

12.1: Introduction

Information systems have had an impact far beyond the world of business. In the past four decades, technology has fundamentally altered our lives: from the way we work, how we play to how we communicate, and how we fight wars. Mobile phones track us as we shop at stores and go to work. Algorithms based on consumer data allow firms to sell us products that they think we need or want. New technologies create new situations that we have never dealt with before. They can threaten individual autonomy, violate privacy rights, and can also be morally contentious. How do we handle the new capabilities that these devices empower us with? What new laws are going to be needed to protect us from ourselves and others? This chapter will kick off with a discussion of the impact of information systems on how we behave (ethics). This will be followed by the new legal structures being put in place, focusing on intellectual property and privacy.

12.1.1: Information Systems Ethics

The term ethics is defined as “a set of moral principles” or “the principles of conduct governing an individual or a group.” Since the dawn of civilization, the study of ethics and its impact has fascinated humankind. But what do ethics have to do with information systems? Let's listen to Professor Gorbatai in this video on What is Digital Ethics?



The introduction of new technology can have a profound effect on human behavior. New technologies give us capabilities that we did not have before, which create environments and situations that have not been specifically addressed in ethical terms. Those who master new technologies gain new power; those who cannot master them may lose power. In 1913, Henry Ford implemented the first moving assembly line to create his Model T cars. While this was a great step forward technologically (and economically), the assembly line reduced human beings' value in the production process. The development of the atomic bomb concentrated unimaginable power in the hands of one government, which then had to wrestle with the decision to use it. Today's digital technologies have created new categories of ethical dilemmas.

For example, the ability to anonymously make perfect copies of digital music has tempted many music fans to download copyrighted music for their own use without making payment to the music's owner. Many of those who would never have walked into a music store and stolen a CD find themselves with dozens of illegally downloaded albums.

Digital technologies have given us the ability to aggregate information from multiple sources to create profiles of people. What would have taken weeks of work in the past can now be done in seconds, allowing private organizations and governments to know more about individuals than at any time in history. This information has value but also chips away at the privacy of consumers and citizens.

Communication technologies like social media(Facebook, Twitter, Instagram, LinkedIn, internet blogs) give so many people access to so much information that it's getting harder and harder to tell what's real and what's fake. Its widespread use has blurred the line

between professional, personal, and private. Employers now have access to information that has traditionally been considered private and personal, giving rise to new legal and ethical ramifications.

Some technologies like self-driving vehicles(drones), artificial intelligence, the digital genome, and additive manufacturing methods(GMO) are transitioning into a new phase, becoming more widely used or incorporated into consumer goods, requiring new ethical and regulatory guidelines.

12.1.1.1: Code of Ethics

One method for navigating new ethical waters is a code of ethics. A code of ethics is a document that outlines a set of acceptable behaviors for a professional or social group; generally, it is agreed to by all members of the group. The document details different actions that are considered appropriate and inappropriate.

A good example of a code of ethics is the [Code of Ethics and Professional Conduct](#) of the Association for Computing Machinery, an organization of computing professionals that includes educators, researchers, and practitioners. Here is an excerpt from the preamble:

Computing professionals' actions change the world. To act responsibly, they should reflect upon the wider impacts of their work, consistently supporting the public good. The ACM Code of Ethics and Professional Conduct ("the Code") expresses the profession's conscience. Additionally, the Code serves as a basis for remediation when violations occur. The Code includes principles formulated as statements of responsibility based on the understanding that the public good is always the primary consideration. Each principle is supplemented by guidelines, which provide explanations to assist computing professionals in understanding and applying the principle.

[Section 1](#) outlines fundamental ethical principles that form the basis for the remainder of the Code. [Section 2](#) addresses additional, more specific considerations of professional responsibility. [Section 3](#) guides individuals who have a leadership role, whether in the workplace or a volunteer professional capacity. Commitment to ethical conduct is required of every ACM member, and principles involving compliance with the Code are given in [Section 4](#).

In the ACM's code, you will find many straightforward ethical instructions, such as the admonition to be honest and trustworthy. But because this is also an organization of professionals that focuses on computing, there are more specific admonitions that relate directly to information technology:

📌 Sidebar: Why everyone in Tech should care about code of ethics?

Listen to this interesting video by Dr. Bo Brinkman, part of the Integrity Project series by ACM Ethics.



One of the major advantages of creating a code of ethics is clarifying the acceptable standards of behavior for a professional group. The varied backgrounds and experiences of the members of a group lead to various ideas regarding what is acceptable behavior. While to many the guidelines may seem obvious, having these items detailed provides clarity and consistency. Explicitly stating standards communicates the common guidelines to everyone in a clear manner.

Having a code of ethics can also have some drawbacks. First of all, a code of ethics does not have legal authority; in other words, breaking a code of ethics is not a crime in itself. So what happens if someone violates one of the guidelines? Many codes of ethics include a section that describes how such situations will be handled. In many cases, repeated violations of the code result in expulsion from the group.

In the case of ACM: “Adherence of professionals to a code of ethics is largely a voluntary matter. However, if a member does not follow this code by engaging in gross misconduct, membership in ACM may be terminated.” Expulsion from ACM may not impact many individuals since membership in ACM is usually not a requirement for employment. However, expulsion from other organizations, such as a state bar organization or medical board, could carry a huge impact.

Another possible disadvantage of a code of ethics is that there is always a chance that important issues will arise that are not specifically addressed in the code. Technology is changing exponentially, and advances in artificial intelligence mean new ethical issues related to machines. The code of ethics might not be updated often enough to keep up with all of the changes. However, a good code of ethics is written in a broad enough fashion that it can address the ethical issues of potential technology changes. In contrast, the organization behind the code makes revisions.

Finally, a code of ethics could also be a disadvantage because it may not entirely reflect the ethics or morals of every member of the group. Organizations with a diverse membership may have internal conflicts as to what is acceptable behavior. For example, there may be a difference of opinion on the consumption of alcoholic beverages at company events. In such cases, the organization must choose the importance of addressing a specific behavior in the code.

📌 Example

Self-driving car technology has created new ethical dilemmas, such as how to program autonomous vehicles to make decisions in emergency scenarios. For example, should a self-driving car prioritize the safety of its own passengers over pedestrians?

📌 Sidebar: Acceptable Use Policies (AUP)

Many organizations that provide technology services to a group of constituents or the public require an acceptable use policy (AUP) before those services can be accessed. Like a code of ethics, it is a set of rules applied by the organization that outlines what users may or may not do while using the organization's services. Usually, the policy requires some acknowledgment that the rules are well understood, including potential violations. An everyday example of this is the terms of service that must be agreed to before using the public Wi-Fi at Starbucks, McDonald's, or even a university. An AUP is an important document as it demonstrates due diligence of the organization's security and protection of sensitive data, which protects the organization from legal actions. Here is an example of an acceptable use policy [from Virginia Tech](#).

Just as with a code of ethics, these acceptable use policies specify what is allowed and what is not allowed. Again, while some of the items listed are obvious to most, others are not so obvious:

- “Borrowing” someone else’s login ID and password are prohibited.
- Using the provided access for commercial purposes, such as hosting your own business website, is not allowed.
- Sending out unsolicited emails to a large group of people is prohibited.

Also, as with codes of ethics, violations of these policies have various consequences. In most cases, such as with Wi-Fi, violating the acceptable use policy will mean that you will lose your access to the resource. While losing access to Wi-Fi at Starbucks may not have a lasting impact, a university student getting banned from the university’s Wi-Fi (or possibly all network resources) could greatly impact their education and their future. From Code to Culture: Operating Ethically

12.1.2: From Code to Culture: Operating Ethically

The rapid emergence of advanced artificial intelligence technologies like chatbots and language models has created new ethical challenges. Systems like ChatGPT demonstrate impressive conversational abilities and knowledge, but also high potential risks around misinformation, privacy, and job disruption. As these technologies become more sophisticated and ubiquitous, clear ethical principles are needed to guide responsible development and use.

Organizations leveraging AI should proactively create codes of ethics covering issues like transparency, accountability, mitigating bias, and aligning with human values. Individuals interacting with language models would also benefit from developing their own code to consciously evaluate when and how to use these powerful tools responsibly. Some key reasons include avoiding the spread of harmful content, properly attributing information sources, considering implications for human roles, and being honest about a system's capabilities. Establishing ethical foundations will help maximize benefits and minimize risks as intelligent algorithms grow more advanced.

While having a code of ethics provides guidance on acceptable conduct, organizations need to take additional steps to truly embed ethical awareness into the corporate culture. Developing a comprehensive ethics program requires ongoing commitment from leadership along with inclusion of stakeholders at all levels. Here are some best practices for bringing ethics principles to life:

- Involve a diverse committee in shaping the code and framework to reflect varied perspectives. Include members across departments, tenures, demographics, etc.
- Connect the guiding values directly to the organization's purpose and mission. The principles should tie logically to the core goals.
- Communicate the code in multiple formats including training, evaluations, signage, workshops, and more. Use many channels for maximum impact.
- Make following the guidelines an element considered in performance reviews and promotions. Leaders should exemplify the expected behaviors.
- Establish safe reporting procedures for suspected violations and protect those who come forward responsibly.
- Respond to breaches with consistent, measured discipline to reinforce accountability. The consequences should fit the offense.
- Assess comprehension and implementation of the code through surveys, audits, and other mechanisms. Identify areas for improvement.
- Schedule periodic reviews by the ethics advisory committee to update the program based on changing needs.

- Consider external validation through certifications like the Ethics & Compliance Initiative to formally benchmark efforts.

Embedding ethics awareness requires patience and concerted effort. But organizations that invest in a culture of integrity reap significant rewards in trust, reputation, and productivity. A robust ethics program brings principles to life.

12.1.3: References

ACM Code of Ethics. *Preamble*. Retrieved November 10, 2020, from <https://www.acm.org/code-of-ethics>.

- No one should enter or use another's computer system, software, or data files without permission. One must always have appropriate approval before using system resources, including communication ports, file space, other system peripherals, and computer time.
- Designing or implementing systems that deliberately or inadvertently demean individuals or groups is ethically unacceptable.
- Organizational leaders are responsible for ensuring that computer systems enhance, not degrade, working life quality. When implementing a computer system, organizations must consider all workers' personal and professional development, physical safety, and human dignity. Appropriate human-computer ergonomic standards should be considered in system design and the workplace.

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