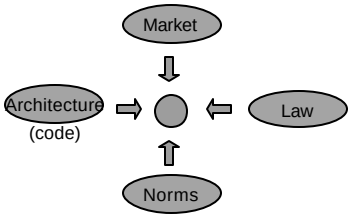
Speech and Control

September 6, 2005

What regulates the 'Net?

Lessig's taxonomy of constraints:

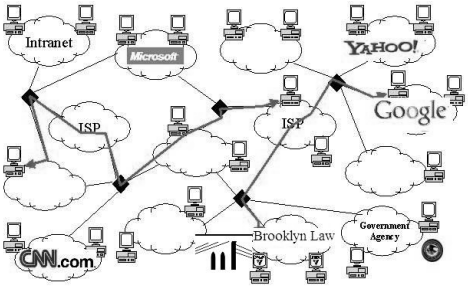


IETF Credo

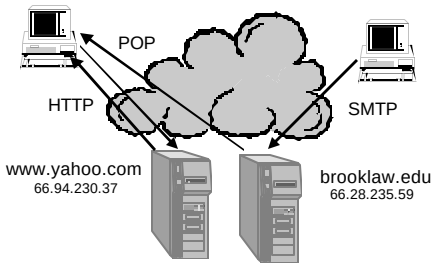
"We reject kings, presidents, and voting. We believe in rough consensus and running code."

Architecture of the Internet

- "Self-governing Internet" written in 1996, at the beginning of the "DNS wars"
  - Does the Internet need a governance structure?
  - Of what kind?
  - For what issues?
- 99% decentralized, self-organizing
  - ferreting out the remaining 1%
  - How will organization of the 1% affect the 99%?



Protocols, Numbers, and Names: Layers of communication



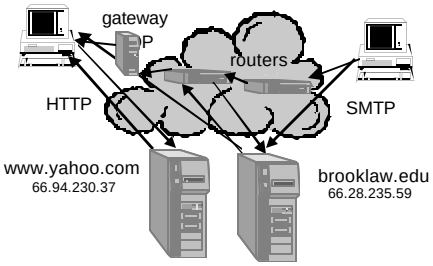
Protocols

- Protocols: technical standards for communication and interoperation
  - TCP/IP: Transmission Control Protocol, Internet Protocol
  - HTTP (web): Hypertext transfer protocol
  - SMTP and POP (email): Simple Mail Transfer Protocol, Post Office Protocol)
- Described in RFCs - Requests for Comment
- "Be conservative in what you send and liberal in what you accept"

Numbers

- Numbers: "IP addresses"
  - IP addresses or "dotted quads" identify computers uniquely to enable packets to find their destinations
  - Gateways (from local network to Internet) and Routers direct the flow
  - IPs are assigned in blocks to providers, who assign smaller blocks or individual addresses
- Distributed coordination of routing tables

Protocols, Numbers, and Names: Layers of communication



Names

- Names: attached by the Domain Name System (DNS) to IP addresses
  - Architecture transparency (www.yahoo.com is multiple machines, if the numbers change, you can still find www.yahoo.com)
  - Mnemonics
- Compare search engines, directory services
- Trademark issues

DNS

- Technical hierarchy:
  - root server (.)
  - Top-level domain (.com, .net, .edu, .uk, .ca)
  - Second-level domain (.yahoo.com, .brooklaw.edu, .ac.uk)
  - Higher-level domains (www.yahoo.com, ox.ac.uk)
- Server asking for an address starts from the right and works backward

DNS

- Administrative hierarchy
  - Registrar: collects the data and money (register.com, gandi.net, networksolutions.com, etc. hundreds of accredited registrars)
  - Registry: keeps the database and more money (Verisign, Afilias, Neulevel,PIR)
  - Root Servers: canonical list of TLD nameservers (A – M.root-servers.net

"Self-governing" Questions:

- Does the proposed change create abundance, instead of just managing scarcity?
- Are functionality and authority distributed?
- How well does the proposed change afford technical evolution?
- Will all stakeholders perceive authority as legitimate?

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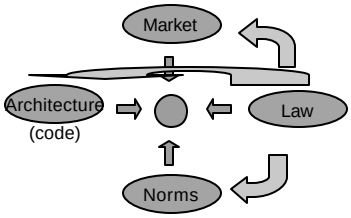

Architectural Principles

- layering for flexibility
- scalability
- modularity
- end-to-end
- standards
- multiple instances of running code

Reno v. ACLU

- Communications Decency Act of 1996 (CDA), 47 U.S.C. § 223 prohibits sending of "obscene or indecent" communications or "patently offensive messages" to minors

John Gilmore

- "The Internet interprets censorship as damage and routes around it."

Reno v. ACLU

- Is the Internet a
  - Magazine shop? (*Ginsberg*)
  - Radio broadcast? (*Pacifica*)
  - Neighborhood? (*Renton)*
  - Dial-a-porn? (*Sable*)

Reno v. ACLU

"Through the use of chat rooms, any person with a phone line can become a town crier with a voice that resonates farther than it could from any soapbox. Through the use of Web pages, mail exploders, and newsgroups, the same individual can become a pamphleteer."

Law	Who is regulated?	How many?	How easy to administer?	How easy to protest?
CDA (1996), *Reno v. ACLU*	Speakers – ban on speaking to minors	Moderately many		
Britain's proposed "extreme pornographic material" act (2005)	Viewers – ban on downloading violent pornography	Many		
Children's Internet Protection Act (CIPA) (2001)	Libraries and Schools – requirement to filter traffic	Intermediate		
Pennsylvania Internet Child Pornography Act (2002), *CDT v. Pappert*	ISPs – requirement to block access to sites	Relatively few		
Zoning (*LICRA v. Yahoo!*, .xxx?)	Speakers and viewers – requirement to self-identify and to screen traffic	Many		