



Chapter 4

Ethical and Social Issues in Information Systems

Video cases:

Case 1: "What Net Neutrality Means for You"

Case 2: Facebook Privacy

Case 3: Data Mining for Terrorists and Innocents

Instructional Video 1: "Victor Mayer Schonberger on the Right to be Forgotten"




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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?




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Behavioral Targeting: Your Privacy Is the Target

- **Problem:** Need to efficiently target online ads.
- **Solutions:** Behavioral targeting allows businesses and organizations to more precisely target desired demographics.
- Google uses tracking files to monitor user activity on thousands of sites; businesses monitor activity on their own sites to better understand customers.
- Demonstrates IT's role in organizing and distributing information.
- Illustrates the ethical questions inherent in online information gathering.

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Understanding Ethical and Social Issues Related to Systems

- **Recent cases of failed ethical judgment in business:**
 - Barclay's Bank, GlaxoSmithKline, Walmart
 - In many, information systems used to bury decisions from public scrutiny
- **Ethics**
 - Principles of right and wrong that individuals, acting as free moral agents, use to make choices to guide their behaviors

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Understanding Ethical and Social Issues Related to Systems

- **Information systems and ethics**
 - **Information systems raise new ethical questions because they create opportunities for:**
 - Intense social change, threatening existing distributions of power, money, rights, and obligations
 - New kinds of crime

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Understanding Ethical and Social Issues Related to Systems

- **A model for thinking about ethical, social, and political Issues**
 - Society as a calm pond
 - IT as rock dropped in pond, creating ripples of new situations not covered by old rules
 - Social and political institutions cannot respond overnight to these ripples—it may take years to develop etiquette, expectations, laws
 - Requires understanding of ethics to make choices in legally gray areas

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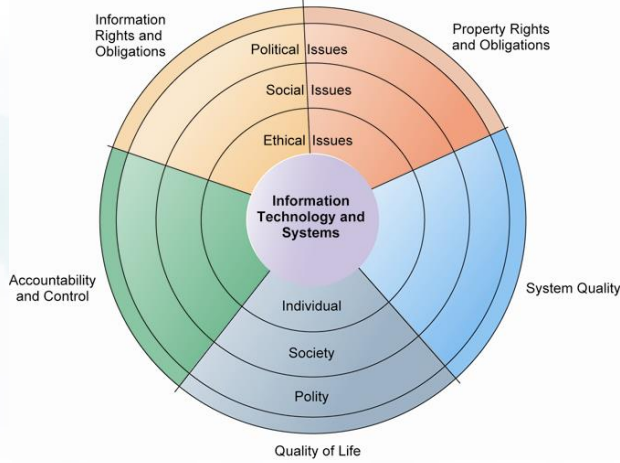


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THE RELATIONSHIP AMONG ETHICAL, SOCIAL, POLITICAL ISSUES IN AN INFORMATION SOCIETY

The introduction of new information technology has a ripple effect, raising new ethical, social, and political issues that must be dealt with on the individual, social, and political levels. These issues have five moral dimensions: information rights and obligations, property rights and obligations, system quality, quality of life, and accountability and control.



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Understanding Ethical and Social Issues Related to Systems

- **Five moral dimensions of the information age:**
 - Information rights and obligations
 - Property rights and obligations
 - Accountability and control
 - System quality
 - Quality of life

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Understanding Ethical and Social Issues Related to Systems

- **Key technology trends that raise ethical issues**
 - **Doubling of computer power**
 - More organizations depend on computer systems for critical operations.
 - **Rapidly declining data storage costs**
 - Organizations can easily maintain detailed databases on individuals.
 - **Networking advances and the Internet**
 - Copying data from one location to another and accessing personal data from remote locations are much easier.

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Understanding Ethical and Social Issues Related to Systems

- **Advances in data analysis techniques**
 - Profiling
 - Combining data from multiple sources to create dossiers of detailed information on individuals
 - Nonobvious relationship awareness (NORA)
 - Combining data from multiple sources to find obscure hidden connections that might help identify criminals or terrorists
- **Mobile device growth**
 - Tracking of individual cell phones

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NONOBLIVIOUS 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

```

graph LR
    A["Watch Lists"] --> D["Name standardization Match Merge"]
    B["Incident and Arrest Systems"] --> D
    C["Customer Transaction Systems"] --> D
    E["Telephone Records"] --> D
    F["Human Resources Systems"] --> D
    D --> G["NORA Alerts"]
  
```


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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

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Ethics in an Information Society

- **Five-step ethical analysis**
 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.

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Ethics in an Information Society

- **Candidate ethical principles**
 - **Golden Rule**
 - Do unto others as you would have them do unto you.
 - **Immanuel Kant's Categorical Imperative**
 - If an action is not right for everyone to take, it is not right for anyone.
 - **Descartes' Rule of Change**
 - If an action cannot be taken repeatedly, it is not right to take at all.

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Ethics in an Information Society

- Candidate ethical principles (cont.)
 - **Utilitarian Principle**
 - Take the action that achieves the higher or greater value.
 - **Risk Aversion Principle**
 - Take the action that produces the least harm or potential cost.
 - **Ethical “No Free Lunch” Rule**
 - Assume that virtually all tangible and intangible objects are owned by someone unless there is a specific declaration otherwise.

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Ethics in an Information Society

- **Professional codes of conduct**
 - **Promulgated by associations of professionals**
 - Examples: 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**
 - Example: right of company to maximize productivity of workers versus workers right to use Internet for short personal tasks


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- **Information rights: privacy and freedom in the Internet age**
 - **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 the United States, privacy protected by:**
 - First Amendment (freedom of speech)
 - Fourth Amendment (unreasonable search and seizure)
 - Additional federal statutes (e.g., Privacy Act of 1974)


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- **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 1998 to provide guidelines for protecting online privacy
 - **Used to drive changes in privacy legislation**
 - COPPA
 - Gramm-Leach-Bliley Act
 - HIPAA
 - Do-Not-Track Online Act of 2011


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- **FTC FIP principles:**
 - **Notice/awareness (core principle)**
 - Web sites must disclose practices before collecting data.
 - **Choice/consent (core principle)**
 - Consumers must be able to choose how information is used for secondary purposes.
 - **Access/participation**
 - Consumers must be able to review and contest accuracy of personal data.


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- **FTC FIP principles (cont.)**
 - **Security**
 - Data collectors must take steps to ensure accuracy, security of personal data.
 - **Enforcement**
 - Must be mechanism to enforce FIP principles.


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- **European Directive on Data Protection:**
 - Companies must inform people information is collected and disclose how it is stored and used.
 - Requires informed consent of customer.
 - EU member nations cannot transfer personal data to countries without similar privacy protection (e.g., the United States).
 - U.S. businesses use *safe harbor* framework.
 - Self-regulating policy and enforcement that meets objectives of government legislation but does not involve government regulation or enforcement.


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- **Internet challenges to privacy:**
 - **Cookies**
 - Identify browser and track visits to site
 - Super cookies (Flash cookies)
 - **Web beacons (Web bugs)**
 - Tiny graphics embedded in e-mails and Web pages
 - Monitor who is reading e-mail message or visiting site
 - **Spyware**
 - Surreptitiously installed on user's computer
 - May transmit user's keystrokes or display unwanted ads
 - **Google services and behavioral targeting**

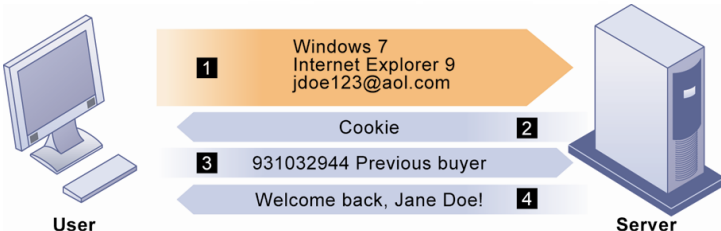
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HOW COOKIES IDENTIFY WEB VISITORS



1 Windows 7
Internet Explorer 9
jdoe123@aol.com

2 Cookie

3 931032944 Previous buyer


4 Welcome back, Jane Doe!

UserServer

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.

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- **The United States allows businesses to gather transaction information and use this for other marketing purposes.**
 - Opt-out vs. opt-in model
- **Online industry promotes self-regulation over privacy legislation.**
- **However, extent of responsibility taken varies:**
 - Complex/ambiguous privacy statements
 - Opt-out models selected over opt-in
 - Online “seals” of privacy principles

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- **Technical solutions**
 - E-mail encryption
 - Anonymity tools
 - Anti-spyware tools
 - Browser features
 - “Private” browsing
 - “Do not track” options
 - Overall, few technical solutions

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Interactive Session: Technology

Life on the Grid: iPhone becomes iTrack
Read the Interactive Session and discuss the following questions

- **Why do mobile phone manufacturers (Apple, Google, and BlackBerry) want to track where their customers go?**
- **Do you think mobile phone customers should be able to turn tracking off? Should customers be informed when they are being tracked? Why or why not?**
- **Do you think mobile phone tracking is a violation of a person’s privacy?**

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

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- **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**

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- **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?

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- **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)

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- **Quality of life: Equity, access, 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

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- **Computer crime and abuse**
 - **Computer crime: commission of illegal acts through use of computer 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

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- **Health risks:**
 - **Repetitive stress injury (RSI)**
 - Largest source is computer keyboards
 - Carpal tunnel syndrome (CTS)
 - **Computer vision syndrome (CVS)**
 - Eyestrain and headaches related to screen use
 - **Technostress**
 - Aggravation, impatience, fatigue

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Interactive Session: Organizations

WASTING TIME: THE NEW DIGITAL DIVIDE
Read the Interactive Session and discuss the following questions

- How does information technology affect socioeconomic disparities?
- Why is access to technology insufficient to eliminate the digital divide?
- How serious a problem is the “new” digital divide?
- Why is the digital divide problem an ethical dilemma?

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