PREDICTING INVENTING THE FUTURE

Computers weren't always like this…

Computers don't have to be like this!

4/2/2015

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COMPUTING IN 1945

Harvard Mark I: 55 feet long, 8 feet high, 5 tons

http://piano.dsi.uminho.pt/museu/indexmark.htm

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VANNEVAR BUSH KICKED OFF BIG SCIENCE

• MIT faculty member
• Coordinated WWII scientific effort
• Social contract for science
  – federal government funds universities
  – universities do basic research
  – helps economy & national defense
• "As We May Think," the Atlantic Monthly, July 1945
• Futuristic inventions / trends
  – wearable cameras to record life
  – encyclopedia for a nickel
  – automatic transcripts of speech
  – trails of discovery
  – capture of nerve impulses
  – Memex

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MEMEX NEVER BUILT… OR WAS IT?

Memex #001 by Trevor Smith, 2013

http://trevor.smith.name/memex/

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http://www.dynamicdiagrams.com/design/memex/model.htm#download


http://www.google.com/
Engelbart’s Unfinished Legacy

Douglas N. Engelbart

AUGMENTING HUMAN INTELLECT

• Stanford Research Institute (SRI) in the 1960s
• 1962 Paper “Conceptual Model for Augmenting Human Intellect”

– complexity of problems increasing
– need new tools to solve

ENGELBART’S CRUSADE

“The complexity of a lot of the problems [in the world] and the means for solving them are just getting to be too much. The time available for solving a lot of the problems is getting shorter and shorter. So the urgency goes up… The complexity/urgency factor had transcended what humans can cope with. I suddenly flashed that if you could do something to improve human capability to cope with that, then you’d really contribute something basic.”


I had the image of sitting at a big CRT screen with all kinds of symbols… The computer could be manipulating, and you could be operating all kinds of things to drive the computer… I also really got a clear picture that one’s colleagues could be sitting in other rooms with similar work stations, tied to the same computer complex, and could be sharing and working and collaborating very closely. And also the assumption that there’d be a lot of new skills, new ways of thinking that would evolve

Engelbart’s Unfinished Legacy

NLS FIRSTS

• First mouse, and ?
• First 2D editing & windows
• First hypertext
• First word processing
• First document version control
• First groupware (shared screen teleconferencing)
• First context-sensitive help
• First distributed client-server
• Many, many more!

TRICYCLES & BICYCLES:

SPECIALIZED TOOLS

Douglas C. Engelbart
Stanford Research Institute
Menlo Park, California

May 24, 1962

Dr. Vannevar Bush
Professor Emeritus
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Dr. Bush:

I wish permission from you to extract lengthy and definitely acknowledged quotes from your article, "As We May Think," that appeared in The Atlantic Monthly, July, 1945. These quotes would appear in a report that I am writing for the Air Force Office of Scientific Research, and I am sending a parallel request to The Atlantic Monthly.

For your information I am enclosing a relatively brief and quite general writeup...
DYNABOOK – KAY (1974)

XEROX STAR – ST COMMERCIAL GUI (1981)

"The best way to predict the future is to invent it"
Alan Kay

NEXT TIME
• In Class
  – Unpack needfinding (empathy map)
  – POV Lecture
  – Develop POV
  – Brainstorm solutions
• Read
  – Engelbart’s Call to Action (due Thur, April 9th)