

## **Learning Objectives**

- **What ethical, social, and political issues are raised by information systems?**
- **What specific principles for conduct can be used to guide ethical decisions?**
- **Why do contemporary information systems technology and the Internet pose challenges to the protection of individual privacy and intellectual property?**
- **How have information systems affected everyday life?**

## Understanding Ethical and Social Issues Related to Systems

### NONOBVIOUS RELATIONSHIP AWARENESS (NORA)

NORA technology can take information about people from disparate sources and find obscure, nonobvious relationships. It might discover, for example, that an applicant for a job at a casino shares a telephone number with a known criminal and issue an alert to the hiring manager.

FIGURE 4-2



## Ethics in an Information Society

- **Basic concepts for ethical analysis**
  - **Responsibility:**
    - Accepting the potential costs, duties, and obligations for decisions
  - **Accountability:**
    - Mechanisms for identifying responsible parties
  - **Liability:**
    - Permits individuals (and firms) to recover damages done to them
  - **Due process:**
    - Laws are well known and understood, with an ability to appeal to higher authorities

## Ethics in an Information Society

- **Ethical analysis: A five-step process**
  1. Identify and clearly describe the facts
  2. Define the conflict or dilemma and identify the higher-order values involved
  3. Identify the stakeholders
  4. Identify the options that you can reasonably take
  5. Identify the potential consequences of your options

## Ethics in an Information Society

- **Six Candidate Ethical Principles**

1. **Golden Rule**

- Do unto others as you would have them do unto you

2. **Immanuel Kant's Categorical Imperative**

- If an action is not right for everyone to take, it is not right for anyone

3. **Descartes' Rule of Change**

- If an action cannot be taken repeatedly, it is not right to take at all

## Ethics in an Information Society

- **Six Candidate Ethical Principles (cont.)**

- 4. Utilitarian Principle**

- Take the action that achieves the higher or greater value

- 5. Risk Aversion Principle**

- Take the action that produces the least harm or least potential cost

- 6. Ethical “no free lunch” Rule**

- Assume that virtually all tangible and intangible objects are owned by someone unless there is a specific declaration otherwise



## Ethics in an Information Society

- **Professional codes of conduct**
  - Promulgated by associations of professionals
    - E.g. AMA, ABA, AITP, ACM
  - Promises by professions to regulate themselves in the general interest of society
- **Real-world ethical dilemmas**
  - One set of interests pitted against another
  - E.g. Right of company to maximize productivity of workers vs. workers right to use Internet for short personal tasks

## The Moral Dimensions of Information Systems

- **Privacy:**
  - Claim of individuals to be left alone, free from surveillance or interference from other individuals, organizations, or state. Claim to be able to control information about yourself
- **In U.S., privacy protected by:**
  - First Amendment (freedom of speech)
  - Fourth Amendment (unreasonable search and seizure)
  - Additional federal statutes (e.g. Privacy Act of 1974)



## The Moral Dimensions of Information Systems

- **Fair information practices:**
  - Set of principles governing the collection and use of information
  - Basis of most U.S. and European privacy laws
  - Based on mutuality of interest between record holder and individual
  - Restated and extended by FTC in 1988 to provide guidelines for protecting online privacy
  - Used to drive changes in privacy legislation
    - COPPA
    - Gramm-Leach-Bliley Act
    - HIPAA

## The Moral Dimensions of Information Systems

- **FTC FIP principles:**
  1. Notice/awareness (core principle)
  2. Choice/consent (core principle)
  3. Access/participation
  4. Security
  5. Enforcement

## The Moral Dimensions of Information Systems

- **European Directive on Data Protection:**
  - Requires companies to inform people when they collect information about them and disclose how it will be stored and used.
  - Requires informed consent of customer
  - EU member nations cannot transfer personal data to countries with no similar privacy protection (e.g. U.S.)
  - U.S. businesses use safe harbor framework
    - Self-regulating policy to meet objectives of government legislation without involving government regulation or enforcement.

## The Moral Dimensions of Information Systems

- **Internet Challenges to Privacy:**
  - **Cookies**
    - Tiny files downloaded by Web site to visitor's hard drive to help identify visitor's browser and track visits to site
    - Allow Web sites to develop profiles on visitors
  - **Web beacons/bugs**
    - Tiny graphics embedded in e-mail and Web pages to monitor who is reading message
  - **Spyware**
    - Surreptitiously installed on user's computer
    - May transmit user's keystrokes or display unwanted ads
- **Google's collection of private data; behavioral targeting**

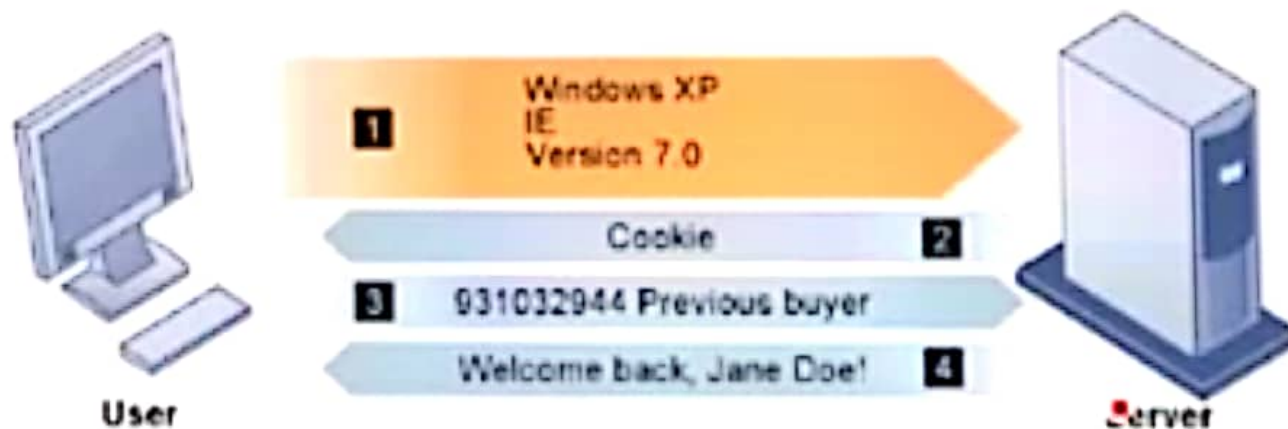
## **The Moral Dimensions of Information Systems**

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## The Moral Dimensions of Information Systems

### HOW COOKIES IDENTIFY WEB VISITORS



1. The Web server reads the user's Web browser and determines the operating system, browser name, version number, Internet address, and other information.
2. The server transmits a tiny text file with user identification information called a cookie, which the user's browser receives and stores on the user's computer hard drive.
3. When the user returns to the Web site, the server requests the contents of any cookie it deposited previously in the user's computer.
4. The Web server reads the cookie, identifies the visitor, and calls up data on the user.

**FIGURE 4-3**

Cookies are written by a Web site on a visitor's hard drive. When the visitor returns to that Web site, the Web server requests the ID number from the cookie and uses it to access the data stored by that server on that visitor. The Web site can then use these data to display personalized information.

## **The Moral Dimensions of Information Systems**

- **U.S. allows businesses to gather transaction information and use this for other marketing purposes**
- **Online industry promotes self-regulation over privacy legislation**
- **However, extent of responsibility taken varies**
  - Statements of information use
  - Opt-out selection boxes
  - Online “seals” of privacy principles
- **Most Web sites do not have any privacy policies**

## **The Moral Dimensions of Information Systems**

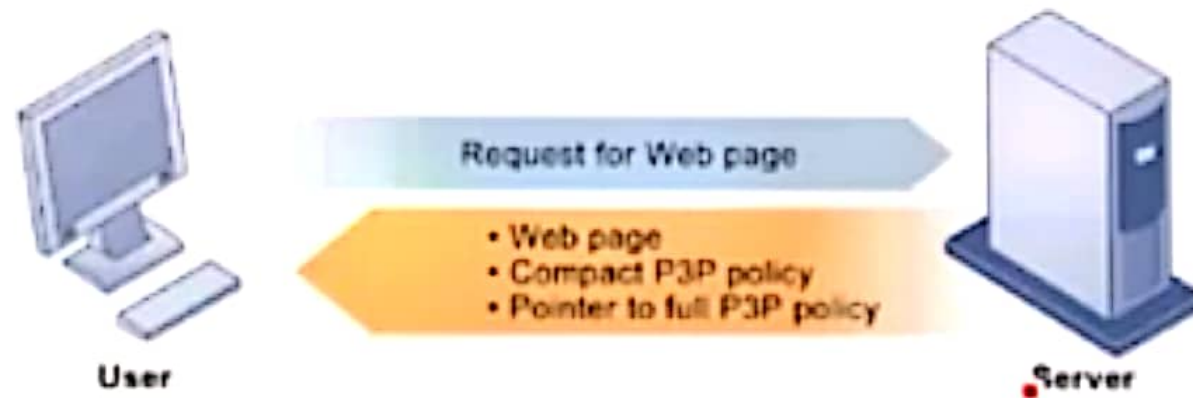
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## The Moral Dimensions of Information Systems

- **Technical solutions**
  - **The Platform for Privacy Preferences (P3P)**
    - Allows Web sites to communicate privacy policies to visitor's Web browser – user
    - User specifies privacy levels desired in browser settings
    - E.g. “medium” level accepts cookies from first-party host sites that have opt-in or opt-out policies but rejects third-party cookies that use personally identifiable information without an opt-in policy

## The Moral Dimensions of Information Systems

### THE P3P STANDARD



1. The user with P3P Web browsing software requests a Web page.
2. The Web server returns the Web page along with a compact version of the Web site's policy and a pointer to the full P3P policy. If the Web site is not P3P compliant, no P3P data are returned.
3. The user's Web browsing software compares the response from the Web site with the user's privacy preferences. If the Web site does not have a P3P policy or the policy does not match the privacy levels established by the user, it warns the user or rejects the cookies from the Web site. Otherwise, the Web page loads normally.

**FIGURE 4-4**

P3P enables Web sites to translate their privacy policies into a standard format that can be read by the user's Web browser software. The browser software evaluates the Web site's privacy policy to determine whether it is compatible with the user's privacy preferences.



## The Moral Dimensions of Information Systems

- **Property rights: Intellectual property**
  - Intellectual property: Intangible property of any kind created by individuals or corporations
  - Three main ways that protect intellectual property
    1. **Trade secret:** Intellectual work or product belonging to business, not in the public domain
    2. **Copyright:** Statutory grant protecting intellectual property from being copied for the life of the author, plus 70 years
    3. **Patents:** Grants creator of invention an exclusive monopoly on ideas behind invention for 20 years

## The Moral Dimensions of Information Systems

- **Challenges to intellectual property rights**
  - Digital media different from physical media (e.g. books)
    - Ease of replication
    - Ease of transmission (networks, Internet)
    - Difficulty in classifying software
    - Compactness
    - Difficulties in establishing uniqueness
- **Digital Millennium Copyright Act (DMCA)**
  - Makes it illegal to circumvent technology-based protections of copyrighted materials

## The Moral Dimensions of Information Systems

- **Accountability, Liability, Control**
  - **Computer-related liability problems**
    - If software fails, who is responsible?
      - If seen as part of machine that injures or harms, software producer and operator may be liable
      - If seen as similar to book, difficult to hold author/publisher responsible
      - What should liability be if software seen as service? Would this be similar to telephone systems not being liable for transmitted messages?

## The Moral Dimensions of Information Systems

- **System Quality: Data Quality and System Errors**
  - What is an acceptable, technologically feasible level of system quality?
    - Flawless software is economically unfeasible
  - Three principal sources of poor system performance:
    - Software bugs, errors
    - Hardware or facility failures
    - Poor input data quality (most common source of business system failure)



## The Moral Dimensions of Information Systems

- **Quality of life: Equity, access, and boundaries**
  - **Negative social consequences of systems**
    - **Balancing power:** Although computing power decentralizing, key decision-making remains centralized
    - **Rapidity of change:** Businesses may not have enough time to respond to global competition
    - **Maintaining boundaries:** Computing, Internet use lengthens work-day, infringes on family, personal time
    - **Dependence and vulnerability:** Public and private organizations ever more dependent on computer systems



## The Moral Dimensions of Information Systems

- **Computer crime and abuse**
  - Computer crime: Commission of illegal acts through use of compute or against a computer system – computer may be object or instrument of crime
  - Computer abuse: Unethical acts, not illegal
    - Spam: High costs for businesses in dealing with spam
- **Employment:**
  - Reengineering work resulting in lost jobs
- **Equity and access – the digital divide:**
  - Certain ethnic and income groups in the United States less likely to have computers or Internet access

## **Summary**

- **Information Systems and their issues**
- **Ethical Issues related to Information Systems**
- **Rules, policies and risks related to IS**
- **How to identify and handle problems**
- **Models to identify ethical issues in information systems.**