

# Discovering Computers Enhanced Edition ©2017

Tools, Apps, Devices, and the Impact of Technology

## Chapter 12

### Working in the Enterprise



## Objectives Overview

Identify the qualities of  
valuable information

Describe various  
information systems  
used in an enterprise

Identify the  
components of and  
steps in information  
literacy

Describe career  
opportunities available  
in various segments of  
the computer industry

Identify job titles and  
responsibilities for  
various technology jobs

See Page 552  
for Detailed Objectives

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## Objectives Overview

Identify mobile app development strategies

Identify ways to prepare for certification

Describe the general areas of IT certification

Identify ways to begin a job search

Explain how to create a professional online presence

See Page 552  
for Detailed Objectives

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## The Technology Industry

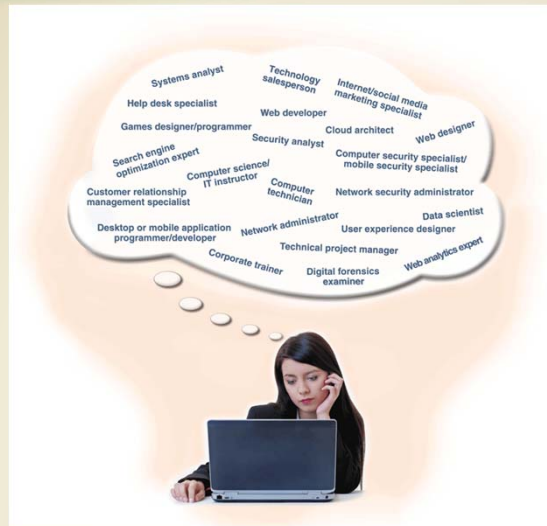
- Nearly every job requires you to interact with technology to:
  - Complete projects
  - Exchange information with coworkers
  - Meet customers' needs
- As new technologies emerge, organizations look for potential employees who possess skills and a desire to learn and who are comfortable using all types of technology

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## The Technology Industry



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Figure 12-1

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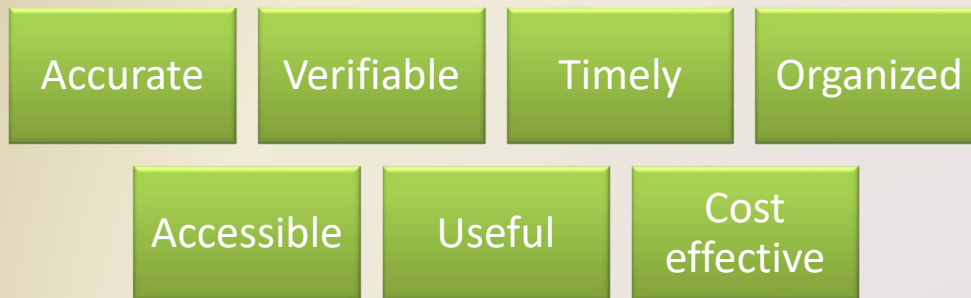
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## Information Systems in the Enterprise

- An **information system** is a set of hardware, software, data, people, and procedures that work together to produce information
- To assist with sound decision making, information must have value

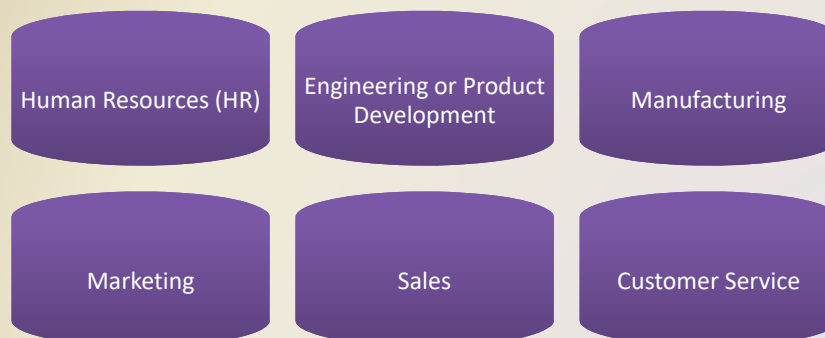
## Information Systems in the Enterprise

- For information to be valuable, it should be:



## Information Systems in the Enterprise

- A typical enterprise consists of a wide variety of departments, centers, and divisions — collectively known as functional units



## Information Systems in the Enterprise

- **Enterprise Resource Planning (ERP)** integrates MRP II with the information flow across an organization to manage and coordinate the ongoing activities of the enterprise



## Information Systems in the Enterprise



## Information Systems in the Enterprise

### Document Management System (DMS)

- Allows for storage and management of a company's documents
- Supports access control, security, version tracking, and search

### Content Management System (CMS)

- Enables and manages the publishing, modification, organization, and access of various forms of documents and other files
- Provides security controls
- Content added through a graphical user interface or webpage

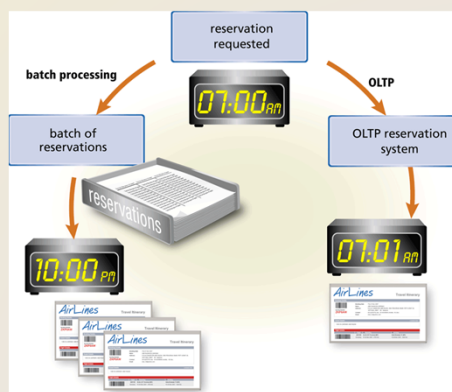
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## Information Systems in the Enterprise

- A transaction processing system (TPS) is an information system that captures and processes data from day-to-day business activities
  - Online transaction processing (OLTP)



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Figure 12-3

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## Information Systems in the Enterprise

- A **management information system (MIS)** is an Information system that generates accurate, timely, and organized information, so that managers and other users can make decisions, solve problems, supervise activities, and track progress

## Information Systems in the Enterprise

Detailed Flight Report for Flight #328				
Passenger Name	Gender	Birthdate	Seat	Premier Club
Adams, Latisha	F	4/25/92	3C	Y
Brewer, Milton	M	10/14/45	22F	N
Cam, Lin	F	12/16/91	2A	Y
Canaan, Lana	F	4/12/90	21A	N
Cole, Kristina	F	5/10/79	16C	N
Drake, Louella	F	3/4/81	4A	Y
Galens, Lynette	F	11/2/75	2C	N
Gilbert, Laura	F	2/20/78	4F	N
Henreich, Max	M	3/10/85	17C	Y
Hidalgo, Ronald	M	10/15/44	3F	Y
Marsh, Constance	F	11/5/82	2C	N
McGill, Teresa	F	2/27/73	16F	Y
Moretti, Leo	M	9/22/90	17A	Y
Nitz, Dawn	F	7/12/65	3F	N
Ruiz, Albert	M	2/13/93	10D	Y
Stein, Michelle	F	8/16/50	3A	N
Tu, Benjamin	M	1/16/77	22C	N
Van Wijk, Fred	M	6/9/89	10A	Y
Warner, Betty	F	7/1/58	16A	N

Summary Flight Report for March 30			
Flight #	Origin/ Destination	Passengers	Premier Club Members
1048	ORD – RSW	108	33
543	ORD – BMI	24	12
715	ORD – LAX	160	62
701	ORD – JFK	26	10

Exception Flight Report for March 30				
Flight #	Class	Origin/ Destination	Premier Club Members	Premier Club Member Goal
1048	A	ORD – RSW	1	4
701	C	ORD – JFK	3	5



## Information Systems in the Enterprise

- A **decision support system** (DSS) helps users analyze information and make decisions
  - Online analytical processing (OLAP)



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Figure 12-5

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## Information Systems in the Enterprise

- An **expert system** is an information system that captures and stores the knowledge of human experts and then imitates human reasoning and decision making



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Figure 12-6

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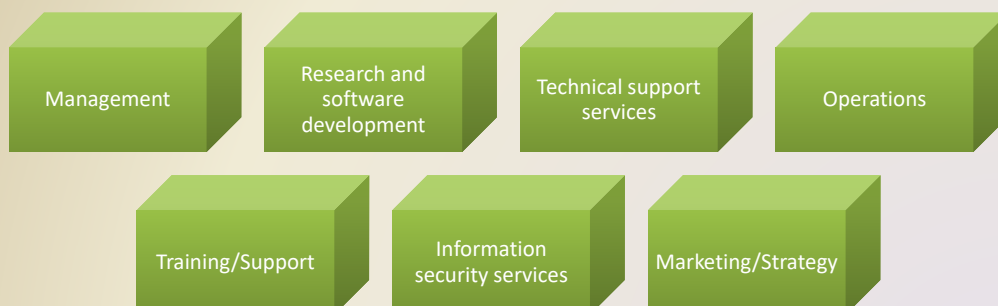


## Technology Careers

- Business and government organizations of all sizes use a variety of computers, mobile devices, and other technology
- Larger organizations use computers and other technology to answer and route phone calls, process orders, update inventory, and manage accounts receivable, accounts payable, billing, and payroll activities

## Technology Careers

- IT jobs usually are divided into the following areas:



## Technology Careers

- The technology equipment field consists of manufacturers and distributors of computers, mobile devices, and other hardware, such as magnetic and optical drives, monitors, printers, and communications and networking devices
- The software and apps field consists of companies that develop, manufacture, and support a wide range of software and apps for computers, the web, and mobile devices



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Figure 12-8

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## Technology Careers

- The technology service and repair field provides preventive maintenance, component installation, and repair services to customers



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Figure 12-9

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## Technology Careers

- Technology salespeople must possess a general understanding of technology and a specific knowledge of the product they are selling



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Figure 12-10

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## Technology Careers

- Schools, colleges, universities, and private companies all need qualified educators to provide technology-related education and training
- Corporate trainers teach employees how to use software and apps, design and develop systems, write programs, integrate and sync data from apps used on multiple devices, and perform other technology-related activities



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Figure 12-11

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## Technology Careers

- A help desk specialist answers hardware, software, and networking questions in person, over the phone, or electronically via email or a chat room
- An **IT consultant**, typically hired based on expertise, provides technology services to his or her clients

## Technology Careers

**Table 12-2 System Development Jobs**

Job Title	Job Description
Cloud Architect	Identifies business requirements, strategies, and solutions for cloud storage and services that meet a company's goals or needs
Database Designer	Specifies the structure, interface, and requirements of a large-scale database; determines security and permissions for users
Program and App Developer	Specifies, designs, implements, tests, and documents programs and apps in a variety of fields, including robotics, operating systems, animation, and applications
Systems Analyst	Works closely with users to analyze their requirements, designs and develops new information systems, and incorporates new technologies
Systems Programmer	Installs and maintains operating system software and provides technical support to the programming staff
Web Designer	Designs the layout, navigation, and overall appearance of a website with a focus on user experience; specifies a website's appearance using HTML5, JavaScript, CSS, media, and other web design technologies
Web Developer	Analyzes, develops, and supports the functionality of a website, including applications that often interact with databases or other online resources

## Technology Careers

**Table 12-3 Technology Operations Jobs**

Job Title	Job Description
<b>Computer Technician</b>	Installs, maintains, and repairs hardware and servers; installs, upgrades, and configures software; troubleshoots hardware problems
<b>Help Desk Specialist/ Help Desk Technician</b>	Answers technology-related questions in person, on the phone, or via email or an online chat room
<b>Network Administrator/ Engineer</b>	Installs, configures, and maintains LANs, WANs, wireless networks, intranets, Internet systems, and network software; identifies and resolves connectivity issues
<b>Technical Project Manager</b>	Guides design, development, and maintenance tasks; serves as interface between programmers/developers and management

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Table 12-3

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## Technology Careers

**Table 12-4 Web Marketing and Social Media Jobs**

Job Title	Job Description
<b>Customer Relationship Management (CRM) Specialist</b>	Integrates apps and data related to customer inquiries, purchases, support requests, and behaviors in order to provide a complete application that manages a company's relationships with its customers
<b>Internet/Social Media Marketing Specialist</b>	Directs and implements an organization's use of Internet and social media marketing, including Facebook pages, Twitter feeds, blogs, and online advertisements
<b>Search Engine Optimization (SEO) Expert</b>	Writes and develops web content and website layouts so that they will appear at the beginning of search results when users search for content
<b>User Experience (UX) Designer</b>	Plans and designs software and apps that consider a user's reaction to a program and its interface, including its efficiency, its effectiveness, and its ease of use

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Table 12-4

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## Technology Careers

**Table 12-5 Data Storage, Retrieval, and Analysis Jobs**

Job Title	Job Description
<b>Data Scientist</b>	Uses analytics and other Big Data tools to compile statistics on data that an organization can use to plan product development or create strategies for marketing
<b>Database Analyst</b>	Uses data modeling techniques and tools to analyze and specify data usage
<b>Database Administrator</b>	Creates and maintains the data dictionary; monitors database performance
<b>Digital Forensics Examiner</b>	Collects and analyzes evidence found on computers, networks, mobile devices, and databases
<b>Web Analytics Expert</b>	Collects and measures Internet data, such as website traffic patterns and advertising, and develops reports that recommend strategies to maximize an organization's web presence

## Technology Careers

**Table 12-6 Information and Systems Security Jobs**

Job Title	Job Description
<b>Computer Security Specialist/ Mobile Security Specialist</b>	Responsible for the security of data and information stored on computers and mobile devices within an organization
<b>Network Security Administrator</b>	Configures routers and firewalls; specifies web protocols and enterprise technologies
<b>Security Analyst</b>	Implements security procedures and methods, looks for flaws in security of a company's devices and networks, works with and trains employees at all levels, and assigns permissions and network settings
<b>Security System Project Manager</b>	Develops and maintains programs and tools designed to provide security to a network
<b>Digital Forensics Analyst</b>	Inspects electronic data to recover documents and files from data storage devices that may have been damaged or deleted, in order to use them as evidence in a crime investigation

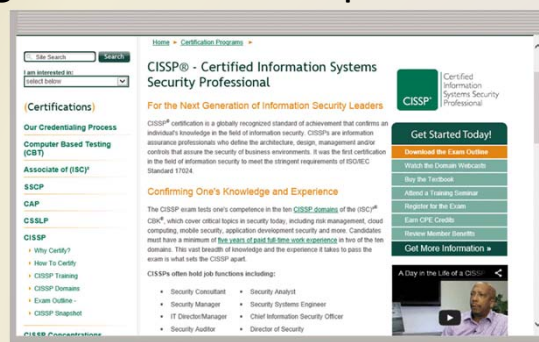
## Technology Careers

**Table 12-7 App Development and Mobile Technologies Jobs**

Job Title	Job Description
<b>Desktop or Mobile Application Programmer/Developer</b>	Converts the system design into the appropriate application development language, such as Visual Basic, Java, C#, and Objective C, and toolkits for various platforms
<b>Games Designer/Programmer</b>	Designs games and translates designs into a program or app using an appropriate application development language
<b>Mobile Strategist</b>	Integrates and expands the company's initiatives for mobile users
<b>Mobile Technology Expert</b>	Develops and directs an organization's mobile strategy, including marketing and app development

## Technology Certifications

- A certification demonstrates your knowledge in a specific area to employers or potential employers
- Obtaining a certification requires time and money





## Technology Certifications

- Application Software Certifications

Corporate trainers

Help desk  
specialists

Office  
managers/workers

Technology sales  
representatives

Technology  
teachers

## Technology Certifications

- Data Analysis and Database Certifications

Data scientist

Database  
administrators

Database  
analysts

Digital  
forensics  
examiners

## Technology Certifications

- Hardware Certifications

Cable  
installation  
technicians

Computer  
repair  
technicians

Corporate  
trainers

Help desk  
specialists

IT consultants

System  
engineers and  
administrators

## Technology Certifications

- Networking Certifications

Hardware  
service  
technicians

IT consultants

Network  
managers

Network  
engineers

System  
administrators

## Technology Certifications

- Operating System Certifications

Hardware  
technicians

Help desk  
specialists

Network  
administrators

IT consultants

System  
administrators

## Technology Certifications

- Program/Developer Certifications

Game developers

IT consultants

Mobile  
application  
developers

Project  
leaders/managers

Systems analyst

Web developers

## Technology Certifications

- Security Certifications

Information  
security officers  
and managers

Law  
enforcement  
officials

Military  
intelligence  
officers

Network  
administrators

Wireless  
network  
administrators

Network  
security  
specialists

Security  
administrators

## Job Searching and Career Planning

- Many job opportunities may exist in your industry, so it is important to narrow down the available jobs to ones for which you are qualified and in which you are interested
- Tools at your disposal include the career service department at your school, career planning websites, and online social networks
- Whether you are seeking a new job or currently are employed, you may find a career planning website useful

## Job Searching and Career Planning



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Figure 12-13

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## Summary

Information  
systems in an  
enterprise

Various technology  
career fields and  
specific technology  
jobs

Technology  
certifications

How to begin a job  
search and create a  
professional online  
presence

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