Ethics for the Information Age
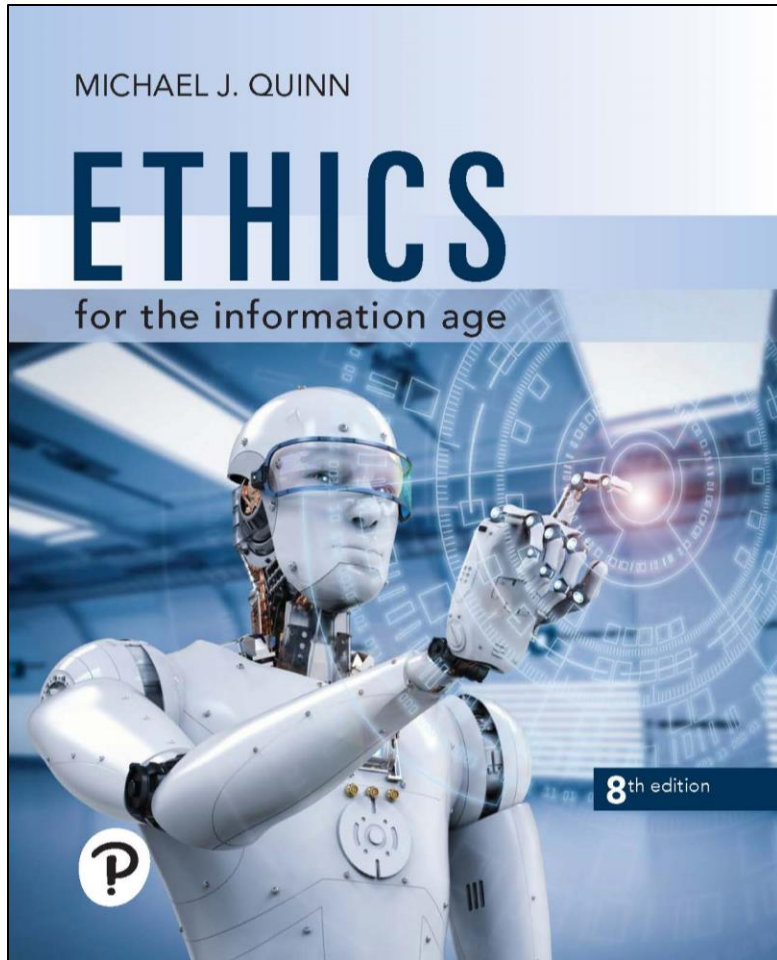
Eighth Edition

MICHAEL J. QUINN
ETHICS
for the information age

8th edition

Chapter 3

Networked Communications

Our Networked World

Far more people in the world have access to cell phones than to electricity or clean water. (Charles Sturge/Alamy)

3.2 Spam

The Spam Tsunami

- **Spam**: Unsolicited, bulk email

- Spam is profitable
  - $10 to send an ad to a million email addresses
  - More than 30,000 times cheaper than "junk mail"

- Spam tsunami hit Internet in 2003
  - Spam only 9% of email traffic in 2002
  - Spam rose to 85% of email traffic by 2009

The Spam Tsunami

- How firms get email addresses
  - Web sites, chat-room conversations, newsgroups
  - Computer viruses
  - Dictionary attacks
  - Contests

- Most spam sent by bot herders who control botnets: huge networks of compromised computers

The Spam Tsunami (3 of 3)

- New software industry grew up to fight spam

- ISPs and businesses have installed spam filters

- Even with filters, wasted productivity estimated at tens of billions of dollars per year in US alone

- Law enforcement agencies around world making effort to shut down botnet command centers

- Meanwhile, spammers moving to selective email lists

- Share of spam in email traffic peaked at 85% in 2009 and has been declining since then – now around 57%

3.3 Internet Interactions

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The World Wide Web

- **Web:** networked hypertext system

- Stimulated tremendous growth in popularity of Internet

- Two important attributes
    1. It is decentralized
    2. Every Web object has a unique address (the URL)

Mobile Apps

- People spending more time on smartphones and tablets

- Using Web browsers awkward on mobile devices

- Mobile apps replace Web browsers as way to access Internet on mobile devices

How We Use the Internet

- Buying
  - Shopping sites enable us to view and order merchandise from the comfort of our homes.
  - *According to the US Census Bureau, ecommerce represented 9 percent of all retail sales in the United States in the fourth quarter of 2017.*

- Selling
  - **Craigslist** allows people to place free classified advertisements on the Internet.
  - Begun by San Franciscan Craig Newmark in 1999, Craigslist is now available in about 90 countries and attracts about 50 billion page views a month.

How We Use the Internet

- Socializing (e.g., Facebook)
  - The Internet has become a popular way for friends to keep in touch with each other.
  - The most popular social network is **Facebook**, with more than 2.2 billion monthly active users in March 2018.
  - Another well-known social network is **LinkedIn**, <u>which serves people looking for professional contacts</u>.
  - In 2012 the Dutch airline KLM launched a program that allows ticketed passengers who have uploaded information from their Facebook or LinkedIn profiles to select seatmates based on the profiles provided by other passengers.

How We Use the Internet

- Contributing content (e.g., wikis and blogs)
  - Popular apps allow people to upload videos, photos, podcasts, or other digital content. Instagram, with more than 800 million monthly users, allows its users to upload photos and videos and share them on social networking services, such as Facebook.
  - A **wiki** is a Web site that allows multiple people to contribute and edit its content.
  - The most famous wiki is ***Wikipedia***, an online encyclopedia.
  - Relying on the submissions of hundreds of thousands of volunteers, *Wikipedia* has become by far the largest encyclopedia in the world. Sixty-six languages are represented by at least 100,000 articles, but by far the most popular language is English, with more than 5.5 million articles written as of 2018.
  - However, critics wonder about the quality of a reference work that allows anyone with a Web browser to contribute.

How We Use the Internet

- We blog.
  - A **blog** (short for "**Web log**") is a personal journal or diary kept on the Web.
  - Used as a verb, the word blog means to maintain such a journal.
  - Blogs may contain plain text, images, audio clips, or video clips.
  - Some commentators use the term **Web 2.0** to refer to a change in the way people use the Web.
  - Social networking services, wikis, Flickr, Reddit, and blogs illustrate that hundreds of millions of people are now using the Web not simply to access content but to build communities and upload and share content they have created.
- Visiting secret Web sites
  - A **darknet** is a network of Web sites that can only be accessed through special software that encrypts messages and provides users with anonymity.
  - Darknets are popular with people who have something to hide: pedophiles, drug dealers, illegal arms traffickers, and the like.

How We Use the Internet

- Crowdsourcing
  - **Crowdsourcing** <u>is an online method of getting goods or services from a large group of people</u>.
  - The **Waze app** is an example of information crowdsourcing. People use Waze to find the quickest way to drive from one place to another. If they allow the app to run while they are driving, it sends their car's GPS coordinates to Waze, which computes vehicle speeds and then uses this information about traffic congestion to help other Waze users find the best route.
  - <u>Financing a project through crowdsourcing is called</u> **crowdfunding**.
  - **Kickstarter** is an American corporation that supports crowdfunding. Since 2009, more than 15 million people have pledged nearly $4 billion to successfully fund more than 144,000 projects in a wide variety of creative areas: music, film and video, games, publishing, art, design, technology, theater, comics, food, fashion, and more.

How We Use the Internet

- Learning
  - In 2001 the Massachusetts Institute of Technology launched its OpenCourseWare initiative. Since then, the quantity and quality of freely available classes posted online have increased steadily.
  - The potential for **massive open online courses (MOOCs)** provided by edX, Coursera, and Udacity to disrupt traditional university education is being widely debated.
- Exploring our roots
  - In the past, genealogists interested in accessing American immigration and census records had the choice between mailing in their requests and waiting for them to be processed or visiting the National Archives and examining the documents by hand.
  - Now FamilySearch.org offers free access to indexes to US census information from 1790 to 1940, allowing genealogical research to be performed remotely—and much more quickly—over the Internet.

How We Use the Internet

- Entering virtual worlds
  - An **online game** is a game played on a computer network that supports the simultaneous participation of multiple players.
  - South Koreans have enjoyed **eSports** for decades. Cybercafés (called **PC bangs** in South Korea) have large-screen monitors enabling spectators to watch the game-play, which is full of virtual violence and mayhem

- Controlling the Internet of Things
  - An increasing number of non-IT devices—thermostats, appliances, lights, motion sensors, door locks, garage-door openers, and baby monitors, to name just a few examples—are being equipped with wireless connections to the Internet, forming an **Internet of Things**. These devices can be controlled from a Web browser, allowing people to oversee them even when they are not at home.

How We Use the Internet

- Paying taxes
- Gambling القمار
- Taking humanitarian action
  - Kiva is a Web site supporting person-to-person microlending. Kiva works with microfinance institutions to identify entrepreneurs from poor communities, and it posts information about these entrepreneurs on its Web site.
  - People who wish to make an interest-free loan are able to identify the particular person to whom they would like to lend money.
  - Lenders have the ability to communicate with the entrepreneurs and see the impact their loans are having on the recipients, their families, and their communities.
- So much more…

3.6 Censorship

Censorship

- **Definition**: Attempt to suppress or regulate public access to material considered harmful or offensive
- Traditionally exercised by governments and religious institutions.

Challenges Posed by the Internet

Five characteristics of the Internet make censorship more difficult:

1. Unlike traditional one-to-many broadcast media, the Internet supports many-to-many communications.
   - While it is relatively easy for a government to shut down a newspaper or a radio station, it is more difficult for a government to prevent an idea from being published on the Internet, where millions of people have the ability to post Web pages.
2. The Internet is dynamic.
   - Millions of new devices are being connected to the Internet each year.
3. The Internet is huge.
   - There is simply no way a team of human censors can keep track of *everything* that is posted on the Web. While automated tools are available, they are fallible. Hence any attempt to control access to material stored on the Internet cannot be 100 percent effective.
4. The Internet is global.
   - National governments have limited authority to restrict activities happening outside their borders.
5. It is hard to distinguish between children and adults on the Internet.
   - How can an "adult" Web site verify the age of someone attempting to enter the site?

Governmental Filtering and Surveillance of Internet Content

- North Korea: Internet virtually inaccessible

- Saudi Arabia: All Internet traffic flows through two government-controlled gateways, which can block sites

- China
  - Blocks Internet access at times of social unrest
  - Has one of world's most sophisticated filtering systems

- Germany: Forbids access to neo-Nazi sites

- United States: Repeated efforts to limit access of minors to inappropriate contents.

3.8 Children and Inappropriate Content

Web Filters

- **Web filter**: Software that prevents display of certain Web pages
  - May be installed on an individual PC
  - ISP may provide service for customers

- Methodologies
  - Maintain "**black list**" of objectionable sites
  - Examine content for objectionable words/phrases

Child Internet Protection Act

- Libraries receiving federal networking funds must filter pages containing obscenity or child pornography

- U.S. Supreme Court ruled CIPA did not violate 1st Amendment guarantees

  (6-3 decision in June 2003)

3.9 Breaking Trust

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Identity Theft (1 of 3)

- **Identity Theft** happens when a person misuses another person's identity

- Leading form of identity theft is fraudulent use of an existing credit card or bank account

- In 2017 about 7% of adults in U.S. reported being victims

- Consumer's liability for credit card losses limited to $50

- Most banks and credit card companies over zero-liability fraud protection

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Identity Theft (3 of 3)

How identity thieves gain access

- Dumpster diving
  - looking for personal information in garbage cans or recycling bins.
  - Old bills, bank statements, and credit card statements contain a wealth of personal information, including names, addresses, and account numbers.
- Shoulder surfing
  - looking over the shoulders of people filling out forms.
- Phishing
  - Gathering financial information via spam.
  - Thieves send out spam messages designed to look as if they originated from PayPal, eBay, or another well-known Internet-active business. Through these messages they hope to con unsuspecting recipients into connecting with authentic-looking Web sites and revealing their credit card numbers or other personal information.

False Information

- Quality of Web-based information varies widely

- Other media also have information of varying quality
    - The New York Times v. The National Enquirer
    - 60 Minutes v. Conspiracy Theory

- **Google attempts to reward quality**
    - Ranking uses "voting" algorithm
    - If many links point to a page, Google search engine ranks that page higher

Cyberbullying*

- Cyberbullying is harassment, torment عذاب, humiliation الاذلال, or threatening of one minor by another minor or group of minors via the Internet or cell phone
  - Cyberbullying can become so intense, child commits suicide
- In a 2009 survey, 10% admitted to cyberbullying, and 19% said they had been cyberbullied
- Case of Ghyslain Raza
- Case of Megan Meier
- Megan Meier Cyberbullying Prevention Act

Cyberbullying*

- Numerous forms of cyberbullying
  1. Sending mean-spirited or threatening messages
  2. Sending thousands of text messages to victim's cell phone and running up a huge cell phone bill
  3. Impersonating victim and sending inappropriate messages to others
  4. Stealing victim's password and modifying his or her profile to include racistعنصري , homophobic, sexual, or other inappropriate data that offends others or attracts the attention of undesirable people

Cyberbullying*

- Numerous forms of cyberbullying (cont'd.)

    5. Posting mean, personal, or false information about the victim in the cyberbully's blog

    6. Creating a Web site whose purpose is to humiliate or threaten the victim

    7. Taking inappropriate photos of the victim and either posting online or sending to others via cell phone

    8. Setting up an Internet poll to elicit responses to embarrassing questions regarding victim

    9. Sending inappropriate messages while playing interactive games

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Cyberstalking*

- Cyberstalking is threatening behavior or unwanted advances using the Internet or online and electronic communications. It is the adult version of cyberbullying
  - Can escalate into:
    1. Abusive or excessive phone calls
    2. Threatening or obscene mail
    3. Trespassing
    4. Vandalism
    5. Physical stalking
    6. Physical assault

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