Ethical and Social Issues in Information Systems

Reading:

Laudon & Laudon

chapter 12

Additional Reading:

Brien & Marakas

chapter 11

Outline

- **Understanding Ethical and Social Issues in IS**

- **Ethics in an Information Society**
  - Responsibility, Accountability, Liability
  - Ethical Analysis

- **The Moral Dimensions of Information Systems**
  - Information Rights
  - Internet Challenges to Privacy
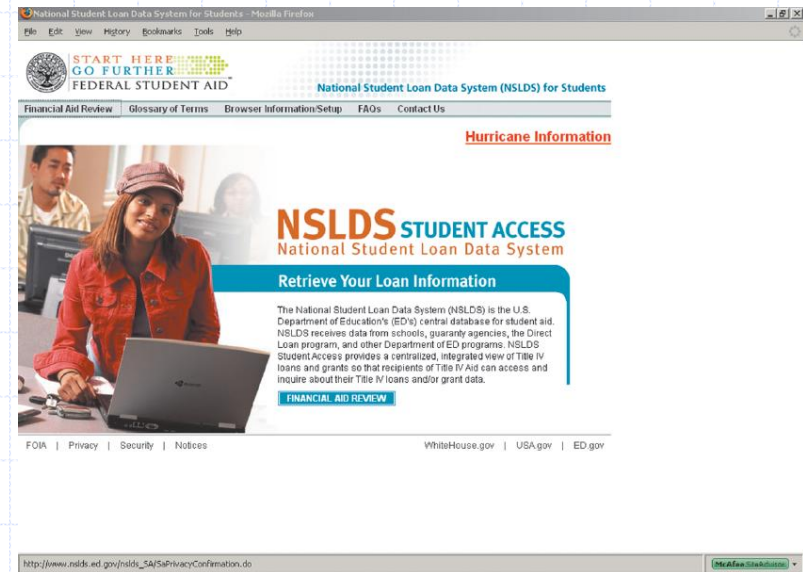 - Internet/Computer Related Liability Problems
  - Property Rights
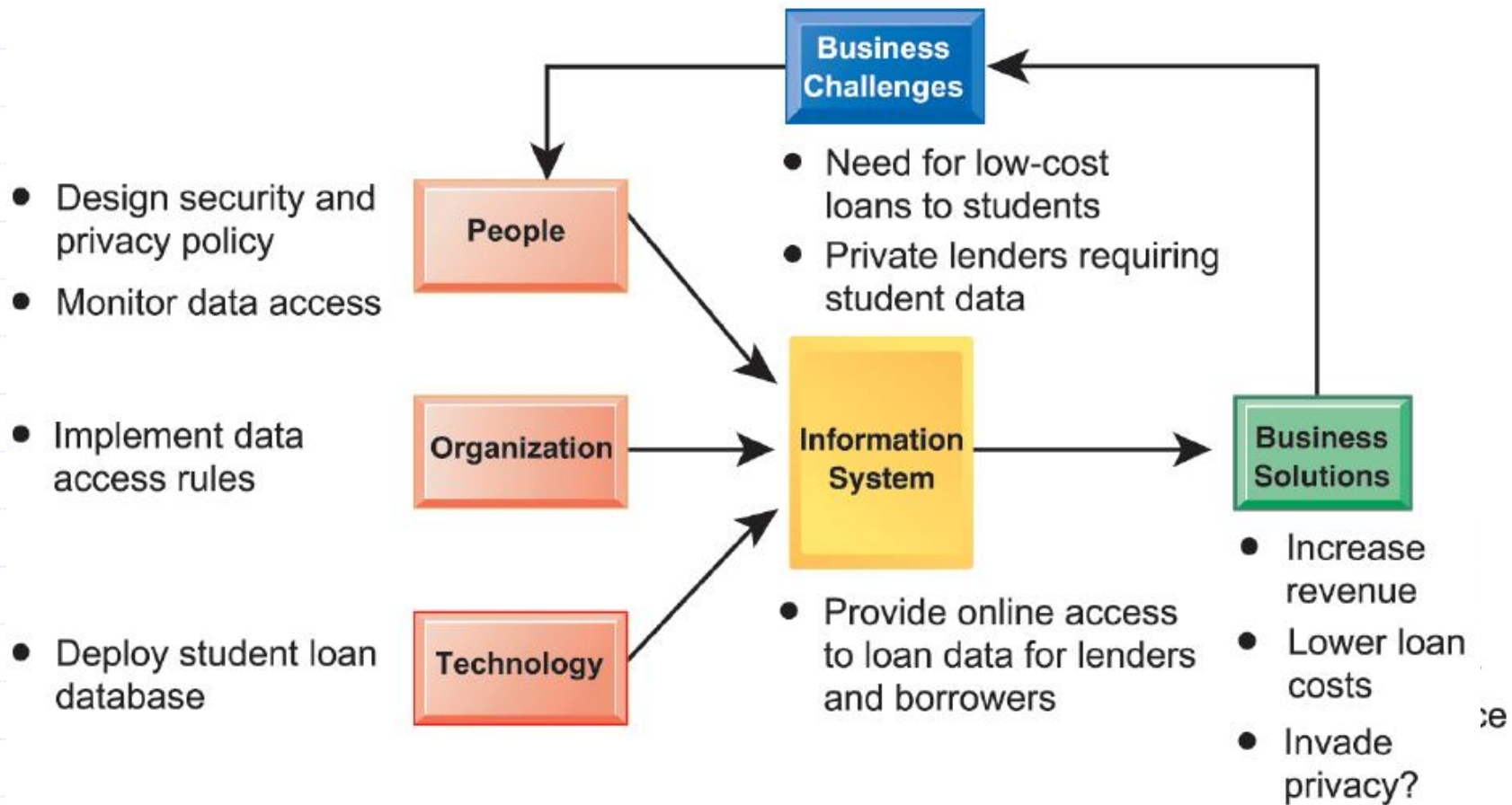
Student Loan Data on Loan

➢ Problem
  ▪ Student loan data was difficult for universities and lenders to acquire
    ◆ DOB, Address, Financial Address, E mail Address, etc.

➢ Solution
  ▪ The National Student Loan Data System (NSLDS) organized this information for easy access by schools and agencies that guarantee loans
  ▪ Data about 60 million student borrowers
  ▪ Access to Database → About 7500 loan company employees, 29,000 university financial aid administrators

  ▪ However, the database was being used inappropriately by loan companies
  ▪ Unusual amount of activity observing accessing students records → Warning letters to database users – could have access rights revoked

  ▪ Resurged again 2007, system access thousand times per minute, temporary suspension

  ▪ Invested more than 650,000 $ to improve system security and protect student info, Revoked more than 52000 user IDs (loan lenders, loan holders, guaranty agencies, and schools believed in suspicious activities)

  ▪ Demonstrates IT's role in organizing and distributing information

  ▪ Illustrates the dangers inherent in using digital databases to store important information

Student Loan Data on Loan

Business Challenges
- Need for low-cost loans to students
- Private lenders requiring student data

People
- Design security and privacy policy
- Monitor data access

Organization
- Implement data access rules

Technology
- Deploy student loan database

Information System
- Provide online access to loan data for lenders and borrowers

Business Solutions
- Increase revenue
- Lower loan costs
- Invade privacy?

■ The actions/activities related to corresponding block is shown in the adjacent text

Ethical and Social Issues Related to System

- ➢ **Failed Ethical Judgment in Business**
  - ■ Several Examples
    - ◆ Enron → Misstating earnings, using *illegal accounting schemes*, *false representation to shareholders*, three executives convicted
    - ◆ WorldCom → Chief executive convicted for improperly inflating revenues by billions using *illegal accounting method*
    - ◆ Lehman Brothers → Whether Lehman executives made false statements about the *fiscal health of firm* shortly before its downfall?

- ➢ **Ethics**
  - ■ Principles of right and wrong that individuals, acting as free moral agents, use to make choices to guide their behaviors

- ➢ **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

Ethical and Social Issues Related to System

➢ Model for Ethical, Social, 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
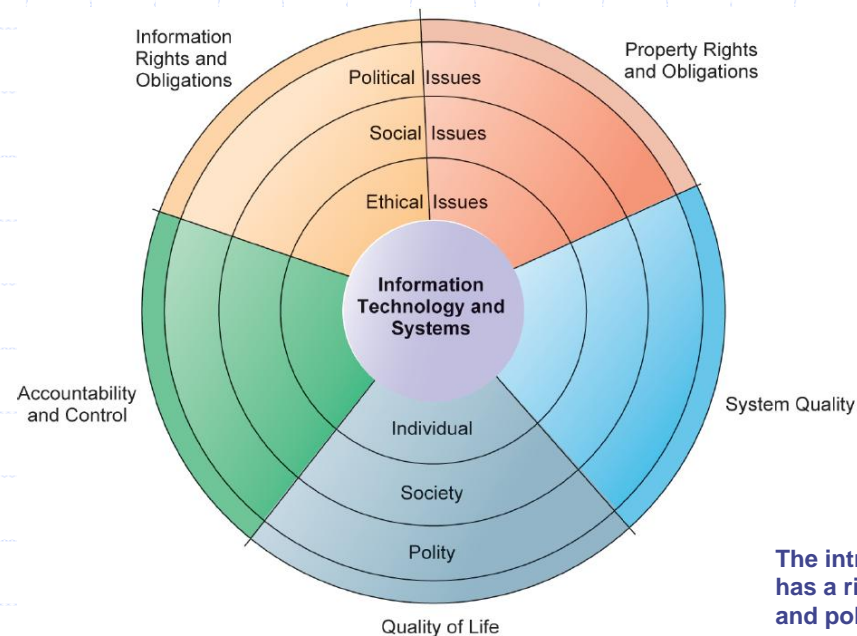
The introduction of new information technology has a ripple effect, raising new ethical, social, and political issues - five moral dimensions;

Ethical and Social Issues Related to System

➢ Five Moral Dimensions of Information Age

- Information rights and obligations

- Property rights and obligations

- Accountability and control
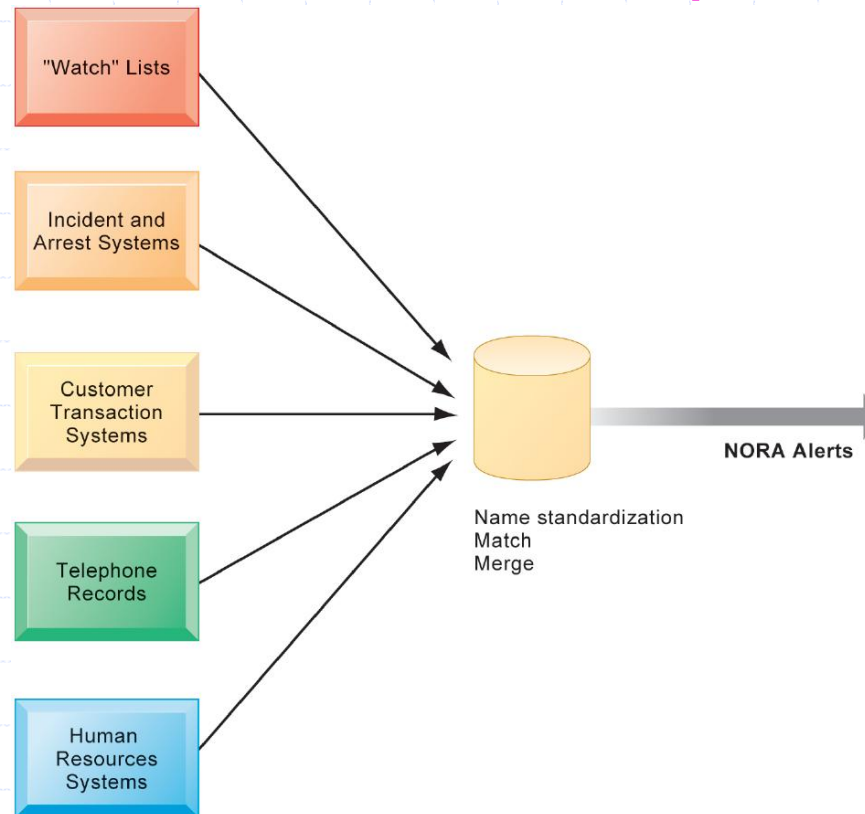
- System quality

- Quality of life

Ethical and Social Issues Related to System

> ## Key Technologies and Trends in 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
- Advances in data analysis techniques
  - Companies can analyze vast quantities of data gathered on individuals
    - 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

Ethical and Social Issues Related to System

➢ Nonobvious Relationship Awareness (NORA)

"Watch" Lists

Incident and Arrest Systems

Customer Transaction Systems

Telephone Records

Human Resources Systems

Name standardization
Match
Merge

NORA Alerts

- 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

Ethics in 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 Information Society

➢Ethical Analysis – Five Step Process

- ■ Identify and clearly describe the facts

- ■ Define the conflict or dilemma and identify the higher-order values involved

- ■ Identify the stakeholders

- ■ Identify the options that you can reasonably take

- ■ Identify the potential consequences of your options

Ethics in 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
- Utilitarian Principle
  - Take the action that achieves the higher or greater value
- Risk Aversion Principle
  - Take the action that produces the least harm or least 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

Ethics in Information Society

➢ Corporate Social Responsibility Theories

- **Stockholder Theory**
  - Managers are agents of the stockholders
  - Their only ethical responsibility is to increase the profits of the business
  - Without violating the law or engaging in fraudulent practices
- **Social Contract Theory**
  - Companies have ethical responsibilities to all members of society
  - Which allow corporations to exist based on a social contract
- **Stakeholder Theory**
  - Managers have an ethical responsibility to manage a firm for the benefit of all its stakeholders
  - Stakeholders are all individuals and groups that have a stake in, or claim on, a company

Ethics in Information Society

➤ Professional Code of Conduct

- **Professional codes of conduct**
  - ◆ Promulgated by associations of professionals
    - ■ Example → 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 Vs workers right to use Internet for short personal tasks

Moral Dimension of Information System

➢ **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

Moral Dimension of Information System

- ➢ **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, contest accuracy of personal data
  - ■ Security
    - ◆ Data collectors must take steps to ensure accuracy, security of personal data
  - ■ Enforcement
    - ◆ Must be mechanism to enforce FIP principles

System Vulnerability and Abuse

➢ Internet Vulnerability

- Network open to anyone
- Size of Internet means abuses can have wide impact
- Use of fixed Internet addresses with permanent connections to Internet eases identification by hackers
- E-mail attachments
- E-mail used for transmitting trade secrets
- IM messages lack security, can be easily intercepted

Moral Dimension of Information System

➢ Internet Challenges to Privacy

- **Cookies**
  - ◆ Tiny files downloaded by Web site to visitor's hard drive
  - ◆ Identify visitor's browser and track visits to site
  - ◆ Allow Web sites to develop profiles on visitors

- **Web bugs**
  - ◆ Tiny graphics embedded in e-mail messages and Web pages
  - ◆ Designed to monitor who is reading message and transmit information to another computer

- **Spyware**
  - ◆ Surreptitiously installed on user's computer
  - ◆ May transmit user's keystrokes or display unwanted ads

Moral Dimension of Information System

➢ How Cookies Identify Web Visitors?

Windows XP
IE
jdoe123@aol.com

1

Cookie 2

3 931032944 Previous buyer

Welcome back, Jane Doe! 4

User

Server

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.a

Moral Dimension of Information System

➢ **Internet Challenges to Privacy**

- Allow businesses to gather transaction information (US)
  - Use this information for other marketing purposes
  - Without obtaining informed consent of individuals
  - Default Model $\rightarrow$ Opt-out
  - Law in Europe $\rightarrow$ Opt-in, business is prohibited from collecting any information unless consumer agrees specifically

- 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 (Truste's disclosure, choice, access, security)

- Most Web sites do not have any privacy policies

Moral Dimension of Information System

➤ Internet Challenges to Privacy

- **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
    - Example – Microsoft IE → "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*

Request for Web page

- Web page
- Compact P3P policy
- Pointer to full P3P policy

User   Server
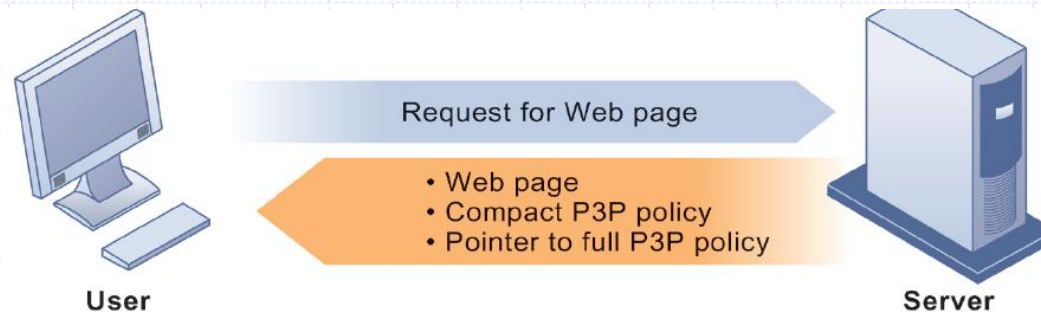
1. The user with P3P Web browsing software requests a Web page.
2. The Web server returns the Web page along with a compact version of the Web site's policy and a pointer to the full P3P policy. If the Web site is not P3P compliant, no P3P data are returned.
3. The user's Web browsing software compares 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.

Moral Dimension of Information System

Property Rights: Intellectual Property

- **Intellectual property**
  - Intangible property of any kind created by individuals or corporations

- **Protecting Intellectual Property**
  - Trade secret $\rightarrow$ Intellectual work or product belonging to business, not in the public domain
  - Copyright $\rightarrow$ Statutory grant protecting intellectual property from being copied for the life of the author, plus 70 years
  - Patents $\rightarrow$ Grants creator of invention an exclusive monopoly on ideas behind invention for 20 years

- **Digital Millennium Copyright Act (DMCA)**
  - Makes it illegal to circumvent technology-based protections of copyrighted materials, *World Intellectual Property Orgn. Treaty*
  - ISPs are required to take down the sites of copyright infringers once they are notified of the problem

Moral Dimension of Information System

➢ Accountability, Liability, and 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 producer of the software and operator *can be held liable* for damages → Someone injures physically/economically
      - Courts have been so far wary of holding software authors liable for *booklike software*

Moral Dimension of Information System

➢ **Abuse of Internet**

Internet Abuses	Activity
General e-Mail Abuses	Include spamming, harassments, chain letters, solicitations, spoofing, propagations of viruses/worms, and defamatory statements.
Unauthorized Usage and Access	Sharing of passwords and access into networks without permission.
Copyright Infringement/ Plagiarism	Using illegal or pirated software that costs organizations millions of dollars because of copyright infringements. Copying of Web sites and copyrighted logos.
Newsgroup Postings	Posting of messages on various non-work-related topics from sex to lawn care advice.
Transmission of Confidential Data	Using the Internet to display or transmit trade secrets.
Pornography	Accessing sexually explicit sites from the workplace as well as the display, distribution, and surfing of these offensive sites.
Hacking	Hacking of Web sites, ranging from denial-of-service attacks to accessing organizational databases.
Non-Work-Related Download/Upload	Propagation of software that ties up office bandwidth. Use of programs that allow the transmission of movies, music, and graphical materials.
Leisure Use of the Internet	Loafing around the Internet, which includes shopping, sending e-cards and personal e-mail, gambling online, chatting, game playing, auctioning, stock trading, and doing other personal activities.
Usage of External ISPs	Using an external ISP to connect to the Internet to avoid detection.
Moonlighting	Using office resources such as networks and computers to organize and conduct personal business (side jobs).

Moral Dimension of Information System

➢ **Abuse of Internet**

■ **Network Monitoring Software**

◆ Monitor use of Internet

◆ Block access to unauthorized web sites
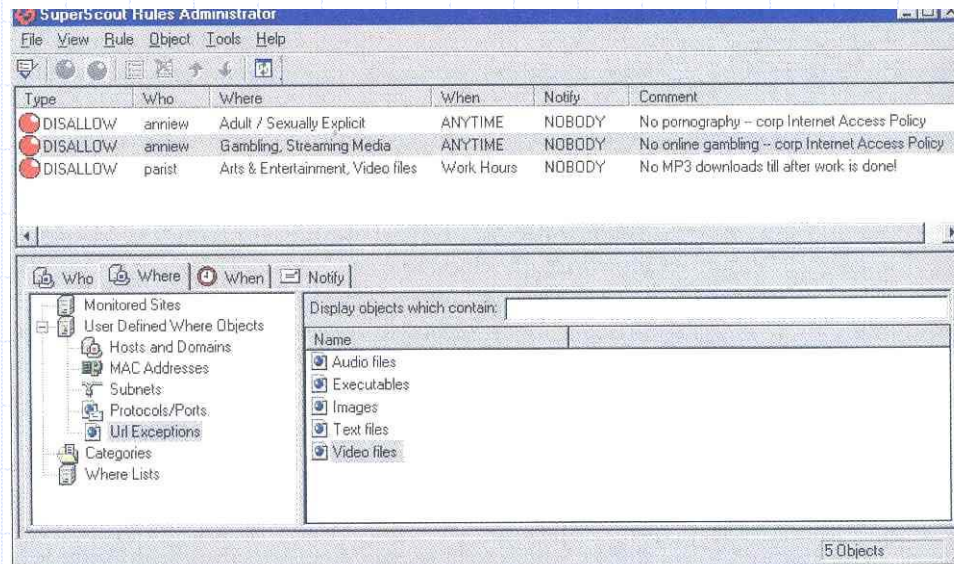
Moral Dimension of Information System

- ➢ 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)
    - Computer crime and abuse
        - ◆ Computer crime: 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 less likely to have computers or Internet access