Professional Ethics for Computer Science

Lecture 2: Ethics for IT Professionals and IT Users

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What key characteristics distinguish a professional from other kinds of workers, and what is the role of an IT professional?

What relationships must an IT professional manage, and what key ethical issues can arise in each?

How do codes of ethics, professional organizations, certification, and licensing affect the ethical behavior of IT professionals?

What are the key tenets of four different codes of ethics that provide guidance for IT professionals?

What are the common ethical issues that face IT users?

What approaches can support the ethical practices of IT users?

Profession is a calling that requires

- specialized knowledge
- long and intensive academic preparation

Are IT Workers Professionals?

Partial list of IT specialists

- programmers
- systems analysts
- software engineers
- database administrators
- local area network (LAN) administrators
- chief information officers (CIOs)

Legal perspective

- IT workers are not recognized as professionals
- not licensed
- IT workers are not liable for malpractice

IT professionals have many different relationships with:

- employers
- clients
- suppliers
- other professionals
- IT users
- society at large

IT professionals must set an example and enforce policies regarding the ethical use of IT

Software piracy is the act of illegally making copies of software or enabling others to access software to which they are not entitled

Software piracy is an area in which IT professionals can be tempted to violate laws and policies

The Business Software Alliance (BSA) is a trade group that represents the world's largest software and hardware manufacturers

- its mission is to stop the unauthorized copying of software produced by its members
- penalties can be up to $100,000 per copyrighted work

Members of BSA (as of July 2005)

TABLE 2-2   Members of Business Software Alliance (as of July 2005)

Adobe	Apple	Autodesk
Avid	Bentley Systems	Borland
Cadence	Cisco Systems	CNC Software/Mastercam
Dell	Entrust	HP (Hewlett-Packard)
IBM	Intel	Internet Security Systems
Macromedia	McAfee, Inc.	Microsoft
PTC	RSA Security	SAP
SolidWorks	Sybase	Symantec
The Mathworks	UGS Corp.	VERITAS Software

Trade secret

- information used in business
- generally unknown to the public
- company has taken strong measures to keep confidential
- examples are the formula for Coke, Intel manufacturing process for P4 chip
- employees must sign a non-disclosure agreement (NDA)
- problems due to high IT employee turn-over

Whistle-blowing

- attracts attention to a negligent, illegal, unethical, abusive, or dangerous act that threatens the public interest

IT professional provides

- hardware, software, or services at a certain cost and within a given time frame

Client provides

- compensation
- access to key contacts
- work space

Relationship is usually documented in contractual terms

Ethical problems arise if a company recommends its own products and services to remedy problems they have detected

- but a company is unable to provide full and accurate reporting of a project's status
- company hired as consultants may recommend its affiliated ptroducst

Fraud, misrepresentation

- crime of obtaining goods, services, or property through deception or trickery
- fraud is proven in court

Breach of contract

- one party fails to meet the terms of a contract
- schedule slippage, cost overruns, better product may be released by competitor during contract execution
- can generate trials which are often settled out of court to minimize reputation damage

Develop good relationships with suppliers

- deal fairly with them
- do not make unreasonable demands

Bribery

- providing money, property, or favors to someone in business or government to obtain a business advantage
- U.S. Foreign Corrupt Practices Act (FCPA) makes it a crime to bribe a foreign official, a foreign political party official, or a candidate for foreign political office

IT projects are joint efforts in which vendors and customers work together

- difficult to assign blame

Bribery

- at what point does a gift become a bribe?
- no gift should be hidden
- perceptions of donor and recipient can differ

Distinguishing Between a Bribe and a Gift

TABLE 2-3   Distinguishing between a bribe and a gift

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

Professionals owe each other adherence to a profession's code of conduct

- there is a sense of mentorship and community

Ethical problems between members of the IT profession

- résumé inflation
- inappropriate sharing of corporate information due to IT access

IT user is a person for whom a hardware or software product is designed

IT professionals' duty

- understand users' needs and capabilities
- deliver products and services that best meet those needs
- establish an environment that supports ethical behavior by users

Actions of an IT professional can affect society

- society expect professionals to not cause harm (=trust)
- society expects professionals to provide benefits
- so there must be a sense of responsibility, also not to damage a professional sector's reputation

Corporations are taking actions to ensure good business ethics among employees

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

- a law does not provide complete guide to ethical behavior

Main parts:

- outlines what the professional organization aspires to become
- lists rules and principles by which members of the organization are expected to abide

Benefits for individual, profession, and society

- improves ethical decision making
- promotes high standards of practice and ethical behavior
- enhances trust and respect from the general public
- provides an evaluation benchmark

Professional Organizations

No universal code of ethics for IT professionals

No single, formal organization of IT professionals has emerged as preeminent

Professional organizations enable

- building of professional and working relationships
- sharing of useful information (stay up-to-date)
- provides a stamp of adhering to defined standards

Most prominent organizations include:

- Association for Computing Machinery (ACM)
- Association of Information Technology Professionals (AITP)
- Computer Society of the Institute of Electrical and Electronics Engineers (IEEE-CS)
- Project Management Institute (PMI)

Indicates a professional possesses a particular set of skills, knowledge, or abilities in the opinion of a certifying organization

Can also apply to products

Generally voluntary

Carries no requirement to adhere to a code of ethics

Can serve as a benchmarks for mastery of a certain skill set and knowledge

- good way to document and structure the acquisition of new skills and knowledge
- get re-certified to stay up-to-date

Vendor certifications

- Cisco, IBM, Microsoft, etc.
- some certifications substantially improve IT workers' salaries and career prospects
- relevant for narrowly defined roles
  - or certain aspects of broader roles
- require passing a written exam
- workers are commonly recertified as newer technologies become available

Industry association certifications

- require a certain level of experience and a broader perspective than vendor certifications
- lag in developing tests that cover new technologies

Generally administered at the state level in the United States

- examples: CPAs, doctors, lawyers, etc.
- but also engineers that perform engineering services for the public

Case for licensing IT professionals

- encourage IT professionals to follow the highest standards of the profession
- practice a code of ethics
- violators would be punished by law
- without it there is no incentive for heightened care and no concept of malpractice
- licensing of IT professionals may improve today's very complex IT systems

Adverse issues associated with government licensing of IT professionals

- there are few international or national licensing programs for IT professionals
- no universally accepted core body of knowledge
- unclear who should manage content and administration of licensing exams
- no administrative body to accredit professional education programs
- no administrative body to assess and ensure competence of individual professionals

Negligence:

- not doing something that a reasonable man would do, or doing something that a reasonable man would not do

Duty of care:

- the obligation to protect people against any unreasonable harm or risk

Courts consistently reject attempts to sue individual parties for computer-related malpractice

Employees' ethical use of IT is an area of growing concern

Software piracy

- copying work software for use at home (even when doing *some* work at home) is considered piracy

Inappropriate use of computing resources

- surf work-unrelated websites
- send questionable email
- etc

Inappropriate sharing of information

- private data
- confidential information

Supporting the Ethical Practices of IT Users

Policies that protect against abuses:

- establish boundaries of acceptable and unacceptable behavior
- enable management to punish violators

Policy components include:

- defining and limiting the appropriate use of IT resources
- establishing guidelines for use of company software
- structuring information systems to protect data and information
- installing and maintaining a corporate firewall

Questions	Yes	No
Is there a statement that explains the need for an IT usage policy?	___	___
Does the policy provide a clear set of guiding principles for ethical decision making?	___	___
Is it clear how the policy applies to the following types of workers?		
Employees	___	___
Part-time workers	___	___
Temps	___	___
Contractors	___	___
Does the policy address the following issues?		
Protection of the data privacy rights of employees, customers, suppliers, and others	___	___
Limits and control of access to proprietary company data and information	___	___
The use of unauthorized or pirated software	___	___

Does the policy address the following issues?

    Employee monitoring, including e-mail, wiretapping and eavesdropping on phone conversations, computer monitoring, and surveillance by video   _____   _____

    Respect of the intellectual rights of others, including trade secrets, copyrights, patents, and trademarks   _____   _____

    Inappropriate use of IT resources, such as Web surfing, e-mailing, and other use of computers for purposes other than business   _____   _____

    The need to protect the security of IT resources through adherence to good security practices, such as not sharing user IDs and passwords, use of "hard-to-guess" passwords, and frequent changing of passwords   _____   _____

    The use of the computer to intimidate, harass, or insult others through abusive language in e-mails and by other means   _____   _____

Are disciplinary actions defined for IT-related abuses?   _____   _____

Is there a process for communicating the policy to employees?   _____   _____

Is there a plan to provide effective, ongoing training relative to the policy?   _____   _____

Has a corporate firewall been implemented?   _____   _____

Is the corporate firewall maintained?   _____   _____

A professional from a legal standpoint

- has passed the state licensing requirements
- has earned the right to practice there

IT professionals have many different relationships

- each with its own set of ethical issues and potential problems

Professional code of ethics

- states the principles and core values essential to the work of an occupational group

Licensing and certification of IT professionals

- many people feel that certification will increase the reliability and effectiveness of information systems
- raises many issues

IT-related professional organizations have developed a code of ethics

IT usage policy defines appropriate and inappropriate IT user behavior