Cyber Law & Professional Ethics

Course Name: Cyber Law & Professional Ethics (3 Cr.)
Course Code: CACS401
Year/Semester: IV/VII
Class Load: 4 Hrs. / Week (Theory: 3Hrs. Tutorial: 1 Hrs.)

Course Description:

This course presents different concepts of cyber law, cybersecurity, and ethics for IT professionals and IT Organizations. This course also presents different concepts related to intellectual properties and their protections, privacy, and social networking issues.

Course Objectives:

The primary objective of this course is to provide knowledge of cyber law, cybersecurity, privacy protection, intellectual property protection, and ethics for IT professionals and IT organizations.

Course Contents:

Unit 1: An Overview of Ethics, Ethics for IT Workers and IT Users (10 Hrs.)

Ethics, Ethics in the Business World; Corporate Social Responsibility; Fostering Corporate Social Responsibility and Good Business Ethics; Improving Business Ethics; Ethical Considerations in Decision Making; Ethics in Information Technology; Managing IT Worker Relationship; Encouraging Professionalism of IT Workers – Professional Codes of Ethics, Professional Organizations, Certifications and Licensing ; Encouraging Ethical Use of IT Resources among Users

Unit 2: Cyberattacks, Cybersecurity, and Cyber Law (12 Hrs.)

Threat Landscape – Computer Incidents, Types of Exploits; CIA Security Triad – Confidentiality, Integrity, Availability, Implementing CIA at Organizational, Network, Application, and End-User Level; Response to Cyberattack - Incident Notification Protection of Evidence and Activity Logs Incident Containment Eradication Incident Follow-Up Using an MSSP, and Computer Forensics; Cyber Law; Provision of Cyber Law and Electronic Transaction Act of Nepal

Unit 3: Privacy and Freedom of Expression (10 Hrs.)

Privacy Protection and the Law - Information Privacy, Privacy Laws, Applications, and Court Rulings; Key Privacy and Anonymity Issues - Consumer Profiling, Electronic Discovery, Workplace Monitoring, Surveillance; First Amendment Rights; Freedom Expressions: Key Issues; Social Networking Ethical Issues

Unit 4: Intellectual Property (8 Hrs.)

Intellectual Property, Copyright; Patient; Trade Secrets; Intellectual Property Issues: Plagiarism, Reverse Engineering, Open Source Code, Competitive Intelligence, Trademark Infringement, and Cybersquatting

Unit 5: Ethical Decision in Software Development and Ethics of IT Organizations (8 Hrs.)

Software Quality and its Importance; Strategies for Developing Quality Software; Use of Contingent Workers; H-1B Workers; Outsourcing; Whistle-Blowing; Green Computing

- **Course Objectives**: The primary objective of this course is to provide knowledge of cyber law, cybersecurity, privacy protection, intellectual property protection, and ethics for IT professionals and IT organizations.

- **Student Evaluation:**
  - Class Performance (5)
  - Attendance (5)
  - Class Test & Terminal Exams (10)
  - Assignments (5)
  - Presentation (15)

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Unit 1: An Overview of Ethics, Ethics for IT Workers and IT Users

What is Ethics?

- **Ethics** is a code of behavior that is defined by the group to which an individual belongs.

- Ethical behavior conforms to generally accepted norms, which may change over time to meet the evolving needs of the society or a group of people who share similar laws, traditions, and values that provide structure to enable them to live in an organized manner.

- Ethics help members of a group understand their roles and responsibilities so they can work together to achieve mutual benefits such as security, access to resources, and the pursuit of life goals.

- **Morals** are the personal principles upon which an individual bases his or her decisions about what is right and what is wrong.

- They are core beliefs formed and adhered to by an individual.

- For example, many of us have a core belief that all people should be treated with respect and this belief governs our actions toward others.

- Your moral principles are statements of what you believe to be rules of right conduct.

- As a child, you may have been taught not to lie, cheat, or steal.

- As an adult facing more complex decisions, you often reflect on your moral principles when you consider what to do in different situations:
  - Is it okay to lie to protect someone's feelings?
  - Should you intervene with a coworker who seems to have a chemical dependency problem?
  - Is it acceptable to exaggerate your work experience on a résumé?
  - Can you cut corners on a project to meet a tight deadline?
- As children grow, they learn complicated tasks—such as walking, talking, swimming, riding a bike, and writing the alphabet—that they perform out of habit for the rest of their lives.

- People also develop habits that make it easier for them to choose between good and bad.

- A **virtue** is a habit that inclines people to do what is acceptable, and a **vice** is a habit of unacceptable behavior.

- Fairness, generosity, and loyalty are examples of virtues, while vanity, greed, envy, and anger are considered vices.

- People's virtues and vices help define their personal value system—the complex scheme of moral values by which they live.

- Life is complex, and on occasion, you will encounter a situation in which the ethics of the group to which you belong are in conflict with your morals, as highlighted in the following two examples:
  - The ethics of the law profession demand that defense attorneys defend an accused client to the best of their ability, even if they know that the client is guilty of the most heinous and morally objectionable crime one could imagine.
  - The ethical standards of the medical profession do not allow a doctor to euthanize a patient, even at the patient's request. However, the doctor may personally believe that the patient has a right, based on the doctor's own morals

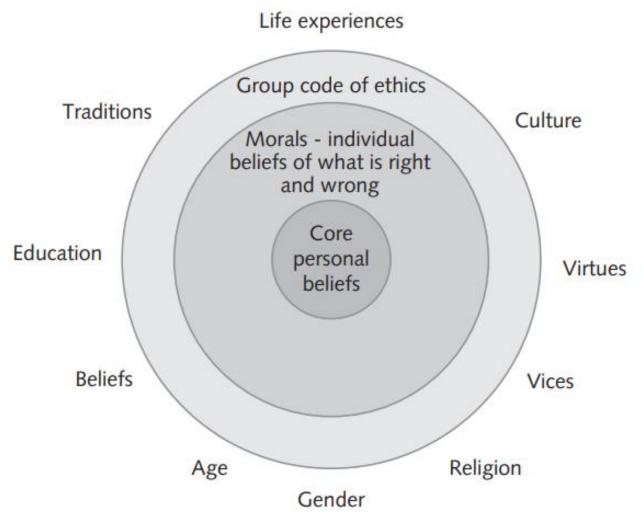**FIGURE 1-1**   The relationship between ethics and morals

The major differences between Morals and Ethics are:

- 1. Morals deal with what is *'right or wrong'*. Ethics deals with what is *'good or evil'*.

- 2. The term morals is derived from a Greek word 'mos' which refers to custom and the customs are determined by group of individuals or some authority. On the other hand, ethics is originated from Greek word 'ethikos' which refers to character and character is an attribute.

- 3. Morals are dictated by **society, culture or religion** while Ethics are chosen by **the person himself which governs his life.**

- 4. Morals are concerned with principles of right and wrong. On the contrary, ethics stresses on right and wrong conduct.

- 5. As morals are framed and designed by the group, there is no option to think and choose; the individual can either accept or reject. Conversely, the people are free to think and choose the principles of his life in ethics.

- *6. Morals may vary from society to society and culture to culture. As opposed to Ethics, which remains same regardless of any culture, religion or society.*

- 7. Morals do not have any applicability to business, whereas Ethics is widely applicable in the business known as business ethics.

- **8. Morals are expressed in the form of statements, but Ethics are not expressed in the form of statements.**

Examples:

- *1. If the son of a big politician has committed a crime and he uses his powers to free his son from legal consequences. Then this act is immoral because the politician is trying to save a culprit.*

- 2. A very close friend or relative of an interviewer comes for an interview and without asking a single question, he selects him. This act is unethical because the selection process must be transparent and unbiased.

- 3. A grocer sells contaminated products to his customers to earn more profit. This act is neither moral nor ethical because he is cheating his customers and profession at the same time.

The Importance of Integrity

- A person who acts with integrity acts in accordance with a personal code of principles.

- One approach to acting with integrity is to extend to all people the same respect and consideration that you expect to receive from them.

- Unfortunately, consistency can be difficult to achieve, particularly when you are in a situation that conflicts with your moral standards.

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- For example, you might believe it is important to do as your employer requests while also believing that you should be fairly compensated for your work.

- Thus, if your employer insists that, due to budget constraints, you do not report the overtime hours that you have worked, a moral conflict arises.

- You can do as your employer requests or you can insist on being fairly compensated, but you cannot do both. In this situation, you may be forced to compromise one of your principles and act with an apparent lack of integrity.

- Another form of inconsistency emerges if you apply moral standards differently according to the situation or people involved. If you are consistent and act with integrity, you apply the same moral standards in all situations. For example, you might consider it morally acceptable to tell a little white lie to spare a friend some pain or embarrassment, but would you lie to a work colleague or customer about a business issue to avoid unpleasantness? Clearly, many ethical dilemmas are not as simple as right versus wrong but involve choices between right versus right. As an example, for some people it is "right" to protect the Alaskan wildlife from being spoiled and also "right" to find new sources of oil to maintain U.S. oil reserves, but how do they balance these two concerns?

The Difference Between Morals, Ethics, and Laws

- Law is a system of rules that tells us what we can and cannot do.

- Laws are enforced by a set of institutions (the police, courts, law-making bodies).

- Violation of a law can result in censure (strong disapproval), fines, and/or imprisonment.

- Laws in the United States are made by the various local, state, and federal legislatures.

- Sometimes the laws of these various jurisdictions are in conflict, creating confusion and uncertainty.

- In addition, laws are not static; new laws are constantly being introduced and existing laws repealed or modified.

- As a result, the precise meaning of a particular law may be different in the future from what it is today.

- Legal acts are acts that conform to the law.

- Moral acts conform to what an individual believes to be the right thing to do.

- Laws can proclaim an act as legal, although many people may consider the act immoral—for example, abortion.

- Laws may also proclaim an act as illegal, although many people may consider the act moral—for example, using marijuana to relieve stress and nausea for people undergoing chemotherapy treatment for cancer.

- Laws raise important and complex issues concerning equality, fairness and justice, but do **not provide** a complete guide to ethical behavior. Just because *an activity is defined as legal doesn't mean that it is ethical.*
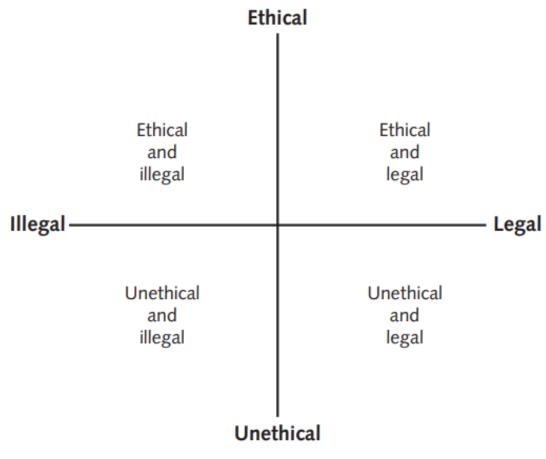
FIGURE 1-2   Legal versus ethical

- **Ethical but illegal**
  - *1) When a child is hungry and he stole a loaf of bread from a shop to feed.*
  - 2) A person violates the traffic rule to rush to the hospital in case of medical emergency.
  - 3) It can be illegal not to fulfill a contract, but it might be ethical for any number of logical reasons.
  - 4) It is illegal to lease a car or an apartment in your name for someone else who otherwise would not qualify, but it is an ethical thing to do if it is going to help them succeed in life.
- **Unethical but legal**
  - 1) Keeping money that someone dropped is legal, but again, many would find it unethical.
  - 2) The death penalty is legal in many countries, but large number of individuals consider it unethical.
  - 3) Smoking cigarettes in public is legal in some places, but some may find it unethical.
  - 4) Abortion is legal in some places, but many consider it as unethical.

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Law vs Ethics

Law	Ethics
Law is system of rules governing the whole society and actions of individual members.	Ethics is branch of moral philosophy that helps in guiding people about the conduct of individuals.
Law is set of rules and regulations	Ethics is set of guidelines
Law is pass by a government	Ethics are rules or guidelines set by individuals or legal and professional norms.
Law is expressed and published in writing	Ethics are abstracts
Violation of law leads to punishments like imprisonment or fine or even both.	Violation of ethics does not cause punishment.

Summary

- Ethics is a code of behavior or **professional principals** that is defined by the group to which an individual belongs.

- **Morals** are the **personal principles** upon which an individual bases his or her decisions about what is right and what is wrong.

- A person who acts with integrity acts in accordance with a personal code of principles.

- *Law is a system of rules that tells us what we can and cannot do. Laws are enforced by a set of institutions (the police, courts, and law-making bodies).*

- A code of ethics states the principles and core values that are essential to one's work.

- Just because an activity is defined as legal does not mean that it is ethical.

ETHICS IN THE BUSINESS WORLD

- The system of **ethical beliefs** that guides the **values**, **behaviors**, and **decisions** of a business organization and the individuals within that organization is known as business ethics.

- Some ethical requirements for businesses are codified into **law**; **environmental regulations**, the **minimum wage**, and **restrictions** against insider trading.

- Ethics has risen to the top of the business agenda because the risks associated with appropriate behavior have increased, both in their likelihood and in their potential negative impact.

- For example:
  - 1. The collapse and/or bailout of financial institutions such as Bank of America, CitiGroup, Yes Bank of India due to unwise and/or unethical decision making regarding mortgages, loans, and credit to unqualified individuals and organizations.
  - 2. Numerous corporate officers and senior managers sentenced to prison terms for their unethical behavior. Stewart Parnell, former CEO of Peanut Corporation of America, was sentenced to 28 years in prison for knowingly shipping contaminated food product, resulting nine dead and more than 700 sick.

- *Unethical behavior in the business world can lead to serious negative consequences for both organizations and individuals.*

- Ethics and moral principles are vital attributes for any business to earn and sustain the trust of customers for longevity, sustain undisputed and unquestioned business for ever, and enjoy long term success in terms of revenue and reputation.

- Many companies having firm ethical and fair trade/business practices are surviving and thriving for centuries, overcoming all upheavals through ages.

- Presence of strong ethical business structure facilitates companies to clearly establish and follow good corporate governance procedures and to foresee and elude any bad business practices.

- Prior to venturing into any line of business or territory, a company must develop a strong business ethical protocol to write off any ethical dilemmas and to handle with any controversial and unprecedented events.

- **Trust**, **transparency**, **considerate** and **reverence** are major traits of the business ethics.

- Company have to design their work culture and functionality to develop a trustworthy business and work environment. This is critical to earn the trust of customers, employees, business partners, agents and any third party suppliers.

- **Fair, just and equal treatment** to all people involved in the business is critical to maintain transparency in:

  - a) Business transaction with customers and external stakeholders; and

  - b) Appraisal system and grievance redress system of the employees.

- Timely consideration and resolution of the customers concerns and real time issues of the employees will be a critical connection in serving customer satisfaction and boosting the morals of the employees.

- Respect towards customers and employees is one of the prime facets in maintaining long term relationship with customers and retaining the qualified and talented employees for long period of time.

- Every business should have a unique and dedicated business ethical protocol and a training system in place to educate the people (internal and external) associated with the business about the criticality of observing the business ethical protocol to conduct the business in ethical and transparent manner.

Features of Business ethics

- *Business ethics of a company will reflect in its moral, ethical and social values.* Such moral, ethical and social values of a company shall comprise of:
  - i. **Honest** service to customers.
  - ii. Following **statutory approved** protocols for customer protection and safety.
  - iii. **Equal** and **fair** treatment to all the people connected to the business.
  - iv. **No mental, physical and economic exploitation** of any group or person who are serving the business.
  - v. Business ethics is a **moral responsibility** of a company to thrive the business on certain set of moral and ethical values.

- vi. **Integration of right set of moral and social values** into business structure will protect the business and economic interests of all business stakeholders.

- vii. A standard business ethics protocol will clearly establish **business limitations** in terms of legal, social, economic, cultural and other limits.

- viii. Educating the business stakeholders about the benefits of observing business ethics protocol and preserving moral and ethical values will define the course of the business in terms of **reputation, revenue and durability**.

- ix. Despite of **size and magnitude of business** it is moral responsibility of every company to establish business ethics protocol and to ensure all stakeholders are observing the business ethics protocol without fail.

Some unethical practices devastating the business ethics

▶ **Economic and Financial Scandals**
  ➥ i. Manipulation of financial and business data
  ➥ ii. Illegal usage of price sensitive information of business
  ➥ iii. Bribery to certain internal and external stakeholders
  ➥ iv. Unauthorized related party transactions
  ➥ v. Insider trading acts

▶ **Intellectual Property Rights (IPR)**
  ➥ i. Unauthorized usage of IPR of another person/company by a company for its benefit or any third party benefit
  ➥ ii. Usage of a product or service in violation or violation of third party IPR
  ➥ iii. Exploiting the IPR of a person with unfair terms and conditions in a contract

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Some unethical practices devastating the business ethics - Contd…

▶ **Professional and Behavioral Matters**

➥ i. Sexual **harassment**

➥ ii. **Discrimination** in job/work allocation to employees

➥ iii. **Negligence** in handling the safety and health of the professionals

➥ iv. **Exploiting** the talent of professionals with payment of unfair compensation

➥ v. Events impacting **privacy** of the professionals and business stakeholders

➥ vi. **Unfair** terms and conditions of the employment agreement

➥ vii. Efforts to **dismantle** the union of the professionals

▶ **Marketing Aspects**

➥ i. Circulation of marketing content which is against public policy and moral values of the society

➥ ii. Misleading advertisements

➥ iii. Circulation of marketing content with prime focus on business and revenue generation by any means rather than serving the requirements and interests of the clients

➥ iv. Usage of unethical methods in marketing to target specific category of consumers

➥ v. Deceptive marketing strategies.

Some unethical practices devastating the business ethics - Contd…

▶ History has proven from time to time that companies which craved for short term success by resorting to unethical and unfair trade practices have crumbled to ground from top position following the unveiling of the fraud which was basis for such short term success.

▶ To avoid the aforesaid fate, establishing and observing standard business ethics is moral responsibility of every company and is also only way out for companies to sustain long term success, to retain the customer base for longevity and to reign as market leaders in their line of business.

Examples of lapses in business ethics by employees in IT organization

▶ 1. Volkswagen has admitted that 11 million of its vehicles were equipped with software that was used to cheat on **emissions test**. The company is now contending with the consequence.

▶ 2. *Toshiba, the Japanese industrial giant whose diversified products and services include IT and communication equipment and systems, disclosed that it overstated its earnings over a seven-year period by more than $1.2 billion.*

▶ 3. Amazon has the second highest employee turnover rate of companies in the Fortune 500 and has been criticized by some for creating a **high pressure work environment** in which bosses' expectations were almost impossible to satisfy and jobs were threatened if illness or other personal issues influenced on work.

▸ *Suppose, you are hired at a* large software company *and have been working* overtime *for the last two months trying to complete the* final testing of a new software release for the company's flagship product, *which is used by thousands of organizations worldwide.*

▸ *Unfortunately, the software has many* bugs *and* testing has taken weeks longer than expected. *This afternoon your boss asked you to* sign off *on the completion of your portion of testing.*

▸ *He explains that the project has gone* over budget *and is in danger of missing the committed release date for customers.*

▸ *When you object because you feel the software is still buggy,* he says not to worry, whatever bugs remain will be fixed in the next release of the software.

▸ **What do you do?**

Summary: What trends have increased the likelihood of an unethical behavior?

▶ **Globalization** has created a much more complex work environment, making it more difficult to apply **principles and codes of ethics** consistently.

▶ Organizations may be tempted to resort to **unethical behavior to maintain profits** in today's more challenging and uncertain economic climate.

▶ It is not unusual for powerful, highly successful individuals to fail to act in morally appropriate ways as such people are often aggressive in striving for what they want and are used to having privileged access to information, people, and other resources. Furthermore, their success often inflates their belief that they have the ability and the right to manipulate the outcome of any situation.

CORPORATE SOCIAL RESPONSIBILITY

- Corporate social responsibility (CSR) is the concept that an organization should act ethically by taking responsibility for the impact of its actions on its shareholders, consumers, employees, community, environment, and suppliers.
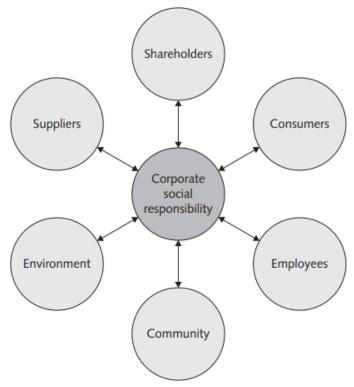

FIGURE 1-4 An organization's program CSR affects its shareholders, consumers, employees, community, environment, and suppliers

- An organization's approach to CSR can encompass a wide variety of tactics—from donating a portion of net profit to charity to implementing more sustainable business operations or encouraging employee education through tuition reimbursement.

- Setting CSR goals encourages an organization to achieve higher moral and ethical standards.

- **Supply chain sustainability** is a component of CSR that focuses on developing and maintaining a supply chain that meets the needs of the present without compromising the ability of future generations to meet their needs.

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- Supply chain sustainability takes into account issues such as fair labor practices, energy and resource conservation, human rights, and community responsibility.

- Many IT equipment manufacturers have made supply chain sustainability a priority, in part, because they must adhere to various European Union directives and regulations—including the Restriction of Hazardous Substances Directive, the Waste Electrical and Electronic Equipment Directive, etc.

- In many cases, meeting supply chain sustainability goals can also lead to lower costs.

- For example, in fiscal year 2015, Dell launched its closed-loop plastics supply chain and by year end had recycled 2.2 million pounds of those plastics back into new Dell products.

- In addition, its global takeback program has made Dell the world's largest technology recycler, collecting more than 1.4 billion pounds of e-waste since 2007.

- Each organization must decide if CSR is a priority and, if so, what its specific CSR goals are.

- The pursuit of some CSR goals can lead to increased profits, making it easy for senior company management and stakeholders to support the organization's goals in this arena.

- However, if striving to meet a specific CSR goal leads to a decrease in profits, senior management may be challenged to modify or drop that CSR goal entirely.

- **For example**, most U.S. auto manufacturers have introduced models that run on clean, renewable electric power as part of a corporate responsibility goal of helping to end U.S. dependence on oil. However, Americans have been slow to embrace electric cars, and many manufacturers have had to offer low-interest financing, cash discounts, sales bonuses, and subsidized leases to get the autos off the sales floor. Manufacturers and dealers are struggling to increase profits on the sale of these electric cars, and senior management at the automakers must consider how long they can continue with their current strategies

- Many organizations define a wide range of corporate responsibility areas that are important to them, their customers, and their community.

- In order for a CSR program to be effective, a senior executive should be placed in charge of corporate responsibility results for each area, with strategic initiatives defined, staffed, and well-funded.

- Key indicators of progress in these areas should be defined and the results tracked and reported to measure progress.

Business Benefits of CSR

- *In a way, **CSR can be seen as a public relations effort.** However, it goes beyond that, as CSR can also boost a firm's competitiveness. The business benefits of CSR include the following:*
  - *i. **Stronger brand image, recognition, and reputation**: CSR adds value to firms by establishing and maintaining a good corporate reputation and/or brand equity.*
  - *ii. **Increased customer loyalty and sales**: Customers of a firm that practices CSR feel that they are helping the firm support good causes.*
  - *iii. **Operational cost savings**: Investing in operational efficiencies results in operational cost savings as well as reduced environmental impact.*
  - *iv. **Retaining key and talented employees**: Employees often stay longer and are more committed to their firm knowing that they are working for a business that practices CSR.*
  - *v. **Easier access to funding**: Many investors are more willing to support a business that practices CSR.*
  - *vi. **Reduced regulatory burden**: Strong relationships with regulatory bodies can help to reduce a firm's regulatory burden.*

WHY FOSTERING CORPORATE SOCIAL RESPONSIBILITY AND GOOD BUSINESS ETHICS IS IMPORTANT?

- Organizations have at least five good reasons to pursue CSR goals and to promote a work environment in which employees are encouraged to act ethically when making business decisions:

  - Gaining the goodwill of the community
  - Creating an organization that operates consistently
  - Fostering good business practices
  - Protecting the organization and its employees from legal action
  - Avoiding unfavorable publicity

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Gaining the Goodwill of the Community

- Although organizations exist primarily to earn profits or provide services to customers, they also have some fundamental responsibilities to society.

- As discussed in the previous section, companies often declare these responsibilities in specific CSR goals.

- All successful organizations, including technology firms, recognize that they must attract and maintain loyal customers.

- Philanthropy is one way in which an organization can demonstrate its values in action and make a positive connection with its stakeholders.

- As a result, many organizations initiate or support socially responsible activities, which may include making contributions to charitable organizations and nonprofit institutions, providing benefits for employees in excess of any legal requirements, and devoting organizational resources to initiatives that are more socially desirable than profitable.

- Here are a few examples of some of the CSR activities supported by major IT organizations:
  - Dell Inc. has several initiatives aimed at reducing the amount of natural resources it takes to create and ship its products, cutting the amount of energy it takes its customers to use its products, and curbing the effects its products have on people and the planet.
  - Google agreed to invest more than $1.5 billion in renewable energy projects, such as large-scale wind farms and rooftop solar panels.
  - Oracle delivered nearly $5 billion in resources (with a focus on computer science education) to help 2.2 million students in 100 countries become college-and-career ready.

- The goodwill that CSR activities generate can make it easier for corporations to conduct their business.

- For example, a company known for treating its employees well will find it easier to compete for the top job candidates.

- On the other hand, businesses that are not socially responsible run the risk of alienating their customer base.

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Creating an Organization That Operates Consistently

- Organizations develop and abide (accept or act in accordance with) by values to create an organizational culture and to define a consistent approach for dealing with the needs of their stakeholders—shareholders, employees, customers, suppliers, and the community.

- Such a consistency ensures that employees know what is expected of them and can employ the organization's values to help them in their decision making.

- Consistency also means that shareholders, customers, suppliers, and the community know what they can expect of the organization—that it will behave in the future much as it has in the past.

- It is especially important for multinational or global organizations to present a consistent face to their shareholders, customers, and suppliers, no matter where those stakeholders live or operate their business.

- Although each company's value system is different, many share the following values:

  - Operate with honesty and integrity, staying true to organizational principles
  - Operate according to standards of ethical conduct, in words and action
  - Treat colleagues, customers, and consumers with respect
  - Strive (try hard to achieve) to be the best at what matters most to the organization
  - Value diversity
  - Make decisions based on facts and principles

Fostering Good Business Practices

- In many cases, good ethics can mean good business and improved profits.

- Companies that produce safe and effective products avoid costly recalls and lawsuits.

- Companies that provide excellent service retain their customers instead of losing them to competitors.

- Companies that develop and maintain strong employee relations enjoy lower turnover rates and better employee morale.

- Suppliers and other business partners often place a priority on working with companies that operate in a fair and ethical manner.

- All these factors tend to increase revenue and profits while decreasing expenses.

- As a result, ethical companies tend to be more profitable over the long term than unethical companies.

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- On the other hand, bad ethics can lead to bad business results.

- Bad ethics can have a negative impact on employees, many of whom may develop negative attitudes if they perceive a difference between their own values and those stated or implied by an organization's actions.

- In such an environment, employees may suppress their tendency to act in a manner that seems ethical to them and instead act in a manner that will protect them against anticipated punishment.

- When such a discrepancy (difference) between employee and organizational ethics occurs, it destroys employee commitment to organizational goals and objectives, creates low morale, fosters poor performance, erodes employee involvement in organizational improvement initiatives, and builds indifference to the organization's needs.

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Protecting the Organization and Its Employees from Legal Action

- In a 1909 ruling, the U.S. Supreme Court established that an employer can be held responsible for the acts of its employees even if the employees act in a manner contrary to corporate policy and their employer's directions.

- The principle established is called respondeat superior, or "let the master answer."

- When it was uncovered that employees of Wells Fargo Bank opened over 2 million bogus credit card accounts not authorized by its customers, the bank was fined over $185 million and ordered to pay customers full restitution for any fees or charges they may have incurred.

- The practice began at least as early as 2011 and was an attempt by thousands of bank employees to achieve their sales targets for cross-selling and be rewarded with higher sales bonuses.

- Cross-selling is the practice of selling multiple products to the existing customers—savings account, checking account, auto loan, mortgage, credit card, etc.

- Cross-selling to existing customers is cheaper than locating and selling to brand new customers. It also tends to lock existing customers into your bank.

- A coalition of several legal organizations, including the Association of Corporate Counsel, the U.S. Chamber of Commerce, the National Association of Manufacturers, the National Association of Criminal Defense Lawyers, and the New York State Association of Criminal Defense Lawyers, argues that organizations should "be able to escape criminal liability if they have acted as responsible corporate citizens, making strong efforts to prevent and detect misconduct in the workplace.

- One way to do this is to establish effective ethics and compliance programs. However, some people argue that officers of companies should not be given light sentences if their ethics programs fail to deter criminal activity within their firms.

Avoiding Unfavorable Publicity

- The public reputation of a company strongly influences the value of its stock, how consumers regard its products and services, the degree of oversight it receives from government agencies, and the amount of support and cooperation it receives from its business partners.

- Thus, many organizations are motivated to build a strong ethics program to avoid negative publicity.

- If an organization is perceived as operating ethically, customers, business partners, shareholders, consumer advocates, financial institutions, and regulatory bodies will usually regard it more favorably.

- Prominent ad buyers and marketers are angry with Facebook after finding out that the world's largest online social network service greatly exaggerated the average viewing time of video ads on its platform.

- This is a key metric used by advertisers in deciding how much to spend on Facebook video versus other video services such as YouTube, Twitter, and TV networks.

- It turns out that Facebook was not including views of three seconds or less in calculating its average view time, resulting in overestimating viewing time by 60 to 80 percent.

- Some advertising industry analysts believe that the new viewing time results and bad publicity associated with the incident will be impactful in the future placement of tens of billions of advertising dollars.

HOW ORGANIZATIONS CAN IMPROVE THEIR ETHICS?

- Research by the Ethics Resource Center (ERC) found that 86 percent of the employees in companies with a well-implemented ethics and compliance program are likely to perceive a strong ethical culture within the company.

- A well-implemented ethics and compliance program and a strong ethical culture can, in turn, lead to less pressure on employees to misbehave and a decrease in observed misconduct.

- It also creates an environment in which employees are more comfortable reporting instances of misconduct, partly because there is less fear of potential retaliation by management against reporters (for example, reduced hours, transfer to less desirable jobs, and delays in promotions).
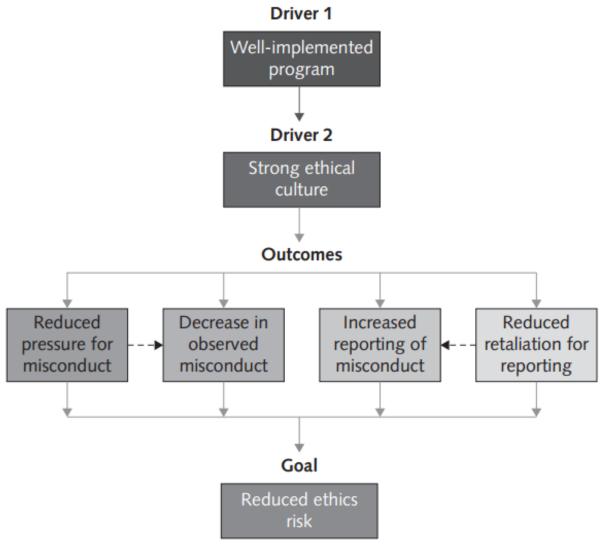
FIGURE 1-5   Reducing the risk of unethical behavior

- The Ethics Resource Center has defined the following characteristics of a successful ethics program:

  - Employees are willing to seek advice about ethics-related issues.
  - Employees feel prepared to handle situations that could lead to misconduct.
  - Employees are rewarded for ethical behavior.
  - The organization does not reward success obtained through questionable means.
  - Employees feel positively about their company.

- The risk of unethical behavior is increasing, so improving business ethics is becoming more important for all companies.
- The following sections explain some of the actions corporations can take to improve business ethics.
  - Appoint a Corporate Ethics Officer
  - Require the Board of Directors to Set and Model High Ethical Standards
  - Establish a Corporate Code of Ethics
  - Conduct Social Audits
  - Require Employees to Take Ethics Training
  - Include Ethical Criteria in Employee Appraisals
  - Create an Ethical Work Environment

Assignment

- Explain the following points

  - Appoint a Corporate Ethics Officer
  - Require the Board of Directors to Set and Model High Ethical Standards
  - Establish a Corporate Code of Ethics
  - Conduct Social Audits
  - Require Employees to Take Ethics Training
  - Include Ethical Criteria in Employee Appraisals
  - Create an Ethical Work Environment

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Examples of ethical behavior in the workplace

- Obey The Company's Rules & Regulation
- Communicate Effectively
- Develop Professional Relationships
- Take Responsibility
- Be Accountable
- Uphold Trust
- Show Initiative without being told
- Respect Your Colleagues
- Work Smarter

Unethical Workplace Behaviors

- Lies
- Taking Credit for Others Hard Work
- Verbal Harassment/Abuse
- Violence
- Non-Office Related Work
- Extended Breaks
- Theft
- Sexual Harassment
- Corrupt Practices

INCLUDING ETHICAL CONSIDERATIONS IN DECISION MAKING

- We are all faced with difficult decisions in our work and in our personal life.

- Most of us have developed a decision-making process that we execute automatically, without thinking about the steps we go through.

- The following sections discuss this decision-making process further and point out where and how ethical considerations need to be brought into the process.
  - Develop Problem Statement
  - Identify Alternatives
  - Choose Alternative
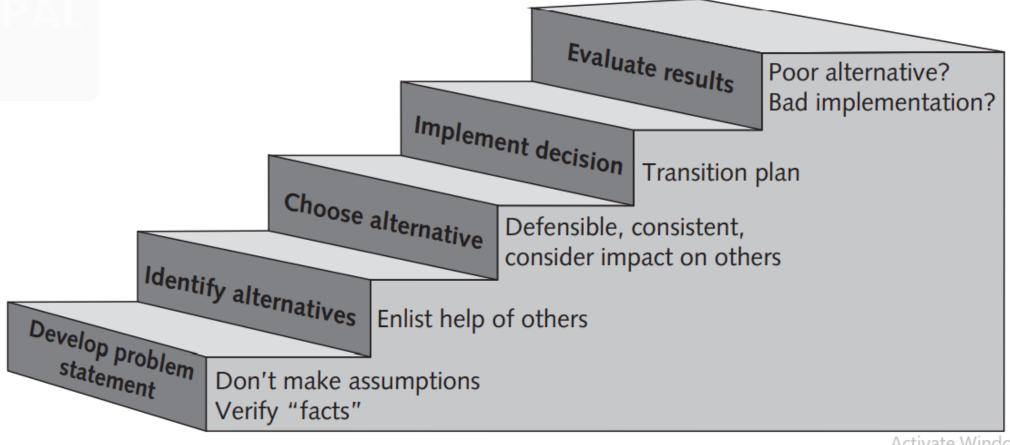 - Implement the Decision
  - Evaluate the Results

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FIGURE 1-7   A five-step ethical decision-making process

Steps (bottom to top):

- **Develop problem statement** — Don't make assumptions / Verify "facts"
- **Identify alternatives** — Enlist help of others
- **Choose alternative** — Defensible, consistent, consider impact on others
- **Implement decision** — Transition plan
- **Evaluate results** — Poor alternative? Bad implementation?

Develop Problem Statement

- A problem statement is a clear, concise description of the issue that needs to be addressed.

- A good problem statement answers the following questions:
  - What do people observe that causes them to think there is a problem?
  - Who is directly affected by the problem?
  - Is anyone else affected?
  - How often does the problem occur?
  - What is the impact of the problem?
  - How serious is the problem?

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- Development of a problem statement is the most critical step in the decision-making process.

- Without a clear statement of the problem or the decision to be made, it is useless to proceed.

- If the problem is stated incorrectly, the chances of solving the real problem are greatly diminished.

- The following list includes one example of a good problem statement as well as two examples of poor problem statements:

- **Good problem statement**: Our product supply organization is continually running out of stock of finished products, creating an out-of-stock situation on over 15 percent of our customer orders, resulting in over $300,000 in lost sales per month.

- **Poor problem statement**: We need to implement a new inventory control system. (This is a possible solution, not a problem statement. Pursuing this course of action will surely be expensive and time consuming and, may or may not, solve the underlying problem.)

- **Poor problem statement**: We need to install cameras and monitoring equipment to put an end to theft of finished product in the warehouse. (Again, this is a possible solution, not a problem statement. And are there sufficient facts to support the hypothesis of theft in the warehouse?)

- You must gather and analyze facts to develop a good problem statement.

- Seek information and opinions from a variety of people to broaden your frame of reference.

- During this process, you must be extremely careful not to make assumptions about the situation and carefully check key facts for validity.

- Simple situations can sometimes turn into complex controversies because no one takes the time to gather and analyze the real facts.

Identify Alternatives

- During this stage of decision making, it is ideal to enlist the help of others, including stakeholders, to identify several alternative solutions to the problem.

- Brainstorming with others will increase your chances of identifying a broad range of alternatives and determining the best solution.

- On the other hand, there may be times when it is inappropriate to involve others in solving a problem that you are not at liberty to discuss.

- In providing participants information about the problem to be solved, offer just the facts, without your opinion, so you don't influence others to accept your solution.

- During any brainstorming process, try not to be critical of ideas, as any negative criticism will tend to shut down the discussion, and the flow of ideas will dry up.

- Simply write down the ideas as they are suggested and ask questions only to gain a clearer understanding of the proposed solution.

Choose Alternative

- Once a set of alternatives has been identified, the group must evaluate them based on numerous criteria, such as effectiveness of addressing the issue, the extent of risk associated with each alternative, cost, and time to implement.

- An alternative that sounds attractive but that is not feasible will not help solve the problem.

- As part of the evaluation process, weigh various laws, guidelines, and principles that may apply.

- You certainly do not want to violate a law that can lead to a fine or imprisonment for yourself or others.
  - Do any corporate policies or guidelines apply?
  - Does the organizational code of ethics offer guidance?
  - Do any of your own morals apply?
- Consider the likely consequences of each alternative from several perspectives:
  - What is the impact on you, your organization, other stakeholders (including your suppliers and customers), and the environment?
  - Does this alternative do less harm than other alternatives?

- The alternative selected should be
  - ethically and legally defensible to a collection of your coworkers, peers, and your profession's governing body of ethics;
  - be consistent with the organization's policies and code of ethics;
  - take into account the impact on others;
  - and, of course, provide a good solution to the problem.

Implement the Decision

- Once an alternative is selected, it should be implemented in an efficient, effective, and timely manner.

- This is often much easier said than done, because people tend to resist change.

- In fact, the bigger the change, the greater is the resistance to it. Communication is the key to helping people accept a change.

- It is imperative (crucial) that someone whom the stakeholders trust and respect answer the following questions:
  - Why are we doing this?
  - What is wrong with the current way we do things?
  - What are the benefits of the new way for you?

- A transition plan must be defined to explain to people how they will move from the old way of doing things to the new way.

- It is essential that the transition be seen as relatively easy and pain free.

- It may be necessary to train the people affected, provide incentives for making the change in a successful fashion, and modify the reward system to encourage new behaviors consistent with the change.

Evaluate the Results

- After the solution to the problem has been implemented, monitor the results to see if the desired effect was achieved and observe its impact on the organization and the various stakeholders.
  - Were the success criteria fully met?
  - Were there any unintended consequences?

- This evaluation may indicate that further refinements are needed.

- If so, return to the problem development step, refine the problem statement as necessary, and work through the process again.

- On the other hand, the proper alternative may have been selected, but it was implemented in a poor fashion so the desired results were not achieved. This may require redoing some of the implementation steps.

ETHICS IN INFORMATION TECHNOLOGY

- The growth of the Internet and social networks;
  - the ability to capture, store, and analyze vast amounts of personal data;
  - and a greater reliance on information systems in all aspects of life have increased the risk that information technology will be used unethically.

- In the midst of the many IT breakthroughs in recent years, the importance of ethics and human values has been underemphasized—with a range of consequences.

- Here are some examples that raise public concern about the ethical use of information technology:
    - Governments around the world have implemented various systems that enable the surveillance of their citizens and are struggling to achieve the proper balance between privacy and security.
    - Many employees have their email and Internet access monitored while at work, as employers struggle to balance their need to manage important company assets and work time with employees' desire for privacy and self-direction.
    - Millions of people have downloaded music and movies at no charge and in apparent violation of copyright laws at tremendous expense to the owners of those copyrights.
    - Organizations contact millions of people worldwide through unsolicited email and text messages in an extremely low cost, but intrusive marketing approach.

- Hackers break into databases of financial and retail institutions to steal customer information and then use it to commit identity theft—opening new accounts and charging purchases to unsuspecting victims.
- Students around the world have been caught downloading material from the web and plagiarizing content for their term papers.
- Websites plant cookies or spyware on visitors' hard drives to track their online purchases and activities.

Ethics in IT has two aspects

- First, the general public needs to develop a better understanding of the critical importance of ethics as it applies to IT; currently, too much emphasis is placed on technical issues.

- IT has a profound effect on society, and IT professionals and end users need to recognize this fact when they implement technology and formulate policies that will have legal ramifications (a complex or unwelcome consequence of an action or event) and affect the wellbeing of millions of consumers.

- The second tenet that important business-technology decisions with strong ethical implications are too often left to the technical experts to decide (for example, what data to gather about customers, where to store it, how to use it, and what level of security to employ to protect it).

- General business managers must assume greater responsibility for such decisions, but to do so they must be able to make broad-minded, objective decisions based on technical savvy (the ability to make good judgements), business know-how, and high ethical standards.

- They must also try to create a working environment in which ethical dilemmas can be discussed openly, objectively, and constructively.

- Thus, the goals of this text are
    - to educate people about the tremendous impact of ethical issues in the successful and secure use of information technology;
    - to motivate people to recognize these issues when making business decisions; and to provide tools, approaches, and useful insights for making ethical decisions.

CRITICAL THINKING EXERCISE: CIO SURPRISES CFO (General Discussion)

- *You are the Chief Financial Officer (CFO) of a midsized manufacturing firm with annual revenue exceeding $100 million. You have heard nothing but positive comments about the new Chief Information Officer (CIO) you hired three months ago. As you listen to her outline what needs to be done to improve the firm's computer security, you are impressed with her energy, enthusiasm, and presentation skills. However, your jaw drops when she states that the total cost of the proposed computer security improvements will be $250,000. This seems like a lot of money for security, given that your firm has had no major incident. Several other items in the budget will either have to be dropped or trimmed back to accommodate such an expenditure. In addition, the $250,000 is above your spending authorization and will require approval by the CEO. This will require you to defend the expenditure, and you are not sure how to do this. As you look around the conference room, you can see that other members of your staff are just as surprised as you. What serious mistake has the CIO made and how could this have been avoided?*

IT WORKER RELATIONSHIPS THAT MUST BE MANAGED

- IT workers typically become involved in many different work relationships, including those with employers, clients, suppliers, other professionals, IT users, and society at large.

- In each relationship, an ethical IT worker acts honestly and appropriately.

- These various relationships are discussed in the following sections.
  - Relationships Between IT Workers and Employers
  - Relationships Between IT Workers and Clients
  - Relationships Between IT Workers and Suppliers
  - Relationships Between IT Workers and Other Professionals
  - Relationships Between IT Workers and IT Users
  - Relationships Between IT Workers and Society

Relationships Between IT Workers and Employers

- IT workers and employers have a critical, multifaceted relationship that requires ongoing effort by both parties to keep it strong.

- An IT worker and an employer typically agree on the fundamental aspects of this relationship before the worker accepts an employment offer.

- These issues may include job title, general performance expectations, specific work responsibilities, drug-testing requirements, dress code, location of employment, salary, work hours, and company benefits.

- Many other aspects of this relationship may be addressed in a company's policy and procedures manual or in the company's code of conduct, if one exists.

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- Topics addressed in such a manual or code of conduct might include
  - protection of company secrets;
  - vacation policy;
  - time off allowed for a funeral or an illness in the family;
  - tuition reimbursement;
  - and use of company resources, including computers and networks.

- Other aspects of this relationship develop over time, depending on circumstances (for example, whether the employee can leave early one day if the time is made up another day).

- Some aspects are addressed by law—for example, an employee cannot be required to do anything illegal, such as falsify the results of a quality assurance test.

- Some issues are specific to the role of the IT worker and are established based on the nature of the work or project—for example, the programming language to be used, the type and amount of documentation to be produced, and the extent of testing to be conducted.

- As the stewards (a person who manages another's property) of an organization's IT resources, IT workers must set an example and enforce policies regarding the ethical use of IT.

- IT workers often have the skills and knowledge to abuse systems and data or to enable others to do so.

- Software piracy is an area in which IT workers may be tempted to violate laws and policies.

- Although end users often get the blame when it comes to using illegal copies of commercial software, software piracy in a corporate setting is sometimes directly traceable to IT staff members—either they allow it to happen or they actively engage in it, often to reduce IT-related spending.

- The Software & Information Industry Association (SIIA) and the BSA I The Software Alliance (BSA) are trade groups that represent the world's largest software and hardware manufacturers.

- Part of their mission is to stop the unauthorized copying of software produced by its members.

- North America has the lowest regional rate of software piracy at 17 percent, which represents a commercial value of $10 billion in lost revenue for software development companies.

- The global software theft rate for personal computer software is around 43 percent, which equates to a commercial value of $62.7 billion.

- SIIA promotes the common interests of the software and digital content industry.

- It protects the intellectual property of member companies and advocates a legal and regulatory environment that benefits the entire industry.

- SIIA informs the industry and the broader public by serving as a resource on trends, technologies, policies, and related issues that affect member firms and demonstrate the contribution of the industry to the broader economy.

- It also provides global services in government relations, business development, corporate education, and intellectual property protection. Over 200 organizations are members of SIIA, including 21st Century Fox, Accenture, Adobe Systems, Bank of America Merrill Lynch, Blackboard, Cengage Learning, Fidelity Investments, Google, Scottrade, Thomson Reuters, and Wells Fargo Bank.

- BSA is funded both through dues based on member companies' software revenue and through settlements from companies that commit piracy.

- BSA membership includes about two dozen global members such as Adobe, Apple, Dell, IBM, Intuit, Microsoft, Oracle, and SAS Institute.

- Many of the cases are reported by disgruntled employees or former employees who can receive a monetary reward of thousands of dollars.

- In 2012 alone, BSA investigated over 15,000 reports of unlicensed software use around the globe.

- **Trade secrecy** is another area that can present challenges for IT workers and their employers.

- A trade secret is information, generally unknown to the public, that a company has taken strong measures to keep confidential.

- It represents something of economic value that has required effort or cost to develop and that has some degree of uniqueness or novelty.

- Trade secrets can include the design of new software code, hardware designs, business plans, the design of a user interface to a computer program, and manufacturing processes.

- Examples include the Colonel's secret recipe of 11 herbs and spices used to make the original KFC chicken, the formula for Coke, and Intel's manufacturing process for the Core i7-6950K 10-core processing chip.

- Employers worry that employees may reveal these secrets to competitors, especially if they leave the company. As a result, companies often require employees to sign confidentiality agreements and promise not to reveal the company's trade secrets.

- Another issue that can create friction between employers and IT workers is whistleblowing.

- **Whistle-blowing** is an effort by an employee to attract attention to a negligent, illegal, unethical, abusive, or dangerous act by a company that threatens the public interest.

- Whistle-blowers often have special information based on their expertise or position within the offending organization.

- For example, an employee of a computer chip manufacturing company may know that the chemical process used to make the chips is dangerous to employees and the general public.

- A conscientious employee would call the problem to management's attention and try to correct it by working with appropriate resources within the company.

- But what if the employee's attempt to correct the problem through internal channels was thwarted or ignored?

- The employee might then consider becoming a whistle-blower and reporting the problem to people outside the company, including state or federal agencies that have jurisdiction.

- Obviously, such actions could have negative consequences on the employee's job, perhaps resulting in retaliation and firing.

- Amazon, IBM, Microsoft, Oracle, and SAP, along with many other companies, are competing in the rapidly growing cloud services arena.

- Competition is fierce, and the companies all have an incentive to make their cloud services appear financially successful.

- However, a whistle-blower lawsuit recently filed against Oracle highlighted potential issues related to the way such companies account for income from subscription-based software services that run in the cloud.

- The whistle-blower, a former Oracle employee, accused management of pressuring her to add millions of dollars in accruals to financial reports for expected cloud-based software and services revenue.

- Accounting experts acknowledge that classifying software sales as cloud or traditional is complex and requires determinations that might subsequently be challenged by auditors.

- Nonetheless, Oracle shares dropped 4 percent the day following announcement of the lawsuit.

- Although Oracle alleges the whistle-blower was fired for poor performance, the employee maintains that she was let go just two months after she received a positive job performance review and just one month after the alleged incident began.

- Oracle strongly denies any allegations of wrongdoing and has vowed to countersue the whistle-blower for malicious prosecution.

Relationships Between IT Workers and Clients

- IT workers provide services to clients; sometimes those "clients" are coworkers who are part of the same company as the IT worker.

- In other cases, the client is part of a different company.

- In relationships between IT workers and clients, each party agrees to provide something of value to the other.

- Generally speaking, the IT worker provides hardware, software, or services at a certain cost and within a given time frame.

- For example, an IT worker might agree to implement a new accounts payable software package that meets a client's requirements.

- The client provides compensation, access to key contacts, and perhaps a work space.

- This relationship is usually documented in contractual terms—who does what, when the work begins, how long it will take, how much the client pays, and so on.

- Although there is often a vast disparity in technical expertise between IT workers and their clients, the two parties must work together to be successful.

- Typically, the client makes decisions about a project on the basis of information, alternatives, and recommendations provided by the IT worker.

- The client trusts the IT worker to use his or her expertise and to act in the client's best interests.

- The IT worker must trust that the client will provide relevant information, listen to and understand what the IT worker says, ask questions to understand the impact of key decisions, and use the information to make wise choices among various alternatives.

- Thus, the responsibility for decision making is shared between the client and the IT worker

- One potential ethical problem that can interfere with the relationship between IT workers and their clients involves IT consultants or auditors who recommend their own products and services or those of an affiliated vendor to remedy a problem they have detected.

- Such a situation has the potential to undermine (erode) the objectivity of an IT worker due to a **conflict of interest**—a conflict between the IT worker's (or the IT firm's) self-interest and the client's interests.

- For example, an IT consulting firm might be hired to assess a firm's IT strategic plan.

- After a few weeks of analysis, the consulting firm might provide a poor rating for the existing strategy and insist that its proprietary products and services are required to develop a new strategic plan.

- Such findings would raise questions about the vendor's objectivity and the trustworthiness of its recommendations

- Problems can also arise during a project if IT workers find themselves unable to provide full and accurate reporting of the project's status due to a lack of information, tools, or experience needed to perform an accurate assessment.

- The project manager may want to keep resources flowing into the project and hope that problems can be corrected before anyone notices.

- The project manager may also be reluctant (unwilling) to share status information because of contractual penalties for failure to meet the schedule or to develop certain system functions.

- In such a situation, the client may not be informed about a problem until it has become a crisis.

- After the truth comes out, finger-pointing and heated discussions about cost overruns, missed schedules, and technical incompetence can lead to charges of fraud, misrepresentation, and breach of contract described next.

- **Fraud** is the crime of obtaining goods, services, or property through deception or trickery.

- Fraudulent misrepresentation occurs when a person consciously decides to induce another person to rely and act on a misrepresentation.

- To prove fraud in a court of law, prosecutors must demonstrate the following elements:
  - The wrongdoer (a person who does something bad or illegal) made a false representation of material fact.
  - The wrongdoer intended to deceive the innocent party.
  - The innocent party justifiably relied on the misrepresentation.
  - The innocent party was injured.

- **Misrepresentation** is the misstatement or incomplete statement of a material fact.

- If the misrepresentation causes the other party to enter into a contract, that party may have the legal right to cancel the contract or seek reimbursement for damages.

- *For example*: Affinity Gaming, a Las Vegas-based casino with 11 properties located across four states, suffered a data breach in 2013 that enabled hackers to gain access to customers' credit card data.

- Affinity hired Trustwave, an information security company that provides on-demand threat, vulnerability, and compliance-management services to investigate and contain the breach.

- Following its investigation, Trustwave claimed that it had identified how the data breach had occurred and had contained the malware responsible for it.

- However, a year later, Affinity was hit with a second customer data breach.

- This time, Affinity hired Mandiant, a Trustwave competitor, to conduct an investigation.

- Mandiant concluded that Trustwave's original work was incomplete and had failed to identify the means by which the attacker had breached Affinity's data security.

- Affinity sued Trustwave for conducting an allegedly "woefully inadequate" investigation that missed key details of the network breach and enabled subsequent attacks.

- Affinity alleged that Trustwave made misrepresentations when it claimed that its examination would analyze and help remedy the data breach, when it represented that the data breach was "contained, " and when it claimed that its recommendations would address the data breach.

- **Breach of contract** occurs when one party fails to meet the terms of a contract.

- Further, a material breach of contract occurs when a party fails to perform certain express or implied obligations, which impairs or destroys the essence of the contract.

- Because there is no clear line between a minor breach and a material breach, determination is made on a case-by-case basis.

- "When there has been a material breach of contract, the non-breaching party can either:
  - (1) rescind (revoke or cancel) the contract, seek restitution of any compensation paid under the contract to the breaching party, and be discharged from any further performance under the contract; or
  - (2) treat the contract as being in effect and sue the breaching party to recover damages."

Example

- In 2016, Hewlett-Packard Enterprise (HPE) was awarded $3 billion in damages from Oracle after a court determined that Oracle had breached its contract with HPE by dropping support for all Oracle database software being run on HP systems using Intel's Itanium processor chip. HPE argued that Oracle's actions dramatically reduced the sale of HPE's Itanium-based products. HPE also alleged that Oracle's actions were intended to boost sales of Oracle's own Sun hardware. The jury ultimately agreed with HPE and awarded it the full amount it was seeking, compensating the company for both lost sales and damages, as well as requiring Oracle to continue supporting Itaniumbased systems.

- When IT projects go wrong because of cost overruns, schedule slippage, lack of system functionality, and so on, aggrieved parties might charge fraud, fraudulent misrepresentation, and/or breach of contract.

- Trials can take years to settle, generate substantial legal fees, and create bad publicity for both parties.

- As a result, the vast majority of such disputes are settled out of court, and the proceedings and outcomes are concealed from the public.

- In addition, IT vendors have become more careful about protecting themselves from major legal losses by requiring that contracts place a limit on potential damages.

- Most IT projects are joint efforts in which vendors and customers work together to develop a system.

- Assigning fault when such projects go wrong can be difficult; one side might be partially at fault, while the other side is mostly at fault.

- Clients and vendors often disagree about who is to blame in such circumstances.

- Frequent causes of problems in IT projects include the following :
  - **Scope creep**—Changes to the scope of the project or the system requirements can result in cost overruns, missed deadlines, and a project that fails to meet end-user expectations.
  - **Poor communication**—Miscommunication or a lack of communication between customer and vendor can lead to a system whose performance does not meet expectations.
  - **Delivery of an obsolete solution**—The vendor delivers a system that meets customer requirements, but a competitor comes out with a system that offers more advanced and useful features.
  - **Legacy systems**—If a customer fails to reveal information about legacy systems or databases that must connect with the new hardware or software at the start of a project, implementation can become extremely difficult.
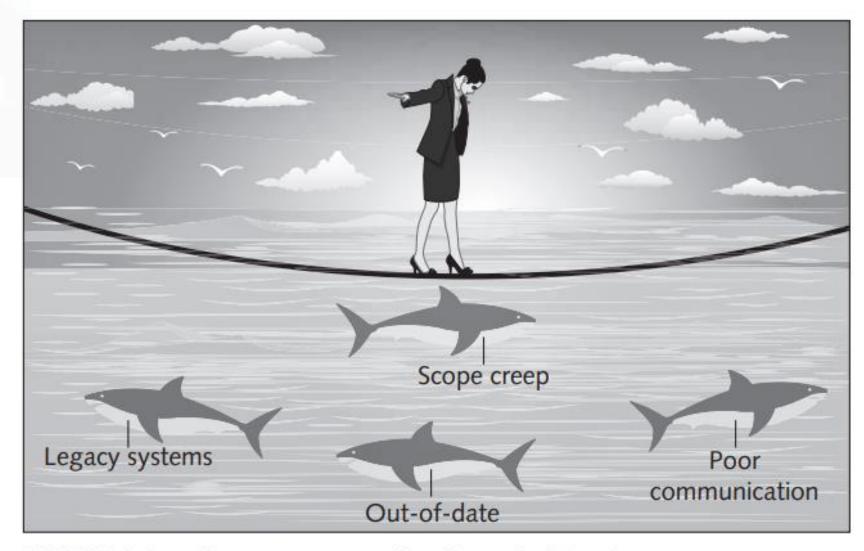
FIGURE 2-1   Frequent causes of problems in IT projects

Relationships Between IT Workers and Suppliers

- IT workers deal with many different hardware, software, and service providers.

- Most IT workers understand that building a good working relationship with suppliers encourages the flow of useful communication as well as the sharing of ideas.

- Such information can lead to innovative and cost-effective ways of using the supplier's products and services that the IT worker may never have considered.

- IT workers can develop good relationships with suppliers by dealing fairly with them and not making unreasonable demands.

- Threatening to replace a supplier who can't deliver needed equipment tomorrow, when the normal industry lead time is one week, is aggressive behavior that does not help build a good working relationship.

- Suppliers strive to maintain positive relationships with their customers in order to make and increase sales.

- To achieve this goal, they may sometimes engage in unethical actions—*for example*, offering an IT worker a gift that is actually intended as a bribe.

- Clearly, IT workers should not accept a bribe from a vendor, and they must be careful when considering what constitutes a bribe.

- For example, accepting invitations to expensive dinners or payment of entry fees for a golf tournament may seem innocent to the recipient, but it may be perceived as bribery by an auditor.

- **Bribery** is the act of providing money, property, or favors to someone in business or government in order to obtain a business advantage.

- An obvious example is a software supplier sales representative who offers money to another company's employee to get its business

- This type of bribe is often referred to as a kickback or a payoff. The person who offers a bribe commits a crime when the offer is made, and the recipient is guilty of a crime if he or she accepts the bribe.

- Various states have enacted bribery laws, which have sometimes been used to invalidate contracts involving bribes but have seldom been used to make criminal convictions.

- Internal control is the process established by an organization's board of directors, managers, and IT systems people to provide reasonable assurance for the effectiveness and efficiency of operations, the reliability of financial reporting, and compliance with applicable laws and regulations.

- An organization's internal control resources include all the people, policies, processes, procedures, and systems controlled by management that enable it to meet these goals
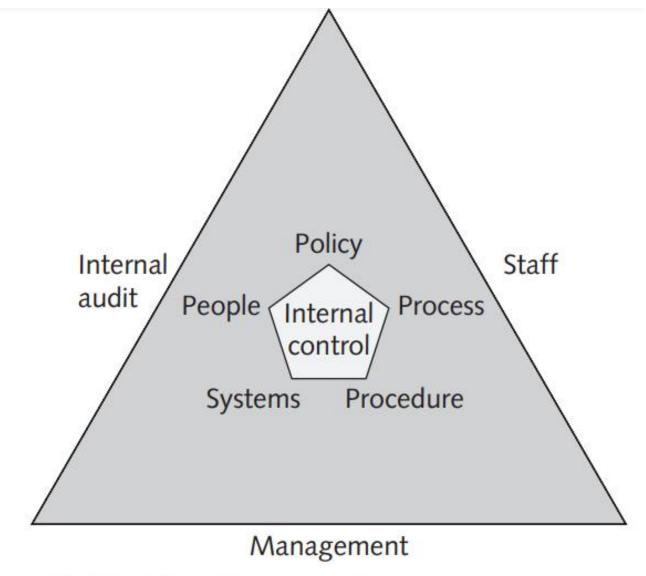
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FIGURE 2-2   Internal control

- **Policies** are the guidelines and standards by which the organization must abide.

- The guidelines and standards are often in response to some law. Policies drive processes and procedures.

- **Processes** are a collection of tasks designed to accomplish a stated objective.

- A **procedure** defines the exact instructions for completing each task in a process.

- An organization might have a policy that defines the credit terms and collection guidelines to be followed when handling a customer order.

- The processes associated with handling customer orders could include creating a new customer account, accepting a new order from an existing customer, and planning shipment of a customer order, among others.

- Procedures for each process define how to complete each task in the process.

- The process and procedures must be designed and executed to conform to the credit terms and collection guidelines policy.

- Management is responsible for ensuring that an adequate system of internal control is set up, documented with written procedures, and implemented.

- Management must also decide the proper level of control over various aspects of the business so that the cost of implementing control does not outweigh the benefits.

- Employees are responsible for following the documented procedures and reporting to management if the controls are not effective in meeting the needs of the organization.

- The internal audit organization is responsible for assessing whether the internal controls have been implemented correctly and are functioning as designed; the internal audit organization reports its findings to management.

- A fundamental concept of good internal controls is the careful **separation of duties** associated with any process that involves the handling of financial transactions so that different aspects of the process are handled by different people.

- With proper separation of duties, fraud would require the collusion of two or more parties.

- When designing an accounts receivable system, for instance, the principal of separation of duties dictates that you separate responsibility for the receipt of customer payments, approving write-offs, depositing cash, and reconciling bank statements.

- Ideally, no one person should be allowed to perform more than one of these tasks.

- Internal controls play a key role in preventing and detecting fraud and protecting the organization's resources.

- Proper separation of duties is frequently reviewed during the audit of a business operation.

- In small organizations, it is common for employees to have multiple responsibilities.

- Such a lack of separation of duties raises concerns that fraud could go undetected.

- **The Foreign Corrupt Practices Ac**t (FCPA) makes it a crime to bribe a foreign official, a foreign political party official, or a candidate for foreign political office.

- In some countries, **gifts** are an essential part of doing business.

- In fact, in some countries, it would be considered rude not to bring a present to an initial business meeting.

- In the United States, a gift might take the form of free tickets to a sporting event from a personnel agency that wants to get on your company's list of preferred suppliers.

- But, at what point does a gift become a bribe, and who decides?

- The key distinguishing factor is that no gift should be hidden.

- A gift may be considered a bribe if it is not declared.

- As a result, most companies require that all gifts be declared and that everything but token gifts be declined.

- Some companies have a policy of pooling the gifts received by their employees, auctioning them off, and giving the proceeds to charity.

TABLE 2-1   Distinguishing between bribes and gifts

Bribes	Gifts
Are made in secret, as they are neither legally nor morally acceptable	Are made openly and publicly, as a gesture of friendship or goodwill
Are often made indirectly through a third party	Are made directly from donor to recipient
Encourage an obligation for the recipient to act favorably toward the donor	Come with no expectation of a future favor for the donor

Relationships Between IT Workers and Other Professionals

- Professionals often feel a degree of loyalty to the other members of their profession.

- As a result, they are often quick to help each other obtain new positions but slow to criticize each other in public.

- Professionals also have an interest in their profession as a whole, because how it is perceived affects how individual members are viewed and treated.

- (*For example*, politicians are not generally thought to be very trustworthy, but teachers are.)

- Hence, professionals owe each other an adherence to the profession's code of conduct.

- Experienced professionals can also serve as mentors and help develop new members of the profession.

- A number of ethical problems can arise among members of the IT profession.

- One of the most common is **résumé inflation**, which involves lying on a résumé by, for example, claiming competence in an IT skill that is in high demand.

- Even though an IT worker might benefit in the short term from exaggerating his or her qualifications, such an action can hurt the profession and the individual in the long run.

- Many employers consider lying on a résumé as grounds for immediate dismissal.

- *For instance*, Yahoo hired Scott Thompson, the president of eBay's PayPal electronic payments unit, as its new CEO in January 2012; however, Thompson resigned less than a year later over discrepancies in his academic record summarized on his résumé.

- **Another ethical issue** that can arise in relationships between IT workers and other professionals is the inappropriate sharing of corporate information.

- Because of their roles, IT workers may have access to corporate databases of private and confidential information about employees, customers, suppliers, new product plans, promotions, budgets, and so on.

- It might be sold to other organizations or shared informally during work conversations with others who have no need to know.

- Revealing such private or confidential information is grounds for termination in many organizations and could even lead to criminal charges.

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Relationships Between IT Workers and IT Users

- The term IT user refers to a person who uses a hardware or software product; the term distinguishes end users from the IT workers who develop, install, service, and support the product.

- IT users need the product to deliver organizational benefits or to increase their productivity.

- IT workers have a duty to **understand** a user's needs and capabilities and to **deliver** products and services that best meet those needs—subject, of course, to budget and time constraints.

- They also have a key responsibility to establish an environment that supports ethical behaviors by users.

- Such an environment discourages software piracy, minimizes the inappropriate use of corporate computing resources, and avoids the inappropriate sharing of information.

Relationships Between IT Workers and Society

- Regulatory laws establish safety standards for products and services to protect the public.

- However, these laws are less than perfect, and they cannot safeguard against all negative side effects of a product or process.

- Often, professionals can clearly see the effect their work will have and can take action to eliminate potential public risks.

- Thus, society expects members of a profession to provide significant benefits and to not cause harm through their actions.

- One approach to meeting this expectation is to establish and maintain professional standards that protect the public.

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- Clearly, the actions of an IT worker can affect society.

- *For example*, a systems analyst may design a computer-based control system to monitor a chemical manufacturing process.

- A failure or an error in the system may put workers or people who live near the plant at risk.

- As a result, IT workers have a relationship with members of society who may be affected by their actions.

- There is currently no single, formal organization of IT workers that takes responsibility for establishing and maintaining standards that protect the public.

- However, as discussed in the following sections, there are a number of professional organizations that provide useful professional codes of ethics to guide actions that support the ethical behavior of IT workers.

ENCOURAGING THE PROFESSIONALISM OF IT WORKERS

- A professional is one who possesses the skill, good judgment, and work habits expected from a person who has the training and experience to do a job well.

- Organizations— including many IT organizations—are desperately seeking workers who have the following characteristics of a professional:
    - They are an expert in the tools and skills needed to do their job.
    - They adhere to high ethical and moral standards.
    - They produce high quality results.
    - They meet their commitments.
    - They communicate effectively.
    - They train and develop others who are less skilled or experienced.

- IT workers of all types can improve their profession's reputation for professionalism by
  - (1) subscribing to a professional code of ethics,
  - (2) joining and participating in professional organizations,
  - (3) obtaining appropriate certifications, and
  - (4) supporting government licensing where available. Each of these topics is discussed in the following sections.

Professional Codes of Ethics

- A professional code of ethics states the principles and core values that are essential to the work of a particular occupational group. Practitioners in many professions subscribe to a code of ethics that governs their behavior.

- For example, doctors adhere to varying versions of the 2,000-year-old Hippocratic oath, which medical schools offer as an affirmation to their graduating classes.

- Most codes of ethics created by professional organizations have two main parts:

- The first outlines what the organization aspires to become and the second typically lists rules and principles by which members of the organization are expected to abide.

- Many codes also include a commitment to continuing education for those who practice the profession.

- Laws do not provide a complete guide to ethical behavior.

- Nor can a professional code of ethics be expected to provide an answer to every ethical dilemma—no code can be a definitive collection of behavioral standards.

- However, following a professional code of ethics can produce many benefits for the individual, the profession, and society as a whole:

- **Ethical decision making**—Adherence to a professional code of ethics means that practitioners use a common set of core values and beliefs as a guideline for ethical decision making.

- **High standards of practice and ethical behavior**—Adherence to a code of ethics reminds professionals of the responsibilities and duties that they may be tempted to compromise to meet the pressures of day-to-day business.

- The code also defines acceptable and unacceptable behaviors to guide professionals in their interactions with others.

- Strong codes of ethics have procedures for censuring professionals for serious violations, with penalties that can include the loss of the right to practice.

- Such codes are the exception, however, and few exist in the IT arena.

- **Trust and respect from the general public**—Public trust is built on the expectation that a professional will behave ethically.

- People must often depend on the integrity and good judgment of a professional to tell the truth, abstain from giving self-serving advice, and offer warnings about the potential negative side effects of their actions.

- Thus, adherence to a code of ethics enhances trust and respect for professionals and their profession.

- **Evaluation benchmark**—A code of ethics provides an evaluation benchmark that a professional can use as a means of self-assessment.

- Peers of the professional can also use the code for recognition or censure.

Professional Organizations

- No one IT professional organization has emerged as preeminent (Outstanding), so there is no universal code of ethics for IT workers.

- However, the existence of such organizations is useful in a field that is rapidly growing and changing.

- In order to stay on the top of the many new developments in their field, IT workers need to network with others, seek out new ideas, and continually build on their personal skills and expertise.

- Whether you are a freelance programmer or the CIO of a Fortune 500 company, membership in an organization of IT workers enables you to associate with others of similar work experience, develop working relationships, and exchange ideas.

- These organizations disseminate information through email, periodicals, websites, social media, meetings, and conferences.

- Furthermore, in recognition of the need for professional standards of competency and conduct, many of these organizations have developed codes of ethics.

- Four of the most prominent IT-related professional organizations are highlighted in the following sections.

- **Association for Computing Machinery (ACM):**

- **Institute of Electrical and Electronics Engineers Computer Society (IEEE-CS)**

- **Association of Information Technology Professionals (AITP)**

- **SysAdmin, Audit, Network, Security (SANS) Institute**

Certification

- Certification indicates that a professional possesses a particular set of skills, knowledge, or abilities, in the opinion of the certifying organization.

- Unlike licensing, which applies only to people and is required by law, certification can also apply to products (for example, the Wi-Fi CERTIFIED logo assures that the product has met rigorous interoperability testing to ensure that it will work with other Wi-Fi-certified products) and is generally voluntary.

- IT-related certifications may or may not include a requirement to adhere to a code of ethics, whereas such a requirement is standard with licensing.

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- Numerous companies and professional organizations offer certifications, and opinions are divided on their value.

- Many employers view them as a benchmark that indicates mastery of a defined set of basic knowledge.

- On the other hand, because certification is no substitute for experience and doesn't guarantee that a person will perform well on the job, some hiring managers are rather cynical about the value of certifications.

- Most IT employees are motivated to learn new skills, and certification provides a structured way of doing so.

- For such people, completing a certification provides clear recognition and correlates with a plan to help them continue to grow and advance in their careers.

- Others view certification as just another means for product vendors to generate additional revenue with little merit attached.

- Deciding on the best IT certification—and even whether to seek a certification— depends on the individual's career aspirations, existing skill level, and accessibility to training

TABLE 2-3 Common IT industry certifications

Category	Certification	Certifying organization
Security	CompTIA Security+	Computer Technology Industry Association
Security	Certified Security Analyst	International Council of E-commerce Consultants (EC)
Forensics	Certified Computer Examiner	The International Society of Forensic Computer Examiners
Governance	Certified in the Governance of Enterprise IT	ISACA
Project management	Project Management Professional	Project Management Institute

- **Vendor Certifications**

- Many IT vendors—such as Cisco, IBM, Microsoft, and Oracle—offer certification programs for those who use their products.

- Workers who successfully complete a program can represent themselves as certified users of a manufacturer's product.

- Depending on the job market and the demand for skilled workers, some certifications might substantially improve an IT worker's salary and career prospects.

- Certifications that are tied to a vendor's product are relevant for job roles with very specific requirements or certain aspects of broader roles.

- Sometimes, however, vendor certifications are too narrowly focused on the technical details of the vendor's technology and do not address more general concepts.

- To become certified, one must pass a written exam. Because of legal concerns about whether other types of exams can be graded objectively, most exams are presented in a multiple-choice format.

- A few certifications, such as the Cisco Certified Internetwork Expert (CCIE) certification, also require a hands-on lab exam that demonstrates skills and knowledge.

- It can take years to obtain the necessary experience required for some certifications.

TABLE 2-4   Common vendor-specific certifications for IT workers

Category	Certification
MAC OS X	Apple Certified Technical Coordinator
Cisco Hardware	Cisco Certified Design Associate
Cisco Networking	Cisco Certified Network Professionals
Cisco Networking	Cisco Certified Internetwork Expert
Microsoft Products	Microsoft Certified Professional
Citrix Products	Citrix Certified Administrator (CCA)
Oracle Database	Oracle Database 12c: Certified Expert Performance Management and Tuning
Salesforce software	Salesforce.com Certified Administrator

Licensing of IT Professionals

- In the United States, a government license is government-issued permission to engage in an activity or to operate a business.

- Most states license activities that could result in damage to public health, safety, or welfare—if practiced by an individual who has not demonstrated minimal competence.

- Licensing is generally administered at the state level and often requires that the recipient pass a test of some kind.

- Some professionals must be licensed, including certified public accountants (CPAs), lawyers, doctors, various types of medical and daycare providers, and some engineers.

- **The Case for Licensing IT Workers**

- As a result of the increasing importance of IT in our everyday lives, the development of reliable, effective information systems has become an area of mounting public concern.

- This concern has led to a debate about whether the licensing of IT workers would improve information systems.

- Proponents argue that licensing would strongly encourage IT workers to follow the highest standards of the profession and practice a code of ethics.

- Without licensing, there are no clear, well-defined requirements for heightened care and no concept of professional malpractice.

- State licensing boards have ultimate authority over the specific requirements for licensing in their jurisdiction, and also decide whether or not to even offer a given exam.

- In 1993, the ACM and IEEE-CS formed a Joint Steering Committee for the Establishment of Software Engineering as a Profession.

- The initial recommendations of the committee were to define ethical standards, to define the required body of knowledge and recommended practices in software engineering, and to define appropriate curricula to acquire knowledge.

- The core **body of knowledge** for any profession outlines agreed-upon sets of skills and abilities that all licensed professionals must possess

The "Software Engineering Code of Ethics and Professional Practice" documents the ethical and professional responsibilities and obligations of software engineers.

Software engineers shall commit themselves to making the analysis, specification, design, development, testing and maintenance of software a beneficial and respected profession. In accordance with their commitment to the health, safety and welfare of the public, software engineers shall adhere to the following Eight Principles:

1. Public - Software engineers shall act consistently with the public interest.
2. Client and Employer - Software engineers shall act in a manner that is in the best interests of their client and employer consistent with the public interest.
3. Product - Software engineers shall ensure that their products and related modifications meet the highest professional standards possible.
4. Judgment - Software engineers shall maintain integrity and independence in their professional judgment.
5. Management - Software engineering managers and leaders shall subscribe to and promote an ethical approach to the management of software development and maintenance.
6. Profession - Software engineers shall advance the integrity and reputation of the profession consistent with the public interest.
7. Colleagues - Software engineers shall be fair to and supportive of their colleagues.
8. Self - Software engineers shall participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of the profession.

FIGURE 2-3 Software Engineering Code of Ethics and Professional Practice

IT Professional Malpractice

- For most IT workers, becoming licensed as a software engineer is optional because they practice under the "industrial exemption" clause of their state's licensing laws that permits them to work internally for an organization without licensure so long as they are not making final decisions to release product to the public or offering engineering services directly to the public.

- However, to open a software engineering consulting practice or to claim that one is a software engineer in a formal context may now require a license in some states. For an IT worker to become licensed raises some potential legal issues, as discussed in the following paragraphs.

- **Negligence** is defined as not doing something that a reasonable person would do or doing something that a reasonable person would not do.

- **Duty of care** refers to the obligation to protect people against any unreasonable harm or risk.

- *For example*, people have a duty to keep their pets from attacking others and to operate their cars safely.

- Similarly, businesses must keep dangerous pollutants out of the air and water, make safe products, and maintain safe operating conditions.

- The courts decide whether parties owe a duty of care by applying a **reasonable person standard** to evaluate how an objective, careful, and conscientious person would have acted in the same circumstances.

- Likewise, defendants who have particular expertise or competence are measured against a reasonable professional standard.

- *For example*, in a medical malpractice suit based on improper treatment of a broken bone, the standard of measure would be higher if the defendant were an orthopedic surgeon rather than a general practitioner.

- In the IT arena, consider a hypothetical negligence case in which an employee inadvertently destroyed millions of customer records in an Oracle database.

- The standard of measure would be higher if the defendant were a licensed software engineer certified as an Oracle database administrator (DBA) with 10 years of experience rather than an unlicensed systems analyst with no DBA experience or specific knowledge of the Oracle software.

- If a court finds that a defendant actually owed a duty of care, it must then determine whether the duty was breached.

- A **breach of the duty of care** is the failure to act as a reasonable person would act.

- A breach of duty might consist of an action, such as throwing a lit cigarette into a fireworks factory and causing an explosion, or a failure to act when there is a duty to do so—*for example*, a police officer not protecting a citizen from an attacker.

- Professionals who breach the duty of care are liable for injuries that their negligence causes.

- This liability is commonly referred to as **professional malpractice**.

- *For example*, a CPA who fails to use reasonable care, knowledge, skill, and judgment when auditing a client's books is liable for accounting malpractice.

- Professionals who breach this duty are liable to their patients or clients and possibly to some third parties.

WHAT CAN BE DONE TO ENCOURAGE THE ETHICAL USE OF IT RESOURCES AMONG USERS?

- This section discusses some of the most common ethical issues that IT users face, as well as ways that organizations can encourage the ethical use of IT by their employees, an area of growing concern as more companies provide employees with
  - smartphones,
  - tablets, and
  - laptops—along with PCs, and
  - other devices
- to access corporate information systems, data, and the Internet.

Common Ethical Issues for IT Users

- **Software Piracy**

- Software piracy in a corporate setting can sometimes be directly traceable to IT professionals—they might allow it to happen, or they might actively engage in it.

- Corporate IT usage policies and management should encourage users to report instances of piracy and to challenge its practice.

- The software piracy rates in Albania, Kazakhstan, Libya, Panama, and Zimbabwe exceed 70 percent, so it is clear that business managers and IT professionals in those countries do not take a strong stand against the practice.

- Sometimes IT users are the ones who commit software piracy. A common violation occurs when employees copy software from their work computers for use at home.

- When confronted, the IT user's argument might be: "I bought a home computer partly so I could take work home and be more productive; therefore, I need the same software on my home computer as I have at work."

- However, if no one has paid for an additional license to use the software on the home computer, this is still piracy.

- **Inappropriate Use of Computing Resources**

- Some employees use their computers to surf popular websites that have nothing to do with their jobs, participate in chat rooms and play computer games.

- These activities eat away at a worker's productivity and waste time.

- Furthermore, activities such as viewing sexually explicit material, sharing lewd jokes, and sending hate email could lead to lawsuits and allegations that a company allowed a work environment conducive to racial or sexual harassment.

Inappropriate Sharing of Information

- Every organization stores vast amounts of information that can be classified as either private or confidential.

- **Private** data describe individual employees—for example, their salary information, attendance data, health records, and performance ratings. Private data also include information about customers—credit card information, telephone number, home address, and so on.

- **Confidential** information describes a company and its operations, including sales and promotion plans, staffing projections, manufacturing processes, product formulas, tactical and strategic plans, and research and development.

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- An IT user who shares this information with an unauthorized party, even inadvertently, has violated someone's privacy or created the potential that company information could fall into the hands of competitors.

- *For example*, if an employee accessed a coworker's payroll records via a human resources computer system and then discussed them with a friend, it would be a clear violation of the coworker's privacy.

Supporting the Ethical Practices of IT Users

- The growing use of IT has increased the potential for new ethical issues and problems; thus, many organizations have recognized the need to develop policies that protect against abuses.

- Although no policy can stop wrongdoers, it can set forth the general rights and responsibilities of all IT users, establish boundaries of acceptable and unacceptable behavior, and enable management to punish violators.

- Adherence to a policy can improve services to users, increase productivity, and reduce costs.

- Companies can take several actions when creating an IT usage policy, as discussed in the following sections.
  - Establishing Guidelines for Use of Company Hardware and Software
  - Defining an Acceptable Use Policy
  - Installing and Maintaining a Corporate Firewall
  - Compliance

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Establishing Guidelines for Use of Company Hardware and Software

- Company IT managers must provide clear rules that govern the use of home computers and associated software.

- Some companies negotiate contracts with software manufacturers and provide PCs and software so that IT users can work at home.

- Other companies help employees buy hardware and software at corporate discount rates.

- The goal should be to ensure that employees have legal copies of all the software they need to be effective, regardless of whether they work in an office, on the road, or at home.

Defining an Acceptable Use Policy

- An **acceptable use policy (AUP)** is a document that stipulates (demand or specify (a requirement)) restrictions and practices that a user must agree to in order to use organizational computing and network resources.

- It is an essential information security policy—so important that most organizations require that employees sign an acceptable use policy before being granted a user or network ID.

- An effective acceptable use policy is clear and concise and contains the following five key elements:
  - 1. Purpose of the AUP—Why is the policy needed and what are its goals?
  - 2. Scope—Who and what is covered under the AUP?
  - 3. Policy—How are both acceptable use and unacceptable use defined; what are some examples of each?
  - 4. Compliance—Who is responsible for monitoring compliance and how will compliance will be measured?
  - 5. Sanctions—What actions will be taken against an individual who violates the policy?

- Members of the legal, human resources, and information security groups are involved in creating the AUP.

- It is the organization's information security group that is responsible for monitoring compliance to the AUP.

Structuring Information Systems to Protect Data and Information

- Organizations must implement systems and procedures that limit data access to just those employees who need it.

- *For example*, sales managers may have total access to sales and promotion databases through a company network, but their access should be limited to products for which they are responsible.

- Furthermore, they should be prohibited from accessing data about research and development results, product formulas, and staffing projections if they don't need it to do their jobs.

Installing and Maintaining a Corporate Firewall

- A firewall is hardware or software (or a combination of both) that serves as the first line of defense between an organization's network and the Internet; a firewall also limits access to the company's network based on the organization's Internet-usage policy.

- A firewall can be configured to serve as an effective deterrent to unauthorized web surfing by blocking access to specific objectionable websites. (Unfortunately, the number of such sites is continually growing, so it is difficult to block them all.)

- A firewall can also serve as an effective barrier to incoming email from certain websites, companies, or users.

Compliance

- Compliance means to be in accordance with established policies, guidelines, specifications, or legislation.

- Records management software, for example, may be developed in compliance with the U.S. Department of Defense's Design Criteria Standard for Electronic Management Software applications that defines mandatory functional requirements for records management software used within the Department of Defense.

- Commercial software used within an organization should be distributed in compliance with the vendor's licensing agreement

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- U.S. Health Insurance Portability and Accountability Act of 1996 (HIPAA), which requires employers to ensure the security and privacy of employee healthcare data.

- Failure to be in compliance with specific pieces of legislation can lead to criminal or civil penalties specified in that legislation.

- It is a major challenge for many organizations to maintain compliance with multiple government and industry regulations, which are frequently updated and modified so that regulations have similar but sometimes conflicting requirements.

- As a result, many organizations have implemented specialized software to track and record compliance actions, hired management consultants to provide advice and training on compliance issues, and even created a new position, the chief compliance officer (CCO), to deal with compliance-related issues.

End of Chapter 1
Thank You