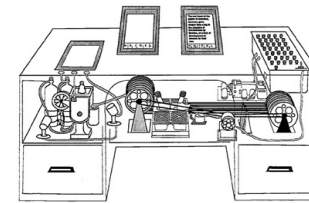


A short history of Human-Computer Interaction

See Michel Beaudouin-Lafon, *40 ans d'Interaction Homme-Machine : points de repères et perspectives*, Journées ASTI 2001
Available at <http://interstices.info>

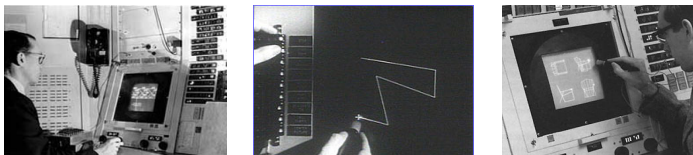
Memex - Vannevar Bush (1945)

Vision for a desktop information management system
Electromechanical system
Seen as the ancestor of the notion of hypertext



Sketchpad - Ivan Sutherland (1963)

Direct manipulation geometric shapes
Geometric constraints, zoom, click-drag



NLS / Augment - Douglas Engelbart (1968)



Inventor of the mouse (1963)



Bimanual interaction



Hypertext, cooperative work,
document sharing, video-conferencing



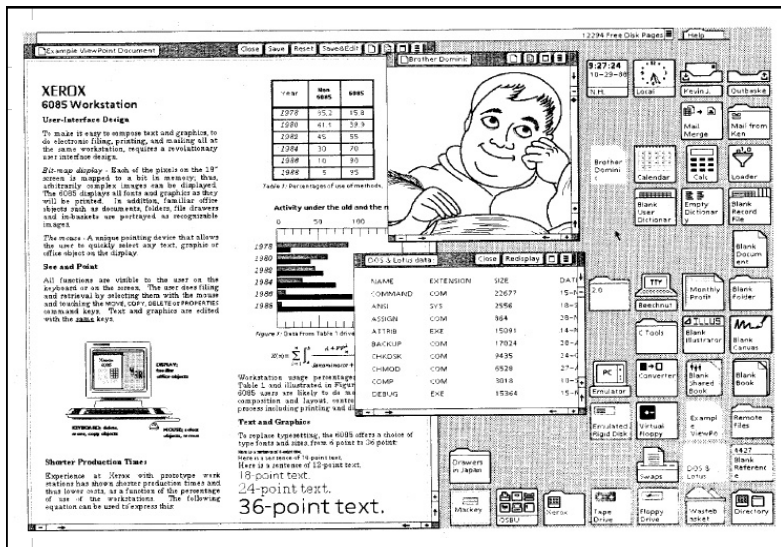
Visicalc - Dan Bricklin (1979)

First spreadsheet (Apple II)

MONTH	NOV	DEC	TOTAL
SALARY	2500.00	2500.00	30000.00
OTHER			
INCOME	2500.00	2500.00	30000.00
FOOD	400.00	400.00	4800.00
RENT	350.00	350.00	4200.00
HEAT	110.00	120.00	575.00
REC	100.00	100.00	1200.00
TAXES	1000.00	1000.00	12000.00
ENTERTAIN	100.00	100.00	1200.00
MISC	100.00	100.00	1200.00
CAR	300.00	300.00	3600.00
EXPENSES	2460.00	2470.00	28775.00
REMAINDER	40.00	30.00	1225.00
SAVINGS	30.00	30.00	360.00

Xerox Star - Xerox PARC (1981)

First commercial graphical workstation
Document-centric approach



Macintosh - Apple (1984)

Graphical personal computer
Finder
MacPaint
MacWrite

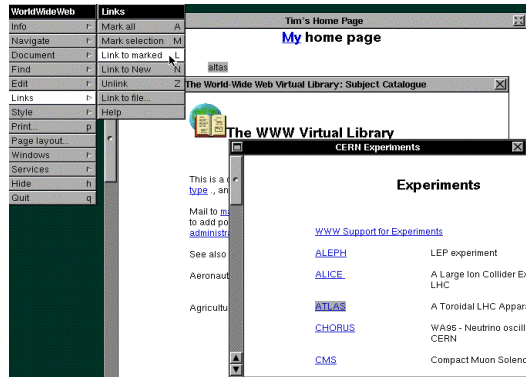
Hardware + software design



World-Wide Web - Tim Berners-Lee (1990)

Networked hypertext

Integrated browser + editor



Are the visions getting more and more limited?

NLS/Augment

« Augmenting human intellect »

Cooperative work

Xerox Star

Personal use, network transparency

Document-centric

Macintosh

Personal use, explicit network access

Application-centric

World-Wide Web

Networked, but poor user interaction

Browsing but not editing

Distinction between invention and innovation

HCI does not follow Moore's law



Original Macintosh

January 1984 - \$2500

CPU 68000 - 0.7 MIPS

RAM 128 kB

Floppy 400 kB

9" n&b, 512x342

Keyboard, mouse

WIMP desktop

x0.7

x214 000

x31 250

x2 500 000

x3 / x21

same

same

iMac 27"

September 2012 - \$1700

CPU core i7 - 150 000 MIPS

RAM 4 GB

Hard drive 1 TB

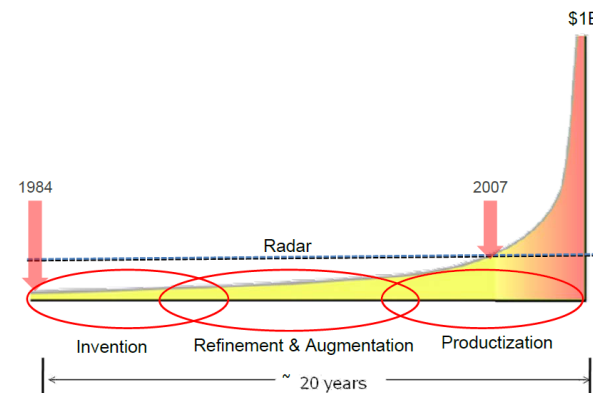
27" colors, 2560x1440

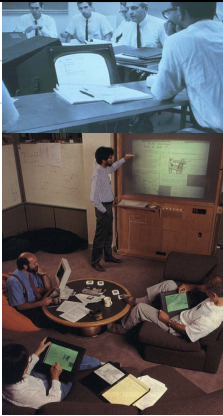
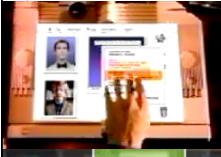
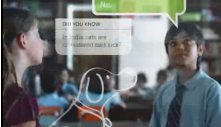
Keyboard, mouse

WIMP desktop

The long nose of innovation

Bill Buxton



		
Visions are important		
Augmenting Human Intellect – Doug Engelbart		
Ubiquitous Computing – Mark Weiser		
	BUT a vision is more than just a video	
	Knowledge Navigator – Apple	
	Future Vision – Microsoft	