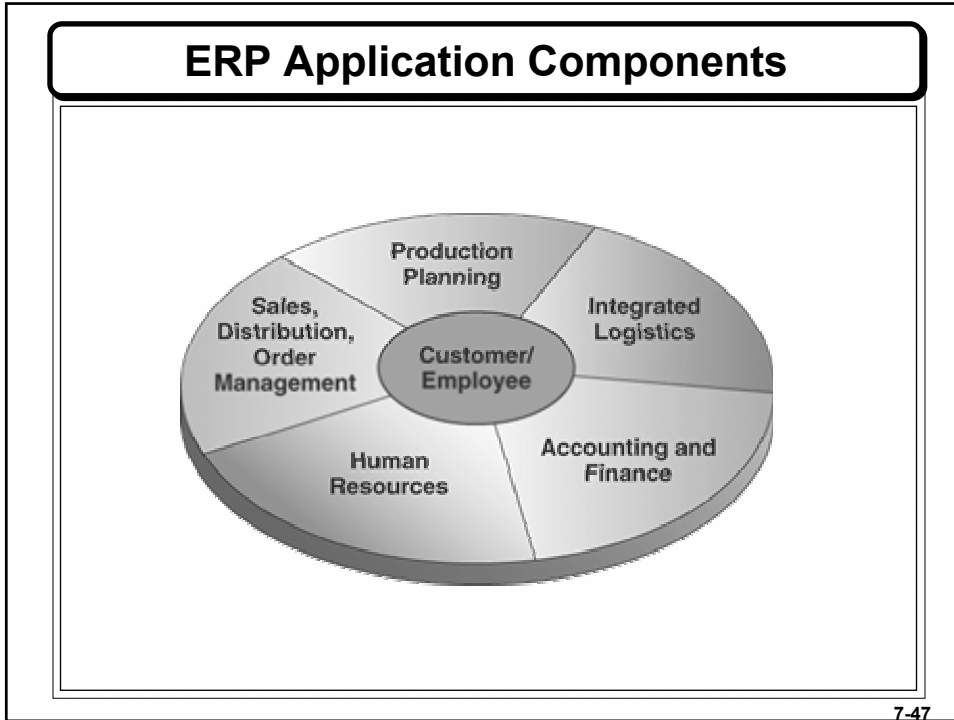
ERP Application Components

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## ERP Process and Information Flows

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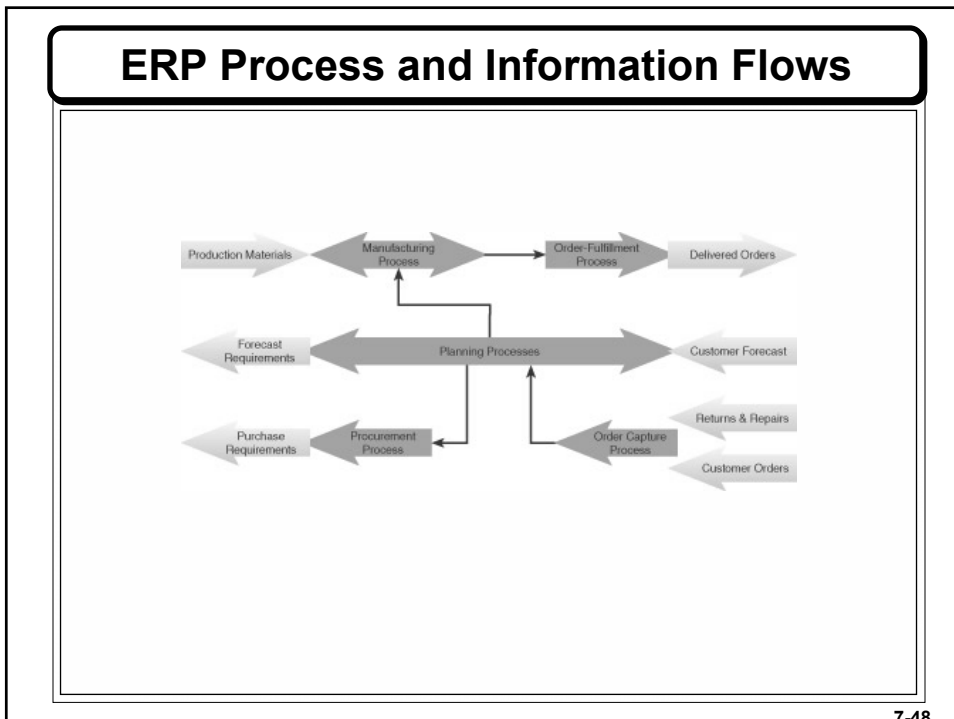
Benefits and Challenges of ERP

- ERP Business Benefits
  - Quality and efficiency
  - Decreased costs
  - Decision support
  - Enterprise agility
- ERP Costs
  - Risks and costs are considerable
  - Hardware and software are a small part of total costs
  - Failure can cripple or kill a business

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Costs of Implementing a New ERP

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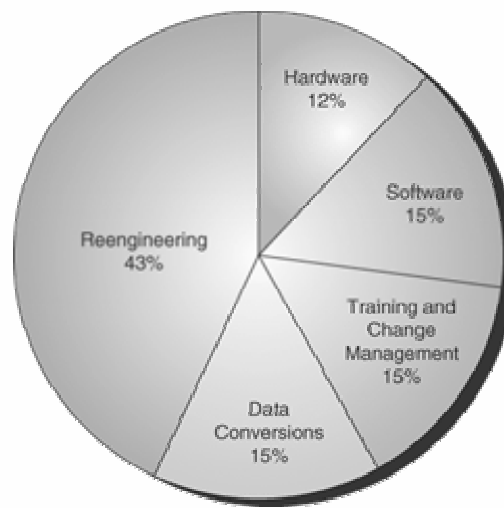
Causes of ERP Failures

- Most common causes of ERP failure
  - Under-estimating the complexity of planning, development, training
  - Failure to involve affected employees in planning and development
  - Trying to do too much too fast
  - Insufficient training
  - Insufficient data conversion and testing
  - Over-reliance on ERP vendor or consultants

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Introduction to e-Commerce

- Electronic commerce encompasses the entire online process of
  - Developing
  - Marketing
  - Selling
  - Delivering
  - Servicing
  - Paying for products and services

- It relies on the Internet and other information technologies to support every step of the process

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Categories of e-Commerce

- Business-to-Consumer
  - Virtual storefronts, multimedia catalogs, interactive order processing, electronic payment, online customer support
- Business-to-Business
  - Electronic business marketplaces, direct links between businesses, auctions and exchanges
- Consumer-to-Consumer
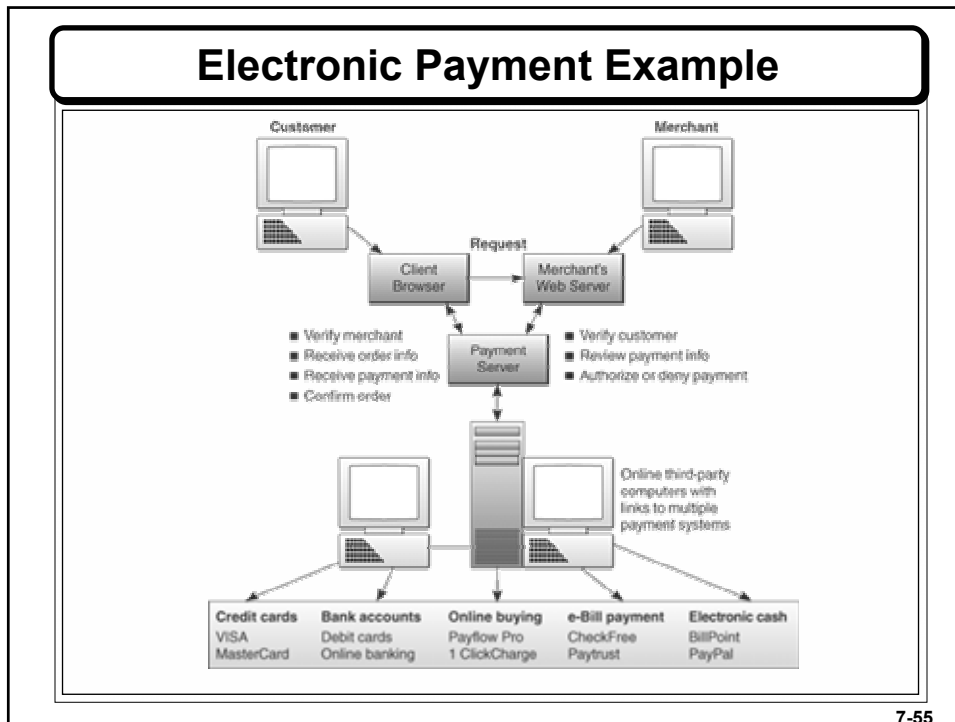 - Online auctions, posting to newspaper sites, personal websites, e-commerce portals

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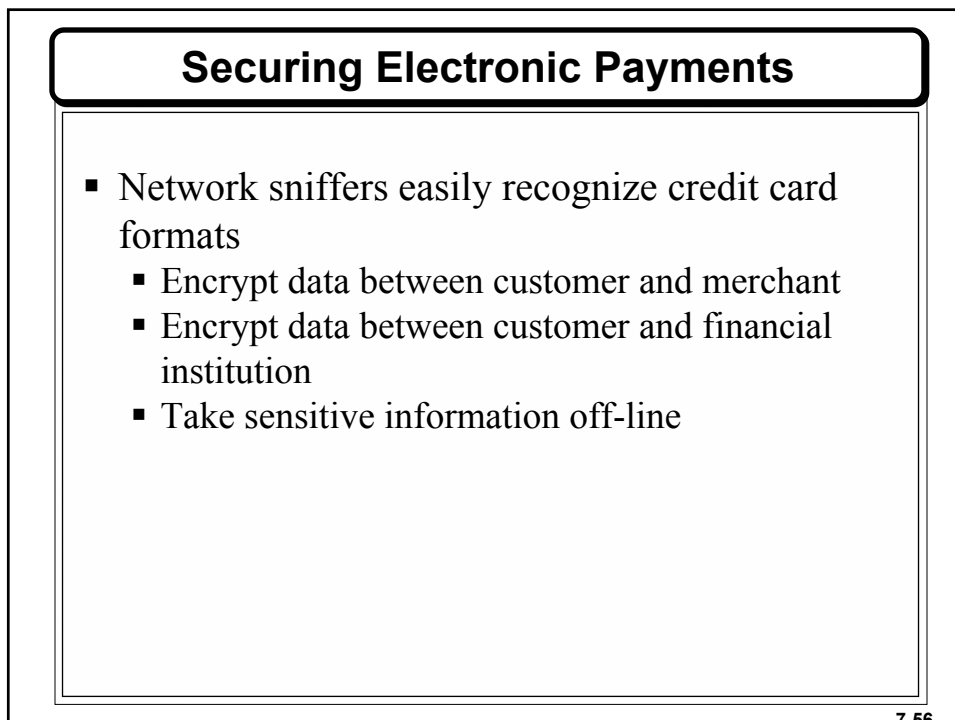### Electronic Payment Processes

- Web Payment Processes
  - Shopping cart process
  - Credit card payment process
  - Debit and other more complex processes
- Electronic Funds Transfer (EFT)
  - Major payment system in banking, retail
  - Variety of information technologies capture and process money and credit card transfers
  - Most point-of-sale terminals in retail stores are networked to bank EFT systems

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Electronic Payment Example

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Securing Electronic Payments

- Network sniffers easily recognize credit card formats
    - Encrypt data between customer and merchant
    - Encrypt data between customer and financial institution
    - Take sensitive information off-line

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B2B E-Commerce

- B2B is the wholesale and supply side of the commercial process
  - Businesses buy, sell, or trade with other businesses
- Relies on multiple electronic information technologies
  - Catalog systems
  - Trading systems
  - Data interchange
  - Electronic funds transfers

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