

INTERNET & WORLD WIDE WEB

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Lesson Overview

- History of the World Wide Web
- History of the Internet
- Future of the Internet and the World Wide Web

History of the WWW

- Paul Otlet and Henri LaFontaine had a goal: collect and organize all the world's knowledge.
- In 1934, began summarizing information; classifying and cross-referencing into a “search engine” called the Mundaneum with over 15 million cards on thousands of topics



History of the WWW (cont.)

- In the 1930s, American scientist Vannevar Bush and British writer H.G. Wells advanced similar goals - Wells with his “World Brain” encyclopedic essays and Bush with the Memex, a sort of microfilm-based Web browser.
- All these information systems organized data in different ways but shared key ideas like automated cross-references – what we call hyperlinks today

History of the WWW (cont.)

- Visionaries dreamed of using technology to organize and link the world's knowledge
- Envisioned multi-user systems embracing elements of networking
- 1950s: Douglas Engelbart, Theodor "Ted" Nelson and Andries van Dam, developed many core computing functions such as word processing, remote collaboration, and elements of the graphical user interface

History of the WWW (cont.)

“Hypertext: Text which is not constrained to be linear, or even to be text”

Ted Nelson

- ⦿ Hypertext – System in which objects (pictures, text pictures, music, programs, etc.) can be creatively linked to each other – hyperlinks
- ⦿ Hypertext is created by a special code called Hypertext Markup Language (HTML or Extensible Hypertext Markup Language (XHTML))

History of the WWW (cont.)

“A web of nodes a user can browse at will”

Tim Berners-Lee

- Created the “Worldwide Web” on an advanced NeXT computer in 1990 with Robert Cailliau
- System was used to share, track, link and edit documents regardless of what computers or programs were used to create them

History of the WWW (cont.)

- ⦿ System components included;
 - HTML
 - URLs - standardized resource locators – used to point to information
 - Hypertext Transfer Protocols (HTTP) – standardized way to easily transfer web pages over networks
- ⦿ Web browser – programs that display a Web document on a website
- ⦿ Mosaic (1983), Netscape, Navigator (now Mozilla Firefox), Microsoft's Internet Explorer, Google's Chrome, Apple's Safari, Opera

Difference between the Internet and WWW

- World Wide Web is a portion of the Internet that contains billions of documents (web pages)
- Internet is a network of hardware (computers, cables, and routers)
- Internet is the physical connection of millions of networks (like an interstate)
- Web uses the Internet as its transport mechanism to distribute its web pages

History of the Internet

- ⦿ Internet (the “Net”) is a global computer network made up of thousands of privately and publicly owned computers and networks that grew over time into one giant network (WAN – Wide Area Network)
- ⦿ At its inception, Internet was a communication and file-exchange network for:
 - Government agencies
 - Scientific research
 - Academic Institutions
- ⦿ Internet is the offspring of the U.S. Department of Defense ARPANET (Advanced Research Projects Agency Network) of the 1960s

History of the Internet

- ⦿ Today the Internet is the medium for:
 - Discovering and exploring information
 - Marketing products
 - Shopping
 - Taking classes
 - Socializing
- ⦿ Internet today is composed of more than 750 million hosts

History of the Internet

- ⦿ Internet backbone – main high-speed routes through which data travels are maintained by network service providers (NSPs) such as AT&T, NCI, Sprint, BBN and UUNET
- ⦿ Routers connect your computer or business network to the Internet backbone
- ⦿ Interoperability – ability for computers to exchange data regardless of the brand, model or operating system the computers are running

History of the Internet

- ⦿ Internet interoperability explains the network's popularity
- ⦿ TCP/IP suite of protocols, which supply the standard methods of packaging and transmitting information, are responsible for enabling interoperability
- ⦿ Transmissions Control Protocol (TCP) manages the assembling of a message or file into smaller packets that are transmitted over the Net
- ⦿ Internet Protocol (IP) handles the address part of each packet so it gets to the right destination

Future of the Net and the Web

- ◉ Web 3.0, the next generation of the Web, will make tasks like searching for information faster and easier
- ◉ Web 3.0 browser will act like a personal assistant, learning your preferences as you browse
- ◉ Ability to sit back and let the Internet do all the work for you
- ◉ Mashup – combination of two or more applications into a single application – will aid in the development of Web 3.0
- ◉ Connecting to the Net via fiber optic will provide incredibly fast connection speeds

Summary

- World Wide Web is a global system of billions of hypertext documents called web pages
- Internet is a global computer network that connects millions of smaller networks
- Future browsers will learn users preferences and Internet connection speeds will increase with fiber optic

References

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QUESTIONS???