Chapter 5

Ethical and Social Issues in the Digital Firm

OBJECTIVES

- **Analyze the relationship among ethical, social, and political issues that are raised by information systems**
- **Identify the main moral dimensions of an information society and specific principles for conduct that can be used to guide ethical decisions**

OBJECTIVES (Continued)

- Evaluate the impact of contemporary information systems and the Internet on the protection of individual privacy and intellectual property
- Assess how information systems have affected everyday life
- Identify the principal management challenges posed by the ethical and social impact of information systems and management solutions

ChoicePoint Case

- Challenge: Millions of records on private citizens now available over the counter pose a threat to privacy
- Solutions: Design new privacy policies to ensure consumers give consent to background searches
- New business processes to ensure integrity of data customers and users
- Illustrates the potential risks to privacy and confidentiality of personal information in digital firms and digital economies

A New Legal and Social Environment

- In the past, so-called “white collar” crimes were treated with a slap on the wrist and fines to restore any damage done.
- Industrial societies have become much less tolerant of financial, accounting, and computer crimes.
- Since the late 1980s in the United States, and worldwide, legislation has been passed that mandates severe penalties for managers who are found guilty of a wide variety of financial, reporting, and computer crimes

A New Legal and Social Environment (Continued)

- In the past, firms protected their managers by providing legal defense counsel. Today, however, in order to force employees to cooperate, prosecutors provide incentives to firms to not mount expensive legal defenses.
- Managers today will have to be especially careful in making ethical judgments.

Ethics

- **Principles of right and wrong**
- **Assumes individuals are acting as free moral agents to make choices to guide their behavior**

UNDERSTANDING ETHICAL AND SOCIAL ISSUES RELATED TO SYSTEMS

Information technology creates ethical issues because:

(a) IT changes the distribution of decision-making rights, power and other resources.

Example: IT makes it possible for millions of people to download video files, weakening the exclusive rights of movie studios to control distribution for their own profit.

UNDERSTANDING ETHICAL AND SOCIAL ISSUES RELATED TO SYSTEMS

Information technology creates ethical issues because: (continued)

(b) IT creates new opportunities to commit crimes.

Example: E-mail creates the conditions for extensive "phishing" or online con games designed to defraud ordinary citizens.

A Model for Thinking About Ethical, Social, and Political Issues

- Illustrates the dynamics connecting ethical, social, and political issues
- Identifies the moral dimensions of the "information society," across individual, social, and political levels of action

UNDERSTANDING ETHICAL AND SOCIAL ISSUES RELATED TO SYSTEMS

The Relationship between Ethical, Social, and Political Issues in an Information Society

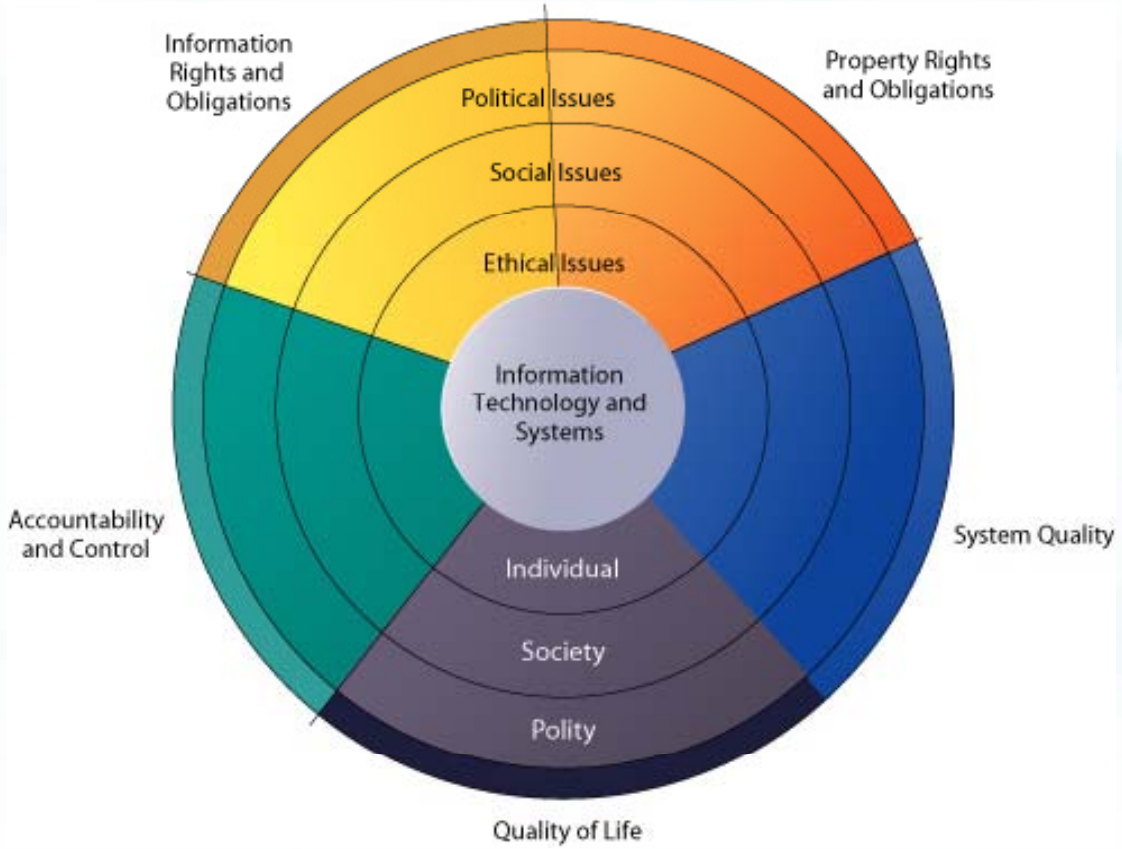


Figure 5-1

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

- Changes in technology have some obvious positive consequences, but also create some potentially or actual negative consequences.

- **Computing power doubles every 18 months:** Dependence on computer systems increases, and it becomes more cost effective to process massive amounts of personal information.

Key Technology Trends Raise Ethical Issues (Continued)

- **Rapidly declining data storage costs:** Lowers the cost of creating huge national databases composed of private information; lowers the cost of storing and using illegal music files

- **Data-mining advances:** Increases the ability of firms and governments to track the movement of citizens throughout life

- **Networking advances and the Internet:** Remotely accessing personal data

UNDERSTANDING ETHICAL AND SOCIAL ISSUES RELATED TO SYSTEMS

Non-obvious Relationship Awareness (NORA)

Figure 5-2

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

- Identify and describe the facts
- Define the conflict or dilemma, the values involved
- Identify the stakeholders
- Identify the options
- Identify the consequences

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, then it is not right for anyone
- **Descartes' rule of change:** If an action cannot be taken repeatedly, then it is not right to be taken at any time

Candidate Ethical Principles (Continued)

- **Utilitarian Principle:** Take the action that achieves the greatest value for all concerned

- **Risk Aversion Principle:** Take the action that produces the least harm or incurs the least cost to all concerned

- **Ethical "no free lunch" rule:** Assume that all tangible and intangible objects are owned by someone else, unless shown the contrary. If someone has created something of value to you, that person probably wants compensation for your use

Professional Codes of Conduct

- Promises by professions to regulate themselves in the general interest of society
- Promulgated by associations such as the American Medical Association (AMA), and the American Bar Association (ABA)

Ethics Codes for IT Professionals

- DPMA and ACM Codes of Conduct
- http://www.acm.org/constitution/code.html
- Geographic Information System Professionals Code of Ethics

Some Real-World IT Ethical Dilemmas

- Using systems to increase efficiency, and causing layoffs and personal hardships
- Using systems to monitor employee e-mail to protect valuable assets, but decreasing employee privacy
- Monitoring employee use of the Internet at work, decreasing employee privacy

Some Real-World IT Ethical Dilemmas (Continued)

- **Using huge databases to aggregate consumer information, reducing the costs of granting credit, but increasing the chance of losing personal data to criminals, terrorists, or others**

What ethical principles can we use to analyze these situations?

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 the state. The claim to be able to control information about yourself

- **Fair information practices:** Set of principles governing the collection and use of information on the basis of U.S. and European privacy laws

U.S. Federal Privacy Laws

General federal privacy laws:

- **Freedom of Information Act, 1966 Privacy Act of 1974**
- **Electronic Communications Privacy Act of 1986**
- **Computer Matching and Privacy Protection Act of 1988**
- **Computer Security Act of 1987**
- **Federal Managers Financial Integrity Act of 1982**

The Fair Information Practices Doctrine

Developed in the early 1970s, FIP is the predominant U.S. doctrine

- **Notice/awareness (core principle)**
- **Choice/consent (core principle)**
- **Access/participation**
- **Security**
- **Enforcement**

The European Directive on Data Protection

Informed consent:

- All uses of personal private information (PII) require the informed consent of data subjects, and require the data gatherer to provide the data subject with all facts needed to make a rational decision

Safe harbor:

- Private self-regulating policy and enforcement mechanism that meets the objectives of government regulators but does not involve government regulation or enforcement. Example: U.S. corporations doing business in Europe must process their data in a "safe harbor" where the European rules of privacy are in force
- "Safe harbor" status is granted by the EU after certification by a trusted third party, e.g. a recognized public account firm.

Internet Challenges to Privacy

Cookies:

- Tiny files deposited on a hard drive
- Used to identify the visitor and track visits to the Web site
- May or may not be used to gather personal private information
- In some cases, only a visitors customer number is maintained, not any personal information. In other cases, personal information can be gathered

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 5-3

Internet Challenges to Privacy

Web bugs:

- Tiny graphic files embedded in e-mail messages and Web pages. When the user views the e-mail, or views the page, a message is sent to the server, or to a third-party server without the knowledge of the user.
- Designed to monitor online Internet user behavior. In the case of e-mail, the e-mail address is known to the server.

Spyware:

- Software downloaded onto a user's computer—usually without knowledge—that tracks Web behavior and reports that behavior to a third-party server

- Spyware is also used to call for ads from third-party servers, or to divert customers from one site to a preferred site. For example, you enter www.LLBean.com and the spyware program takes you to www.eddiebauer.com and displays a discount coupon for Eddie Bauer.

Spyware: (Continued)

- LL Bean sued. The adware manufacturer Gator.com changed the software, and stopped the marketing campaign. They settled out of court.

- Typically downloaded by file-sharing programs like Kazaa, who make money selling advertising to large consumer products, retailing, and clothing companies.

Two Models of Providing Web Privacy

U.S. Opt-out model:

- **Informed consent means permitting sites to collect personal information unless the user explicitly chooses to opt out by unclicking a box or taking some action. The default is to assume consent is given.**

European Opt-in model:

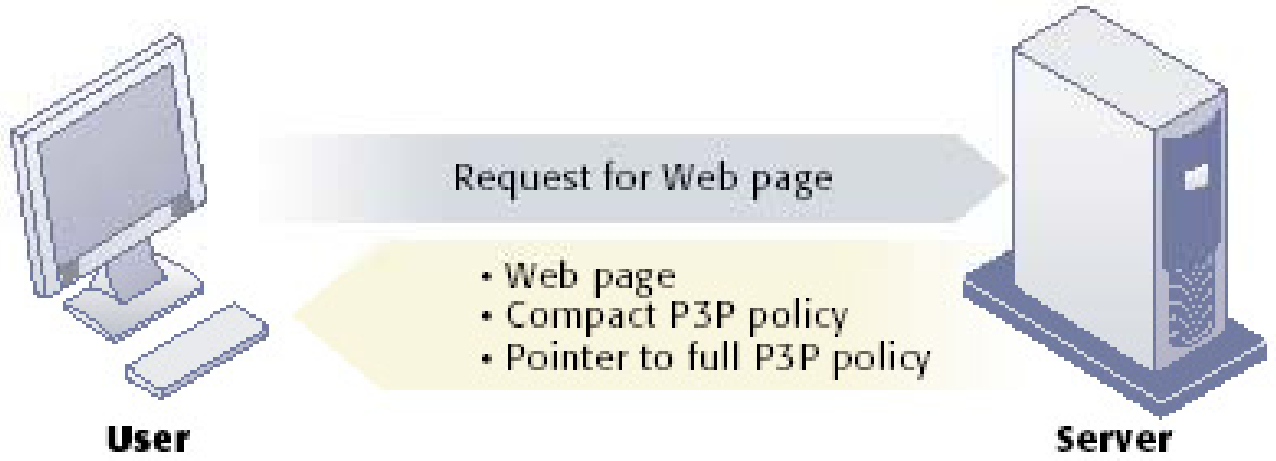
- **Informed consent means prohibiting an organization from collecting any personal information unless the users specifically requests to allow such use by clicking a box. The default is to assume consent is not given.**
- **What do you think works best to protect the privacy of individuals?**

Technical Solutions

P3P

- Platform for Privacy Preferences Project
- Industry standard designed to give users more control over personal information

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 5-4

Ethical Issues

- Under what conditions should the privacy of others be invaded?
- What legitimates intruding into others' lives through unobtrusive surveillance, through market research, or by whatever means?
- Do we have to inform people that we are eavesdropping?
- Do we have to inform people that we are using credit history information for employment screening purposes?

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

Property Rights: Intellectual Property

Three main ways that intellectual property is protected: (Continued)

- **Copyright:** Statutory grant protecting intellectual property from being copied for the life of the author, plus 70 years

- **Patents:** A grant to the creator of an invention granting the owner an exclusive monopoly on the ideas behind an invention for 20 years

Challenges to Intellectual Property Rights

- Perfect digital copies cost almost nothing.
- Sharing of digital content over the Internet costs almost nothing.
- Courts have generally not interfered with the commercialization of technology that creates perfect copies of protected works as long as the manufacturer could not control how customers use its products.

Challenges to Intellectual Property Rights (Continued)

- Example: Publishers sued Xerox corporation because users copied books and magazines. The publishers lost.
- Example: The Motion Picture Industry Association sued Sony because users of its VCRs make illegal copies of Hollywood movies. MPIA lost.
- Question: what is an ethical solution to this dilemma?

THE MORAL DIMENSIONS OF INFORMATION SYSTEMS

Who owns the pieces? Anatomy of a Web page

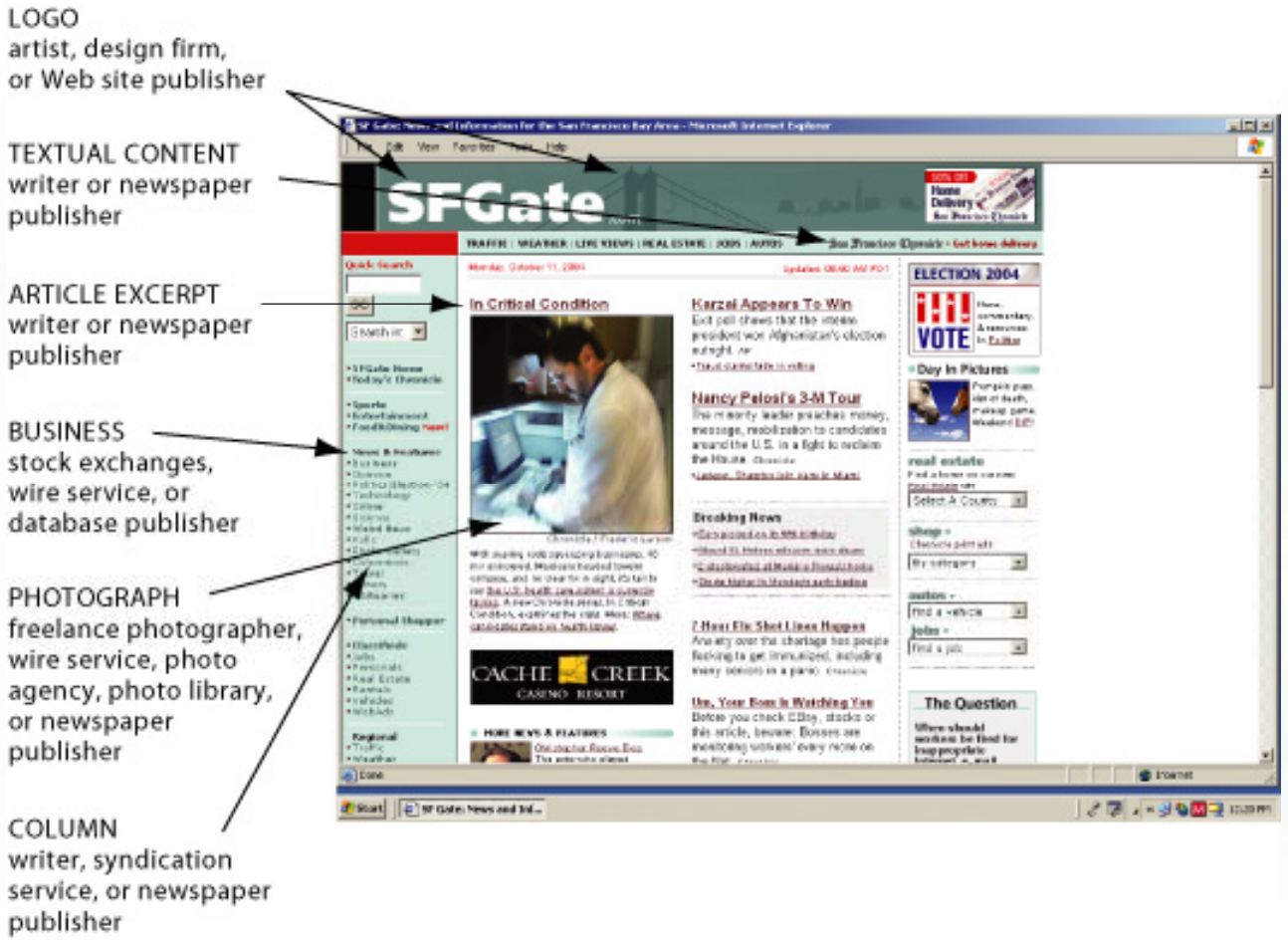


Figure 5-5

IT: Accountability, Liability, and Control

- IT can challenge our ability to identify who is responsible for actions involving systems that injure people.
- IT can make it difficult to assign liability and restore injured persons.
- IT raises issues about who should control information systems that have the potential for injuring citizens.

IT: Accountability, Liability, and Control (Continued)

- **Example: ChoicePoint.com is a leading provider of decision-making information to businesses and government agencies that helps reduce fraud and mitigate risk. It lost to criminal business firms 130,000 personal records of California residents in February 2005. This loss may result in the victims losing credit, being denied an apartment, losing employment, or experiencing an identity theft.**

- **What are the issues of accountability, liability, and control in this case?**

Ethics and System Quality: Data Quality and System Errors

- No software program is perfect, errors will be made, even if the errors have a low probability of occurring. Errors in Windows operating systems were notorious. At what point should software "be shipped?" What kind of disclaimer statements might be appropriate?

Ethics and System Quality: Data Quality and System Errors (Continued)

- No database is without errors. In fact, most consumer and government personal information databases have errors ranging from 10-20% of the data records being either inaccurate, incomplete, or ambiguous. How should decision makers treat this kind of information in order to be fair to data subjects?

IT and Quality of Life Issues: Equity, Access, and Boundaries

- **Balancing Power: Center Versus Periphery:** Is IT centralizing decision-making power in the hands of a few, or is it allowing many more people to participate in decisions that affect their lives?

- **Rapidity of change: Reduced response time to competition:** The business you work for may not be able to respond to rapidly changing IT-enabled market places. There goes your job offshore!

IT and Quality of Life Issues: Equity, Access, and Boundaries (Continued)

- **Maintaining boundaries: Family, work, and leisure:** "Do anything anywhere" environment blurs the boundaries between work, vacation, and family time

- **Dependence and vulnerability:** There are few regulatory standards to protect us from the failure of complex electrical, communications, and computer networks upon which we all depend

IT and Quality of Life Issues: Equity, Access, and Boundaries (Continued)

- **Computer crime:** Commission of illegal acts through the use of a computer or against a computer system is on the increase. Spam is now illegal (a federal and state felony offense), and phishing to defraud people is also a felony. But 70% of e-mail is now spam, and phishing crimes are the fastest growing Internet fraud.

- **Computer abuse:** Unethical but not necessarily illegal acts. Adware programs that alter a person's browser are not illegal but most of us would not want this to happen (without knowing about it)

IT and Quality of Life Issues: Equity, Access, and Boundaries (Continued)

- **Employment: Trickle-down technology and reengineering job loss:** The rapid development of the Internet has made it possible to offshore hundreds of thousands of jobs from high-wage countries to low-wage countries. Reengineering existing jobs using IT also results in few jobs (generally). While this benefits low-wage countries enormously, the costs are paid by high-wage country workers

IT and Quality of Life Issues: Equity, Access, and Boundaries (Continued)

- **Equity and access:** While 500 million people worldwide are on the Internet, billions of others are not. Within the United States, the digital divide has declined among ethnic groups, but still persists. The divide between men and women has largely disappeared.

Health Risks: RSI, CVS, and Technostress

IT has been the source of several diseases

Repetitive Stress Injury (RSI):

- **Occupational disease**
- **Muscle groups are forced through repetitive actions with high-impact loads or thousands of repetitions with low-impact loads.**

Carpal Tunnel Syndrome (CTS):

- **Type of RSI**
- **Pressure on the median nerve through the wrist's bony carpal tunnel structure produces pain.**

Computer Vision Syndrome (CVS):

- Eyestrain condition
- Related to computer display screen usage
- Symptoms include headaches, blurred vision, and dry and irritated eyes

Technostress:

- Stress induced by computer use
- Symptoms include aggravation, hostility toward humans, impatience, and enervation

Management Opportunities:

Managers have the opportunity to use information technology to create an ethical business and social environment. This does not mean management actions will always please all stakeholders, but at least management actions should take into account the ethical dimensions of IT-related decisions.

Management Challenges:

- Understanding the moral risks of new technology
- Establishing corporate ethics policies that include information systems issues

Solution Guidelines:

Management should devise policies and ethical standards specifically for IT areas that cover the following:

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