

Internet Evolution

and its global business future

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Internet History

■ US Defense Advanced Research Projects Agency (ARPA)

■ ARPANET - 1969

■ Command and Control

■ Packet Satellite (SATNET)

■ International (NATO)

■ Packet Radio (PRNET)

■ Mobile Command and Control

Internet History (2)

Internetting Project (1973)

- link different packet networks together

- Stanford, ARPA

- University College London

- Bolt Beranek and Newman

Ethernet (Xerox PARC)

Internet History (3)

First Network Information Center (SRI International) [NIC]

Requests for Comment (RFCs)

Internet Assigned Numbers Authority (IANA)

First Multinetwork demonstration July 1977
ARPANET, PRNET, SATNET

Internet History (4)

- ❑ TCP/IP Version 4 - 1978
- ❑ DoD announces standards plan - 1980
- ❑ Major implementation efforts (different operating systems) 1980-1982
- ❑ NSF's CSNET
- ❑ DoD Standard - 1982
- ❑ ARPANET Cutover - Jan 1983

Internet History (5)

Internet Activities Board

- Research advice to ARPA

- Internet Standards (informal)

- Becomes Internet Architecture Board

Internet Research Task Force (IRTF)

Internet Engineering Task Force (IETF)

- Internet Engineering Steering Group

- Internet Standards

Internet History (6)

☐ National Science Foundation Net (NSFNET)

- 1986

☐ Supercomputer Center Interconnection

☐ 56 Kb/s

☐ First Commercial Router Vendors (ca 1986)

☐ Cisco Systems

☐ Proteon

Internet History (7)

- Second NSFNET - 1988

- T1 (1.5 Mb/s) 1988

- Regional Network Formation

- Commercial Email Interconnect - 1989

- Internet/MCI Mail ... many others

- Advanced Network and Services- 1990

- MERIT, IBM, MCI form non-profit

- T3 (45 Mb/s) backbone

Internet History (8)

First Commercial Internet Services (e.g.)

- NYSERNET ... Performance Systems,
International (PSI) - 1990

- UUNET Communications (1986 - non-profit,
but changed circa 1990)

- CERFNET - 1989

Commercial Information Providers -1991

- Dow Jones, Dialog, ... many others

Internet History (9)


 Réseau IP Européenne (RIPE)

 European EBONE

 RIPE NIC

 Réseau Associes pour la Recherche
Européenne (RARE)

 DANTE/Europamet

 EARN + RARE = TERENA (1994)

 NORDUNET

Commercialization (1994/5 examples)

☐ MCI - 1994 45 megabit/second backbone

☐ NSF Network Access Points, CIX, GIX,
MAE-EAST, MAE-WEST

☐ IBM Network (Advantis)

☐ Sprint Network (Sprintlink)

☐ PSI

☐ AOL/ANS-CORE

Commercialization (Cont.)

- UUNET/Altnet
- British Telecom
- DANTE
- PIPEX
- France Telecom
- Finland Telecom
- Swedish Telecom

Commercialization (Cont.)



ATT JENS (Japan)



KDD (Japan)



EUNET (many countries)



SURFNET (Netherlands)



Deutsche Forschungs Netz (DFN)
(Germany)



Deutsche Telekom (Germany)

Mergers and Acquisitions - 1995

- BBN buys BARRNET, NEARNET, SURANET Regionals
- America OnLine (AOL) buys ANS-CORE
- Microsoft invests in UUNET
- Australian Telecom buys/acquires AARNET

World Wide Web

- ❑ CERN development - 1989
 - ❑ NCSA MOSAIC - 1992
 - ❑ Netscape Communications - 1994
 - ❑ Spyglass - 1994
-
- ❑ 27,000 sites world wide (est. 1/95)
 - ❑ 14% of Internet Traffic

The Internet Explosion

☐ Brief Pause while we switch to a new set of slides... :-)

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