ACS-1803
Introduction to Information Systems

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Social Impact of Information Systems

Lecture Outline 12

Social Issues

▶ The information age has brought the need to understand issues for workers, companies, and society in general:

  ▶ Computer Wate 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

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

Privacy and the Federal Government

▸ The federal government has implemented a number of laws addressing personal privacy

- ▸ Personal Information Protection and Electronic Documents Act (PIPEDA)

- ▸ Originally created in 2000 to promote consumer trust in eCommerce

- ▸ It is a law to protect individuals and their right to privacy

- ▸ Individuals have the full right to control their information no matter who has it or where it is stored

- ▸ When organizations collect information about individuals they need to obtain full consent in the collection of information

- ▸ The law provides the avenues that the individual can use in order to complain when they believe that their information is being misused.

Information Property - PIPEDA

Personal Information Protection and Electronic Documents Act (PIPEDA)
The law gives <u>individuals</u> 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.

Information Property - PIPEDA

Personal Information Protection and Electronic Documents Act (PIPEDA)

The law requires <u>organizations</u> 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.

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

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

  ▶ Programing 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
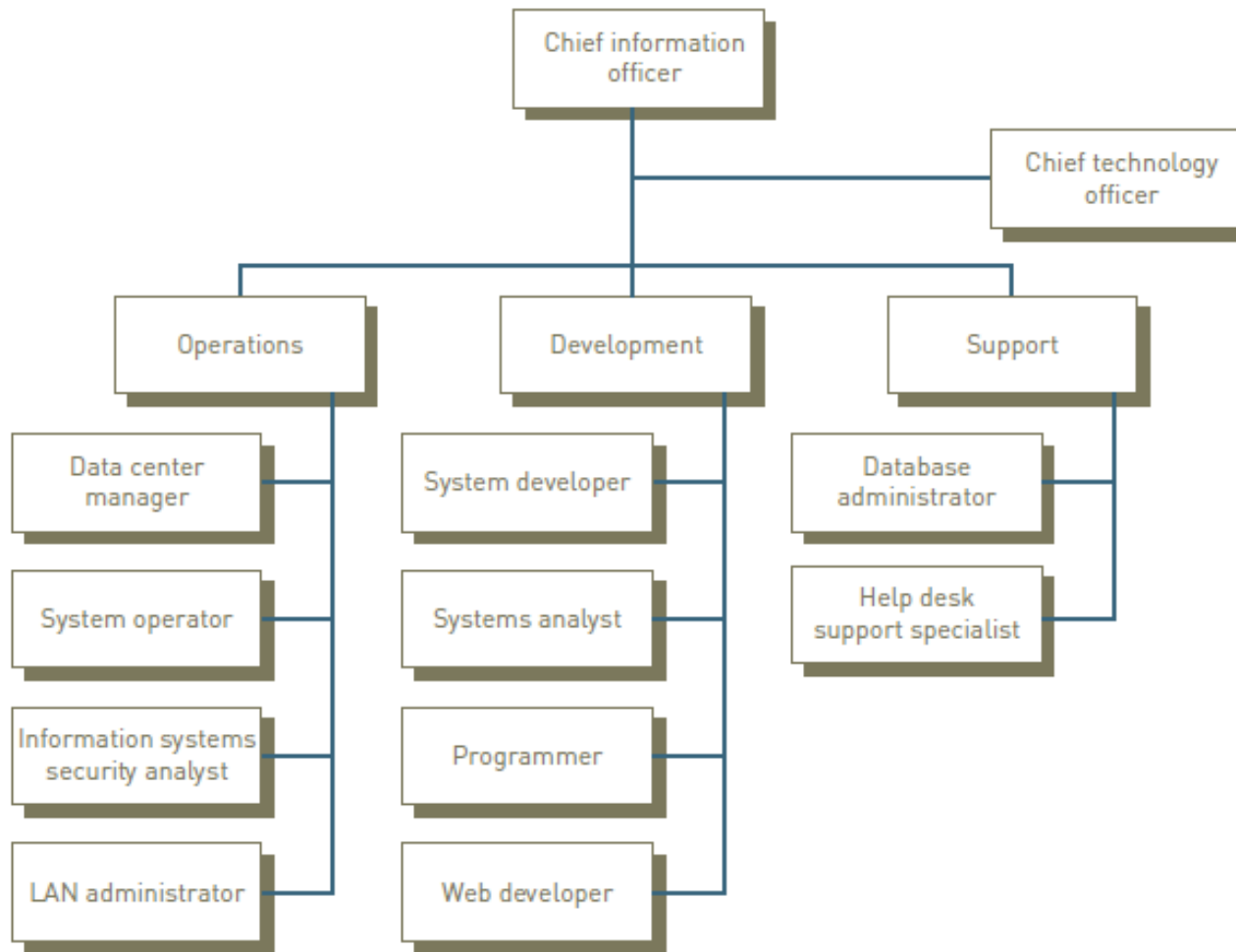
Careers in Information Systems

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** 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 Information Systems: Development Roles

▸ **Software developers** write the software that customers and employees use

▸ **Systems analysts** consult with management and users, as well as convey system requirements to software developers and network architects

▸ **Programmers** convert a program design developed by a systems analyst or software developer into one of many computer languages

▸ **Web developers** design and maintain Web sites, including site layout and function, to meet the client's requirements

Careers in Information Systems: Support 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

Careers in Information Systems

▶ Other IS Careers

  ▶ Consulting opportunities

  ▶ Computer training

  ▶ Computer and computer-equipment sales

  ▶ Computer repair and maintenance

  ▶ Support services

  ▶ Employment with technology companies

  ▶ Entrepreneurial ventures

The End

▸ Good Luck on Exams and in Future!!!