An Instrument whose Music is Ideas

Smalltalk, eToys and the Idea of the Children's Machine
New Media

Paul Otlet
1868-1944

1948

Vannevar Bush
As We May Think
Doug Engelbart 1968
NLS (oNLine System)

The Demo

Augmenting the Human Intellect

Hypertext Mouse
KIDS

Seymour Paper with Jean Piaget

Logo
If the Computer is a universal control system, let's give kids universes to control.

Ted Nelson (1974)
The Dynabook Vision

Alan Kay, 1968
The Dynabook Vision

SpaceWar!

Alan Kay, 1968
The Dynabook Vision

Collaborative
Wireless

Alan Kay, 1968
The Dynabook Vision

Programmers of the game

Alan Kay, 1968
Moores Law: Hardware is no Problem!

(ca. 1980 it will be good enough)

10 years to do the software
Xerox PARC: Alto
1973

Bitmap Display: ca. 600x800
4Mips Microcode performance
128-512KB RAM, 2.5MB Disk
Ethernet, Laserprinter

Chuck Thacker
Smalltalk: 72-80
Video: Happy Hacker
Legacy

OOP
Smalltalk-80

Graphical User Interface
Somebody think about the children!
Squeak 1996 -- 2001

Back to the original Smalltalk

Children’s programming and Media Environment

Dynabook, take II
“Our number one commitment is to an exquisite personal computing environment.

Imagine a system as immediate and tactile as a sketch pad, in which you can effortlessly mingle writing, drawing, painting, and all of the structured leverage of computer science.”
“Moreover imagine that every aspect of that system is described in itself and equally amenable to examination and composition. “
“Moreover imagine that every aspect of that system is described in itself and equally amenable to examination and composition.”
“You get the idea – it’s the Holy Grail of computer science.”
Demo Squeak

What is Squeak?

1. Multimedia Authoring
2. Programming for Children
3. Operating System?
4. Development Environment
5. A Community
Lots of cool Experiments

(no time... private Demos possible)
Sadly not many visible results
Two Artefacts/Products:

Etoys

Scratch
Etoys Drive a Car

Drive a Car

- CAR forward by
- CAR turn by

Navigator

Supplies
squeakland.org

Ready to use
Maintained
Course Materials
Examples
Community

On the OLPC:
 Implemented in Squeak

more constraints than etoys

very well done (design, website...)

scratch.mit.edu
Questions?
Notes

Slide 14:

"The Computer Revolution hasn't happend yet. Keynote OOPSLA 1997"
(See Links) Starting from 4:33.

Slide 22 and 26:

The Squeak and Etoy Demos were done using the Squeak Image from the Talk at 22C3
(Chaos Computer Club Meeting, Berlin, Germany, 2004)

Links

Paul Otlet
Visioning a web in 1934: http://www.youtube.com/watch?v=hSyfZkVgasI
Documentary (available on DVD): http://www.mementoproduction.be/Otlet.htm
Doug Engelbart Demo
http://video.google.com/videoplay?docid=-8734787622017763097

Alan Kay:
"The Computer Revolution hasn't happend yet. Keynote OOPSLA 1997"
http://video.google.com/videoplay?docid=-2950949730059754521
"Doing with images makes symbols"
http://video.google.com/videoplay?docid=-533537336174204822

Squeak eToys: http://squeakland.org
Scratch: http://scratch.mit.edu/
Alan Kay's Research Group: http://vpri.org

Book: