MUSIC & THE INTERNET MUMT 301

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Plan

- Review of last class

- Introduction to the Internet

- The network

- Review of HTML

- Komodo Edit

- Assignment #1

Review

- Music Technology Computer Lab (E-215)

    - OSX account & password (changeit)

    - Backup (memory stick, Dropbox, iCloud, etc.)

    - Emergency contact: Darryl Cameron (darryl@music.mcgill.ca)

- Web server: music.mcgill.ca (not www.music.mcgill.ca)

    - Use the Linux userid & password emailed to you by Alain Terriault (sysadmin)

    - Login via ssh from a shell (e.g., Terminal):

        - ssh userid@music.mcgill.ca

        - File transfer using sftp (e.g., Fugu)

        - Basic Linux commands: ls, cd, passwd, pico,

        - Directory structure:

            - home directory (cd ~)

            - web page directory (cd public_html)

            - home page (index.html)

Introduction to Internet

- What is Internet?

- History of Internet

- What is the web?

- The Internet network

What is Internet?

- The difference between:

  - intranet – within an organization, e.g., McGill VPN

  - internet – between organizations

  - extranet – network available outside of an organization

  - The Internet – the global network of computers

History of the Internet

Did Al Gore invent the Internet?
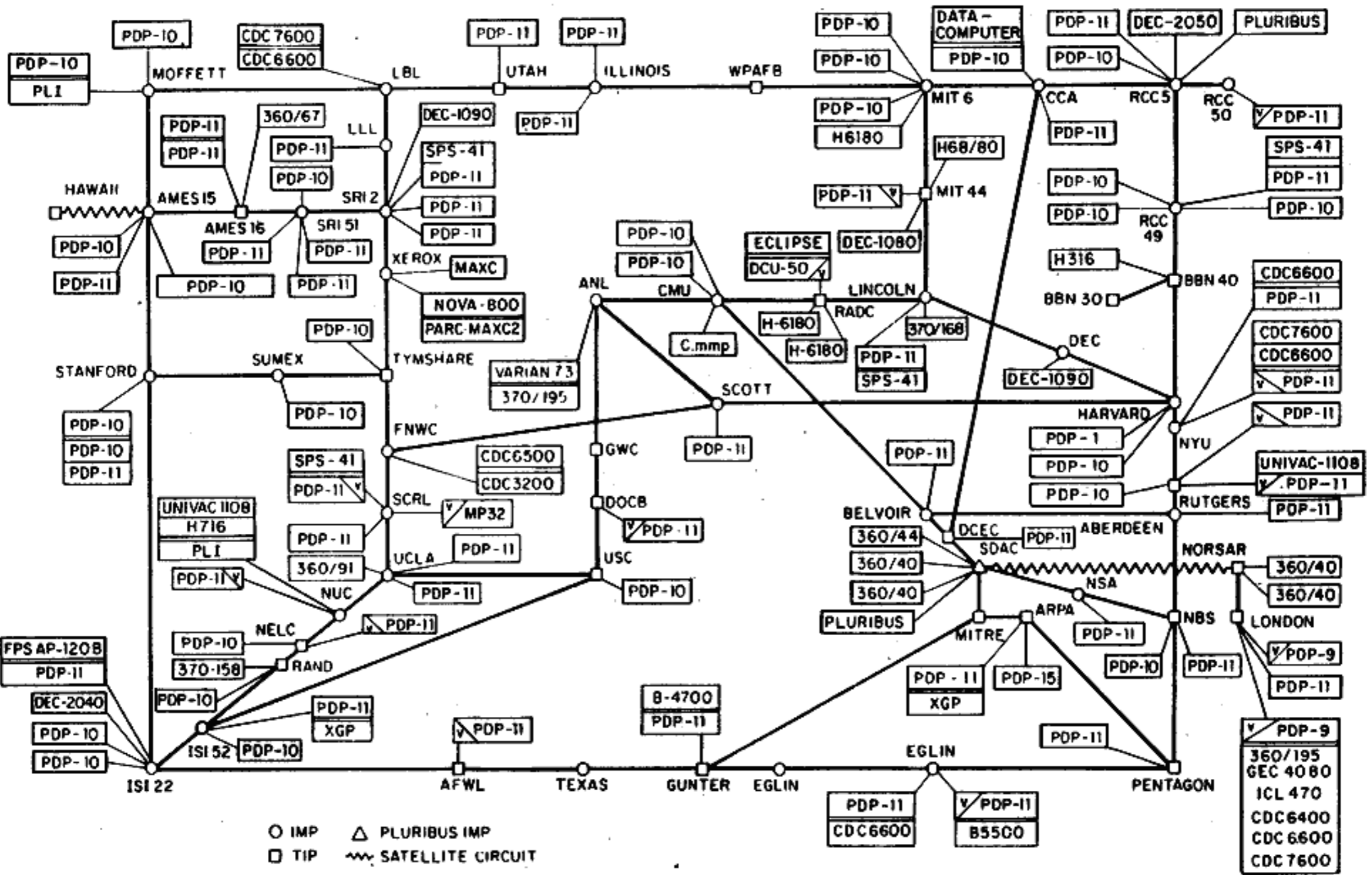
Did Al Gore invent the Internet?

History of the Internet

- In defense of Al Gore:

    - http://www.eecs.umich.edu/~fessler/misc/funny/gore,net.txt

History of the Internet

- 1969: ARPANET connected four nodes: UCLA, Stanford, UCSB, and University of Utah

- 1977: ARPANET extended across USA and London, UK

ARPANET LOGICAL MAP, MARCH 1977

(PLEASE NOTE THAT WHILE THIS MAP SHOWS THE HOST POPULATION OF THE NETWORK ACCORDING TO THE BEST INFORMATION OBTAINABLE, NO CLAIM CAN BE MADE FOR ITS ACCURACY)

NAMES SHOWN ARE IMP NAMES, NOT (NECESSARILY) HOST NAMES

○ IMP   △ PLURIBUS IMP
□ TIP   〜〜 SATELLITE CIRCUIT

Thursday, 20 September, 12

ARPANET LOGICAL MAP, MARCH 1977

PDP-10 | PDP-10 | CDC 7600 | PDP-11 | PDP-11 | PDP-10 | DATA-COMPUTER | PDP-11 | DEC-2050 | PLURIBUS

PLI | MOFFETT | CDC 6600 | LBL | UTAH | ILLINOIS | WPAFB | PDP-10 | PDP-10 | PDP-10

RCC 50 | PDP-11

SPS-41

PDP-11

PDP-11 | PDP-11

HAWAII | AMES 15 | PDP-10

PDP-10 | PDP-11

STANFORD

PDP-10 | PDP-10 | PDP-11

UNIVAC II | H716 | PLI | PDP-11

FPS AP-120B | PDP-11 | PDP-10 | 370-15

DEC-2040 | PDP-10 | ISI 52

PDP-10 | PDP-10

ISI 22

BBN 40 | CDC6600 | PDP-11

CDC7600 | CDC6600 | PDP-11

NYU | PDP-11

UNIVAC-1108 | PDP-11

RUTGERS | PDP-11

NORSAR | 360/40 | 360/40

NBS | LONDON

PDP-11 | PDP-9 | PDP-11

PDP-9

360/195 | GEC 4080 | ICL 470 | CDC6400 | CDC 6600 | CDC 7600

TAGON

Source: http://cm.bell-labs.com/who/dmr/picture.html

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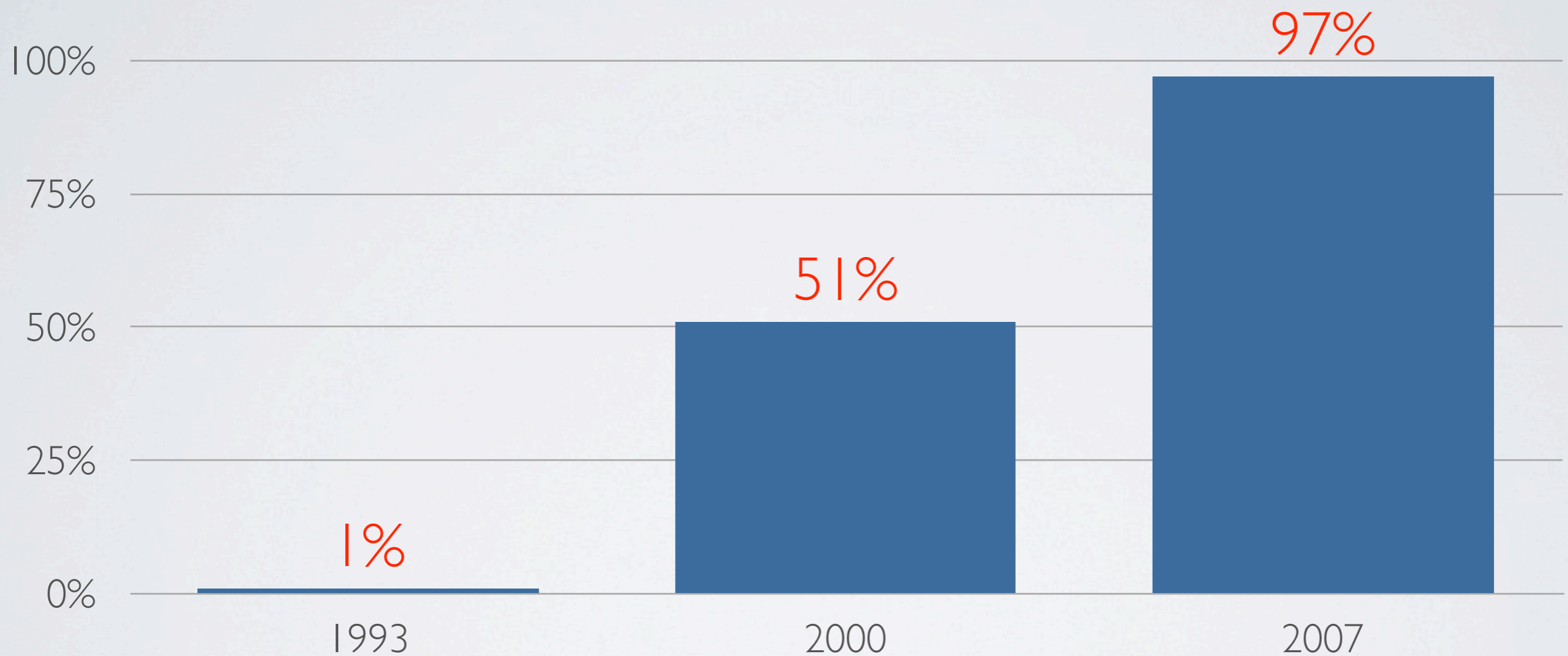NAMES SHOWN ARE IMP NAMES, NOT (NECESSARILY) HOST NAMES

History of the Internet

- 1969: ARPANET connected four nodes: UCLA, Stanford, UCSB, and University of Utah

- 1977: ARPANET extended across USA and London, UK

- 1980: Ethernet standard introduced

- 1981: Access to ARPANET expanded: e.g., BITNET, CSNET

- 1982: Internet Protocol (TCP/IP) standardized

- 1982: Simple Mail Transfer Protocol (SMTP) defined

- 1983: Domain Name Systems (DNS) / Name server

- 1986: Internet link to McGill

- 1986: NSFNET created (backbone speed of 56Kbps)

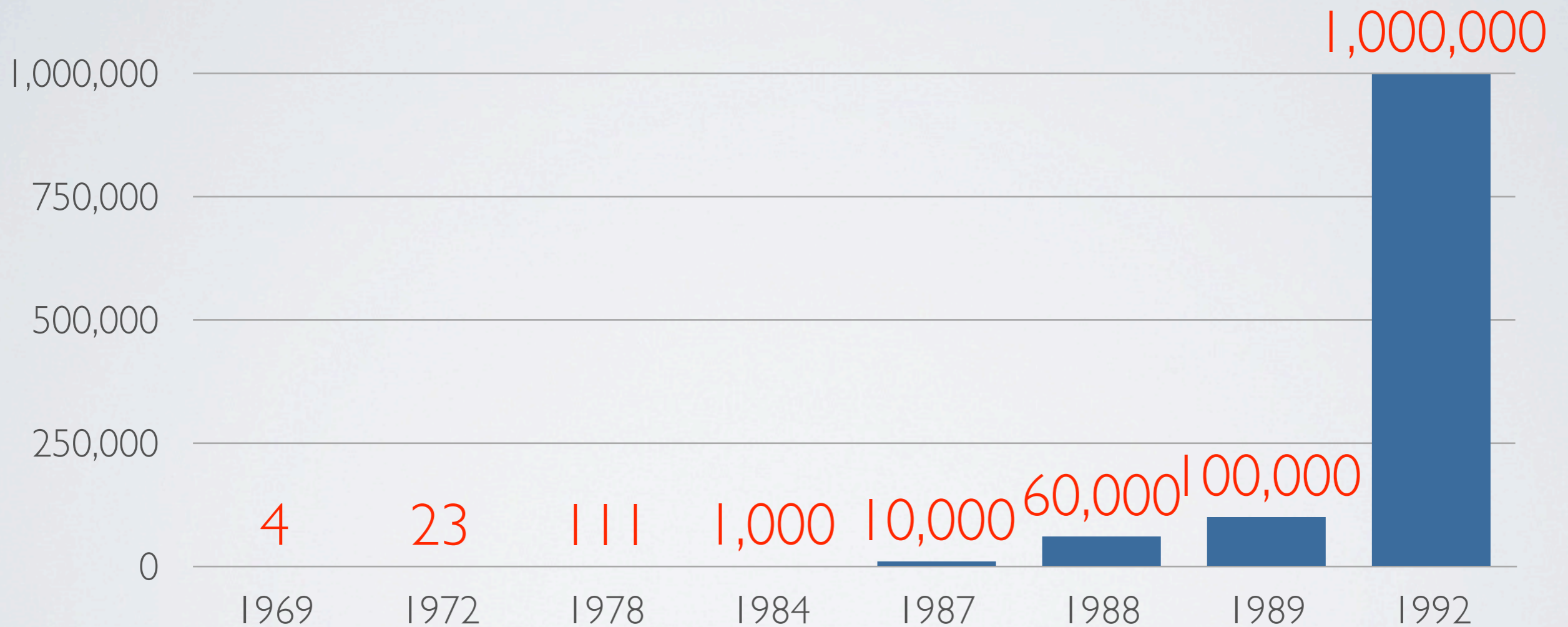# History of the Internet: Commercialization

- 1990's: Emergence of Internet Service Providers (ISPs)

- 1995: Complete commercialization (no restriction to carry commercial traffic)

  - public e-mail (AOL)
  - instant messaging
  - VoIP (Voice over Internet Protocol) (e.g., Skype)
  - WWW
    - online shopping, wikis, blogs, Facebook, Twitter

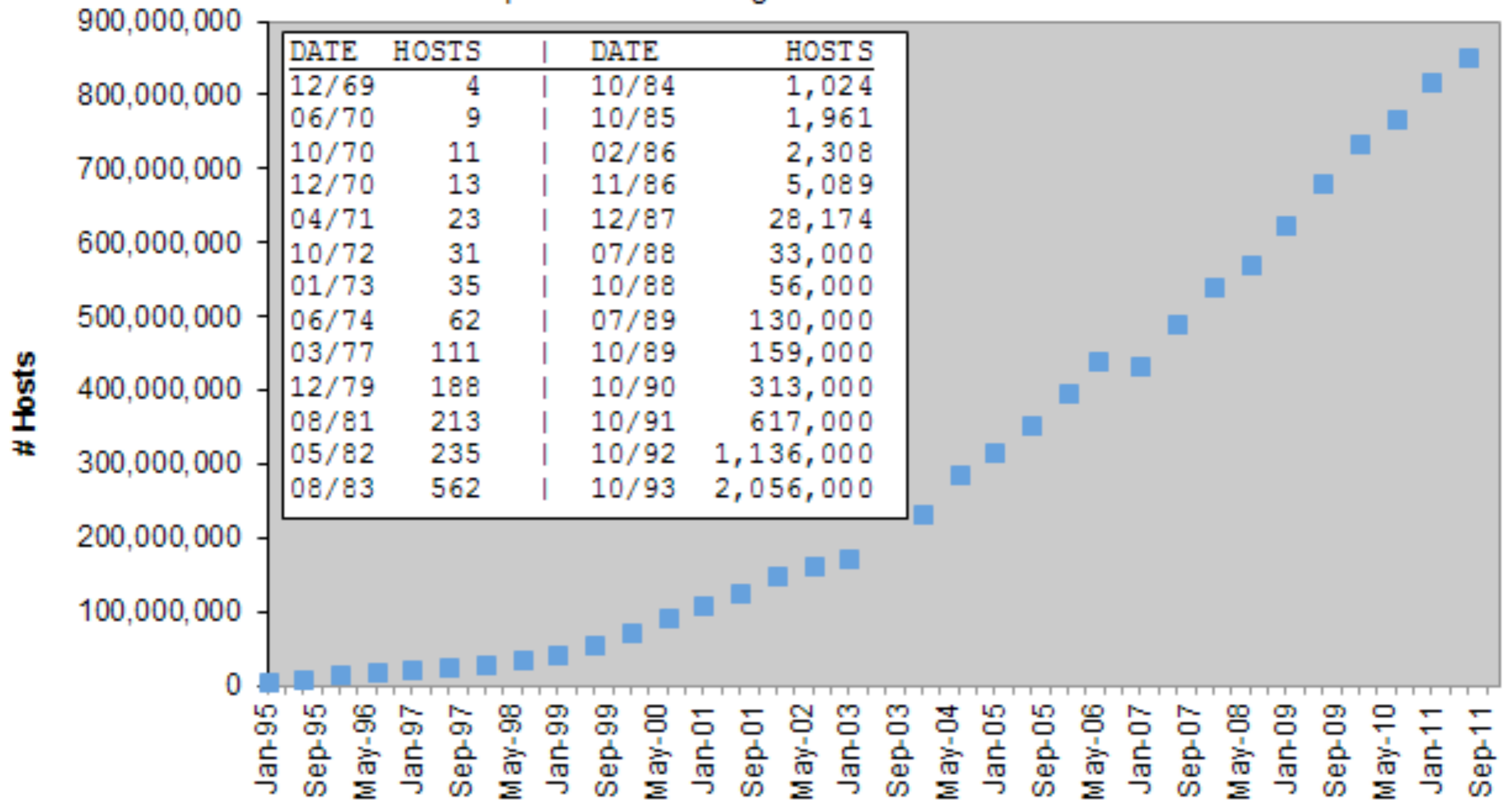# The percentage of two-way telecommunication carried on the Internet

The number of computers on the Internet

Internet Hosts

Hobbes' Internet Timeline Copyright ©2012 Robert H Zakon
http://www.zakon.org/robert/internet/timeline/

DATE	HOSTS		DATE	HOSTS
12/69	4		10/84	1,024
06/70	9		10/85	1,961
10/70	11		02/86	2,308
12/70	13		11/86	5,089
04/71	23		12/87	28,174
10/72	31		07/88	33,000
01/73	35		10/88	56,000
06/74	62		07/89	130,000
03/77	111		10/89	159,000
12/79	188		10/90	313,000
08/81	213		10/91	617,000
05/82	235		10/92	1,136,000
08/83	562		10/93	2,056,000

- http://www.internetworldstats.com/stats.htm

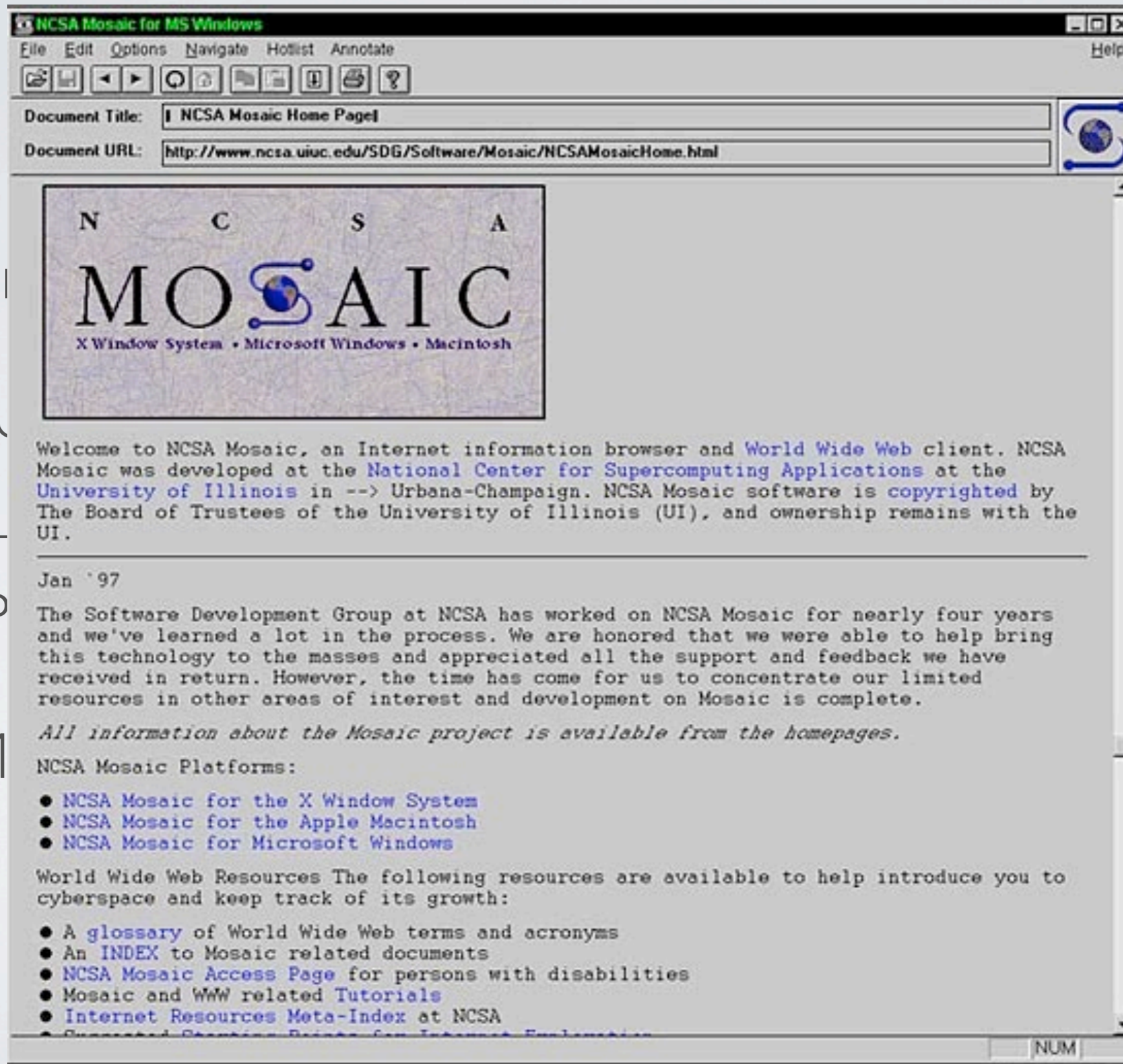# History of World Wide Web: Precursors

- 1990: Archie search engine

  - Developed at McGill to search FTP sites (~200 sites)

- 1991: WAIS (Wide Area Information Server)

- 1991: Gopher (search documents)

History of WWW

- 1990: Sir Tim Berners-Lee introduces WWW concept

  - URI (Uniform Resource Identifier)
  - HTML (Hypertext Markup Language)
  - HTTP (Hypertext Transfer Protocol)

- 1993: Mosaic web browser (NCSA-UIUC)

History of WWW

- 1990: Si~~~~~~~~~~~~~~~~~~~~~~~~pt

  - URI (U~~

  - HTML~~

  - HTTP~~

- 1993: M~~

History of WWW: Search Engines
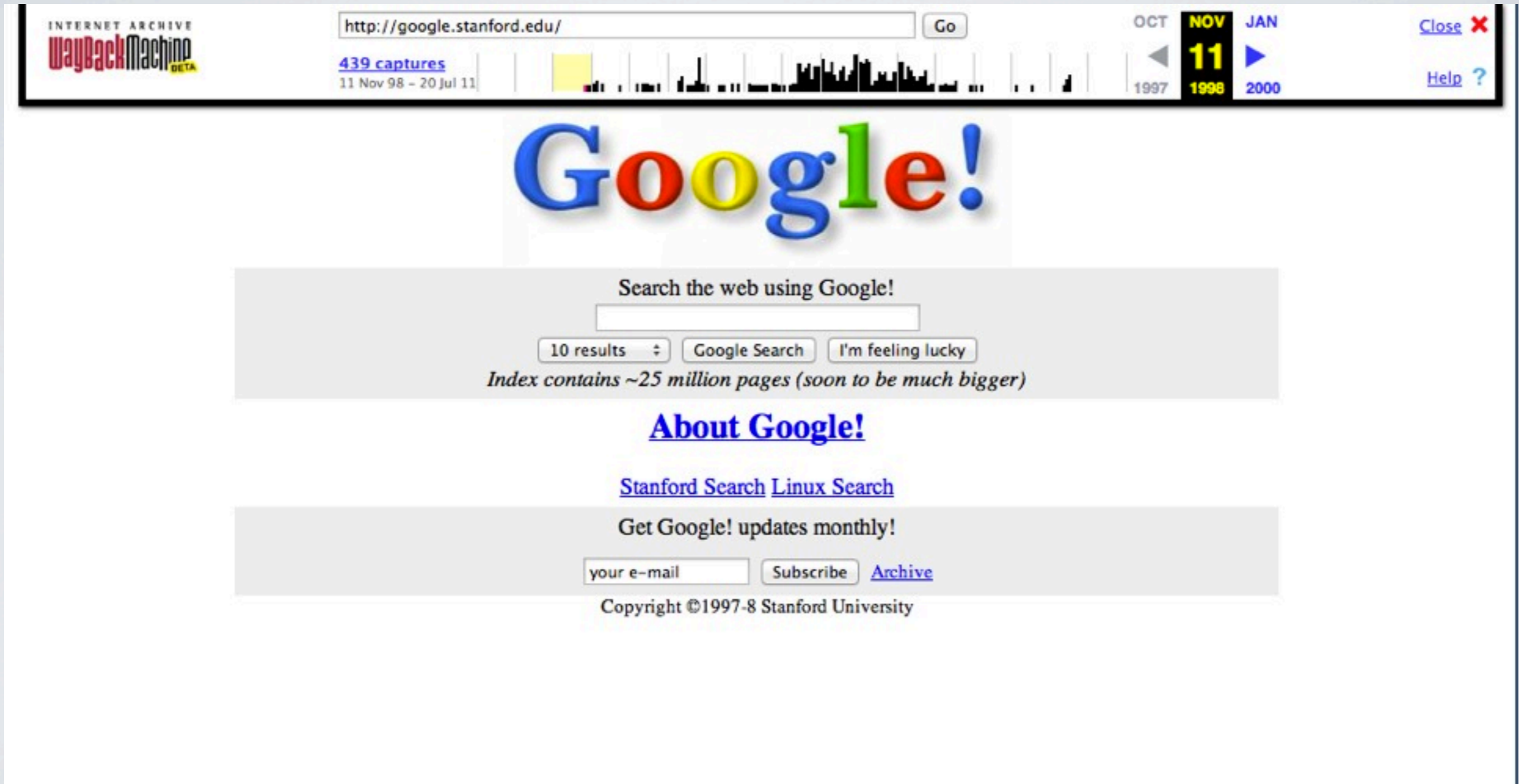
- 1993: Excite

- 1994: Yahoo; WebCrawler (first full-text search engine), Lycos

- 1995: Infoseek, AltaVista (natural language inquires)

- 1997: Google

Google.com 1998/11/11

- 2012: "Google has index over 30 trillion pages" [wikipedia]