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ROYAL UNIVERSITY OF PHNOM PENH

Ethical, Legal, and Social Issues of Information Systems

MIS

Chea Daly

Why Learn about the Personal and Social Impact of Information Systems?

- Computers have become such valuable tools that most business people today have difficulty imagining how they would accomplish their work without them.

Why Learn about the Personal and Social Impact of Information Systems?

- Yet, the information age has also brought the potential for cybercrime as well as the following potential problems for workers, companies, and society in general:
  - Computer waste and mistakes
  - Trade-offs between privacy and security
  - Work environment problems
  - Ethical issues

Why Learn about the Personal and Social Impact of Information Systems?

- If you work at an organization, you will likely be challenged with leading your organization in dealing with these issues.
- Also, as a user of information systems and the Internet, developing a better understanding of these issues will help you to manage in an ethical manner and avoid technology-related problems.

Computer Waste and Mistakes

- Computer waste:
  - Inappropriate use of computer technology and resources.
- Computer-related mistakes:
  - Errors, failures, and other computer problems that make computer output incorrect or not useful.

Computer Waste and Mistakes

- Computer-related waste and mistakes are major causes of computer problems, contributing to unnecessarily high costs and lost profits.

Computer Waste

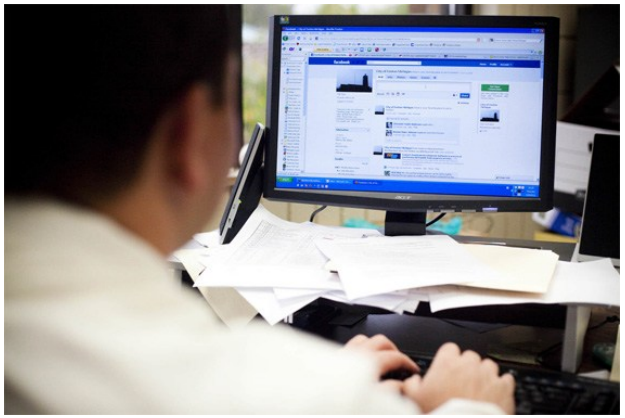
- Some organizations still use unintegrated information systems, which makes it difficult for workers to collaborate and share information.
- For example, most public health departments locally implemented information systems for patient data collection, management, and reporting.

Computer Waste

- Such systems are inefficiencies, difficulties in generating reports, and limited data accessibility. Which can add to the growth in healthcare costs.

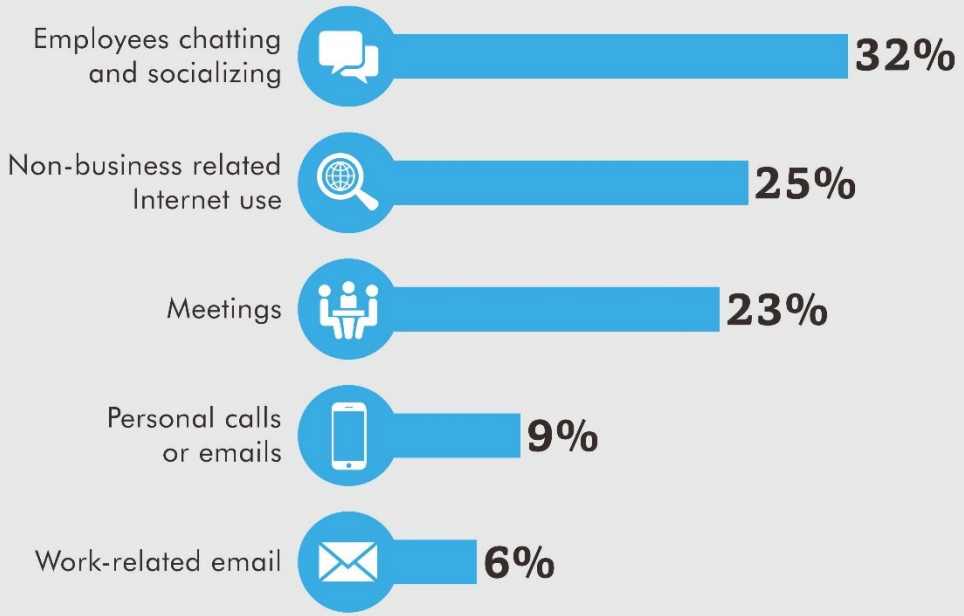
Computer Waste

- A less dramatic, yet still relevant, example of waste is the amount of company time, money, and IS resources that some employees misuse through texting, sending personal email, playing computer games, surfing the Web, shopping online, and checking for updates on Instagram or Facebook.



WASTING THE WORK DAY AWAY

Workers reveal their biggest distractions on the job:



Not sure: 6%

Source: Accountemps survey of more than 1,000 workers in the United States

Responses do not total 100 percent due to rounding.

rh Accountemps® A Robert Half Company

Computer Waste

- A study conducted by researchers at the University of Nevada estimated that wasting time online (or “cyberloafing,” as it is sometime called) costs U.S. businesses more than $85 billion annually.

Computer Waste

- As a result, many companies are exploring new tools to help improve workers' productivity, such as
  - using an open space layout instead of cubicles,
  - banning personal calls/cell phones,
  - monitoring emails and Internet usage, and
  - blocking certain Internet sites entirely.

Computer-Related Mistakes

Most common computer-related mistakes:

- Data-entry or data-capture errors
- Programming errors
- Errors in handling files, including formatting a disk by mistake, copying an old file over a newer one, and deleting a file by mistake
- Mishandling of computer output
- Failure to provide access to the most current information
- …

Preventing Computer-Related Waste and Mistakes

- To remain profitable in a competitive environment, organizations must use their resources wisely by minimizing waste and mistakes.
- This effort involves establishing, implementing, monitoring, and reviewing effective policies and procedures.

Establishing Policies and Procedures

- The first step in preventing computer-related waste and mistakes is to establish policies and procedures regarding efficient acquisition, use, and disposal of systems and devices.

Establishing Policies and Procedures

- Most companies require a formal justification statement before computer equipment is purchased, defining standard computing platforms (operating system, type of computer chip, minimum amount of RAM, etc.), and mandating the use of preferred vendors for all acquisitions.

Establishing Policies and Procedures

- Most organizations have also established strong policies to prevent employees from wasting time using computers inappropriately at work.

Establishing Policies and Procedures

- Some Institutes offer online training on preventing human errors that explains the underlying reasons that humans make mistakes and how these mistakes can be prevented.

https://www.process-improvement-institute.com/human-error-prevention-training/

Establishing Policies and Procedures

Examples of other useful policies to minimize waste and mistakes include the following:

- Changes to critical data should be tightly controlled, with all changes documented and authorized by responsible owners.

Establishing Policies and Procedures

- A user manual should be available covering the use of information systems to help prevent computer mistakes.
- Each system report should indicate its general content in its title and specify the time period covered.
- The system should have controls to prevent invalid and unreasonable data entry.
- …

Implementing Policies and Procedures

- The process of implementing policies and procedures to minimize waste and mistakes varies by organization.
- Most companies develop such policies and procedures with advice from the firm's internal auditing group or its external auditing firm.

Implementing Policies and Procedures

- Training and communication are the keys to the successful acceptance and implementation of policies and procedures.
- Many users are not properly trained in using applications, and their mistakes can be very costly.

Monitoring Policies and Procedures

- To ensure that users throughout an organization are following established procedures, routine practices must be monitored and corrective action must be taken when necessary.

Monitoring Policies and Procedures

- Many organizations perform audits to measure actual results against established goals, such as
  - percentage of end-user reports produced on time,
  - Percentage of data-input errors detected, and
  - number of input transactions entered per eight-hour shift.

Monitoring Policies and Procedures

- Audits can also be used to track the amount of time employees spend on non-work-related Web sites and to determine if specific system policies and procedures are being followed consistently.

Reviewing Policies and Procedures

- The final step in preventing computer-related waste and mistakes is to review existing policies and procedures to determine whether they are adequate.

Reviewing Policies and Procedures

- Questions to be answered:
  - Do current policies cover existing practices adequately?
  - Does the organization plan any new activities in the future? If so, does it need new policies or procedures addressing who will handle them and what must be done?
- The results of failing to review and plan changes in policies and procedures can lead to disastrous consequences.

Privacy Issues

- Privacy is an important social issue related to the use of information systems.
- In 1890, U.S. Supreme Court Justice Louis Brandeis stated that the “right to be left alone” is one of the most “comprehensive of rights and the most valued by civilized man.”

Privacy Issues

- Data is constantly being collected and stored and sometimes without our knowledge or consent.
- Today, many businesses rely on collected personal data to enhance their sales and marketing efforts, and for some organizations, buying and selling personal data is their business.

Privacy Issues

- If a public or private organization spends time and resources to obtain data on you, does the organization own the data, and should it be allowed to use the data in any way it desires?

Privacy at Work

- The right to privacy at work is also an important issue.
- Employers are using technology and corporate policies to manage worker productivity and protect the use of IS resources.
- Employers are monitoring employees' Web activity, employees' email, etc.

Privacy at Work

- Some companies require employees to provide health and medical details to a third-party provider in return for lower insurance premiums.
- And not all companies clearly state what data is protected, what data will be shared third parties, and what data will be shared with the employer (and whether that information will include individually identifiable data).

Privacy at Work

- Many employees of the city of Houston balked at providing private information to a company whose authorization form indicated that it might pass the data to other third-party vendors and that the data might be subject to “redisclosure” in areas reviewable by the public

Privacy at Work

- New questions regarding employee data privacy have also arisen as more employers are encouraging—or requiring—the use of wearable technology that monitors not only employees' health but also their locations.

Privacy at Work

- The European Union (EU) has developed strict regulations to enforce data privacy standards across all members of the organization.
- Under these regulations, personal data can only be gathered legally under strict conditions and only for reasonable purposes.

Privacy at Work

- Furthermore, persons or organizations that collect and manage individuals' personal information must protect it from misuse and must respect certain rights of the data owners, which are guaranteed by EU law.
- These regulations affect virtually any company doing business in Europe.

Privacy and Email

- The use of email also raises some interesting issues about privacy.
- Sending an email message is like having an open conversation in a large room—many people can listen to your messages.
- In addition, federal law permits employers to monitor email sent and received by employees.

Privacy and Instant Messaging

- Privacy issues have come into play in some recent cases involving sexting—the sending of sexually explicit texts and/or photos.
- Some older teenagers who have engaged in consensual sexting have found that those texts are not considered private if the sexting involves someone who is still a minor.

Privacy and Instant Messaging

- Currently, only 20 states have sexting laws with provisions that provide for leniency for adolescents in cases where the sexting was consensual.
- Statutes in many states can result in teenagers who are prosecuted in cases involving underage texting being charged with possessing child pornography, resulting in a mandatory, lifetime sex offender designation.

Privacy and Personal Sensing Devices

- Mobile crowd sensing (MCS) is a means of acquiring data (i.e., location, noise level, traffic conditions, and pollution levels) through sensor-enhanced mobile devices and then sharing this data with individuals, healthcare providers, utility firms, and government agencies for decision making.

Privacy and Personal Sensing Devices

- While such data can be potentially useful in a variety of fields, the technology carries with it some privacy risks if people are unaware (or forget) that their personal mobile data is being shared.

Privacy and the Internet

- Some people approach the Internet with the assumption that there is no privacy online and that people who choose to use the Internet do so at their own risk.
- Others believe that companies with Web sites should have strict privacy procedures and be held accountable for privacy invasion.
- Regardless of your view, the potential for privacy invasion on the Internet is huge.

Privacy and the Internet

- People and organizations looking to invade your privacy could be anyone from criminal hackers or marketing companies, or others.
- When you visit a Web site on the Internet, information about you and your computer can be captured.
- Companies can find out what you read, where you shop, what products you buy, and what your interests are.

Privacy and the Internet

- The issue of most concern to many Internet users is what do content providers want to do with the personal information they gather online?
- If you buy something and provide a shipping address, will it be sold to other retailers?
- Will your email address be sold on a list of active Internet shoppers?

Privacy and the Internet

- If a site requests that you provide your information, you have every right to know why and what will be done with it.

Privacy and the Internet

Case: Children's Online Privacy Protection Act (COPPA)

- In December 2015, the Federal Trade Commission issued a total of $360,000 on two companies allowing third-party advertisers to collect personal information from children who used their apps.

Privacy and the Internet

- Facebook, in particular, holds a startling amount of information. It currently has 2.9 billion monthly active users.
- In addition to the information users provide when setting up an account, many Facebook users reveal their sexual, racial, religious, preferences, where they will be on a certain day (helpful to potential burglars), and other personal information about their friends and family.

Privacy and the Internet

- Facebook receives a notice every time you log on to Facebook, visit a Web site, whether or not you click the “Like” button.
- Users and observers have raised concerns about how Facebook treats this sometimes very personal information.
- Many privacy advocates have raised concerns about the ways in which Facebook provides this information to third parties for marketing or other purposes.

Privacy and Internet Libel Concerns

- **Libel** involves publishing an intentionally false written statement that is damaging to a person's or organization's reputation.
- Examples:
  - an ex-husband posting lies about his former wife on a blog,
  - a disgruntled former employee posting lies about a company on a message board, and
  - a jilted girlfriend posting false statements to her former boyfriend's Facebook account.

Privacy and Internet Libel Concerns Case: Google

- The local billionaire filed the lawsuit after Google refused to remove autocomplete suggestions, such as “triad” (in China, this is another name for an organized crime gang), which appear with searches on his name.
- The billionaire maintains that his reputation has been “gravely injured” and wants recompense.

Privacy and Internet Libel Concerns

- Individuals can post information on the Internet using anonymous email accounts or screen names.
- This anonymity makes it more difficult, but not impossible, to identify the libeler.
- The offended party can file lawsuit and grant the power to force the ISP to provide whatever information it has about the anonymous poster, including IP address, name, and street address.

Privacy and Filtering and Classifying Internet Content

- To help parents control what their children see on the Internet, some companies provide filtering software to help screen Internet content.
- Many of these screening programs also prevent children from sending personal information over email, in chat groups, or through instant messaging apps.

Privacy and Filtering and Classifying Internet Content

- These programs stop children from broadcasting their name, address, phone number, or other personal information over the Internet.

Privacy and Filtering and Classifying Internet Content

The 2016 top-rated Internet filtering software for both Windows and Mac:

TABLE 14.3 Top-rated Internet filtering software

Windows Systems	Mac Systems
NetNanny ($28.99)	Net Nanny ($28.99)
SpyAgent ($69.95)	Safe Eyes ($49.95)
Qustodio ($44.95)	Spector Pro ($99.95)

Privacy and Filtering and Classifying Internet Content

- Organizations also implement filtering software to prevent employees from visiting Web sites not related to work.
- Before an organization implements Web site blocking, it should educate employees about the company's Internet policies and why they exist.

Privacy and Filtering and Classifying Internet Content

- The U.S. Congress has made several attempts to limit children's exposure to online pornography.
- Under Children's Internet Protection Act (CIPA), schools and libraries receive funding to help purchase Internet access and computers if they certify that they have certain Internet safety measures in place to block child pornography, or other contents harmful to minors."

Individual Efforts to Protect Privacy

- Although numerous state and federal laws deal with privacy, the laws do not completely protect individual privacy.
- In addition, not all companies have privacy policies.
- As a result, many people are taking steps to increase their own privacy protection.

Individual Efforts to Protect Privacy

Some of the steps that you can take to protect personal privacy include the following:

- Be careful when you share information about yourself.
  - Do not share information unless it is absolutely necessary. Every time you give information about yourself, your privacy is at risk.

Individual Efforts to Protect Privacy

- Be careful when you share information about yourself (cont.).
  - Be vigilant in insisting that your doctor, bank, or financial institution not share information about you with others without your written consent.

Individual Efforts to Protect Privacy

- Be proactive in protecting your privacy.
  - Destroy copies of your charge card bills and shred monthly statements before disposing of them in the garbage.
  - Be careful about sending personal email messages over a corporate email system.
  - …

Individual Efforts to Protect Privacy

- Take extra care when purchasing anything from a Web site.
  - Do not do business with a site unless you know that it handles credit card information securely. Look for a seal of approval.

FIGURE **7.4**

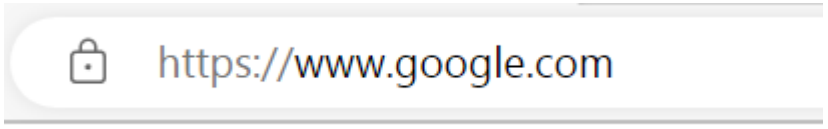
Seals of approval

To avoid problems when shopping online, look on the Web site for a seal of approval from organizations such as the Better Business Bureau Online or TRUSTe.

Courtesy Better Business Bureau and TRUSTe

Individual Efforts to Protect Privacy

- Take extra care when purchasing anything from a Web site (cont.).
  - When you open the Web page where you enter credit card information or other personal data, make sure that the Web address begins with https and check to see if a locked padlock icon appears in the Address bar or status bar.



Individual Efforts to Protect Privacy

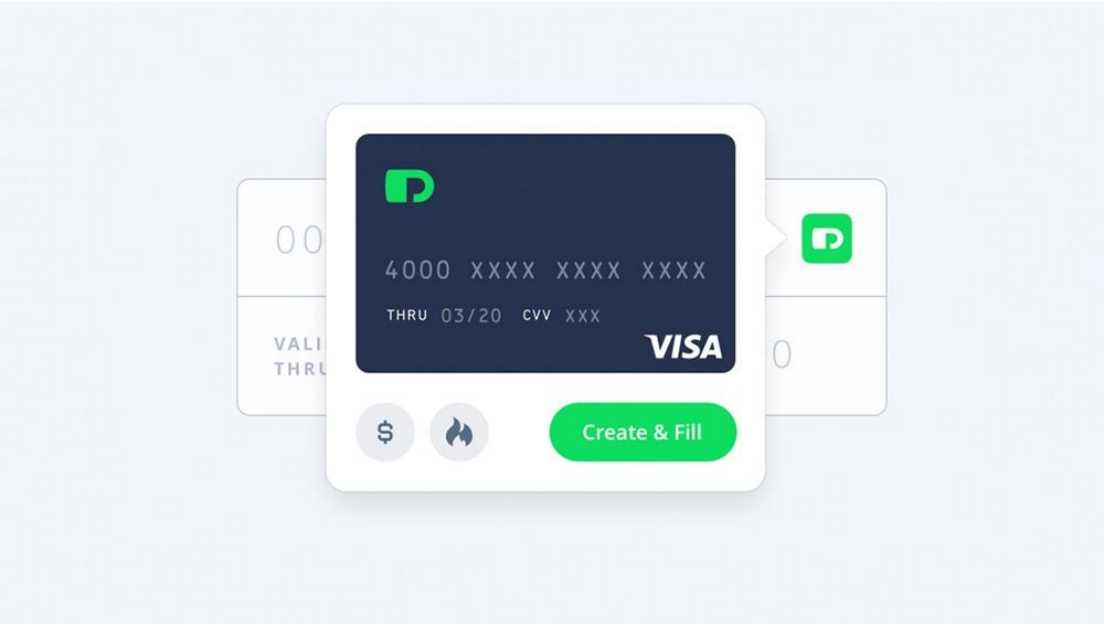
- Take extra care when purchasing anything from a Web site (cont.).
  - Do not provide personal information without reviewing the site's data privacy policy.

Our privacy policy

In short:	Ixquick does not collect or share personal information. We don't track or profile you.
The longer version:	Ixquick is strongly committed to protecting the privacy of its user community and is dedicated to ensure that your search information cannot be linked back to you. This privacy policy details the - very limited and non-personal - information Ixquick.com ("Ixquick") may gather and our disclosure policy.

Individual Efforts to Protect Privacy

- Take extra care when purchasing anything from a Web site (cont.).
  - Many credit card companies will issue single-use credit card numbers on request.



Work Environment

- As computers and other IS components drop in cost and become easier to use, more workers will benefit from the increased productivity and efficiency provided by computers.
- Yet, the use of information systems can raise other concerns.

Health Concerns

- For some people, working with computers can cause occupational stress.
- Anxieties about job insecurity, loss of control and incompetence are just a few of the fears workers might experience.
- In some cases, the stress can become so severe that workers avoid taking training to learn how to use new computer systems and equipment.

Health Concerns

- Training and counseling can often help the employee.
- Although they can cause negative health consequences, information systems can also be used to provide a wealth of information on health topics through the Internet and other sources.

Health Concerns

- Heavy computer use can affect one's physical health as well.
- A job that requires sitting at a desk and using a computer for many hours a day qualifies as a sedentary job. Such work can double the risk of Seated Immobility thromboembolism (SIT), the formation of blood clots in the legs or lungs.

Health Concerns

- People leading a sedentary lifestyle are also likely to experience an undesirable weight gain, which can lead to increased fatigue and greater risk of type 2 diabetes, heart problems, and other serious ailments.

Health Concerns

- Repetitive strain injury (RSI) is an injury or disorder of the muscles, nerves, tendons, ligaments, or joints caused by repetitive motion.
- Carpal tunnel syndrome (CTS) involves wrist pain, a feeling of tingling and numbness, and difficulty grasping and holding objects.

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.

Avoiding Health and Environmental Problems

- Computer screens can be hard to read because of glare and poor contrast.
- Desks and chairs can also be uncomfortable.
- Keyboards and screens might be fixed in an awkward position or difficult to move.
- The hazardous activities associated with these unfavorable conditions are collectively referred to as **work stressors.**

Avoiding Health and Environmental Problems

- Continued stressors such as repetitive motion, awkward posture, and eye strain can cause more serious and long-term injuries.
- These problems can severely limit productivity and performance.

Avoiding Health and Environmental Problems

- It is never too soon to stop unhealthy computer work habits.
- Prolonged computer use under poor working conditions can lead to carpal tunnel syndrome, bursitis, headaches, and permanent eye damage.
- Poor office conditions should not be left unchecked.

Avoiding Health and Environmental Problems

- Unfortunately, at times, we are all distracted by pressing issues such as the organization's need to raise productivity, improve quality, meet deadlines, and cut costs.
- We become complacent and fail to pay attention to the importance of healthy working conditions.

Avoiding Health and Environmental Problems

TABLE 14.5 Avoiding common discomforts associated with heavy use of computers

Common Discomforts Associated with Heavy Use of Computers	Preventative Action
Red, dry, itchy eyes	Change your focus away from the screen every 20 or 30 minutes by looking into the distance and focusing on an object for 20 to 30 seconds.
	Make a conscious effort to blink more often.
	Consider the use of artificial tears.
	Use an LCD screen, which provides a better viewing experience for your eyes by eliminating most screen flicker while still being bright without harsh incandescence.
Neck and shoulder pain	Use proper posture when working at the computer.
	Stand up, stretch, and walk around for a few minutes every hour.
	Shrug and rotate your shoulders occasionally.
Pain, numbness, or tingling sensation in hands	Use proper posture when working at the computer.
	Do not rest your elbows on hard surfaces.
	Place a wrist rest between your computer keyboard and the edge of your desk.
	Take an occasional break and spread fingers apart while keeping your wrists straight.Taken an occasional break with your arms resting at your sides and gently shake your hands.

Avoiding Health and Environmental Problems

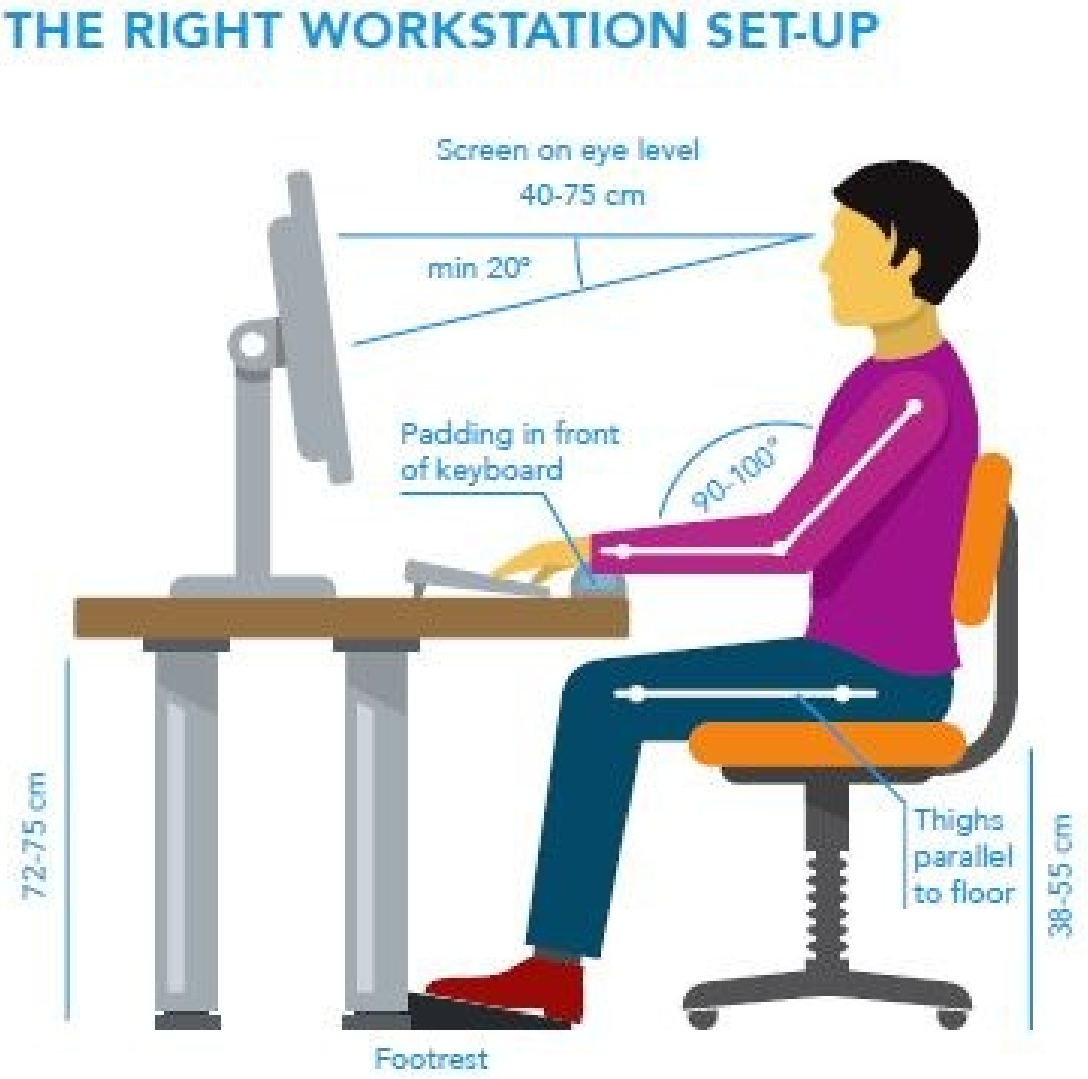


FIGURE **14.4**

Ergonomics

Developing certain ergonomically correct habits can reduce the risk of adverse health effects when using a computer.

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 in their work developing, implementing, and maintaining information systems.
- As a result, some IS professional organizations have developed codes of ethics to guide people working in IS professions.

What Is Ethics?

- As previously defined, **ethics** is a set of beliefs about right and wrong behavior.
- Ethical behavior conforms to generally accepted social norms—many of which are almost universally accepted.

What Is Ethics?

- Doing what is ethical can be difficult in certain situations.
- For example, although nearly everyone would agree that lying and cheating are unethical, some people might consider it acceptable to tell a lie to protect someone's feelings or to keep a friend from getting into trouble.

What Is Ethics?

- **Morals** are one's personal beliefs about right and wrong, whereas the term "ethics" describes standards or codes of behavior expected of an individual by a group (nation, organization, and profession) to which an individual belongs.

What Is Ethics?

- For example, the ethics of the law profession demand that defense attorneys defend an accused client to the best of their ability, even if they know that the client is guilty of the most heinous and morally objectionable crime one could imagine.

What Is Ethics?

- **Law** is a system of rules that tells us what we can and cannot do.
- Laws are enforced by a set of institutions (the police, courts, law-making bodies).
- Legal acts are acts that conform to the law.

What Is Ethics?

- Moral acts conform to what an individual believes to be the right thing to do.
- Laws can proclaim an act as legal, although some people may consider the act immoral—for example, abortion.

Codes of Ethics

- Laws do not provide a complete guide to ethical behavior.
- Just because an activity is defined as legal does not mean that it is ethical.
- As a result, practitioners in many professions subscribe to codes of ethics which are rules, principles and core values that guide the behavior of individuals or groups in various situations.

Codes of Ethics

- The code can become a reference point for weighing what is legal and what is ethical.

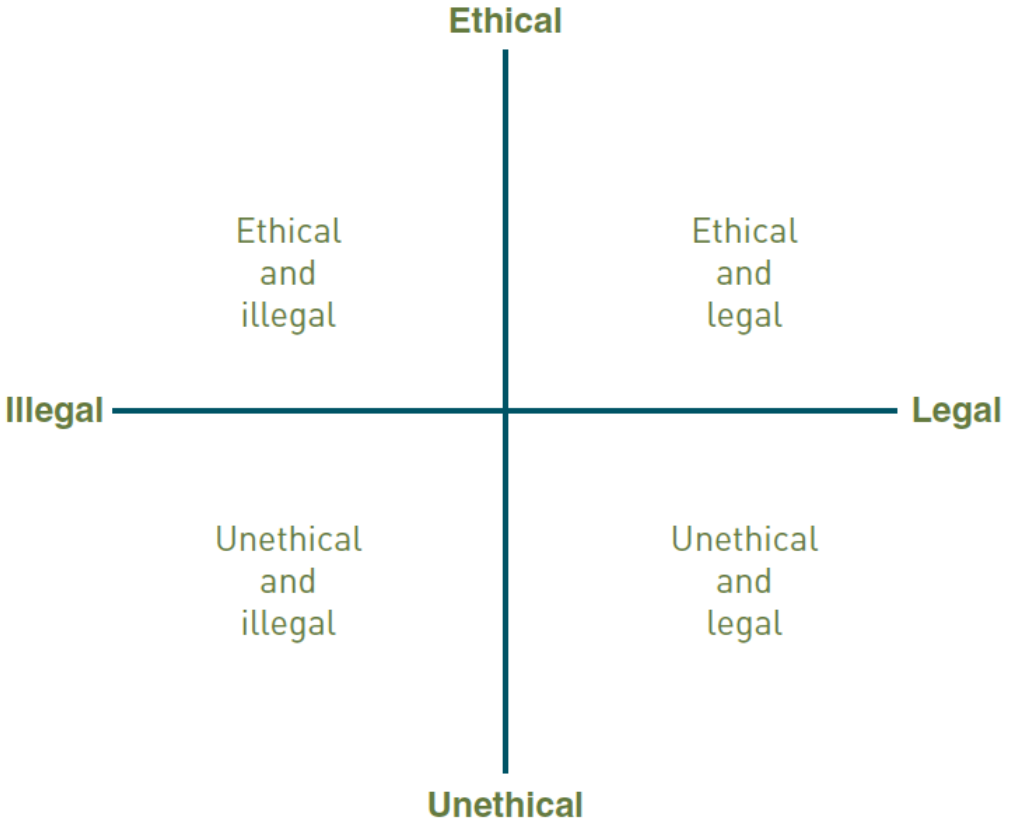


FIGURE **14.7**

Legal versus ethical

Just because an activity is defined as legal does not mean that it is ethical.

Codes of Ethics Examples

For Medical doctors:

- **Care**: We have a duty of care to everyone.
- **Honesty**: We maintain integrity in all situations
- **Excellent**: We promise to render high-quality medical services to every patient
- **Fairness**: We strive to treat every person equally.

Codes of Ethics Examples

For Attorneys:

- **Justice**: We are dedicated to finding justice for all individuals.
- **Confidentiality**: We aim to always maintain the privacy of our clients.
- **Respect**: We believe every individual deserves respect and dignity.
- **Reliability**: We strive to maintain optimal standards so other people can rely on us for assistance.

Codes of Ethics Examples

For IS professionals:

- **Integrity**: the quality of being honest, trustworthy, being truthful in communications.
- **Confidentiality**: protect sensitive or private information entrusted to them by clients, users, or organizations.
- **Objectivity**: fairness, free from bias or personal interests.

Codes of Ethics Examples

For IS professionals:

- **Professionalism**: This includes maintaining a high level of expertise, and treating colleagues, clients, and users with respect.
- **Fairness**: treating all individuals, stakeholders, and users unbiasedly, regardless of factors such as race, gender, nationality, socioeconomic status, etc.
- …

References

- **Reynolds, George Walter, Stair, Ralph M.** "Principles of information systems", 13e – 2018