

Chapter 3: Networking

Chapter Overview

- Spam
- Internet interactions
- Text messaging
- Censorship
- Freedom of expression
- Children and inappropriate content
- Breaking trust
- Internet addiction

Far More People Have Access to Cell Phones than Electricity or Clean Water



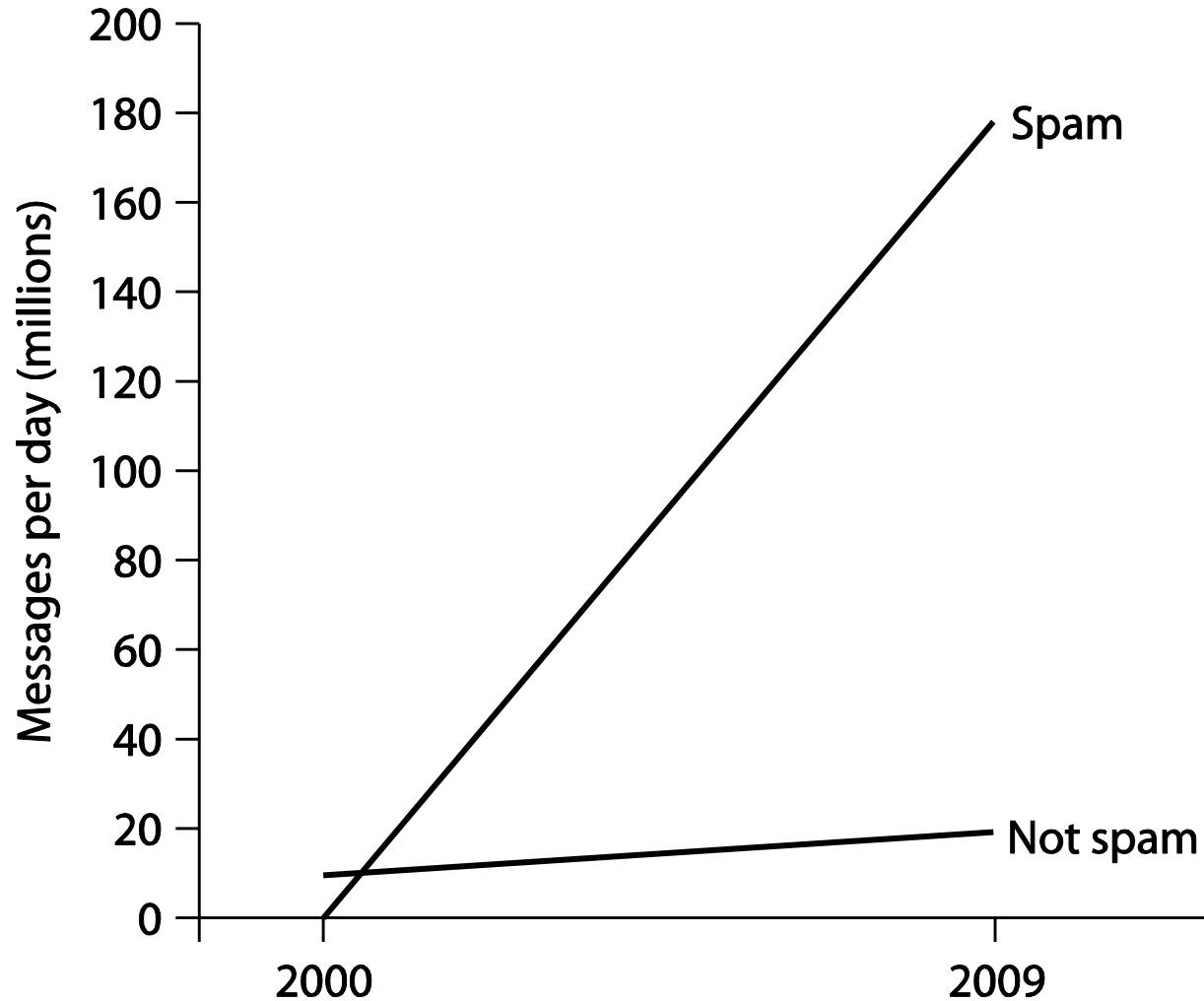
Charles Sturge/Alamy

3.2 Spam

The Spam Epidemic (1/3)

- Spam: Unsolicited, bulk email
- Spam is profitable
 - More than 100 times cheaper than “junk mail”
 - Profitable even if only 1 in 100,000 buys product
- Amount of email that is spam has ballooned
 - 8% in 2001
 - 90% in 2009

The Spam Epidemic (2/3)



The Spam Epidemic (3/3)

- How firms get email addresses
 - Web sites, chat-room conversations, newsgroups
 - Computer viruses harvest addresses from PC address books
 - Dictionary attacks
 - Contests
- Most spam sent out by bot herders: people who are able to take control of huge networks of computers. Bot herders create these networks by launching programs that search the Internet for computers with inadequate security and install software robot programs, called bots, on these vulnerable systems.

The Spam Epidemic (3/3)

A computer with the bot program installed on it is called a zombie because it can be directed by a remote computer to perform certain tasks. Bot herders can send out billions of email messages every day by dividing the address lists among hundreds of thousands of zombies they control.

- To deal with this deluge, ISPs install spam filters to block spam from reaching users' mailboxes. These filters look for a large number of messages coming from the same email address, messages with suspicious subject lines, or messages with spam like content.

Need for Socio-Technical Solutions

- New technologies sometimes cause new social situations to emerge
- Spam an example of this phenomenon
 - Email messages practically free
 - Profits increase with number of messages sent
 - Strong motivation to send more messages
- Internet design allows unfair, one-way communications

Case Study: Ann the Acme Accountant

- Ann: Accountant at Acme Corporation
- She distributes paychecks to all 50 employees
- Ann sends email advertising Girl Scout cookie sale
- 9 recipients order cookies; average 4 boxes each
- Other 40 recipients unhappy to get email; half complain to a co-worker
- Did Ann do anything wrong?

Kantian Analysis

- We should always respect autonomy of others, treating them as ends in themselves and never only as the means to an end (2nd formulation of Categorical Imperative)
- Ann didn't misrepresent what she was doing
- She didn't force anyone to read the entire email
- Some who read her email chose to order cookies
- Therefore, she didn't "use" others, and her action was not strictly wrong
- However, an "opt in" approach would have been better

Act Utilitarian Analysis

- Benefit to Girls Scouts = \$108
 - \$3 profit per box of cookies
 - 36 boxes sold
- Harm to company: time wasted
 - Orders taken during breaks
 - Lost productivity from complaining: \$70
 - 20 employees \times 2 \times 5 minutes/employee = 200 minutes
 - 3.5 hours \times \$20/hour = \$70
- Benefits exceed harms, so action good
- Company may create policy against future fundraisers

Rule Utilitarian Analysis

- Q: What would be consequences of everyone in company used email to solicit donations?
- A: Plenty of employee grumbling and lower morale
- If all doing it, unlikely any one cause would do well
- Harms greater than benefits, so Ann's action was wrong

Social Contract Theory Analysis

- Acme Corporation has no prohibition against using its email system this way
- Ann was exercising her right to express herself
- Some people didn't appreciate message, but she didn't act like a spammer
 - She didn't conceal her identity
 - She wasn't selling a fraudulent product
- Ann did nothing wrong

Virtue Ethics Analysis

- As employee, relevant virtues: honesty, fairness, respect
- Ann was honest: her email didn't mislead anyone
- She wasn't fair or respectful, and she exercised poor judgment (as evidenced by larger amount of complaining by co-workers)
- In her role as parent, she did all work herself and didn't find a role for her daughter to play
- Ann should have found a way for her daughter to help, and she should have found another way to advertise that respected co-workers

Summary

- Analyses reached different conclusions, but Ann could have taken a less controversial course
- She could have posted a sign-up sheet to identify those interested in cookie sale
- That way, she would have sent email only to those interested, avoiding the problems of grumbling and lost productivity
- She could have found a way to get her daughter more engaged

3.3 Internet Interactions

The World Wide Web

- WWW : networked hypertext system
- Stimulated tremendous growth in popularity of Internet
- Two important attributes
 - It is decentralized
 - Every Web object has a unique address

Rise of the App

- 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

- Shopping
- Socializing (e.g., Facebook)
- Contributing content (e.g., wikis)
- Blogging
- Crowdsourcing
- Learning
- Exploring our roots
- Entering virtual worlds
- Controlling the Internet of Things
- Paying taxes
- Gambling
- Taking humanitarian action
- Lots more!

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Larger View

Immigrants on a Ferry Boat Near Ellis Island, ARC ID 594479.