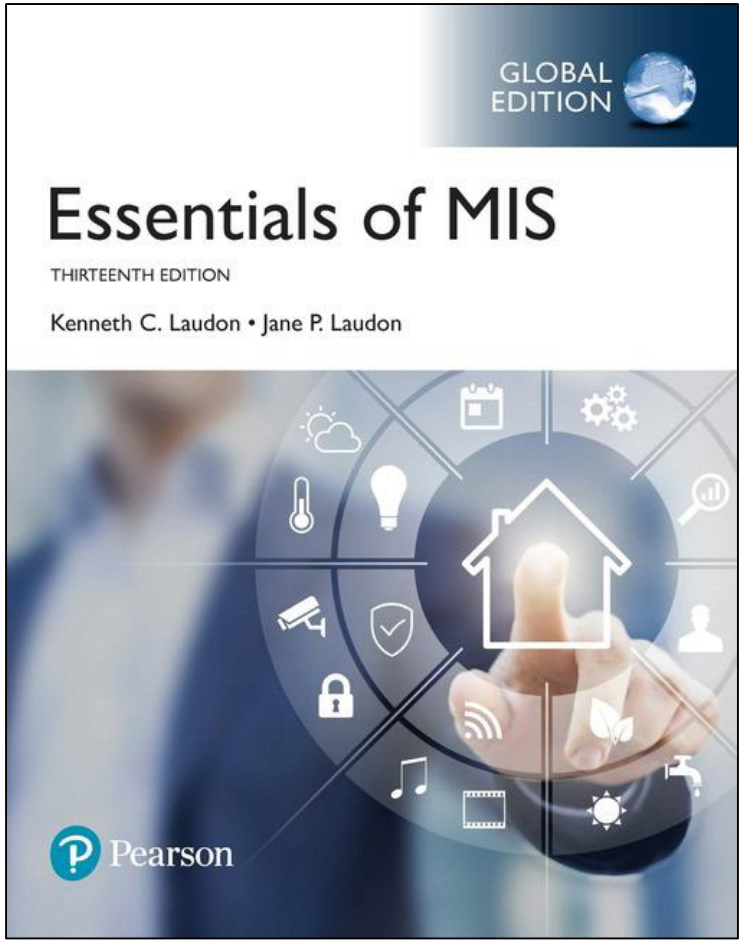
Essentials of Management Information Systems

Thirteenth 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?

4.5 How will MIS help my career?

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 (***is a statistical technique using machine learning and data mining to predict and forecast likely future outcomes with the aid of historical and existing data. It works by analyzing current and historical data and projecting what it learns on a model generated to forecast likely outcomes***) 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

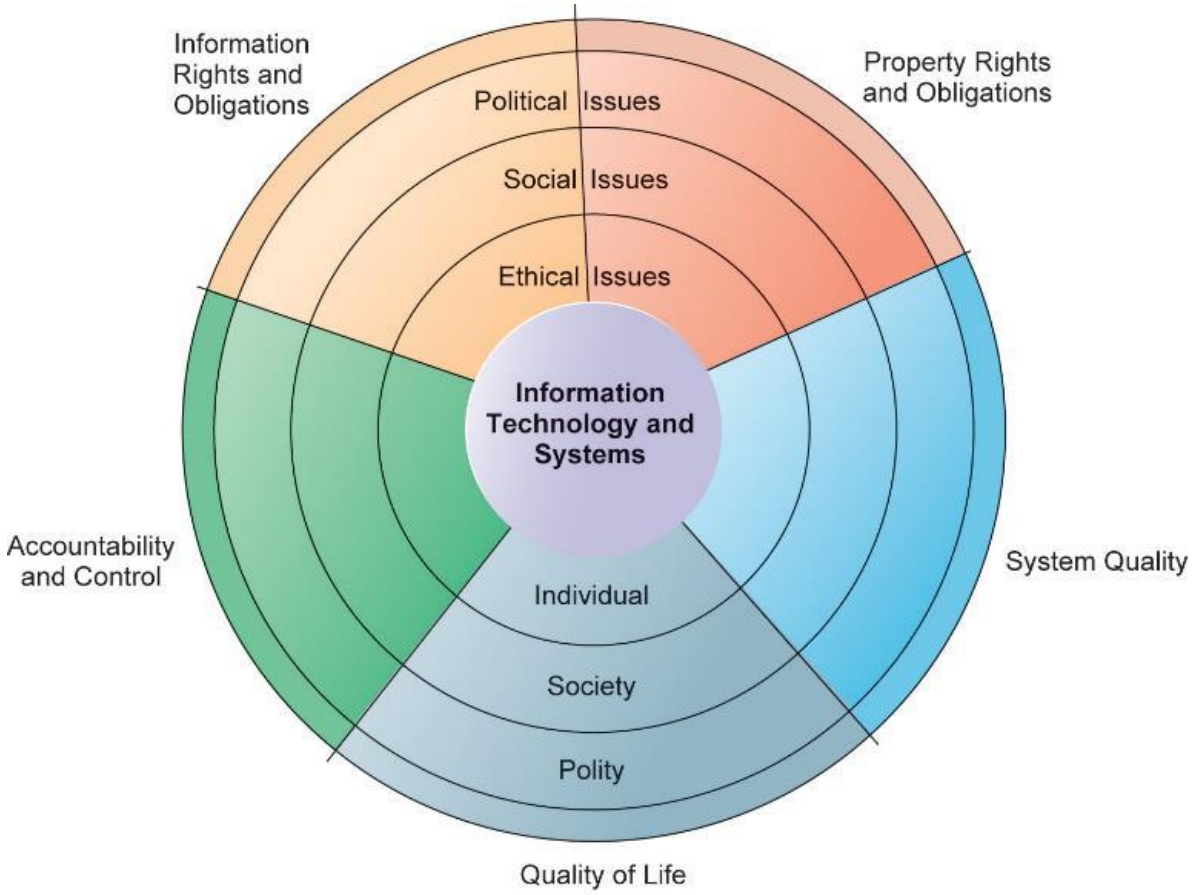
What Ethical, Social, and Political Issues are Raised by Information Systems?

- Recent cases of failed ethical judgment in business
  - In many, information systems used to hide decisions from public study
- Ethics
  - Principles of right and wrong that individuals, acting as free moral agents, use to make choices to guide their behaviors
- 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

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



Five Moral Dimensions of the Information Age

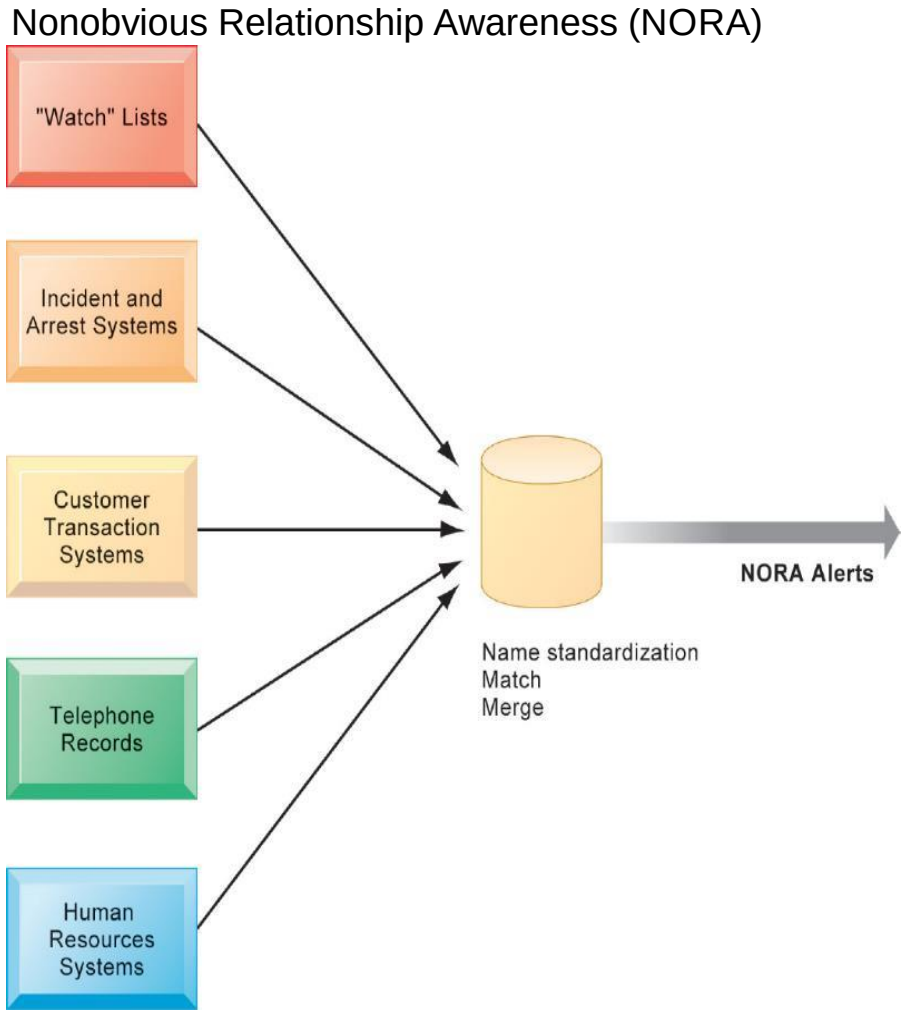
- Information rights and obligations
- Property rights and obligations
- Accountability and control
- System quality
- Quality of life

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



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

- **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
- **Slippery Slope Rule**
  - 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 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

Real-World Ethical Dilemmas

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

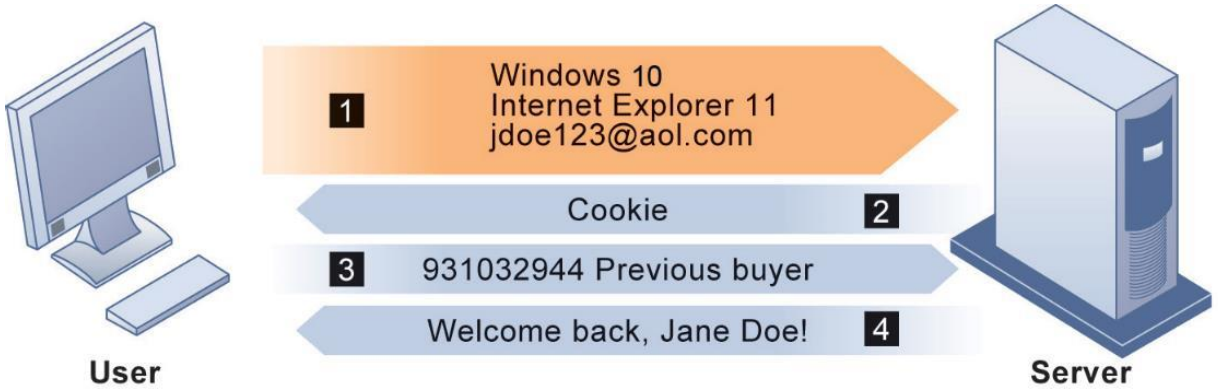
Information Rights: Privacy and Freedom in the Internet Age

- 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 statues (e.g., Privacy Act of 1974)
- Fair information practices
  - Set of principles governing the collection and use of information
- FTC FIP principles
  - Notice/awareness (core principle)
  - Choice/consent (core principle)
  - Access/participation
  - Security
  - Enforcement

Internet Challenges to Privacy

- Cookies
  - Identify browser and track visits to site
  - Super cookies (Flash cookies)
- Web beacons (web bugs)
  - Tiny graphics embedded in emails and web pages
  - Monitor who is reading email 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
- The United States allows businesses to gather transaction information and use this for other marketing purposes.
- Opt-out v s. 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

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.
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.

Technical Solutions

- Solutions include:
  - Email 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**
  - Tangible and intangible products of the mind created by individuals or corporations

- Protected in four main ways:
  - **Copyright** is a type of intellectual property that gives its owner the exclusive right to make copies of a creative work, usually for a limited time. The creative work may be in a literary, artistic, educational, or musical form.
  - **Patents** A patent is a type of intellectual property that gives its owner the legal right to exclude others from making, using, or selling an invention for a limited period of years, in exchange for publishing an enabling public disclosure of the invention.
  - **Trademarks** are a type of intellectual property consisting of a recognizable sign, design, or expression which identifies products or services of a particular source from those of others, although trademarks used to identify services are usually called service marks.
  - **Trade secret** are a type of intellectual property that comprise formulas, practices, processes, designs, instruments, patterns, or compilations of information that have inherent economic value because they are not generally known or readily ascertainable by others, and which the owner takes reasonable measures to keep secret. In some jurisdictions, such secrets are referred to as confidential .

Challenges to Intellectual Property Rights

- Digital media different from physical media
  - Ease of replication (copying)
  - Ease of transmission (networks, Internet)
  - Ease of alteration
  - Compactness
  - Difficulties in establishing uniqueness

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 2)

- 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
- Computer crime and abuse
  - Computer crime
  - Computer abuse
  - Spam
- Employment
  - Trickle-down technology
  - Reengineering job loss

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

- Equity and access
  - The digital divide refers to **the gap between those who benefit from the Digital Age and those who don't. People** without access to the Internet and other information and communication technologies are put at a disadvantage, as they are unable or less able to obtain digital information, shop online, participate democratically, or learn and offer skills.
- Health risks
  - Repetitive stress injury (RSI)
  - Carpal tunnel syndrome (CTS)
  - Computer vision syndrome (CVS)
  - Technostress

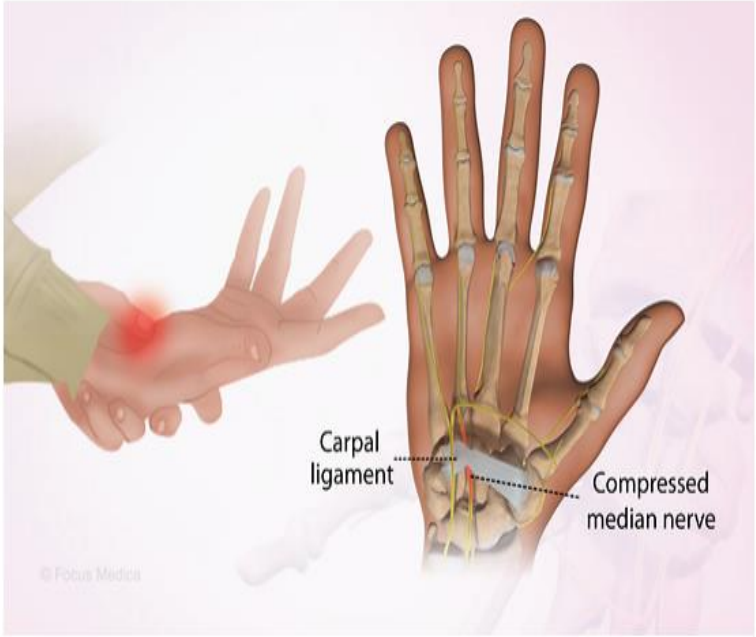
Repetitive stress injury (RSI)

What is repetitive strain injury? A repetitive strain injury (RSI), sometimes referred to as repetitive stress injury, is a **gradual buildup of damage to muscles, tendons, and nerves from repetitive motions**. RSIs are common and may be caused by many different types of activities, including: using a computer mouse

Carpal tunnel syndrome (CTS)

A condition that causes pain, tingling and numbness in the hand, more commonly at the base of the palm.

- Treatable by a medical professional
- Requires lab test or imaging
- Can last several months
- Common for ages 30 and older
- More common in females
- Family history may increase likelihood



Computer vision syndrome (CVS)

Computer vision syndrome (CVS) is a condition resulting from **focusing the eyes on a computer or other display device for protracted, uninterrupted periods of time** and the eye's muscles being unable to recover from the constant tension required to maintain focus on a close object.

Technostress

How Will MIS Help My Career?

- The Organization: Pinnacle Air Force Base
- Position Description
- Job Requirements
- Interview Questions

Video Cases

- Case 2: Facebook and Google Privacy: What Privacy?