Topic 2: History of the Internet

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Pre-Internet Networks

- Networks before Internet, e.g., 1940s
- First instance of message going from one computer to another, being processed, and returned to first computer
- So not history of networking, per se
- Rather: events leading up to massive global phenomenon [that we know as the internet]
Cold War

- 1957
  - USSR launches Sputnik
  - USA (DoD) creates ARPA: Advanced Research Projects Agency

- 1962
  - Scientist start research on network that could survive a nuclear attack (robustness)
Packet Switching

- No dedicated line, communication broken up into packets and sent intermixed
- Instead of circuit switching (e.g. telephone switchboard operator)
  - Paul Baran, RAND Corporation (USA)
  - Donald Davies at National Physical Lab (UK)
ARPANET

• 1969
  • Four systems linked, using packet switching
    • UCLA
    • Stanford
  • Bandwidth 56 kbps

• 1971
  • “True” email created (SNDMSG)
  • @ symbol chosen for addresses
Timeline 1969-1971

# of Computers on the Internet: 15
ARPANET Grows

- 1972
- *ARPAnet expands to 23 locations*
- 1973
- *ARPANET first international link*…
ARPANET Grows

• 1972
  • *ARPAnet expands to 23 locations*

• 1973
  • *ARPANET first international link…*
  • Norway
ARPANET Grows
ARPANET Grows

Abb. 4 ARPA NETwork, topologische Karte. Stand Juni 1974.
Internetworked Networks

• 1974
  • *First use of term “internet”*
  • *Abbreviation for Internetworked Networks*

• 1975
  • *Telenet: first network available to public*
  • Operated separately of ARPANET
USEnet

• 1979

• USEnet created

• Based on newsgroups (articles/posts on topics)

• Bulletin board system (BBS) like forums today

• No central server or dedicated admin

• MUD (Multi-User Dungeon) created.

Social chat rooms and Role Playing Games (RPGs)

• Usually small, locally operated
CSNET

• 1981
• National Science Foundation (NSF) funds Computer Science Network (CSNET)
• Created network to non-ARPANET universities → without DoD project
Domain Name System

- 1983
- **URLs as we know them today**
- **TCP/IP** as protocol standard, as internet now stabilizing world wide
- **MILnet** splits off from **ARPAnet**, which is too large to be secure

- Early ‘80’s
- “Hacker Culture” and “Hacker Paranoia” begin to surface in common culture
Timeline 1969-1984

# of Computers on the Internet: 1,000
For the Masses

• 1988
  - Backbones spearheaded by NSF to promote science (NSFNET)
  - Internet Relay Chat (IRC) developed

• 1989
  - First dial-up ISP created
  - Some [uptight] academics upset, but Internet is now affordable to small schools and… (gasp) even savvy home users.
Timeline 1969-1989

# of Computers on the Internet: 100,000
Prodigious Prodigy

• 1990

• *Prodigy, CompuServe, AOL, + other services began as networked content providers*

• Offering news, sports, common meeting places (e.g., chat rooms), separate from university-oriented networks of the day

• *These services crucial in adapting early home users to an online visual environment*
First Browser

• 1990 (cont.)
  • *ARPANET* closed, replaced by superior technology

• 1991
  • *Gopher: text based hypertext browser*
  • “*World Wide Web*” coined
Graphical Browser

• 1993

• **MOSAIC:** first graphical web browser (as we know them today)
Timeline 1969-1993

# of Computers on the Internet: 2 Million
Browser Boom

• 1994
  • Online capabilities expand: shopping malls online, even order pizza!
  • The Webcrawler: first search engine
  • Geocities offers free webpages

• 1995
  • The Browser Wars fought between newly-released Internet Explorer and Netscape
Social Networking??

• 1997
• *SixDegrees.com launched: one of first social networking sites. Closed in 2001*
• Because, you know, probably no future in social networking sites
Google & P2P

• 1998
  • Google founded.
  • PageRank more important than database size
  • Every country online

• 1999
  • Napster: first widely used Peer to Peer (P2P) Network
  • LiveJournal launched, makes blogging easy
In 1999, a new computer joined the Internet... every second.
Fake Money

• 2000
• *Dot Com Bubble Burst*
• Theglobe.com:
  Nov ‘98 public $63.50
  Apr ‘01 closes $00.16

• *President Clinton makes first webcast by a president*
• 2001
  • Seti@Home
  • Napster closed
  • First webcam ever to broadcast shuts down (pointed at coffee pot since 1991)
  • Wikipedia launched
Social Networking!!

- 2003
- *MySpace*
- 2004
- *TheFacebook* → *Facebook*

- *(… maybe there’s something here after all)*
MySpace vs. Facebook

Facebook and Myspace: Monthly U.S. Unique Visitor (000) Trend
Source: comScore Media Metrix, U.S., Aug-05 - May-11
Timeline 1972-2006

# of Computers on the Internet: 439 Million
In 2006, ten computers joined the Internet every second.
What does Internet “look” like?