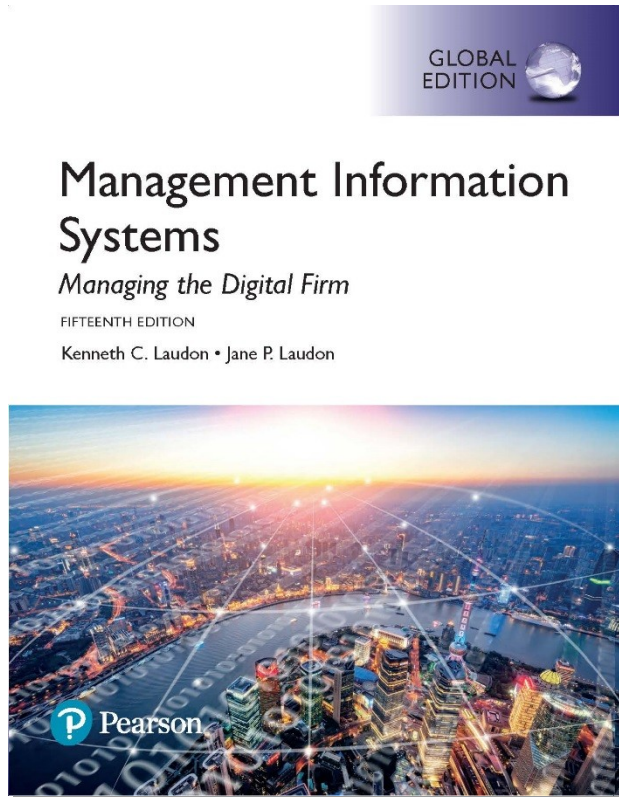


Management Information Systems: Managing the Digital Firm

Fifteenth edition



Chapter 4 Ethical and Social Issues in Information Systems

Learning Objectives

- **4-1** What ethical, social, and political issues are raised by information systems?
- **4-2** What specific principles for conduct can be used to guide ethical decisions?
- **4-3** Why do contemporary information systems technology and the Internet pose challenges to the protection of individual privacy and intellectual property?
- **4-4** How have information systems affected laws for establishing accountability, liability, and the quality of everyday life?

Video Cases

- Case 1: What Net Neutrality Means for You
- Case 2: Facebook and Google Privacy: What Privacy?
- Case 3: United States v. Terrorism: Data Mining for Terrorists and Innocents
- *Instructional Video: Viktor Mayer Scöhnberger on the Right to Be Forgotten*

The Dark Side of Big Data (1 of 2)

- Problem

- Opportunities from new technology
- Undeveloped legal environment

- Solutions

- Develop big data strategy
- Develop privacy policies
- Develop big data predictive models
- Develop big data mining technology
- Develop big data analytics tools and predictive modeling systems

The Dark Side of Big Data (2 of 2)

- Organizations like Progressive and Deloitte Consulting LLP use predictive modeling to identify individual customers that fit risk or vulnerability profiles
- Demonstrates how technological innovations can be a double-edged sword
- Illustrates the ability of IT systems to support decision making

What Ethical, Social, and Political Issues Are Raised by Information Systems? (1 of 2)

- Recent cases of failed ethical judgment in business
 - General Motors, Barclay's Bank, GlaxoSmithKline, Takata Corporation
 - 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

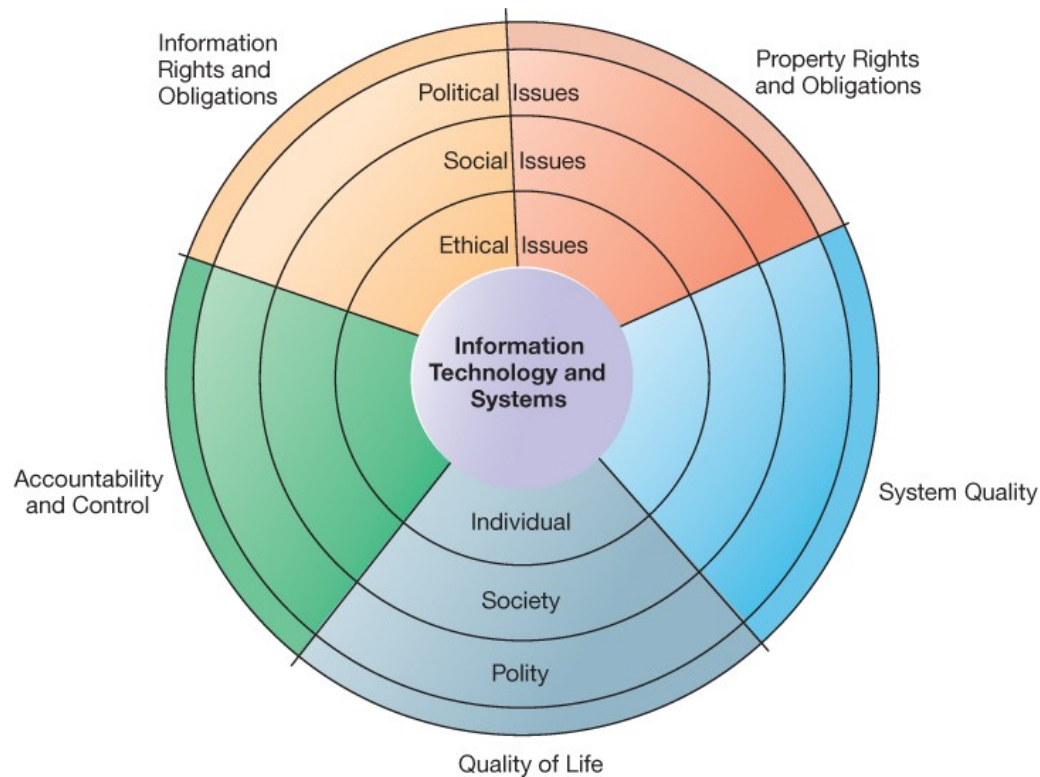
What Ethical, Social, and Political Issues Are Raised by Information Systems? (2 of 2)

- 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

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

Figure 4.1: The Relationship Between Ethical, Social, and Political Issues in an Information Society



Five Moral Dimensions of the Information Age

- Information rights and obligations
- Property rights and obligations
- Accountability and control
- System quality
- Quality of life

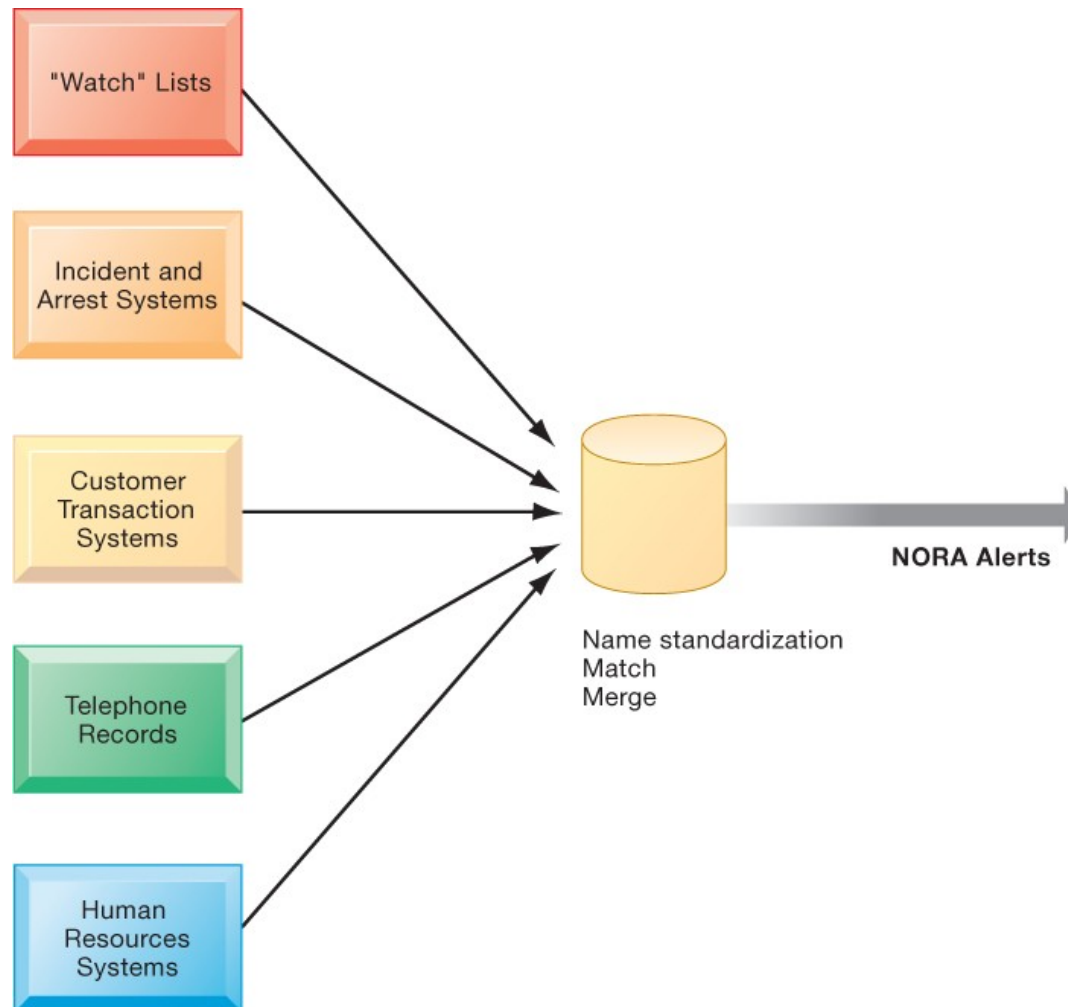
Key Technology Trends that Raise Ethical Issues

- Computing power doubles every 18 months
- Data storage costs rapidly decline
- Data analysis advances
- Networking advances
- Mobile device growth impact

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

Figure 4.2: Nonobvious Relationship Awareness (NORA)



Basic Concepts: Responsibility, Accountability, and Liability

- **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

Ethical Analysis

- Five-step process for 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.

Candidate Ethical Principles (1 of 2)

- 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

Candidate Ethical Principles (2 of 2)

- **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

Professional Codes of Conduct

- Promulgated by associations of professionals
 - American Medical Association (AMA)
 - American Bar Association (ABA)
 - Association for Computing Machinery (ACM)
- Promises by professions to regulate themselves in the general interest of society

Real-world Ethical Dilemmas

- One set of interests pitted against another
- Examples
 - Monitoring employees: Right of company to maximize productivity of workers versus workers right to use Internet for short personal tasks
 - Facebook monitors users and sells information to advertisers and app developers

Information Rights: Privacy and Freedom in the Internet Age (1 of 3)

- 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 and association)
- Fourth Amendment (unreasonable search and seizure)
- Additional federal statutes (e.g., Privacy Act of 1974)

Information Rights: Privacy and Freedom in the Internet Age (2 of 3)

- Fair information practices
 - Set of principles governing the collection and use of information
 - Basis of most U.S. and European privacy laws
 - Used to drive changes in privacy legislation
 - COPPA
 - Gramm-Leach-Bliley Act
 - HIPAA
 - Do-Not-Track Online Act of 2011

Information Rights: Privacy and Freedom in the Internet Age (3 of 3)

- FTC FIP principles
 - Notice/awareness (core principle)
 - Choice/consent (core principle)
 - Access/participation
 - Security
 - Enforcement

European Directive on Data Protection:

- Use of data requires informed consent of customer
- EU member nations cannot transfer personal data to countries without similar privacy protection
- Stricter enforcements under consideration:
 - Right of access
 - Right to be forgotten
- Safe harbor framework
- Edward Snowden

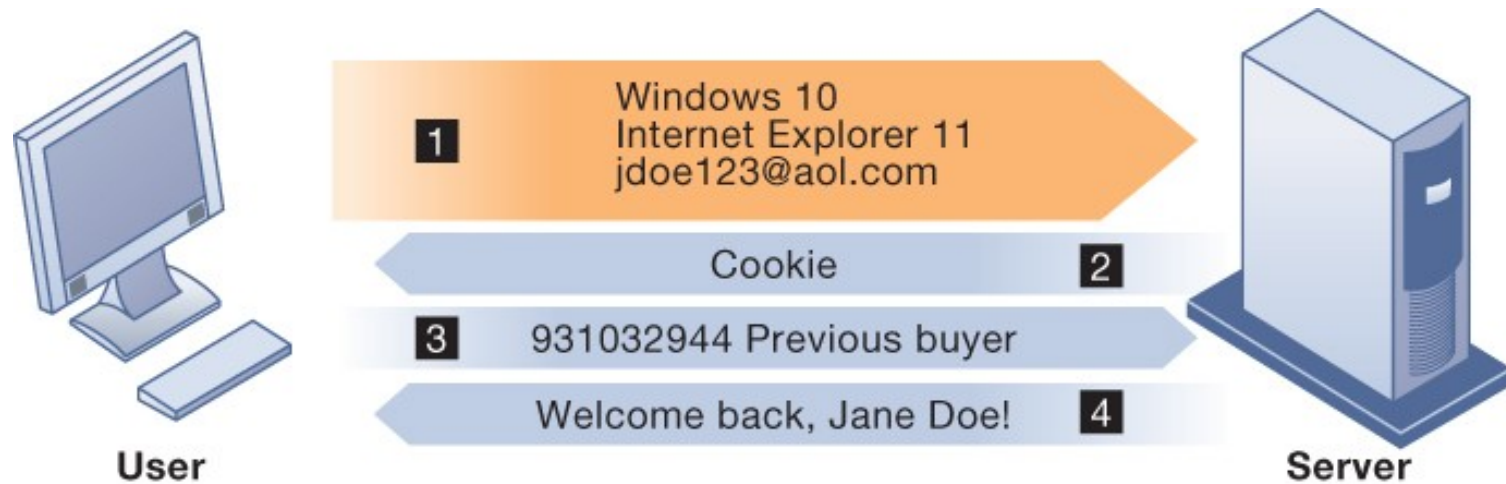
Internet Challenges to Privacy (1 of 2)

- 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

Internet Challenges to Privacy (2 of 2)

- 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.
 - Complex/ambiguous privacy statements
 - Opt-out models selected over opt-in
 - Online “seals” of privacy principles

Figure 4.3: 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 website, 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.

Technical Solutions

- Solutions include:
 - E-mail encryption
 - Anonymity tools
 - Anti-spyware tools
- Overall, technical solutions have failed to protect users from being tracked from one site to another
 - Browser features
 - “Private” browsing
 - “Do not track” options

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

Challenges to Intellectual Property Rights

- Digital media different from physical media
 - Ease of replication
 - Ease of transmission (networks, Internet)
 - Ease of alteration
 - Compactness
 - Difficulties in establishing uniqueness
- Digital Millennium Copyright Act (DMCA)
 - Makes it illegal to circumvent technology-based protections of copyrighted materials

Computer-Related Liability Problems

- If software fails, who is responsible?
 - If seen as part of a machine that injures or harms, software producer and operator may be liable.
 - If seen as similar to book, difficult to hold author/publisher responsible.
 - If seen as a service? Would this be similar to telephone systems not being liable for transmitted messages?

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)

Quality of Life: Equity, Access, Boundaries (1 of 3)

- Negative social consequences of systems
- Balancing power: center versus periphery
- Rapidity of change: reduced response time to competition
- Maintaining boundaries: family, work, and leisure
- Dependence and vulnerability
- Computer crime and abuse

Quality of Life: Equity, Access, Boundaries (2 of 3)

- Computer crime and abuse
 - Computer crime
 - Computer abuse
 - Spam
 - CAN-SPAM Act of 2003
- Employment
 - Trickle-down technology
 - Reengineering job loss

Quality of Life: Equity, Access, Boundaries (3 of 3)

- Equity and access
 - The digital divide
- Health risks
 - Repetitive stress injury (RSI)
 - Carpal tunnel syndrome (CTS)
 - Computer vision syndrome (CVS)
 - Technostress

Interactive Session: Monitoring in The Workplace

- Class discussion

- Which of the five moral dimensions of information systems identified in this text is involved in this case?
- What are the ethical, social, and political issues raised by this case?
- Which of the ethical principles described in the text are useful for decision making about monitoring employees in the workplace?

Interactive Session: Organizations: Are We Relying Too Much on Computers to Think for Us?

- Class discussion

- Identify the problem described in this case study. In what sense is it an ethical dilemma?
- Should more tasks be automated? Why or why not? Explain your answer.
- Can the problem of automation reducing cognitive skills be solved? Explain your answer.