Computers and the Internet

Information Technology and Social Life

Feb. 28, 2005

Computer History

- 1801 - Jacquard looms - punch cards
- Charles Babbage (1791-1871) English Mathematician
- 1890 - Hollerith - US Census - company became IBM.
- Difference Engine
- Analytical Engine
- Computer History Timeline - http://www.computerhistory.org/timeline/
- Wikipedia computer timeline - http://en.wikipedia.org/wiki/Computing_timeline
- Apple History - http://www.apple-history.com/
- GUI History - http://applemuseum.bott.org/gui.htm
- Wikipedia GUI history - http://en.wikipedia.org/wiki/History_of_the_graphical_user_interface
- Internet History - http://uts.cc.utexas.edu/%7Ecroyal/designpres_uil/history.html
- Apple 1984 Super Bowl Ad - http://www.uriah.com/apple-qt/1984.html

GUI based on WIMP (windows, icons, menus and pointers)

Ada

- Sadie Plant (1964-) - lecturer at University of Birmingham in UK; cyberfeminist
- Ada Lovelace (1815-1852) - daughter of Lord Byron, documented analytical engine, wrote notes and descriptions to paper by Louis Menabrea.
- Unusual for women of the time to be involved in science and engineering
- Took little credit in the writing
- Detailed descriptions preserved the ideas; considered first description of computer programming.
- Ada programming language - DOD 1979

She translated a paper on Babbage's Engines by General Menabrea, later to be prime minister of the newly united Italy. Under Babbage's careful supervision Ada added extensive notes (c.f. Science and Reform, Selected Works of Charles Babbage, by Anthony Hyman) which constitute the best contemporary description of the Engines, and the best account we have of Babbage's views on the general powers of the Engines. Beautiful, charming, temperamental, an aristocratic hostess, mathematicians of the time thought her a magnificent addition to their number.

Tim Berners Lee

- Tim Berners-Lee – physicist at CERN, Geneva Switzerland
- Born 1955
- Graduated Queens College, Oxford University, 1976
- Knighted in 2003
- Parents – programmed Manchester, Mark I early 1950s.
- Articulated vision, wrote first Web programs, and came up with acronyms URL, http, html, and World Wide Web
- Credit to Vannevar Bush – concept of memex
- Ted Nelson – concept of hypertext
- Doug Engelbart – invention of mouse; idea that a person could interface with machine in a very close, natural way.

Tim Berners Lee

- Power in arranging ideas in an unconstrained, weblike way.
- “By being able to reference anything with equal ease, a computer could represent associations between things that might seem unrelated, but somehow did, in fact, share a relationship.” Pg. 4
- Marry together hypertext and Internet
- Became interested in document management – wrote Enquire; Tangle
- Needed a system with common rules that would be acceptable to everyone; decentralized; adding new link had to be trivial; every document had to be equivalent;
- Used model of online help programs; marrying ideas of hypertext and Internet
- Wrote proposal, little response; not really important to CERN;

Tim Berners Lee

- Wrote proposal, little response; not really important to CERN; finally manager allowed him to use new NEXT as platform for Web.; other companies not interested
- Wrote Web client – like a word processor that would allow creation, browsing, and editing of hypertext pages;
- Wrote http, the language computers would use to communicate over the Internet, and the URL or URI, address scheme for documents
- Wrote html- didn't expect people to write code by hand.
- Nicola Pellow – first line-mode browser – browsing as opposed to editing, set the pace for the Web as a medium in which few published. Not his original vision.

Tim Berners Lee

- Early vision included databases, video, images, audio. – but html became source of content as well.
- Basic rule, html should convey structure, not details of presentation. – based on sgml (standard generalized markup language).
- Focus first on extending existing documentations systems; later on this idea of global, cosmic sharing.
- Exposed first at CERN, then on newsgroup, alt.hypertext; hypertext community was originally not focused on Internet.
- Paper rejected for Hypertext 91; 1993 every project on display at Hypertext 91 would have something to do with the web.
- Later browser created at Univ. Illinois/ Marc Andreesen, Mosiac, later Netscape.
- Microsoft involved later, ultimately problems with anti-trust

Information Technology and Social Life

The Internet and Social Life

- Interactive - like telephone and telegraph
- Mass medium - like radio and tv
- Both lauded and criticized
- Global issues
- Weaken community ties?
- Anonymity and few non-verbal cues
- Effects on interpersonal interaction
  - Workplace
  - Personal communication
  - Group membership and social support
  - Community involvement
- Role of Trust

This is not to say that Internet technology has now penetrated the entire planet to a similar extent. For example, in 2001 only 1 in 250 people in Africa was an Internet user, compared with a world average of 1 in 35, and 1 in 3 for North AmericaandEurope.

First, each new technological advance in communications of the past 200 years—the telegraph, telephone, radio, motion pictures, television, and most recently the Internet—was met with concerns about its potential to weaken community ties (Katz et al. 2001, p. 406).

Pew Internet and American Life

- An initiative of the Pew Research Center
- Lee Rainie, Director; headquartered in Washington, D.C.
- Mission - creates original research that explores the impact of the Internet on children, families, communities, the work place, schools, health care and civic/political life. It has produced more than 65 reports on how Americans use the Internet and on-line activities, focusing on such topics as health care, educational activities, workplace experiences, interactions with the political system, relationships with family and friends and religious and spiritual life.
- Reports - http://www.pewinternet.org/reports.asp
- Internet Evolution - how the Internet has woven itself into daily life
- The Future of the Internet - survey of technology leaders, scholars, and officials.

email - killer app, then information searching, entertainment, and then e-commerce

Internet enhances social action

People become more serious in their online endeavors as they use Internet

Changes way people deal with health issues

Creates new online town squares and civic storms

Enhances relationship of citizens and govt

Problems - spam, spyware, terrorism, child porn, drug dealing, stalking

60 million Americans use broadband at home (5 million in 2000)

Internet Evolution findings

- Gender, racial, age differences
- Email - killer app, then information searching, entertainment, and then e-commerce
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Men more likely to create online content