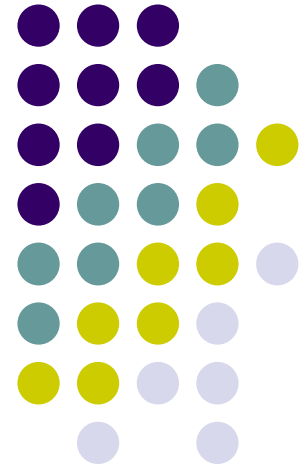
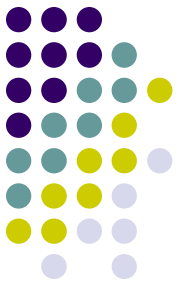


Web Information System





Objectives

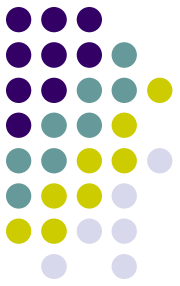
- Provide students with theory and concept about web information system from the past to future:
 - Basic concepts of Internet, WWW
 - Fundamental knowledge of HTML, CSS: elements of static web pages
 - Client-side and server-side dynamic web pages: concepts and development
 - Issues on web information systems: service containers, security, scalability
 - Advanced topic: web services, web 2.0, web 3.0.



Course Plan

- 1st week: Introduction
- 2nd week: HTTP
- 3rd week: HTML
- 4th week: CSS
- 5th week: Overview of dynamic page
- 6th week: Client side dynamic page
- 7th week: Server side dynamic page
- 8th week: Service container
- 9th week: Security
- 10th week: Scalability
- 11th week: Advanced topic – Web service, XHTML
- 12th week: Advanced topic - Web 2.0
- 13th week: Advanced topic – Web 3.0
- 14th, 15th weeks: Groups of 4 students present different topics given by professors

Evaluation



- Midterm test 30%
- Topic presentation 70%



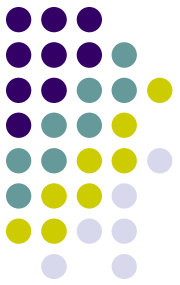
Working method

- Study student lecture note
- Ask professor questions in the class
- Search for solutions in web or discuss with classmates
- Contact with professor
 - 9:00 – 10:00 Mondays.
 - Department of Communication and Computer Networks – SoICT, C1 - 329
 - ĐT: 8680896
 - Mail: linhtd@it-hut.edu.vn
 - Slides and lecture note can be found at www.it-hut.edu.vn/~linhtd



References

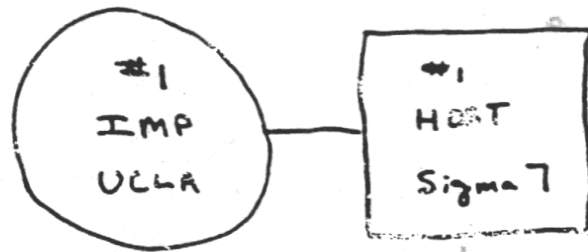
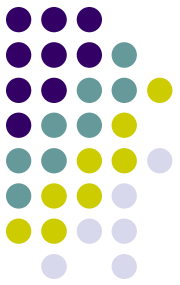
- Student lecture note of the course Web Information System
- Website:
 - <http://www.w3schools.com/>
 - <http://www.w3.org/TR/>
 - <http://www.w3.org/2001/sw/>
 - <http://www.ibm.com/developerworks/web/>
 - <http://java.sun.com/>
 - <http://www.apache.org/>



Chapter 1: Introduction

- Brief history of Internet
- What is not a Web system
- Typical application
- Social impact

History of Internet



- ARPRANET was born with a project of ARPA
- At the beginning, there is only a link between two nodes (IMP of UCLA and IMP of SRI).

THE ARPA NETWORK

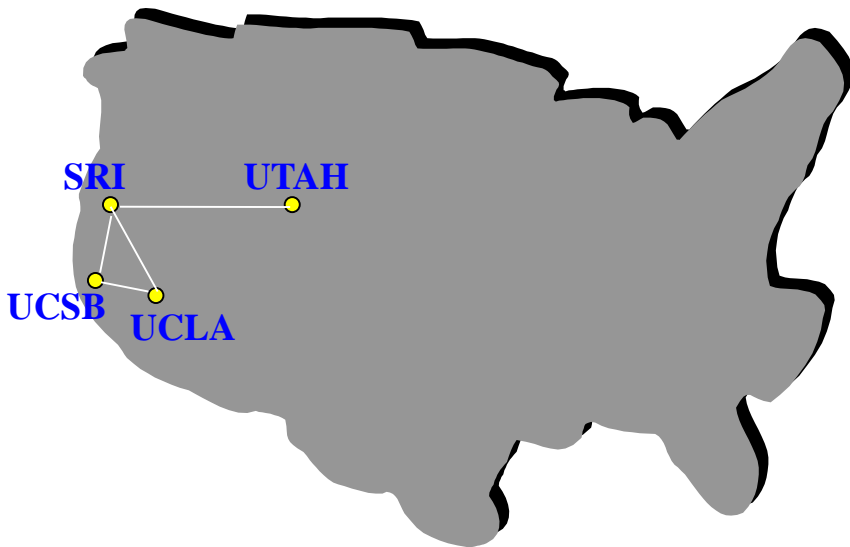
SEPT. 1969

1 NODE

FIGURE 6.1 Drawing of September 1969
(Courtesy of Alex McKenzie)

ARPA: Advanced Research Project Agency
UCLA: University California Los Angeles
SRI: Stanford Research Institute
IMP: Interface Message Processor

3 months later, 12/1969

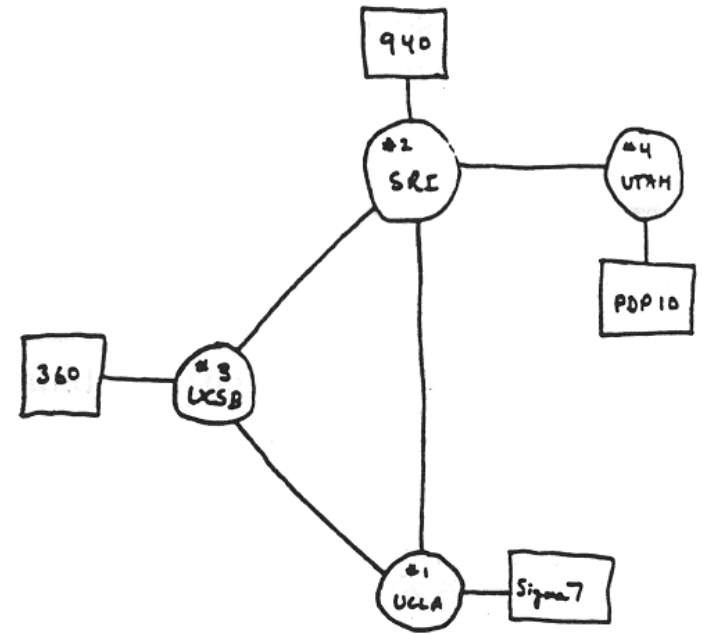


A network with 4 nodes, speed
56kbps

UCSB:University of California, Santa Barbara

UTAH:University of Utah

source: <http://www.cybergeography.org/atlas/historical.html>



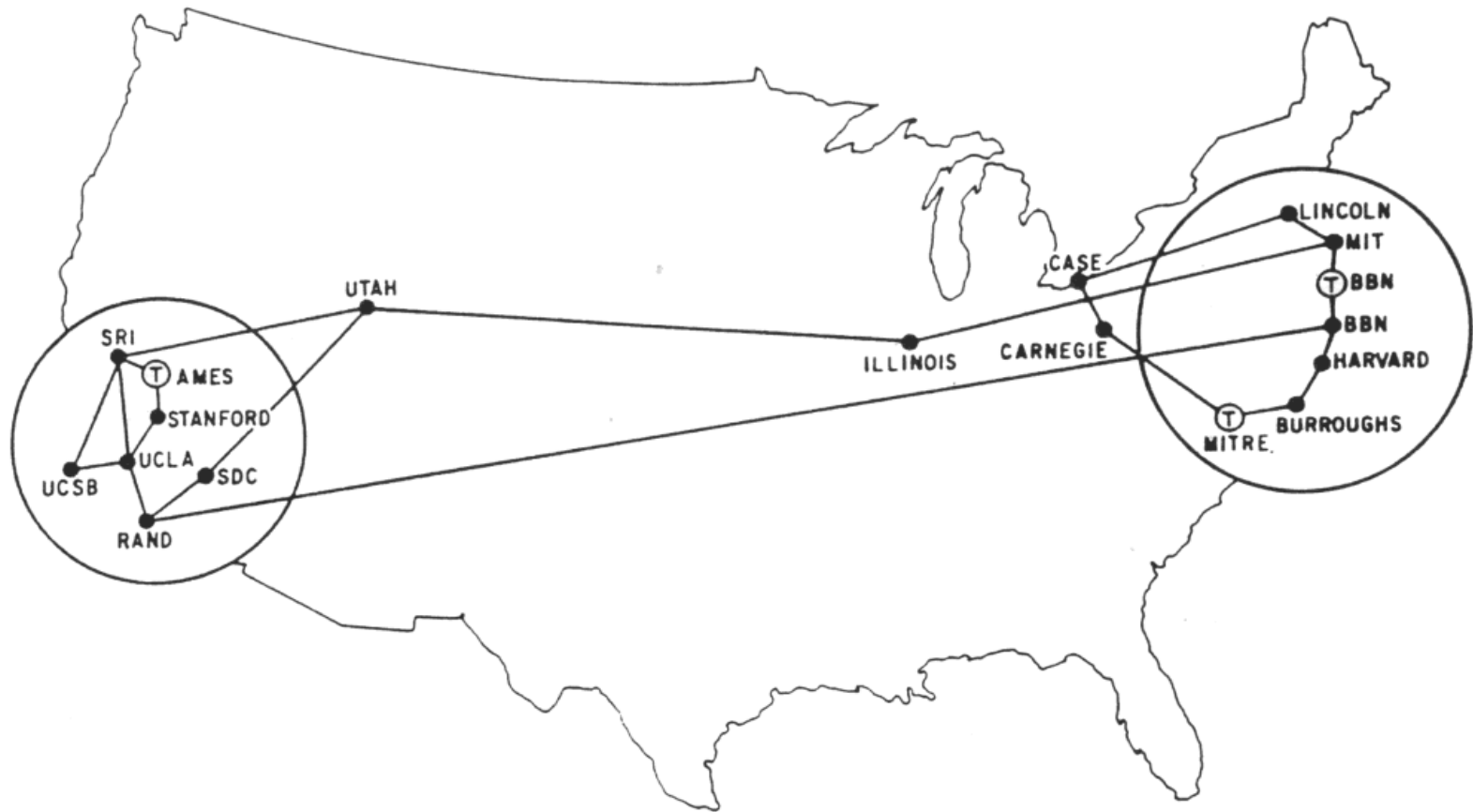
THE ARPANET

DEC 1969

4 NODES

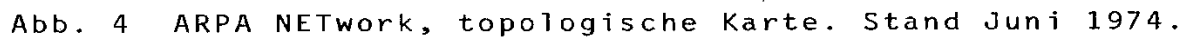
FIGURE 6.2 Drawing of 4 Node Network
(Courtesy of Alex McKenzie)

ARPANET at the beginning, 1971



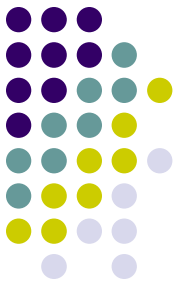
Source: MAP 4 September 1971
[http://www.cybergeography.org/
atlas/historical.html](http://www.cybergeography.org/atlas/historical.html)

Growth speed: One additional node/month



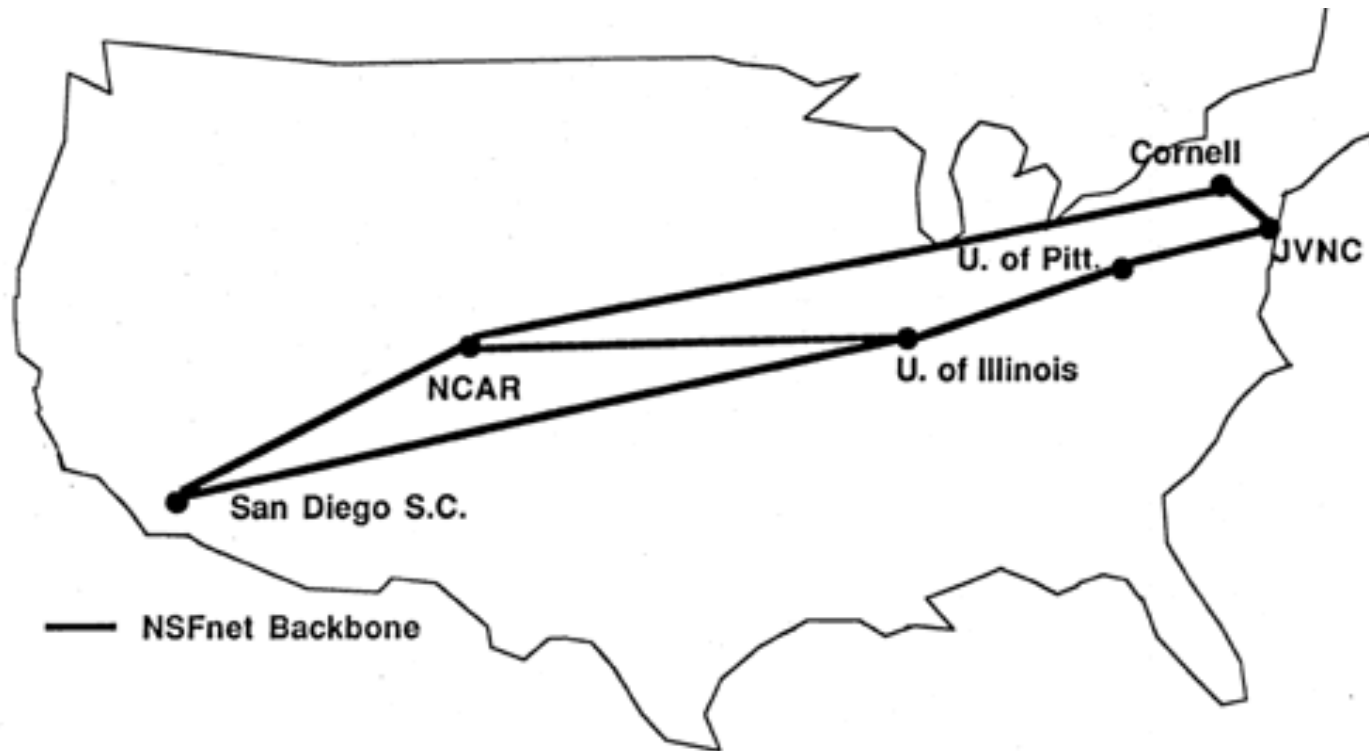
Traffic: 3.000.000 packets/day

1981: NSFNET is built



NSF: National Science Foundation

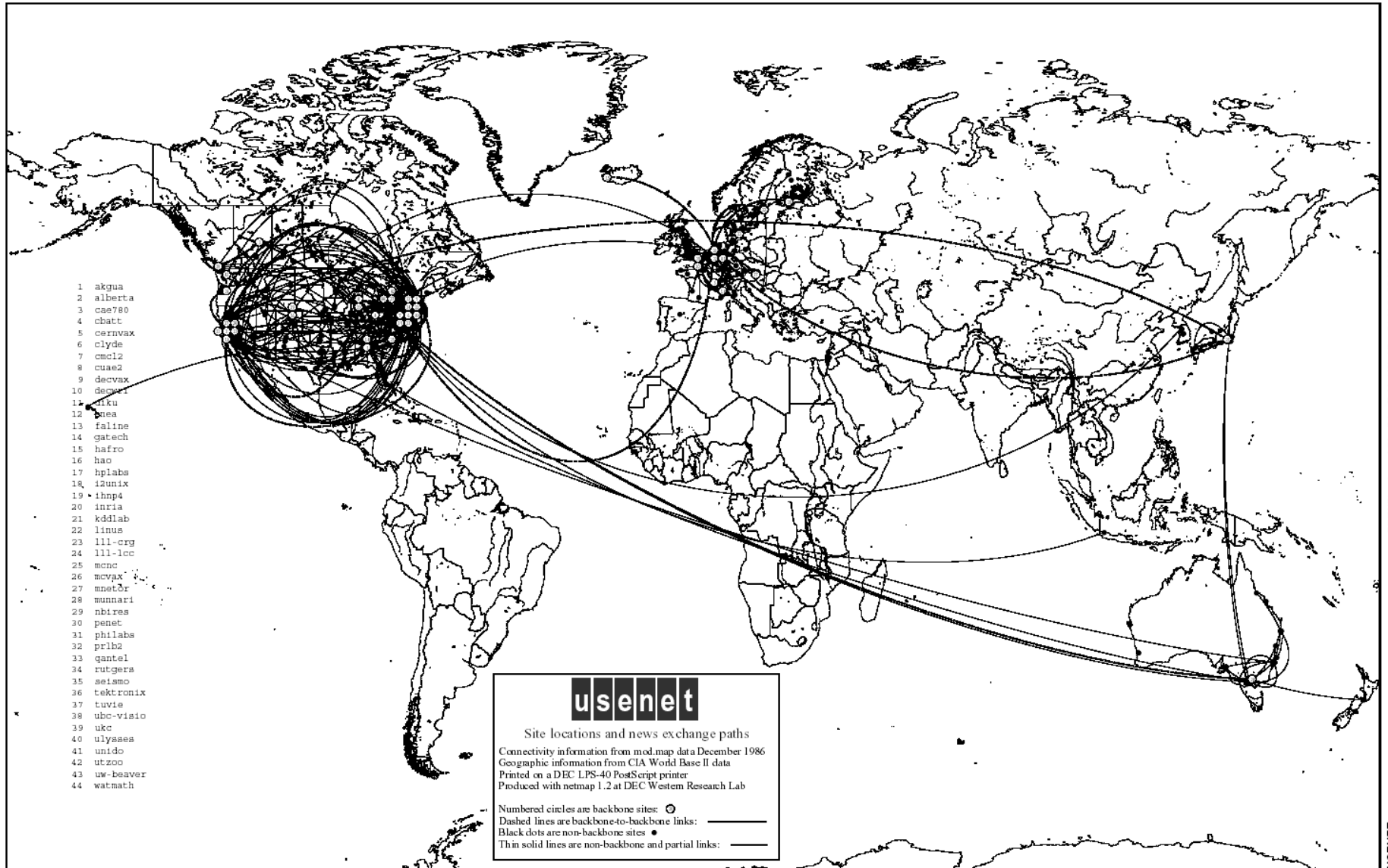
NSF is built for scientific research objectives due to the overload of ARPANET



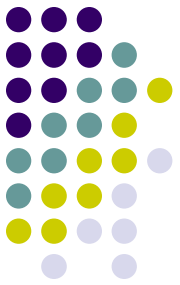
NSFnet Backbone Network

National Center For Atmospheric Research
March 19, 1986

1986: Connections of USENET & NSFNET



90 Decade



- Early 90s decade: Web presents
 - HTML, HTTP: Berners-Lee
 - 1994: Mosaic, Netscape
- Late 90s: Commercialize Internet

Late 1990's – 2000's:

New type of applications: chat, file sharing P2P...

E-commerce, Yahoo, Amazon, Google...

> 50 million station,

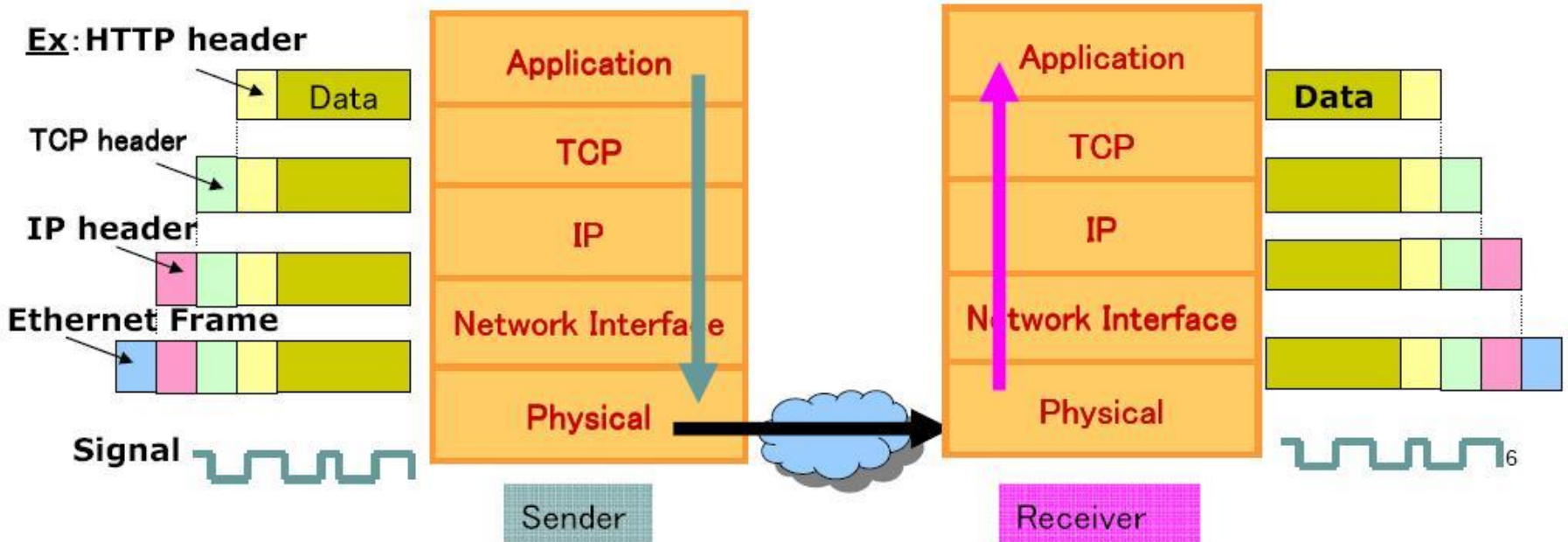
> 100 million users

Security issue!

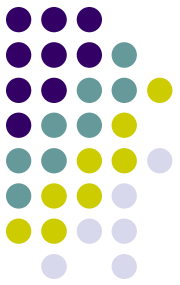
Everyone can use Internet

Every application, services have to take into consider this issue

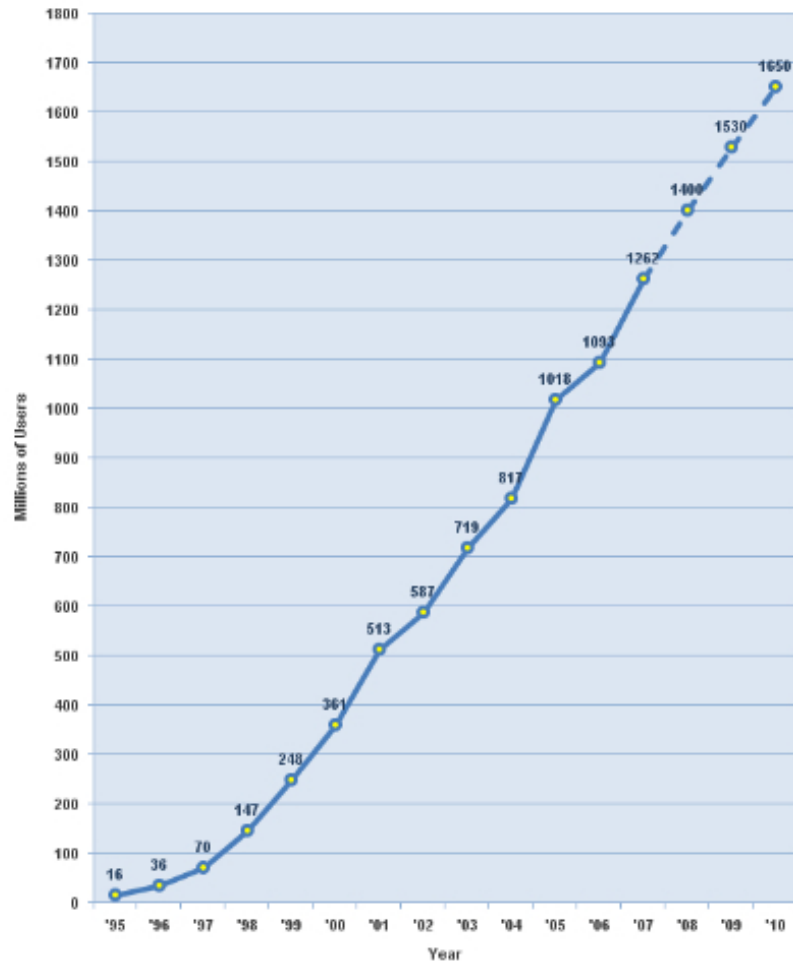
Internet protocol stack



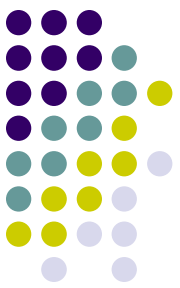
Statistics number



Internet Users in the World
Growth 1995 - 2010



Source: www.internetworldstats.com - January, 2008
Copyright © 2008, Miniwatts Marketing Group



Statistics number

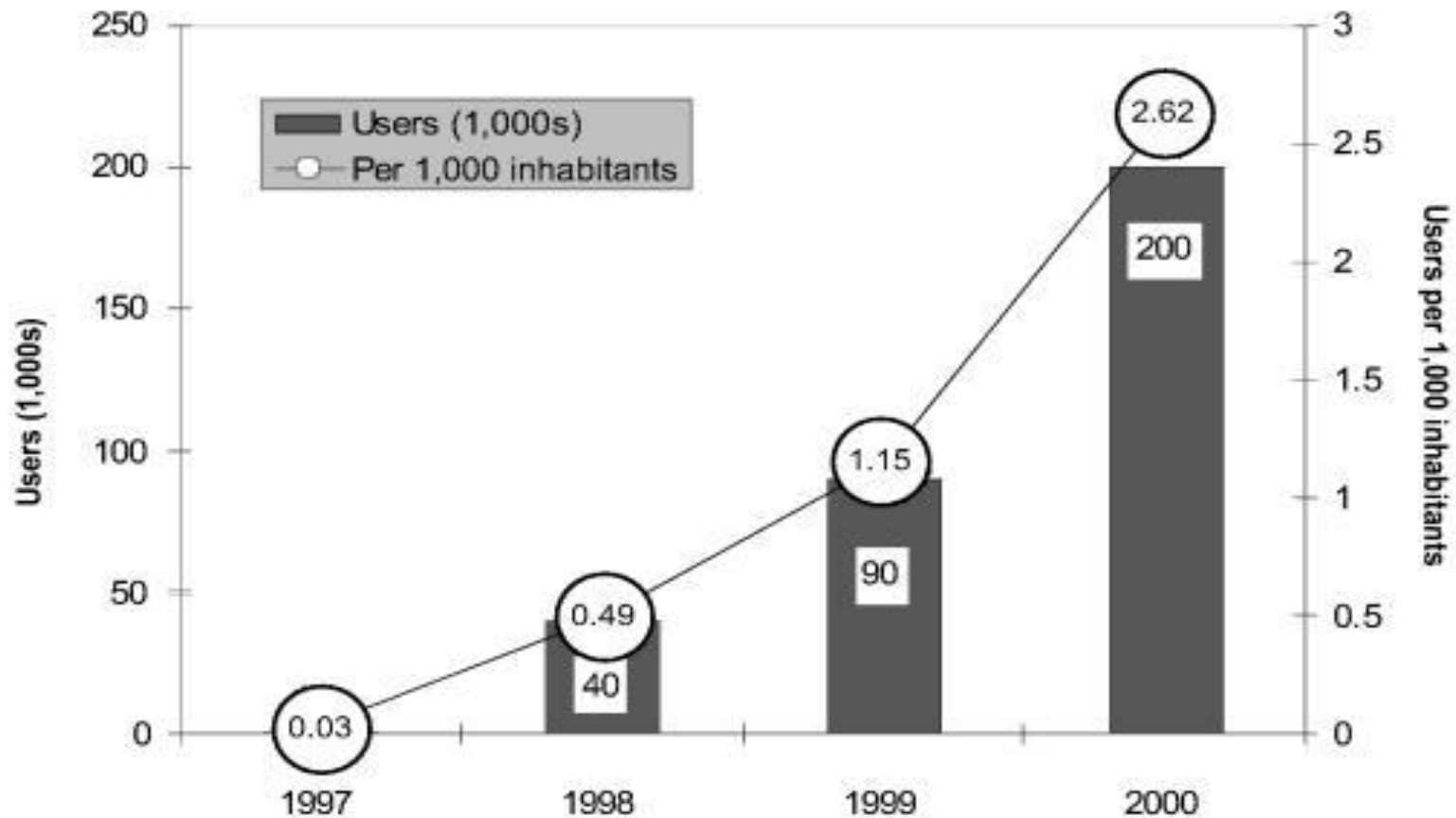
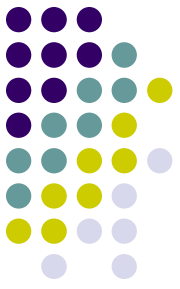
WORLD INTERNET USAGE AND POPULATION STATISTICS						
World Regions	Population (2008 Est.)	Internet Users Dec/31, 2000	Internet Usage, Latest Data	% Population (Penetration)	Usage % of World	Usage Growth 2000-2008
Africa	955,200,348	4,514,400	51,065,630	5.3 %	3.5 %	1,031.2 %
Asia	3,776,181,949	114,304,000	578,538,257	15.3 %	39.5 %	408.1 %
Europe	800,401,065	105,088,093	384,633,765	48.1 %	28.3 %	288.0 %
Middle East	197,090,443	3,284,800	41,939,200	21.3 %	2.9 %	1,176.8 %
North America	337,187,248	108,088,800	248,241,969	73.8 %	17.0 %	129.6 %
Latin America/Caribbean	570,081,673	18,088,919	139,009,209	24.1 %	9.5 %	609.3 %
Oceania / Australia	33,081,562	7,620,480	20,204,331	59.5 %	1.4 %	185.1 %
WORLD TOTAL	6,676,120,288	360,985,492	1,463,632,361	21.9 %	100.0 %	305.5 %

Development of Internet in Việt Nam



- 1996: Infrastructure for the Internet is ready
 - ISP: VNPT
 - one connection to international network of 64kbps,
- 1997: Việt Nam connects officially to the Internet
 - 1 IXP: VNPT
 - 4 ISP: VNPT, Netnam (IOT), FPT, SPT
- 2007:
 - 20 ISPs, 4 IXPs
 - 19 millions users, 22.04% population

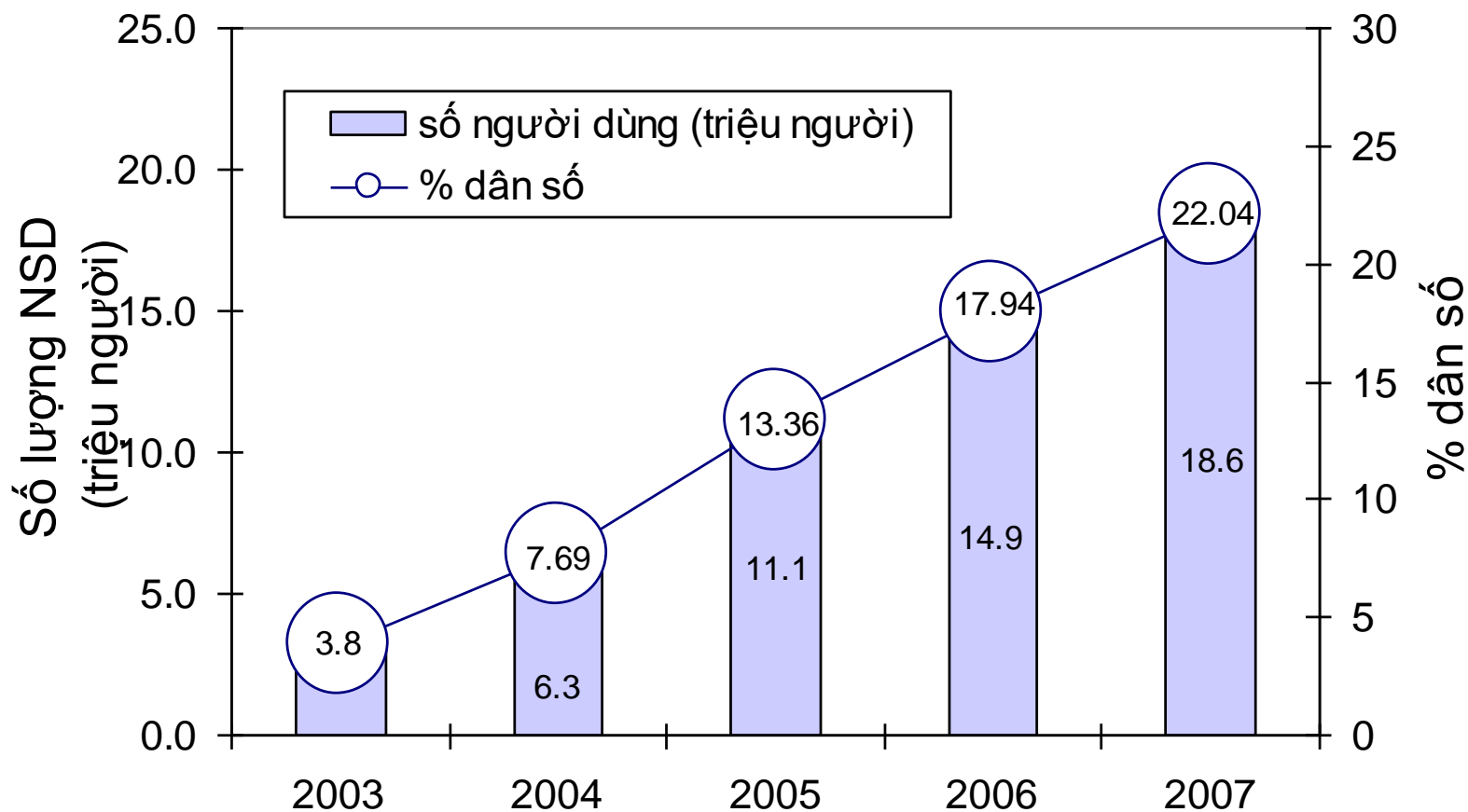
Development of Internet in VN



The number of users are estimated by twice the number of subscribers

Source: Vietnam Internet Case Study, <http://www.itu.int/asean2001/reports/material/VNM%20CS.pdf>

Recent statistics



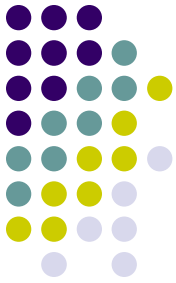
Source: Vnnic, <http://www.thongkeinternet.vn>



Internet in 20xx

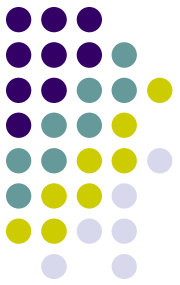
- New applications and technologies
 - Youtube, Skype, Bittorrent, Video & VoIP...
 - Wireless networks, optical networks, mobile networks
 -
- Internet improve services and change continuously
 - Objective is the convenience of users

Definition of Web



- The World Wide Web (Web in abbreviation) is a system of interlinked hypertext documents accessed via the Internet.
- Document may contain text, images, videos, and other multimedia
- With web browser, users can navigate between them using hyperlinks.





History of World Wide Web

- Web is invented by English physicist Tim Berners-Lee:
 - 1989: Write a proposal "a large hypertext database with typed links"
 - 1990: build all the tools necessary for a working Web:
 - Hypertext Transfer Protocol (HTTP) 0.9,
 - HyperText Markup Language (HTML),
 - WorldWideWeb: The first Web browser + editor for NeXT computer
 - The first HTTP server software (later known as CERN http)



History of World Wide Web

- **1992-1995: Growth of the WWW**
 - 1992 some web browsers was developed for X Window System for Linux: Erwise, ViolaWWW
 - Feb. 1993: Mosaic web browser was created for X windows browser. It becomes Netscape when it is commercialized in 1994
 - June 1993: Cello, the first Microsoft Windows browser was created.

Timeline of web browsers:

http://en.wikipedia.org/wiki/Timeline_of_web_browsers



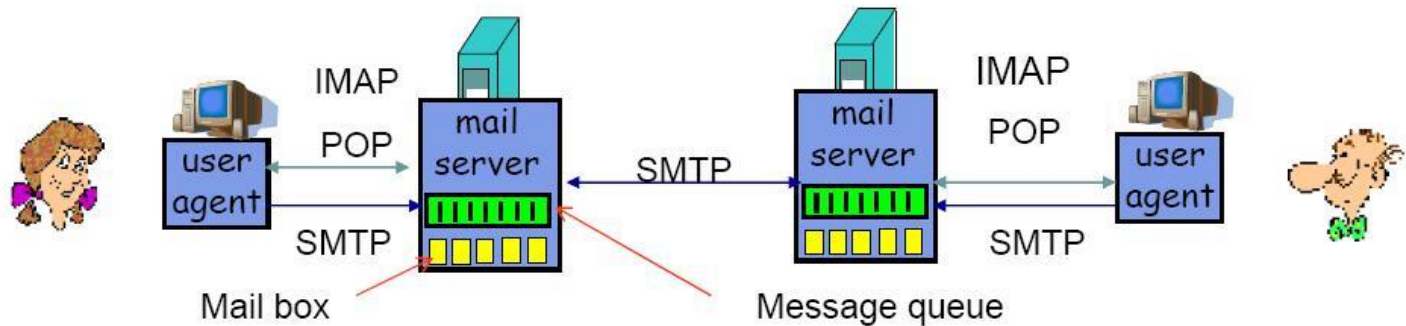
History of World Wide Web

- Sept. 1994, Berners-Lee founded the World Wide Web Consortium (W3C) at the MIT with support from the DARPA and the European Commission.
 - Objective: create standards and recommendations to improve the quality of the Web.
 - W3C comprised various companies
 - Web available freely, with no patent and no royalties due.
- 1996-1998: Commercialization of the WWW
 - E-commerce: Web based commerce
 - Dotcom companies display products on Web.
- 1999-2001: "Dot-com" boom and bust
- 2002-Present: The Web becomes ubiquitous

What is NOT a web system



- Email



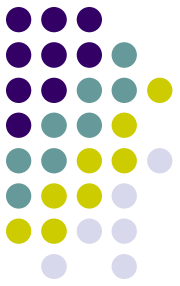
- However many email systems provide Web interface for user to read and write email (web based user agent)
 - Gmail, Hotmail, Yahoo, HUT's email ...



What is NOT a web system

- Many internet services require dedicated client software to install. By using the Web as a platform for these services, users only need a web browser which is already installed in almost all client computers nowadays.
- Demerits of using web browsers for various services are restricted user interface, lack of local storage, and poor efficiency.
- In many organizations, only designated communication between inside and outside is permitted for security reason.
 - For example, if SMTP and POP are blocked by a firewall, users cannot access outside mail servers. Since HTTP is often permitted due to popularity of the Web system, users may well be able to access outside web mail systems.

What is NOT a web system



- Example 2

Typical applications

- Blog



The screenshot shows a Facebook news feed for a user named Eric Eldon. The interface includes a top navigation bar with links to Home, Profile, Friends, and Inbox (618). The main content area displays a 'What's on your mind?' status update box at the top. Below this, the feed shows several posts: a post by Ibrahim Hamza about finding a roommate, a post by Tim Cox about the Clean Tech Open event, a post by Emily Glassman about Keith Urban's new album, and a post by Dave McClure about a demo day. The right sidebar features a 'TODAY' section with links to Charity Smackdown, iGames Summit, and Angela Smith's birthday, as well as a 'HIGHLIGHTS' section with links to SXSW Baby! and NCAA March Madness. The left sidebar contains a list of links to various features like News Feed, Public Profiles, Photos, Links, Video, Notes, Twitter, Delicious, New Layout Vote, and Google Reader.

facebook Home Profile Friends Inbox (618) Eric Eldon Settings Logout Search

Welcome, Eric. You have 1 friend request.

News Feed Public Profiles San Francisco, CA More

Photos Links Video Notes Twitter Delicious New Layout Vote Google Reader

Drag and drop your filters to reorder them.

Hide

What's on your mind?

Share

Ibrahim Hamza is looking for a new roommate. I'm kicking my old one out. (aka.. he's off to bigger and better things!!)

21 seconds ago · Comment · Like

Tim Cox Launching the Clean Tech Open today. "100K Jobs Challenge"; \$1 million in prizes.

Clean Tech Open Calls for Entrepreneurs to Create 100,000 Green-Collar Jobs

Source: www.marketwire.com

SAN JOSE, CA--(Marketwire - March 19, 2009) - The Clean Tech Open (www.cleantechopen.com), the innovation catalyst that helps great ideas become viable clean tech businesses, today challenged entrepreneurs, ...

2 minutes ago · Comment · Like · Share

Emily Glassman

EW.com

Keith Urban debuts new album, track by track, on iLike (which I love) | PopWatch Blog | EW.com

Source: popwatch.ew.com

Keith Urban debuts new album, track by track, on iLike (which I love)

2 minutes ago · Comment · Like · Share

Dave McClure evidently Paul Graham is chapping my hide at today's Demo Day Part II for accidently "tweet-launching" some stealth #YC startups. oops :)

3 minutes ago · Comment · Like

TODAY See More

Charity Smackdown - GO TEAM HAYDEN

Now

iGames Summit - The iPhone Games Conference

Now

Angela Smith's birthday - Send a gift

HIGHLIGHTS

SXSW Baby! by Dayna Nicole

Let's get ready to RUMBLE!

1

NCAA® March Madness®

Games are playing live now! Don't miss a second - watch every game live online for free with NCAA® March Madness® on Demand.

WATCH LIVE NOW

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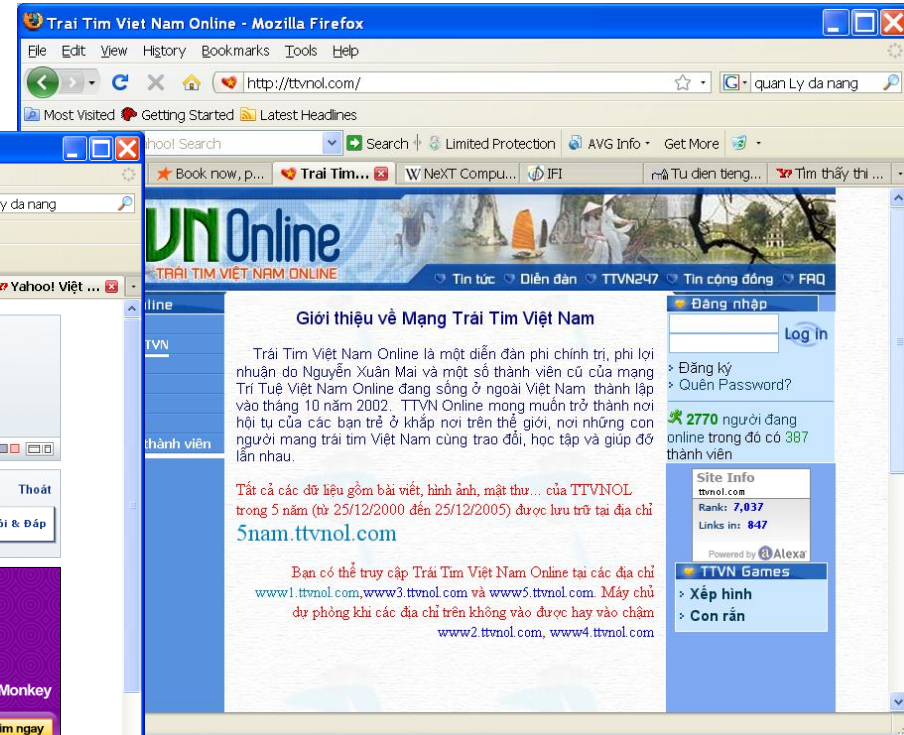
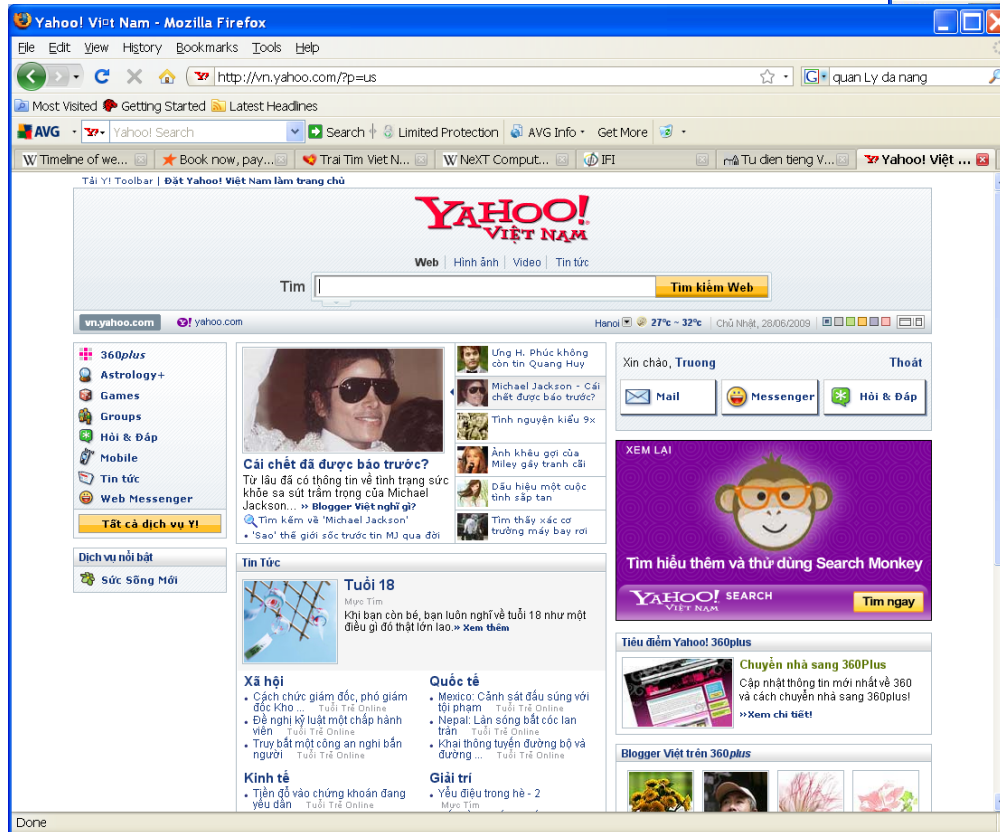
The Daily Show 14 friends are fans. Become a Fan

Nepal Trip Info by David Adewumi

1

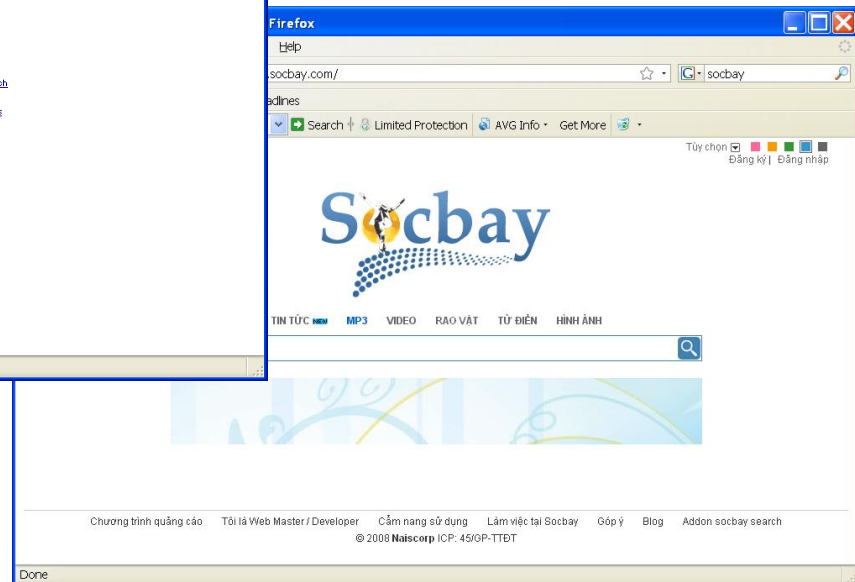
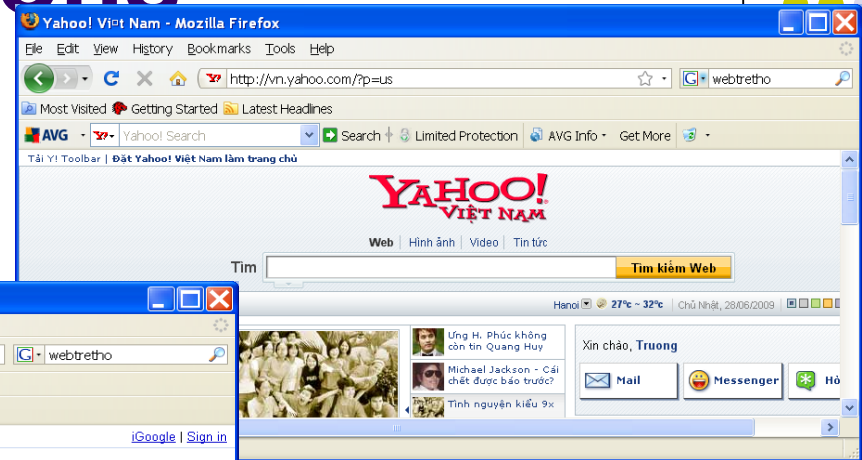
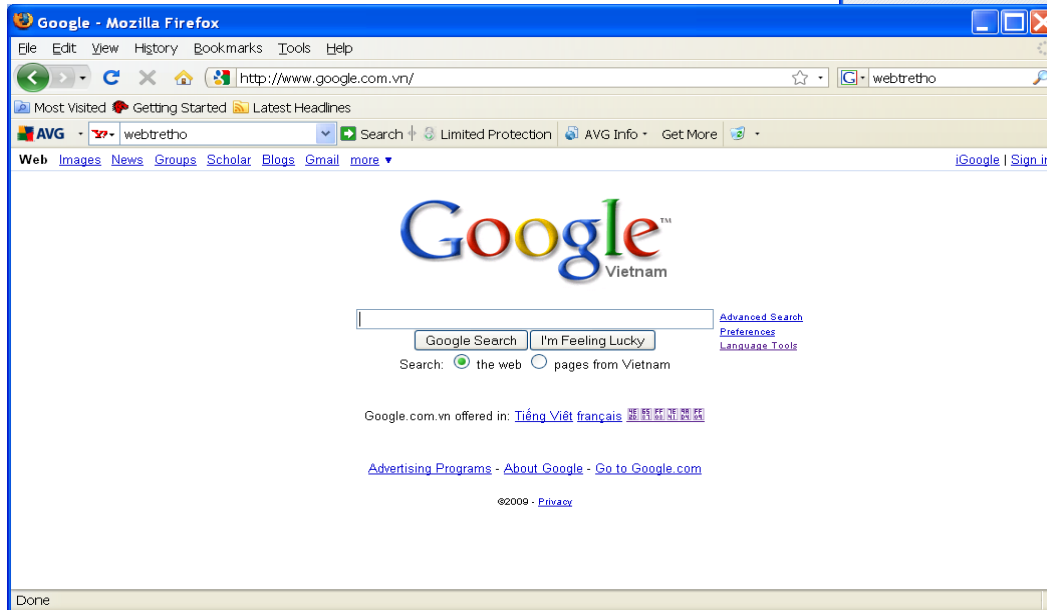
Typical applications

- Social Network System



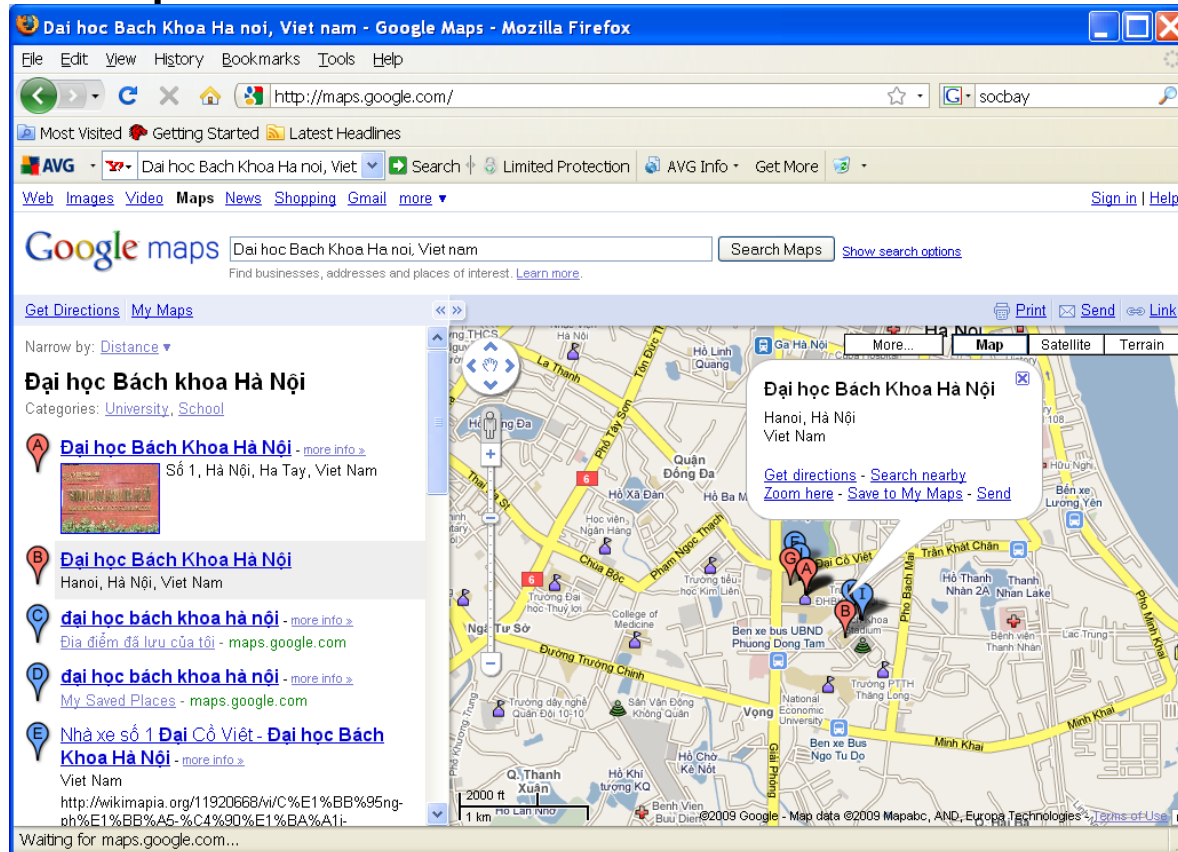
Typical applications

- Search Engines

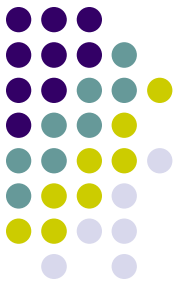


Typical applications

- Google map



Social Impact



- **Advantages:** Many things that you can do via the Internet
 - **E-mail:** Instantly send and receive information from other peoples. Much faster in comparison with traditional mail by post office
 - **Access Information:** Any kind of information on any topic under the sun is available on the Internet.
 - **Online Shopping:** You do not need to leave your house for shopping.
 - **Online Chat:** Meet new people, make new friends, as well as to stay in touch with old friends.
 - **Downloading Software:** Many software, games, music, videos, movies, are available for downloading free or with fee on web.
- **Disadvantages**
 - **Personal Information:** Your personal information such as your name, address, etc. can be accessed by other people.
 - **Pornography:** There are thousands of pornographic sites on the Internet that can be easily found and can be a detriment to letting children use the Internet.
 - **Spamming:** hundreds of spam email per days per user accounts.
 - **Virus threat**

Classification of Web Information System



- How a web information system can be useful?
- Why we build a web information system?
What for?
- Classification according to user interaction
 - From user to WIS
 - From user to user by using WIS
 - From user to WIS by using another WIS

Classification of WIS



- According to application domain
 - News website: managing and publishing news
 - Social network
 - Management system: online store
 - Transport mean for distributed system: webservices
 - Operating system: Web operating system
 - web is used for accessing remote resource
 - Google apps