



**ACS-1803**  
**Introduction to Information**  
**Systems**

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**Social Impact of Information Systems**  
Lecture Outline 13



# Principles and Learning Objectives

- Analyze the ethical, social, and political issues that are raised by information systems
- Discuss the ethical concerns associated with information privacy, accuracy, property, and accessibility
- Define computer crime, and list several types of computer crime
- Understand the role of the IS function within an organization
- Describe the study and future of Applied Information Systems

# Social Issues

- The information age has brought the need to understand issues for workers, companies, and society in general:
- Computer Waste and Mistakes
- Trade-offs between privacy and security
- Work environment issues
- Ethical Issues

# Computer Waste and Mistakes

- Examples of computer-related waste include:
  - Organization's operating unintegrated information systems
  - Acquiring redundant systems
  - Wasting information system resources
- Computer-related mistakes refer to:
  - Errors
  - Failures
  - Other computer problems that make computer output incorrect or not useful
- Most computer-related mistakes are caused by human error

# Computer Waste

- Unintegrated information systems make it difficult to collaborate and share information
  - Leads to missed opportunities, increased costs, and lost sales
- Systems acquired in different organizational units that perform the same functions
  - Increases hardware and software costs
- Improper use of information systems and resources by employees
  - Sending texts and personal email, playing computer games, surfing the Web, shopping online, checking for updates on Instagram or Facebook, etc.

# Computer Related Mistakes

- Common causes
  - Unclear expectations
  - Inadequate training and feedback
  - Program development that contains errors
  - Incorrect input by a data-entry clerk
- Some examples:
  - Data-entry or data-capture errors
  - Programming errors
  - Errors in handling files
  - Mishandling of computer output
  - Inadequate planning for and control of equipment malfunctions etc.

# Preventing Computer-Related Waste and Mistakes

- IS efficiency and effectiveness involves:
  - Establishing policies and procedures
  - Implementing policies and procedures
  - Monitoring policies and procedures
  - Reviewing policies and procedures

# Establishing Policies and Procedures

- Training programs as well as manuals and documents covering the use and maintenance of information systems
  - Can help prevent computer waste and mistakes
- Additional preventative measures:
  - Requirement that all new applications be approved through an established process before they are rolled out
  - Requirement that documentation and descriptions of certain applications be filed or submitted to a central office



# Privacy Issues

- Issue of privacy deals with the right to be left alone or to be withdrawn from public view
- Data is constantly being collected and stored on each of us
  - The data is often distributed over easily accessed networks without our knowledge or consent
  - Who owns this information and knowledge?

# Privacy at Work

- Employers use technology and corporate policies to manage worker productivity and protect the use of IS resources
  - Employers are concerned about inappropriate Web surfing
- Organizations monitor employees' email
  - More than half retain and review messages
- Most employers have a policy that explicitly eliminates any expectation of privacy when an employee uses any company-owned computer, server, or e-mail system
- The courts have ruled that, without a reasonable expectation of privacy, there is no Fourth Amendment protection for the employee

# Information Privacy and Issues

- **Information Privacy** concerns what information an individual must reveal to others in the course of gaining employment or shopping online
- Privacy is the claim of individuals to be left alone, free from surveillance or interference from other individuals or organizations including the Government.
- Claim to privacy is protected by the Canadian Charter of Rights and Freedoms
- In 2000, in Canada, Personal Information Protection and Electronic Documents Act (PIPEDA)
- However, privacy can be challenged by the Internet: cookies, spyware

# Information Property – PIPEDA

The law requires organizations to:

- obtain consent when they collect, use or disclose their personal information;
- supply an individual with a product or a service even if they refuse consent for the collection, use or disclosure of your personal information unless that information is essential to the transaction;
- collect information by fair and lawful means; and
- have personal information policies that are clear, understandable and readily available.

# Information Property – PIPEDA

*Personal Information Protection and Electronic Documents Act (PIPEDA)* The law gives individuals the right to

- know why an organization collects, uses or discloses their personal information;
- expect an organization to collect, use or disclose their personal information reasonably and appropriately, and not use the information for any purpose other than that to which they have consented;
- know who in the organization is responsible for protecting their personal information;
- expect an organization to protect their personal information by taking appropriate security measures;
- expect the personal information an organization holds about them to be accurate, complete and up-to-date;
- obtain access to their personal information and ask for corrections if necessary; and
- complain about how an organization handles their personal information if they feel their privacy rights have not been respected.

# Privacy and Email

- Federal law permits employers to monitor email sent and received by employees
- Email messages that have been erased from hard disks can be retrieved and used in lawsuits
- Email use among public officials might violate “open meeting” laws

# Privacy and the Internet

- Privacy concerns with the Internet
  - Sending email messages
  - Visiting a Web site
  - Buying products over the Internet
- The Children's Online Privacy Protection Act (COPPA) of 1998
  - Impacts the design and operations of Web sites that cater to children
- Social network services
  - Examples: Facebook, Twitter, LinkedIn, Pinterest, Google Plus, Tumblr, and Instagram
  - Parents should discuss potential dangers, check their children's profiles, and monitor children's activities

# Individual Efforts to Protect Privacy

- Laws to do completely protect individual privacy
  - Many people take steps to increase their own privacy protection
- To protect personal privacy:
  - Find out what is stored about you in existing databases
  - Be careful when you share information about yourself
  - Be proactive to protect your privacy
  - Take extra care when purchasing anything from a Web site



# Work Environment

- Use of computer-based information systems has changed the workforce
  - Jobs that require IS literacy have increased
  - Less-skilled positions have been eliminated
- While information systems increase productivity and efficiency, there are inherent concerns with their use

# Health Concerns

- Occupational stress
  - Anxieties about job insecurity, loss of control, incompetence, and demotion
- Seated immobility thromboembolism (SIT)
  - Formation of blood clots in the legs or lungs
- Repetitive strain injury (RSI)
  - An injury or disorder of the muscles, nerves, tendons, ligaments, or joints caused by repetitive motion
- Carpal tunnel syndrome (CTS)
  - Inflammation of the nerve that connects the forearm to the palm of the wrist

# Avoiding Health and Environmental Problems

- Two primary causes of computer-related health problems are
  - A poorly designed work environment
  - Failure to take regular breaks to stretch the muscles and rest the eyes
- Work stressors are hazardous activities associated with unfavorable conditions of a poorly designed work environment
  - Repetitive motion, awkward posture, and eye strain are examples

# Ethical Issues in Information Systems

- Ethical issues
  - Deal with what is generally considered right or wrong
- IS professionals are often faced with their own unique set of ethical challenges
- Some IS professional organizations have developed code of ethics to guide people working in IS professions

# What is Ethics

- Ethical behavior conforms to generally accepted social norms
- Morals are one's personal beliefs about right and wrong
- Law is a system of rules that tells us what we can and cannot do
  
- Morals, Ethics and Law can conflict both for good and bad

# Code of Ethics

- A code of ethics:
  - States the principles and core values essential to a set of people and, therefore, govern their behavior
  - Can become a reference point for weighing what is legal and what is ethical
- Mishandling of the social issues discussed in this chapter—including waste and mistakes, crime, privacy, health, and ethics—can devastate an organization
- Prevention of these problems and recovery from them are important aspects of managing information and information systems as critical corporate assets



# Careers in Information Systems

# Careers in Information Systems

- Successful IS workers must:
  - Enjoy working in a fast-paced, dynamic environment
  - Meet deadlines and solving unexpected challenges
  - Possess good communication skills
  - Have solid analytical and decision-making skills
  - Develop effective team and leadership skills
  - Be adept at implementing organization change
  - Be prepared to engage in life-long learning in a rapidly changing field



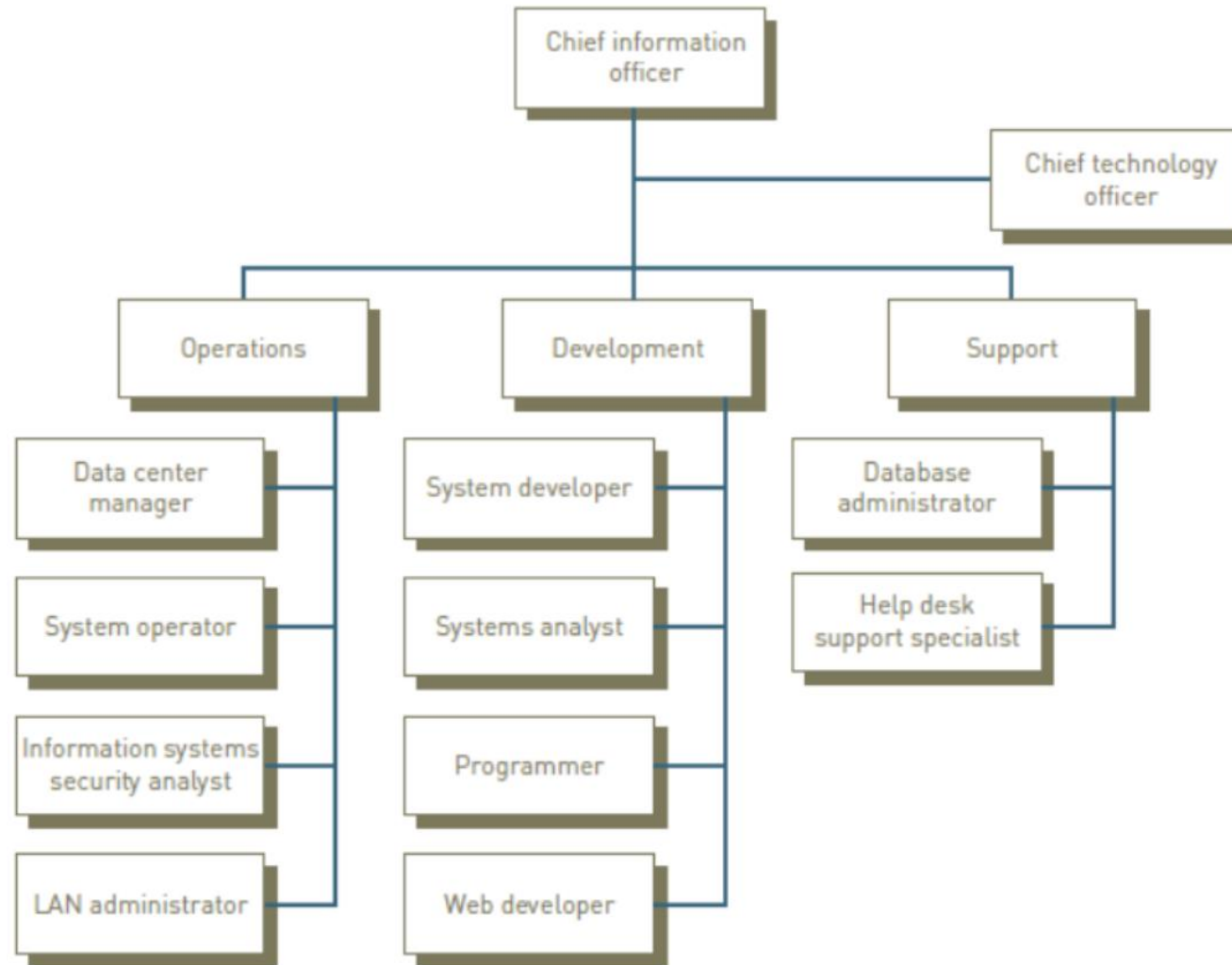
# Careers in Information Systems

- Technical skills important for IS workers to have:
  - Capability to analyze large amounts of structured and unstructured data
  - Ability to design/build applications for mobile devices
  - Programming and application development skills
  - Technical support expertise
  - Project management skills
  - Knowledge of networking and cloud computing
  - Ability to audit systems and implement necessary security measures
  - Web design and development skills
  - Knowledge of data center operations

# Careers in Information Systems

- In addition to technical skills, IS professionals need:
  - Skills in written and verbal communication
  - An understanding of organizations and the way they operate
  - The ability to work with people and in groups

# Careers in Information Systems



**FIGURE 1.14**

## Three primary functions of the information systems organization

Each of these functions—operations, development, and support—encompasses several different IS roles.

# Careers in Information Systems

- Typical IS Titles and Functions
  - **Chief Information Officer (CIO)** employs the IS department's equipment and personnel to help the organization attain its goals
  - **Senior IS Managers**
    - Vice president of information systems
    - Manager of information systems
    - Chief technology officer (CTO)
    - Central role of all of the above is to communicate with other areas of the organization to determine changing business needs

# Careers in Information Systems: Operations Roles

- **Data center managers** are responsible for the maintenance and operation of the organization's computing facilities
- **System Operators/Application Administrators** run and maintain IS equipment
- **IS security analysts** are responsible for maintaining the security and integrity of their organizations' systems and data
- **Local area network (LAN) administrators** set up and manage the network hardware, software, and security processes

# Careers in IS: Operations Roles

- Database administrators (DBAs) design and set up databases to meet an organization's needs
- System support specialists respond to telephone calls, email, and other inquiries from computer users
  - Desktop support
  - Help Desk

# The End!

Good luck with your Exams and for the Future!