

Lecture 9

Global Issues and the Internet

Design of the Internet Causes Problems

- Exchanging packets of information routed through accessible path (TCP/IP)
 - IP address of sender and receiver known
 - End-to-end principle keeps network as simple as possible
- Who, what and where are anonymous
- Promotes free expression
- Difficult problems of regulating negative human behavior
 - Spam, phishing, hacking
 - Protecting individual privacy: identity theft & cyber-bullying
 - Protecting property: copyrights, business activity
 - Protect children: Porn, predators
 - Crime: money-laundering

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Liberty Reserve Currency

Exchange: Money Laundering Bust

"The coin of its realm was anonymity," Preet Bharara, the United States attorney in Manhattan, said of Liberty Reserve.

\$6 billion money-laundering operation online

Millions of customers around the world, including about 200,000 in the US

Central hub for criminals trafficking in everything from stolen identities to child pornography



Solutions?

- Should the Internet be regulated?
 - Can the Internet be regulated?
- How should it be carried out?
- Who should do the regulation?

Should/Can the Internet be regulated?

- John Perry Barlow
 - Former lyricist for Grateful Dead, co-founder EFF
 - “A Declaration of the Independence of Cyberspace” (1996)
 - “Governments of the Industrial World, you have no sovereignty where we gather....Cyberspace does not lie within your borders.”
- Regulation by the government and courts
 - Existing laws of individual states and nations
 - Very few laws that regulate behavior (or protect rights) specifically on the Internet
 - Lack of laws actually allow government to pursue its own aims, e.g. Patriot Act, NCIC

How should it be carried out?

- Key is to remove anonymity from the who, what and where of internet communication
 - CompuServe example 1995
 - Bavaria wanted porn off servers
 - CompuServe filtered content on a country-by-country basis by adding more identification information it could prevent porn downloads by Bavarians
- Establishing who, what and where

Establishing who

- identity
 - Attributes: name, address, age
- authentication
 - Cross comparison of data, independent data, biometric
- credential
 - Independent verification: driver's license (name, address, photo)
- add new layer to the Internet (Microsoft, Lessig): Identity layer
 - Part of infrastructure
 - No central database
 - Bit identifying certain information, not the information itself
 - Cryptography

Establishing what

- Software to scan packet streams

Establishing where

- Geo-positioning software

SDN: Achieving the Who, what and where

- Software Defined Networking (SDN)
 - Abstraction of lower level functionality into virtual services
 - Separates the control level (where traffic is sent) from the data level (forwards traffic to selected destination)
 - Content-based routing
 - Twitter as opposed to US Postal Service
 - Multi-cast vs one-to-one connection
 - Security for individuals and website
- Open-Flow protocol
 - Changes destination address from physical port to table entry

Who should do the regulation?

- Currently, some regulation is occurring demanded by users and deployed by commerce
- Currently, some regulation is occurring demanded by nation-states and deployed by commerce and government

Regulation by Commerce

- Authentication
 - Creation of accounts
 - Authentication routines
 - Cookies
- Security measures
 - Anti-hacking, but little defense against DDoS
 - Training of developers & administrators
 - Encryption

Regulation by Courts

- 1999-2000 Yahoo-France v. France regarding censorship of Nazi material
 - France blocks Americans from getting Nazi paraphernalia
 - Blocking Nazi speech is censorship in US, why should US citizens be deprived of their US rights in France?
- 2000 iCraveTV, Canada v. NFL and copyright protection of broadcast TV
 - US blocks Canadians from free TV because it is illegal in US
 - Why isn't it censorship to block free TV in Canada where it is legal?

Regulation by Government

- Burma (Myanmar), Cuba, North Korea: Internet virtually inaccessible
- Saudi Arabia: centralized control center
- People's Republic of China: "one of most sophisticated filtering systems in the world" as well as censorship
- Germany: Forbids access to neo-Nazi sites
- United States: Repeated efforts to limit access of minors to pornography; copyright protection

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For more information on IP theft please click on this banner

This domain name has been seized by U.S. Immigration and Customs Enforcement pursuant to a seizure warrant issued by a United States District Court under the authority of 18 U.S.C. §§ 981 and 2323.

Willful copyright infringement is a federal crime that carries penalties for first time offenders of up to five years in federal prison, a \$250,000 fine, forfeiture and restitution (17 U.S.C. § 506, 18 U.S.C. § 2319). Intentionally and knowingly trafficking in counterfeit goods is a federal crime that carries penalties for first time offenders of up to ten years in federal prison, a \$2,000,000 fine, forfeiture and restitution (18 U.S.C. § 2320).

Business bending to Government

- 2005 Google in China agreed to censorship
 - Special version of search engine that blocks content that is censored
 - “democracy”, “human rights”
 - Profit motive for Google, and may actually speed China on path to democracy
 - But also re-enforces central control of an authoritarian government by a company claiming to be dedicated to democracy and free expression

Lessig Chapter 15

- Cyberspace vs. Real Space: We are in both
- Proposal to regulate the Internet by Lessig (Chapter 15)
 - Create identity for user that associates real space with cyber space
 - Reimposes borders on a network built without borders
 - Example
 - Whenever a user from Oregon enters a website that fact is knowable, if necessary, to the website
 - Can use this to avoid paying sales tax

Ethics of Regulation

- Harms
 - Restriction of free expression (censorship)
 - Restriction of action to legitimate activities (harder to hack)
 - Cementing the nation-state and authoritarian governments
- Benefits
 - Security: property, identity
 - Authentication of identity
 - Protection of Privacy

Microcosm of the Problem

- Rape in Cyberspace
 - What happened there?
 - Why did it happen?
 - What were the solutions
 - Technical
 - Non-technical

Discussion

- Do you think that the Internet should be regulated?
 - If no, should anything be done?
 - If yes, how?
 - Technical & Non-technical
 - Entities
 - Government
 - International oversight: Do we preserve the nation-state?
 - Business
- If yes, what do we do to achieve that?
