



K2's Ethics And Technology



Ethics Definition



Lexico.com defines “ethics” as:

Moral principles that govern a person's behavior or the conducting of an activity

So, how is ethics like and different from morals and laws?

Ethics vs. Morals (www.diffen.com)

	Ethics	Morals
What are they?	The rules of conduct recognized in respect to a particular class of human actions or a particular group or culture.	Principles or habits with respect to right or wrong conduct. While morals also prescribe dos and don'ts, morality is ultimately a personal compass of right and wrong.
Where do they come from?	Social system - External	Individual - Internal
Why we do it?	Because society says it is the right thing to do.	Because we believe in something being right or wrong.
Flexibility	Ethics are dependent on others for definition. They tend to be consistent within a certain context, but can vary between contexts.	Usually consistent, although can change if an individual's beliefs change.
The "Gray"	A person strictly following Ethical Principles may not have any Morals at all. Likewise, one could violate Ethical Principles within a given system of rules in order to maintain Moral integrity.	A Moral Person although perhaps bound by a higher covenant, may choose to follow a code of ethics as it would apply to a system. "Make it fit"
Origin	Greek word "ethos" meaning "character"	Latin word "mos" meaning "custom"
Acceptability	Ethics are governed by professional and legal guidelines within a particular time and place	Morality transcends cultural norms



Ethics vs. Laws



- Laws address only a subset of all the issues business professionals face daily
- For example, something might be legal while simultaneously being unethical in the eyes of many
 - As a partner in a company, you see great opportunity on the horizon. You don't want your other partner to share in these potential profits, of which they are not yet aware. You purchase your partner's interest before the profits materialize so that you are the only one to receive the forthcoming profits. Is this behavior *legal*? Probably so. Is it *ethical*? Maybe not.

Laws, Morals, & Ethics



Laws

- *Created by others*
- *Influenced by us as citizens and voters*

Ethics

- *Created by others and by our chosen profession*
- *Influenced by us and our chosen profession*

Morals

- *Created by us*
- *Influenced by family, friends, teachers, others and, for many, faith*

Eight Components Of A Mature Professional Infrastructure



1. Initial professional education
2. Accreditation
3. Skills development
4. Certification
5. Licensing
6. Professional development
7. Code of ethics
8. Professional society

As identified by Gary Ford and Norman Gibbs in "A Mature Profession of Software Engineering," 1996, Carnegie Mellon University



CODE OF PROFESSIONAL CONDUCT

Six Principles Of The AICPA Code Of Professional Conduct



Responsibilities
Principle

Public Interest
Principle

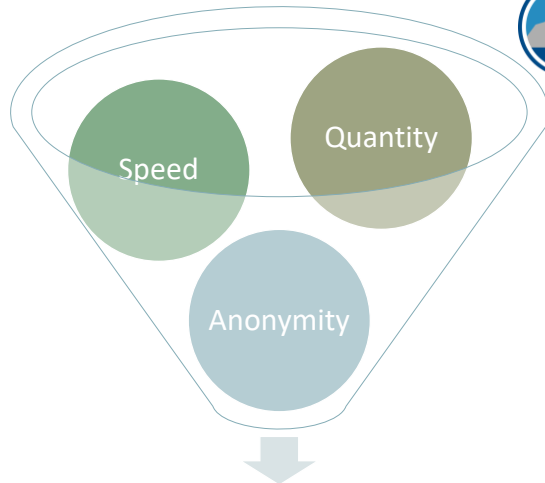
Integrity Principle

Objectivity and
Independence
Principle

Due Care
Principle

Scope And
Nature of
Services Principle

How Does Technology Impact Ethics?



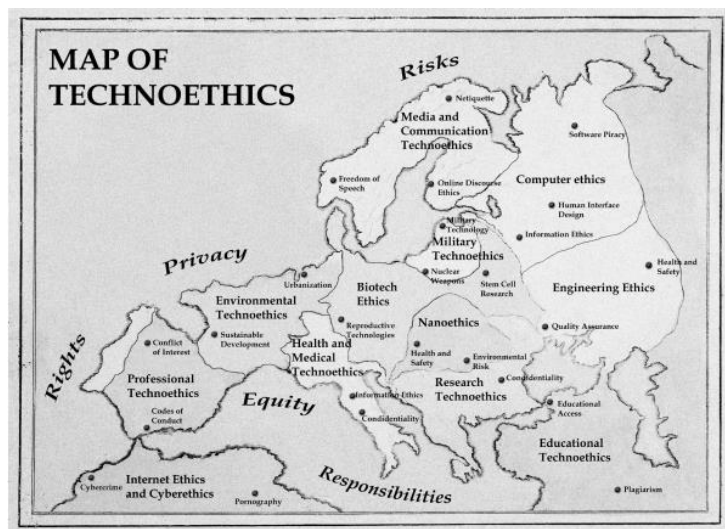
Greater Opportunity? Greater Temptation? Greater
Reward From Potentially Unethical Actions?

Technoethics Definition



Using theories and methods from multiple domains, technoethics provides insights on ethical aspects of technological systems and practices, examines technology-related social policies and interventions, and provides guidelines for how to ethically use new advancements in technology.

https://en.wikipedia.org/wiki/Ethics_of_technology#Definitions



“The Emerging Field of Technoethics,” Rocci Luppicini, University of Ottawa

Jacobus Lentz, IBM, And The Nazis: *An Early Case In Technology Ethics*



- Inspector of Population Registries in Netherlands prior to World War II
- With leased IBM machines, he created forgery-proof ID cards
- After German invasion, cards were issued to all
- Lentz also created an alphabetical listing of Jews in the Netherlands, which was used beginning in 1942 to facilitate deportation of Jews to concentration camps
- 107,000 were deported and of these persons, 102,000 died



Napster: *A Case In Technology Ethics*



- Do you remember Napster, the online, peer-to-peer network that facilitated sharing music MP3s?
- Service operated between 1999 and 2001
- Metallica filed suit in March 2000 against Napster; Dr. Dre filed similar suit one month later
 - Napster settled both suits
- A&M Records through the RIAA sued Napster in 2000 for copyright infringement and Napster lost that case
- Napster shut down in 2001 and sold off assets in 2002

Consider What Sony Did In 2005



- In an effort to be proactive rather than just litigious in limiting illegal online music swapping, the label late last year tried something new: music CDs that when placed in a customer's computer installed a program to prevent the copying of songs. Companies have been adding antipiracy features to products for years, so what's wrong with that? Everything, according to an outraged mass of music fans. Installing software programs--even (or perhaps especially) one aimed at protecting intellectual property--without explicit user permission turned out be crossing the line. Even worse, the software made computers vulnerable to viruses. Sony quickly backed down and offered a program to remove the first one. But it just ended up making things worse when the new program was found to have similar security flaws.*

<https://www.inc.com/magazine/20060301/column-freedman.html>

What Do The Cases Have In Common?



Cutting-edge
technology
(at the time)

Volume of
data

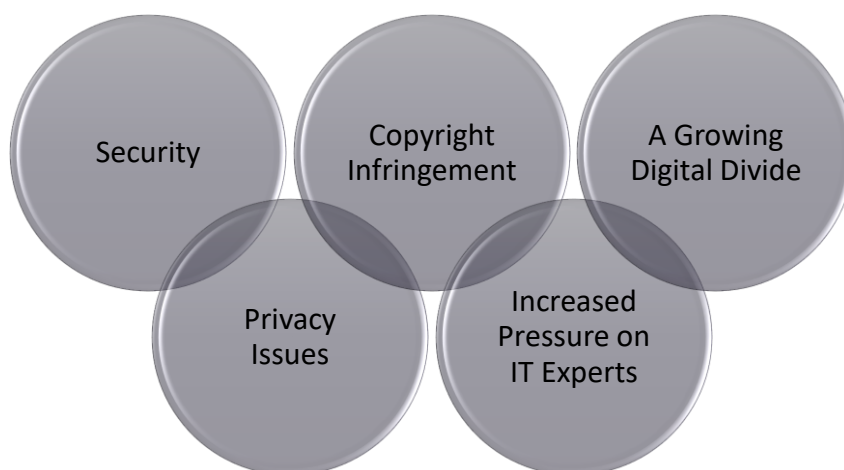
Speed of
processing

Privacy of data



JUST AS TECHNOETHICS EVOLVED FROM 1940 TO 2000, IT CONTINUES TO EVOLVE TODAY, BECAUSE OF CONTINUAL TECHNOLOGY ADVANCEMENTS AND INITIATIVES...

Technoethcis: Five Challenges



Karehka Ramey, <https://www.useoftechnology.com/5-ethical-challenges-information-technology/>



SOME EXAMPLES TO SEE WHAT TECHNOETHICS LOOKS LIKE...



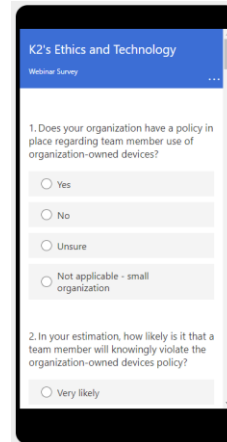
What About Privacy Of Consumer Data?

- How much does Google, Amazon, Microsoft, Facebook, and other companies know about you?
- How do they collect this info and what can you do about it?
- What about your choice of a search engine? Does it matter?
- Are these technology companies acting ethically when they collect data about you?

Use Of Company-Owned Devices



- Is it safe to say that almost all workers with access to company-provided technology use these tools for personal reasons?
- What if this is in violation of company-established policies?
- What if this causes inefficiencies and lost productivity and simultaneously increases risk?



Use Of Company's Internet



- Virtually every business is connected to the Internet today
- Team members often take advantage of Company-owned Internet access for personal activities, perhaps in violation of Company-issued policies
- It's not just a *quantity* issue, it is also a *quality* issue – what types of sites are they visiting?

Personal Texts And Social Media Posts



- Like it or not, social media is here to stay
- But how much time are team members spending each day texting and posting personal content?
- Is this acceptable?

Password And Access Policies



- No one likes passwords, but they remain a “necessary evil”
- In far too many organizations, team members routinely share passwords with others
 - For example, during vacations
- Also, many team members do not follow password policies in organizations, potentially increasing risk to their employer

Company's Use Of Monitoring Tools



- How often, if ever, does your organization use monitoring tools to keep an eye on what team members are doing with their technology?
 - For example, what websites are being visited?
- What would be the benefit to the organization for doing so?

Copying And Pasting Information



- It's all too easy to copy-and-paste information from the Internet without proper attribution, perhaps in violation of copyright laws
 - Remember Napster?
- Similarly, scanning and running OCR on PDF documents could lead to the theft of someone's intellectual property

Collecting Information About Customers And Potential Customers



- Privacy is a huge issue today
- What do companies such as Google, Microsoft, Amazon, and others know about you?
- What type of information is your company collecting about customers and what is being done with that data?
- Is this disclosed in your company's Privacy Policy?

Issues Surrounding Remote Workers



- Large numbers of team members work from remote locations, for many reasons
- This leads to numerous potential ethical issues
 - Are they really working when they're supposed to be?
 - How are they using their technology?
 - Are they being treated fairly, and are their contributions valued?

Internet Access In Remote Areas



- When working outside away from the office, how do you access the Internet?
 - Cellular data
 - Public Wi-Fi
 - VPN
- Do you comply with company-issued standards/best practices and, if not, what's the risk?

Sensors And Cameras



- What type of sensors and cameras exist in your workplace, if any, in the name of security?
- Could these be used for unethical purposes?
- What about the potential benefits associated with using facial recognition in law enforcement situations?

Illegal/Unlicensed Computer Software



- Just because someone bought a license to an application doesn't give them the right to install it onto an unlimited number of devices
- Likewise, subscription services may have restrictions on sharing of the service

What About A Digital Divide?



- High-speed data connections are taken for granted in most metropolitan areas
- But what ethical issues are in play when considering the notion of a "digital divide," where the availability of high-speed connections have direct impact on one's opportunity to generate income?
- Does society have a responsibility to ensure that all who want affordable, high-speed connections have access to them?
 - We've been down this path before to provide phone service in rural areas
- It's not just internet access...what about availability of computing devices in low-income households?

What About Competing Interests?



- Technology can have profound, disparate impacts on different groups
- For example, consider the automation of routine tasks...great benefit to organizations at the risk of displacing workers
- Government and law enforcement agencies requesting access to encrypted communications and devices
 - Apple's policy to never undermine the security features associated with its products
 - National security versus individual/corporate rights...an ethical dilemma of immense proportions!

Ethical Pressures On Tech Experts



- Tech experts, including programmers and security officers, face mounting pressure today
- Consider a scenario where a programmer is under pressure to complete a project with an impending due date, but the programmer knows that serious security flaws exist in the application, flaws that cannot be corrected before the deadline
 - What is the ethical course of action for the programmer?
- Expect these types of situations to mount as more privacy regulations are put into place



ETHICAL LAPSES IN THE DIGITAL AGE OFTEN RESULT IN FRAUD AND SECURITY BREACHES

An Example...



Medical bills and lost time away from work caring for a critically ill child have created a financial hardship for Tim and his family; they face enormous financial hardships. With his back to the wall, Tim sees no way out and he decides to steal from his employer. Because the Controller keeps their passwords on a sticky note on the side of their monitor, Tim is able to use those credentials to log-in to the Company's accounting system and begin committing a billing scheme fraud. Eighteen months later, the fraud is discovered after Tim has stolen more than \$100,000 from the Company. Sure, Tim had an ethical lapse and committed a crime, ***but what can we say about the Controller's ethics in this case?***



CAN WE AGREE THAT ALL CASES OF FRAUD REPRESENT ETHICAL LAPSES?

Other Concerning Issues



- Should we consider the preceding example of Tim stealing from his employer differently than installing software that is licensed on a per computer basis onto multiple computers?
- Should team members have unfettered access to the Internet before, during, and after work hours?
- What is our duty to protect sensitive information about team members, customers, and others and what are the implications of not doing so?



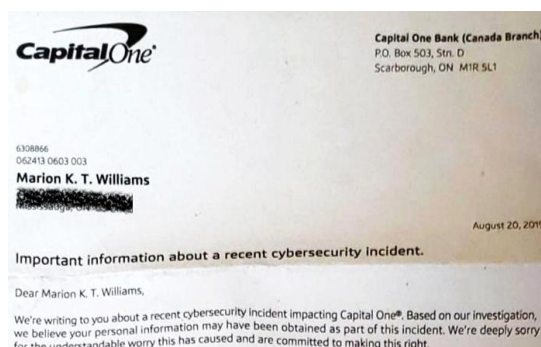
TECHNOETHICS & CYBERSECURITY

Cybersecurity – A Case Study



Capital One

- Capital One was hit with a data breach, affecting an estimated 100 million US individuals and 6 million in Canada
- Misconfiguration of a firewall allowed hacker access to the system



Ethical Issues



Integrity and Due Care

- Was the firewall rules reviewed by anyone and was any testing completed?

Professional Competence

- Did Capital One employ people with the correct skill set?
- Was consultation or referral required?

Objectivity

- Are you bias toward cloud and believed this was a cloud issue? This could be any office with a misconfigured firewall.



EMAIL

Email

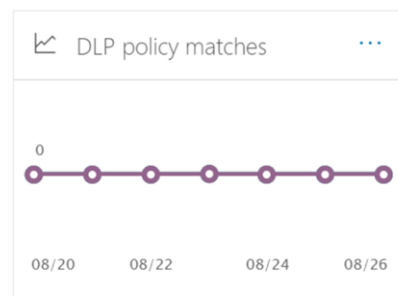


- Email remains one of the most used means of communicating amongst business professionals
- It's quick, easy, and widely accepted, so what are the ethical issues associated with this communication platform?
- Likely, the most significant of these issues is the security and privacy of the data transmitted in a message
- Absent encryption, we should assume that email messages are not secured, creating a risk for potentially exposing data

Data Loss Prevention



- Data Loss Prevention (DLP) can help identify, monitor, and automatically protect sensitive information
- DLP is available in many Microsoft 365/Office 365 plans, yet many organizations have not enabled it





DATA

Confidential Client Information



Per the AICPA Code of Conduct:

“... regulations concerning confidentiality of client information may be more restrictive than the requirements in the code.”⁽¹⁾

Consult your federal, state, provincial, and local privacy regulations.

Data Protection – An Example



- Dropbox files at rest are encrypted using 256-bit Advanced Encryption Standard (AES)
- Dropbox uses Secure Sockets Layer (SSL)/Transport Layer Security (TLS) to protect data in transit between Dropbox apps and our servers
- SSL/TSL creates a secure tunnel protected by 128-bit or higher Advanced Encryption Standard (AES) encryption
- Dropbox applications and infrastructure are regularly tested for security vulnerabilities and hardened to enhance security and protect against attacks
- [Two-step verification](#) is available for an extra layer of security at login
- If you use two-step verification, you can choose to receive security codes by text message or from any Time-Based One-Time Password ([TOTP](#)) app, such as [those listed here](#)
- Public files are only viewable by people who have a link to the file(s)

Does Your Password Matter?



According to Microsoft:

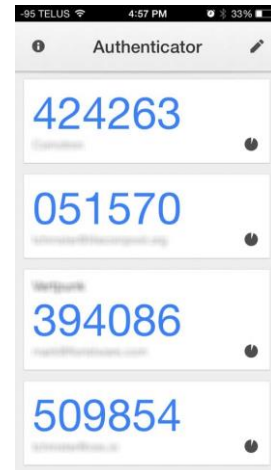
“ – your password, in the case of breach, just doesn’t matter – unless it’s longer than 12 characters and has never been used before – which means it was generated by a password manager”

- What do you use to prevent access to your data – a password
- Do you use a password manager to provide due care and confidentiality of your data?

Also, Per Microsoft



“your account is more than 99.9% less likely to be compromised if you use MFA”



Ethics PLUS



- **P**rofessional/trade-related/company codes of conduct
- **L**egal requirements: are any laws being broken, e.g. the Prevention of Bribery Ordinance, Theft Ordinance, Criminal Procedure Ordinance, etc.?
- **U**ncompromising self values; e.g. honesty, fairness, trustworthiness, etc.
- **S**unshine test; i.e. whether the issue can be discussed openly, and the final decision disclosed without any sense of misgiving

Software Updates And Due Professional Care



- Equifax Breach
 - Hackers were able to access personal data of 143 million Equifax customers
- What Happened
 - **System update not installed**
 - “Equifax admitted it was aware of the security flaw a full two months before the company says hackers first gained access to its data” ⁽¹⁾



SO, WHAT ARE WE TO CONCLUDE ABOUT ETHICS IN AN AGE OF TECHNOLOGY?

Summary



- The issue of ethics in business is as old as business itself
 - Technoethics just takes it to another level
- With widespread deployments of technology, the ability to act can, in some cases, be more readily accessible and more easily concealable, leading to larger losses
- Who's to blame? **The perpetrator, always the perpetrator!**
- But we must accept the responsibility to act ethically and to promote ethics to reduce the risk to our companies
- Remember, we get to make choices too!



tommy@k2e.com

THANK YOU!