

Alan Milstein's History of Computers

CYBERCHRONOLOGY

INTRODUCTION

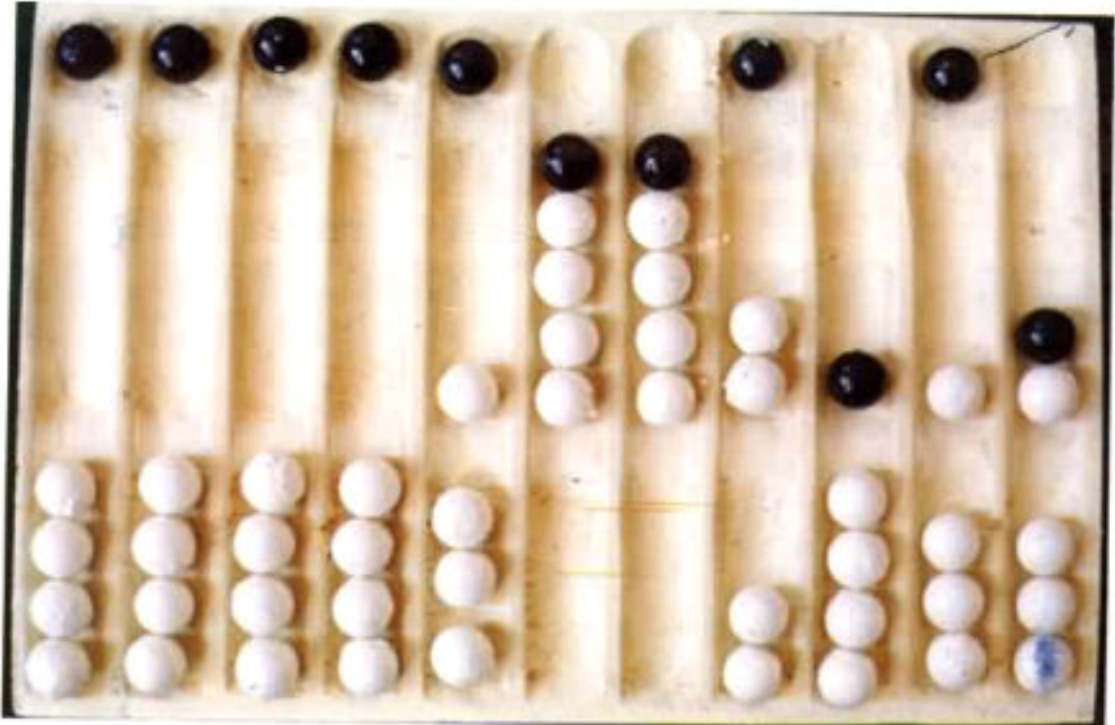
This chronology reflects the vision that the history of computers is the history of humankind. Computing is not just calculating; it is thinking, learning, and communicating. This Cyberchronology is a history of two competing paths, the outcome of which may ultimately determine our fate. Computers either are simply machines to be controlled by the powerful, by governments and industrial giants, and by the Masters of War, or they are the tools that will allow every human being to achieve his or her potential and to unite for a common purpose.

Day One Earliest humans use pebbles to calculate, a word derived from the Latin for "pebble"

17th century B.C. Wolf's jawbone carved with 55 notches in groups of five, first evidence of tally system

8500 B.C. Bone carved with notches in groups of prime numbers

5th century B.C. Abacus invented, a digital computing device



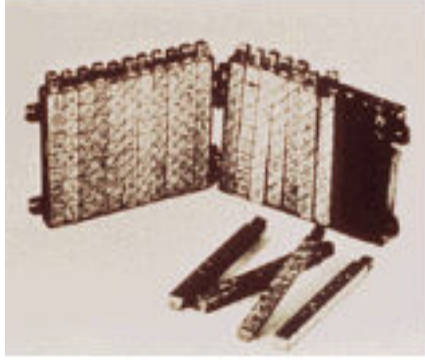
415 B.C. Theaetetus creates solid geometry

293 B.C. Euclid writes the "Elements"



725 A Chinese engineer and Buddhist monk build first mechanical clock

1617 John Napier invents Napier's Bones, multiplication tables on strips of wood or bones



1621 William Oughtred invents slide rule, an analog computing device



1623 Wilhelm Schickard of Germany invents calculating clock, a 6 digit machine, can add and subtract

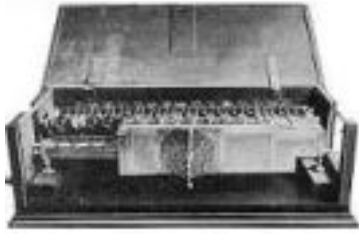
1645 Blaise Pascal invents Pascaline, a 5 digit adding machine



1668 Samuel Morland of England invents nondecimal adding machine



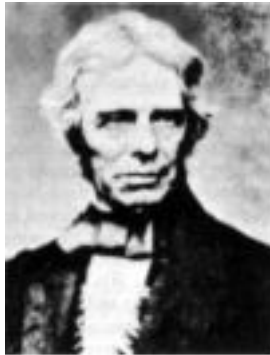
1694 Gottfried Leibniz, who discovered both calculus and the binary system, develops the Leibniz Computer, a nonprogrammable multiplying machine



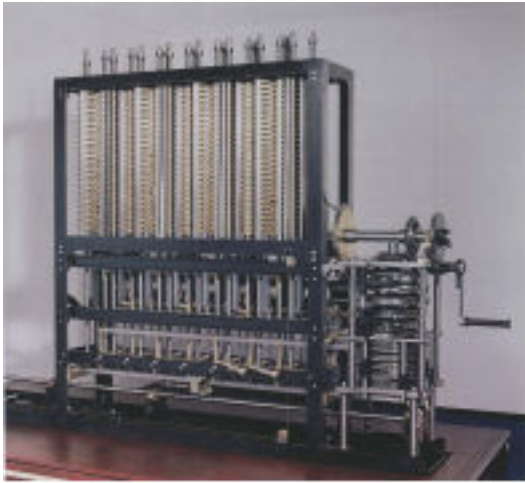
1714 Henry Mill patents the typewriter in England

1786 Mueller conceives Difference Engine, special purpose calculator for tabulating values of polynomial

1821 Michael Faraday, the Father of Electricity, builds first two electric motors



1832 Charles Babbage designs first Difference Engine



1835 Joseph Henry invents electrical relay

5/24/1844 Samuel B. Morse sends the first telegram



1861 San Francisco and New York are connected by a telegraph line

3/10/1876 First telephone call from Bell to Watson



1867 First commercial typewriter

1874 Christopher Sholes invents Sholes (QWERTY) keyboard allowing fast typing without jamming the keys



1878 First shift key typewriter

1885 Boston and New York are connected by telephone

1888 William Burroughs patents adding machine



8/8/1889 Herman Holerith invents tabulator sorter box, a punch card calculator he later distributes through Tabulating Machine Co.

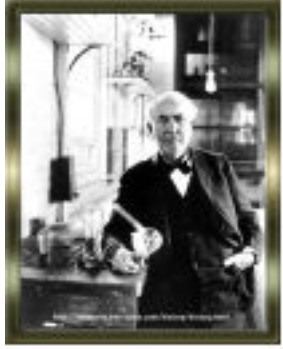


1894 Guglielmo Marconi receives first patent for radio



1900 World connected by telegraph

1904 John Ambrose Fleming patents first vacuum tube



1906 Reginald Fessenden invents AM radio



1911 Tabulating Machine Co. merged into Computer Tabulating Recording Co (CTR) owned by Holerith, Charles Flint and Tom Watson

1923 Vladimir Zworkin demonstrates electronic television camera tube



1924 CTR changed to International Business Machine (IBM)

9/7/1927 Philo T. Farnsworth, using Zworkin's technology, invents television



1929 FM radio introduced

1935 IBM releases 601, a punch card machine, can multiply in 1 second



1936 BBC begins first public television broadcasts using tube developed by John Logie Baird

1937 Alan Turing publishes "On Computable Numbers," introducing the Turing Machine, a theoretical model of a computer

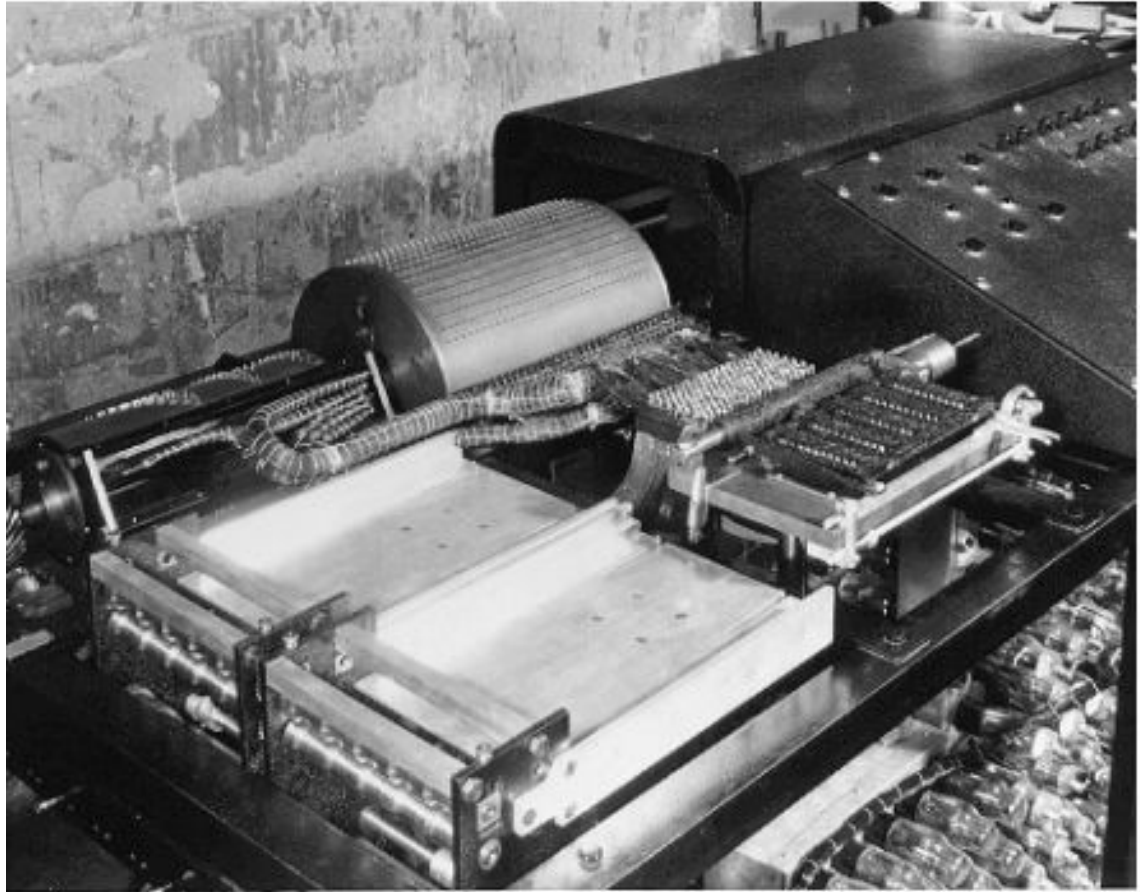


11/39 John Atanasoff of Iowa State University completes 16 bit adder, first machine to calculate using vacuum tubes

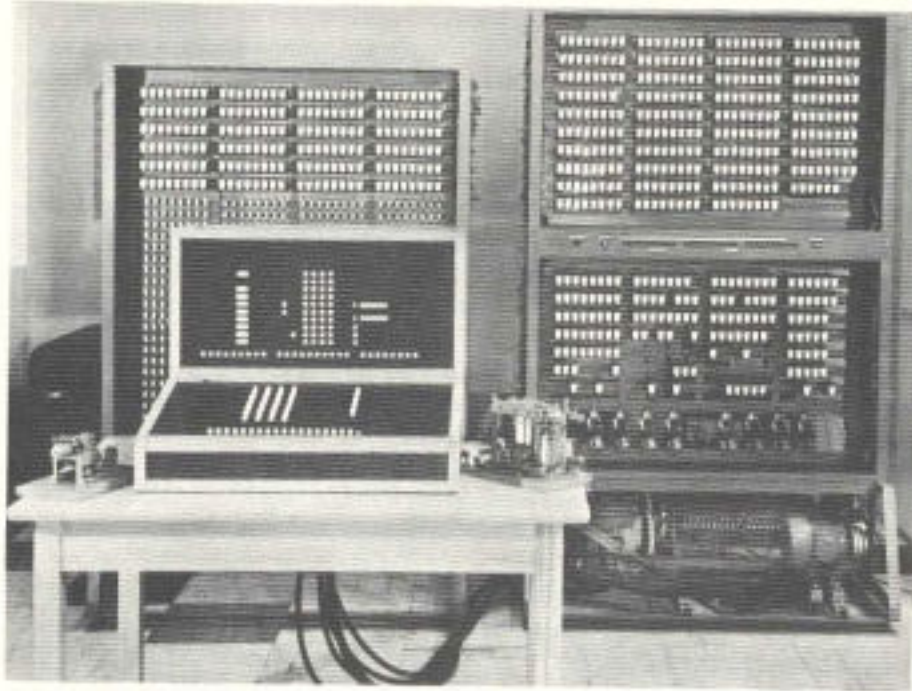


1940 Britain develops Robinson, an operational computer designed to decode Nazi encrypted transmissions

Summer 1941 Atanasoff and assistant Berry invent Atanasoff-Berry Computer, special purpose calculator for solving problems of simultaneous linear equations

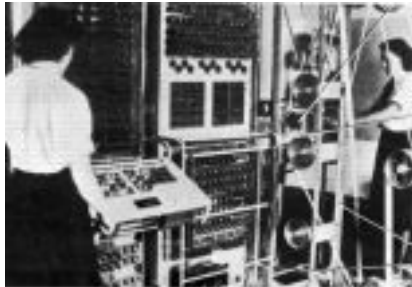


1941 German Konrad Zuse invents Z 3, first programmable digital computer



Die rekonstruierte Z3 im Deutschen Museum in München

1943 Britain builds Colossus, hundreds of times faster than Robinson, to decode Nazi encrypted transmissions



1944 Howard Aiken builds Aiken, first American programmable computer

1945 Konrad Zuse develops Plankalkul, first high level computer language

6/45 John Von Newman writes paper describing Electronic Discrete Variable Automatic Computer (EDVAC)



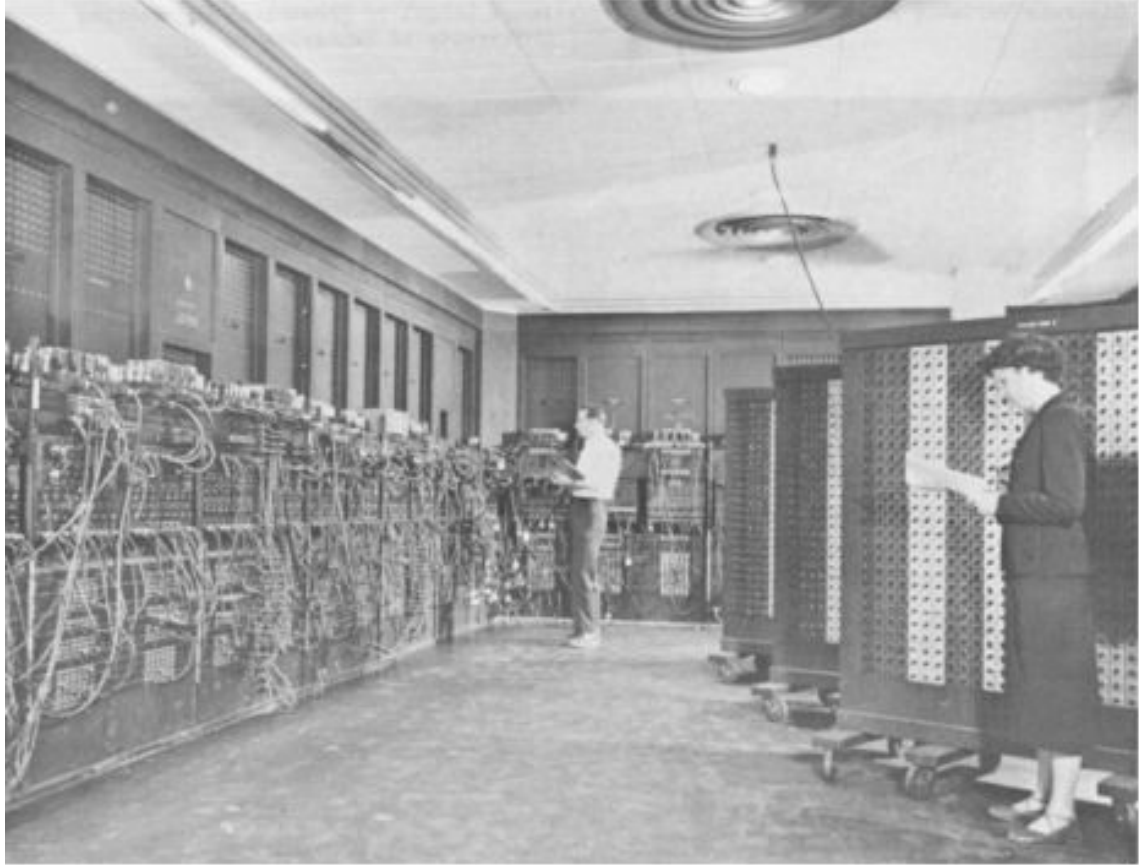
7/45 Physicist Vannevar Bush publishes article in Atlantic Monthly about a future device he calls "Memex" in which an individual stores all his "books, records and communications"



1946 John Tukey coins term "bit" for binary digit



6/30/46 ENIAC, first electronic general purpose programmable computer, weighing 30 tons and composed of 17,468 vacuum tubes, is born at Moore College of Engineering at Penn, delivered by Eckert and Mauchly, costing \$486,804.22



1946 Echert and Mauchly form Electronic Control Co at 1215 Walnut St, Philadelphia, later change name to Echert Mauchly Computing Corp (EMCC)

1946 FCC standardizes television signal paving way for mass market production of TVs

1947 William Shockley of Bell Labs invents first transistor



1948 William Shockley patents first transistor

1/48 IBM makes its first computer

1949 Maurice Wilkes builds EDSAK, first stored-program computer

2/1/50 James Rand buys EMCC, becomes Remington

3/51 Remington produces UNIVAC, universal automatic computer



1951 Jay Forrester and Ken Olsen assemble Whirlwind, first real time computer



1951 CBS and Walter Cronkite use and display UNIVAC for TV broadcast to predict Eisenhower's victory in the Presidential election

1952 IBM produces 701, designed by Nathaniel Rochester, first production line electronic stored program computer



1952 Pocket sized transistor radio introduced

1954 IBM's John Backus creates Fortran



1954 Gene Amdahl develops first operating system used on IBM 704



1954 Texas instruments makes \$2.50 transistor for radio market and begins commercial distribution of silicon transistor

1954 Bell Labs constructs all transistor computer

1955 Remington merges with Sperry, becomes Sperry Rand

1955 Shockley Semiconductor founded in Palo Alto, Ca

10/2/1955 11:45 am ENIAC turned off

1956 Term "Artificial Intelligence" coined at conference at Dartmouth

1957 Doug Engelbart joins Stanford Research Institute (SRI) to work on his vision of the computer as a device to "augment" human intelligence



1957 Harlan Anderson and Ken Olsen form Digital Equipment Corp (DEC)

1957 Eight engineers leave Shockley and form Fairchild Semiconductor

1957 Control Data formed

1957 Responding to launch of Sputnik, US forms Advanced Research Projects Agency (ARPA) to establish US lead in science and technology

1958 Jack Kilby of Texas Instruments and Robert Noyce of Fairchild Semiconductor independently invent first integrated circuit

1958 William Higginbotham, designer of electronics for Manhattan Project, wires computer to an oscilloscope to create tennis-like game, the first video game

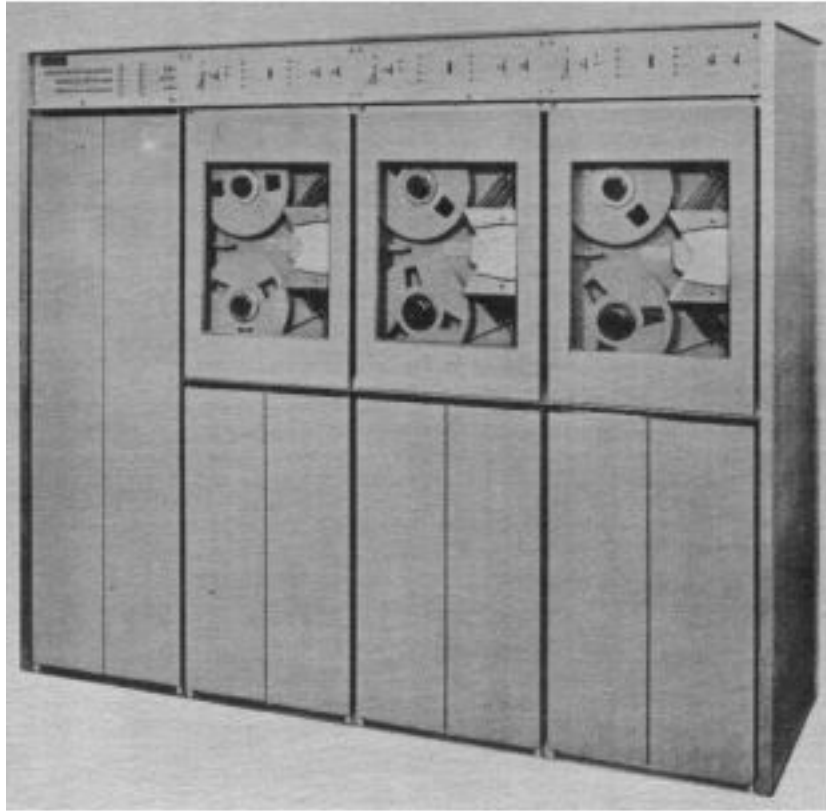
1958 Seymour Cray of Control Data builds transistor super-computer



1960 AT&T invents modem

1960 Sony introduces first all transistor portable television

1960 DEC builds PDP-1 (Programmed Data Processor), its first minicomputer and first computer with video screen, producing 50 machines costing \$120,000



1961 Building 26 at MIT: upstairs IBM 704 then 709, large mainframe costing several million dollars, downstairs a DEC PDP1; Tech Model RR Club at MIT coins phrase "to hack" meaning a student prank with style and technical innovation

1961 Wesley Clark of MIT designs LINC (Laboratory Instrument Computer), a 12 bit computer with a small screen and a keyboard, priced at \$43,000 from DEC



1962 NASA utilizes network of two IBM 7090 transistorized computers and one 709 vacuum tube for Project Mercury

1962 Doug Engelbart prepares report for air force titled "Augmenting Human Intellect: A Conceptual Framework" describing his vision of a personal computer



1962 MIT graduate Steve Russell creates SPACEWAR, a computer game that becomes popular on university computer systems

1962 Research labs near Stanford begin recruiting subjects for LSD experiments; one of the first to enroll is Stewart Brand soon joined by a number of engineers from the Stanford Research Institute including Engelbart

1963 John McCarthy founds Artificial Intelligence Laboratory at Stanford



1964 Kenney and Kurtz develop BASIC programming language at Dartmouth

1964 Engelbart conceives of a rolling handheld pointing device, a mouse, controlling the cursor then called a "cat" across the screen



1964 Gordon Moore introduces Moore's Law: the number of transistors per square inch on integrated circuits will double every year

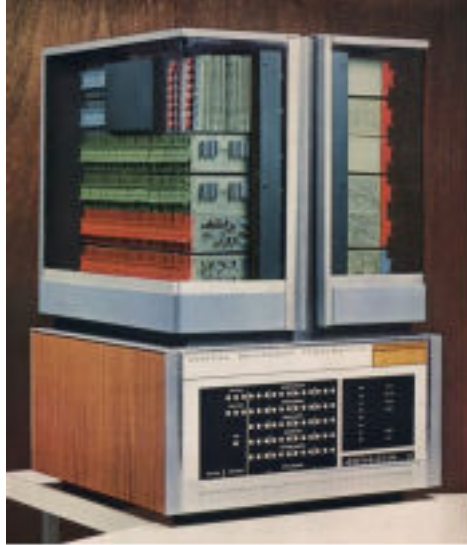


1964 Marshall McLuhan publishes "Understanding Media," predicting electronic media will create a global village

12/3/1964 Mario Savio launches the Free Speech Movement in front of Sproul Hall on the Berkeley campus

1965 Texas Instruments patents integrated circuit

1965 DEC produces PDP8, first computer to use integrated circuit



1965 Sony introduces Portapak, the first home video system

3/23/1965 NASA launches first Gemini spacecraft with on board IBM 7094 computer weighing 59 pounds and occupying 1.35 cubic feet

4/1965 IBM 360, dominant computer of 60's



12/24/1965 Kesey stages first large scale Acid Test at Big Nig's Pad in San Jose where Grateful Dead make their debut

1966 Engelbart's Augmented Human Intellect Research Center relocated to second floor of new SRI building

1966 Amateur Computer Society founded

1/3/1966 Psychedelic Shop opens in Haight Ashbury

1/23/1966 Stewart Brand and Ken Kesey stage Trips Festival at Longshoreman's Hall in San Francisco



5/1966 Stanford Artificial Intelligence laboratory (SAIL) occupies another building on Stanford Campus and is given use of an ARPA funded PDP 6

9/20/1966 San Francisco Oracle first published

10/1/1966 Stewart Brand stages Awareness Festival at San Francisco State

1966 Martin Frost of SAIL writes NS (News Service) program allowing user to search by key word through loaded news stories

1967 IBM builds first floppy

1968 Engineering firm Bolt Beranek Newman hired by Defense Department to build ARPANET a network of computers

1968 Ed Roberts forms MITS (Micro Instrumentation Telemetry Systems)



Ed Roberts.

1968 30,000 computers in world, mostly mainframes programmed with punch cards

1968 Bob Noyce, inventor of first integrated circuit, leaves Fairchild Semiconductor to start own business called INTEL



12/9/1968 Doug Engelbart debuts Augment and demonstrates onLine System, the future internet, as well as the keyboard, mouse and word processor at Fall Joint Computer Conference in San Francisco

1/1969 Stewart Brand publishes the Whole Earth Catalogue, announcing in the Preface: "a realm of personal power is developing"

1/2/1969 US Advanced Research Projects Agency funds ARPANET to network connecting computers in Stanford, UC Santa Barbara, UCLA and U of Utah

7/20/1969 Apollo 11 lands on the moon using an on board IBM 360 computer

1969 Advance Micro Devices formed

1969 Thompson and Ritchie of Bell Labs introduce UNIX

1969 Bill Gates and Paul Allen form Lakeside Programming Group, agree to report bugs in pdp software in exchange for computer time

10/29/1969 First ARPANET transmission between UCLA and Engelbart's group at SRI

1970 Gilbert Hyatt receives patent for microprocessor

1970 Intel releases DRAM memory chip

1971 Intel releases 4004 microprocessor \$200, 60000 ops per sec, 2300 transistors, running at 108 kHz and implementing 45 8-bit instructions to be used for electronic adding machine; designed by Ted Hoff, Federico Faggin, Stan Mazor and Masatoshi Shima

1971 John Blakenbaker builds the Kenbak 1, an early PC



1971 Wozniak and Bill Fernandez build computer with lights and switches called Cream Soda

1971 First computer kit by National Radio Institute for \$503

1971 Wang word processor



1971 23 ARPANET hosts

1971 Bolt Beranek Newman computer engineer Ray Tomlinson sends first email between two early ARPANET computers placing @ between login name and computer address

10/1971 Peoples Computer Company founded

1971 Nolan Bushnell builds Computer Space, a variety of Space War, the first commercial arcade video game, a commercial failure because of its complexity



1972 Alan Kay of Xerox Park proposes that the company build a portable personal computer called the Dynabook; Xerox rejects the idea as not marketable



1972 Stewart Brand publishes "Spacewar: Fanatic Life and Symbolic Life among the Computer Bums" in Rolling Stone, writing "Half or more of computer science is heads."



1972 Bushnell forms Atari; tells programmers to design a game so simple any idiot could figure out how to play it with a beer in one hand; they design Pong



1972 Intel releases 8008 microprocessor, 3500 transistors, used by Don Lancaster to create a TV typewriter, an early PC

10/1972 First public demo of ARPANET at first international conference on computers and communications in Washington D.C.

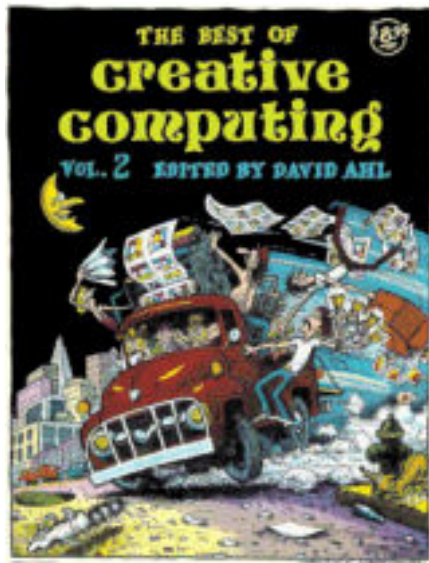
10/1972 First issue of People's Computer Company



1972 Berkeley Community Memory launches, the first computer bulletin board on an XDS 940 located at top of stairs of Leopold Records

1972 Bill Gates and Paul Allen form Traf O'Data, tracking traffic flow using 8008

9/1973 Creative Computing published



10/19/1973 Honeywell v Sperry (D.Minn., Larson J.)

11/1973 Computer Hobbyist published

1973 Robert Metcalf invents Ethernet, local area networking technology

1974 Stewart Brand publishes Cybernetic Frontiers, the first text to popularize the term "personal computer"

1974 Intel releases 8080, 6000 transistors

7/1974 Radio Electronics Magazine's cover story announces: "Build the Mark-8, Your Personal Minicomputer," built around the Intel 8080



1974 Motorola introduces 6800 microprocessor with 4000 transistor

1975 Department of Defense using ARPANET, assumes control of network

1/1/1975 Popular Electronics cover pictures a kit to build MITS (micro instrumentation telemetry systems) Altair 8080 using Intel 8080, 256 bytes of memory (1 byte=8 units) no input no output just switches and lights (The week MITS released Altair 0001 to PE's editor Les Solomon, daughter Lauren named it because the Enterprise headed there), cost \$397



1975 Pong home systems begin to sell initially only through Sears outlets

2/1/1975 Paul Allen and 19 yr old Bill Gates complete basic interpreter, 1st computer language for PC and license it to MITS



3/1/1975 Allen joins MITS

3/1975 Homebrew Hobby club 1st meeting

7/1975 Arrowhead Computer Company opens in Los Angeles selling assembled Altairs

9/1975 IBM portable 5100 released for \$9000



9/1975 Byte published

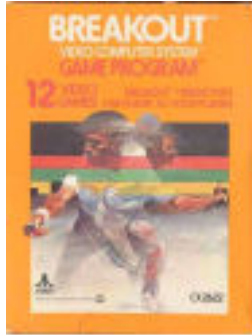


12/1975 Byte Shop opens in California

11/29/1975 Gates coins term Microsoft to describe partnership with Allen, drops name Traf O' Data

1975 While working as programmers at Atari, Wozniak and Jobs create a blueprint for an easy to use PC which is rejected by their boss Nolan Bushnell

1975 Wozniak and Jobs create Breakout for Atari, a solitary version of Pong



1/1/1976 Steve Wozniak and Steve Jobs of Atari form Apple Computer



1976 Sony introduces Betamax

1976 MOS Technologies releases 6502 microprocessor, 8 bit processor with 16 bit address, for \$25.

3/27/1976 Gates gives opening speech at 1st annual Altair convention in Alb. N.M.

3/1976 Woz and Steve Jobs build and market Apple (Woz had worked in orchard) from Job's garage, market kits for \$666.66, has no keyboard, case, sound or graphics; Byte Shop orders 50



7/1976 Popular Electronics reveals the SOL computer with a typewriter keyboard and video screen



The Sol computer, named for Les Solomon, made its debut in the July 1976 issue of Popular Electronics.

11/26/1976 Microsoft trade name registered

1977 NASA launches Voyagers I and II carrying digital messages to life outside of the Earth



1/1977 TRS 80 demoed for Radio Shack



2/1977 Apple moves from garage to Cupertino CA

2/3/1977 Microsoft partnership formed

4/1977 Apple incorporated; Apple II released for \$1300, first PC to generate color graphics and includes a built in power supply and keyboard



4/1977 Commodore releases PET using MOS 6502



8/1977 Radio Shack releases TRS80 for \$600, 10,000 sold

8/1977 CompuServe Incorporated

11/1977 Microsoft releases Fortran

1977 Atari introduces Atari 2600 system which runs interchangeable game cartridges



1977 Larry Ellison founds Oracle



1978 Oracle develops 1st relational database

1978 Intel releases 8086 with 29000 transistors, 16 bit

1978 Apple Disk II, an inexpensive user friendly and fast floppy drive



4/11/78 Microsoft releases COBOL 80

2/1978 First on line bulletin board, the Board in Chicago

10/78 First PC expo

1978 Space Invaders invades video arcade galleries

1979 Atari releases Asteroids

1979 Intel releases 8088, 29000 transistors

1979 Motorola releases 68000, 32 bit instruction set, 68000 transistors, used for some of early UNIX systems and later for Apple's Lisa and Macintosh systems

6/18/1979 Microsoft releases basic for 16 bit microprocessor

1979 Apple introduces Silentype, its first printer



7/1979 Microsoft moves from Albuquerque, NM to Bellevue, WA.

7/79 CompuServe BBS micronet begins

10/1979 Dan Bricklin develops and distributes VisiCalc, a spreadsheet for the PC



1979 USENET established between Duke and UNC

1979 First MUD

1979 50,000 Apple IIs sold

1979 Hayes introduces modem for Apple II

5/1980 Apple III \$4500



10/1980 Allen meets with Tim Patterson, licenses QDOS (quick and dirty operating system) for \$50,000

11/1980 IBM Microsoft deal for dos

1980 Apple's floppy drive

1980 Namco releases Pac-Man



12/1980 Apple goes public

1981 IBM announces its PC, subcontracts operating system to Microsoft

1981 213 ARPANET hosts

1981 Corporate Professionals for Social Responsibility (cpsr) formed in Palo Alto, Ca. first as a meeting group then a lobbying organization

1981 Japan's Nintendo releases Donkey Kong



1982 Intel releases 286 chip, 134,000 transistors

2/1982 Compaq founded by Rod Canion and other ex-Texas Instruments employees

4/1982 Mitch Kapor forms Lotus



11/1982 Compaq releases its first computer, an IBM clone

11/1982 Lotus 123 released



1982 Apple reaches \$1 billion in annual sales

1983 War Games movie released

1983 Apple v Franklin establishes copyright protection for software

1983 CD-ROM developed by Sony and Phillips

1983 ARPANET protocol converted to TCP/IP transmission control protocol/Internet protocol)

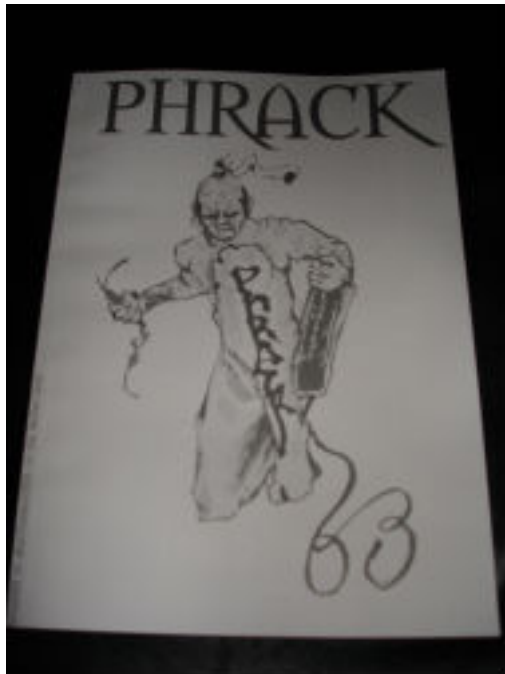
1983 Cray 2 performs 1 billion operations per second

5/2/1983 Microsoft mouse released

6/25/1983 Microsoft incorporated

11/10/1983 Microsoft releases Windows

1984 PHRACK begun coedited by knight lightning (Craig Neudorf) and Taran King

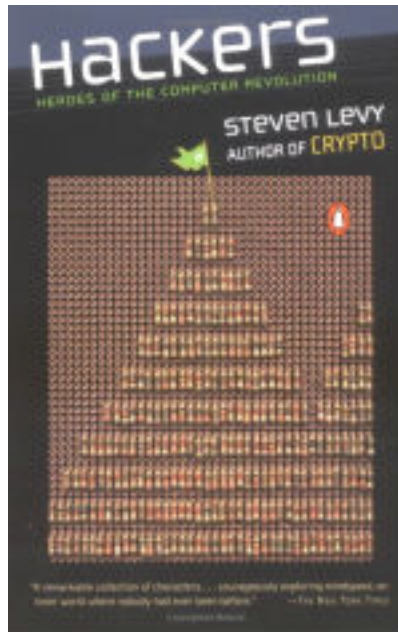


1984 Apple gives birth to the Mac, 32 bit machine; sells 50,000 in 75 days



1984 Supreme Court decides Sony v Universal studios, the Betamax case

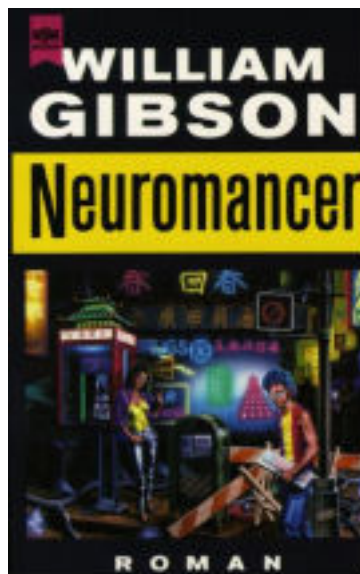
1984 Hackers: Heroes of the Computer Age released by Steve Levy



1984 First Hackers conference in San Francisco sponsored by POINT foundation run by Stewart Brand

1984 Whole Earth Software Review begins, published by Stewart Brand

7/1984 Neuromancer published by William Gibson, "cyberspace" given a name



1985 Intel releases 386 chip, 275,000 transistors, 32 bit design

1985 Birth of the WELL/ whole earth lectronic link, point foundation's BBS

1985 Nintendo releases first Mario Brothers game

1985-1986 LEGION of DOOM formed

1986 MIPS ships its R2000 chip, the first RISC microprocessor

2/1986 2,308 hosts on ARPANET

3/13/1986 Microsoft goes public; Gates becomes youngest billionaire

7/1986 National Science Foundation establishes 6 supercomputer sites as backbone of Internet dubbed NSFNET

10/1986 Intel releases 386 chip, accesses 4 gig, 275000 transistors

10/16/1986 Computer Fraud and Abuse Act

10/21/1986 Electronic Communication Privacy Act

11/1986 Microsoft releases Windows 1.0

3/1987 MAC II \$3900



4/1987 Windows 2.0

8/1987 DOS 3.3

11/1987 Compaq makes its 1,000,000th PC

12/1987 Microsoft ships 1,000,000th Windows

3/1988 Apple sues Microsoft

6/1988 DOS 4.0

9/1988 Prophet of LoD cracks Bell South AIMSX computer network and downloads e911 document; AT&T security notified

11/1988 Creative Labs, Inc. founded

11/2/1988 Robert Morris, graduate student at Cornell, unleashes his worm on the Internet



1989 Computer Emergency Response Team (CERT) formed in response to Morris worm

1989 Intel releases 486, 1.2 million transistors

1/1989 Prophet uploads e911 to knight lightning

2/25/1989 e911 published in PHRACK by knight lightning



Knight Lightning

5/1989 MAC OS 7.0

6/1989 NuPrometheus League hacks into Apple and steals source code for part of MAC screen display, copies it and mails floppies around the country

6/13/1989 Callers to Palm Beach city probation department get Tina, a phone sex operator in NY

7/1989 Fry guy raided at parents home in Indiana, Fry Guy a 16 yr old who got nickname by hacking into McDonald's computer and giving raises, later stole \$8000 from Western Union in credit card fraud scheme. Raid assisted by Tim Foley. Fry Guy confesses and says he will rat on lod which, he says, plans to crash phone system on a major holiday

7/1989 Secret service raids prophet in Georgia

11/1989 Creative Labs introduces Sound Blaster, 8 bit mono sound card for PC

1989 90,000 Internet hosts

1989 Sega's Genesis releases first 16 bit home video system

1989 Nintendo releases handheld Game Boy

1/15/1990 Martin Luther King Day: AT&T long distance crashes for 9 hrs, a bug in its software or?

1/18/1990 Knight lightning raided at his frat house at University of Missouri by Tim Foley; Foley accuses kl of causing AT&T crash 3 days before; kl agrees to cooperate

1/24/1990 Phiber optic, acid phreak and scorpion raided by secret service, accused of causing AT&T crash

2/6/1990 knight lightning and prophet indicted for theft of e911 document valued at \$79,000

3/1/1990 Raid on Steve Jackson Games by Tim Foley and others; SJG a publisher of simulation games e.g. illuminati and carwars; about to publish GURPS CYBERPUNK. computers and modems seized, a Dukakis poster ripped from the wall. No one arrested. e911 document not on any computer or disk

3/1990 Windows 3.0

7/90 Microsoft sales for previous year hit \$1,000,000,000

7/90 Lotus sues Borland for copyright infringement of menu commands

7/90 Apple expands Apple Line and renames it America On Line

7/24-7/27/90 Trial of knight lightning for computer fraud and theft dismissed by prosecutor on his own motion after e911 document revealed to be worth \$13 and anything but a computer road map, merely a description of people involved in 911 system

5/9/90 Feds announce operation sundial, sweep in 16 cities; 42 computer systems and 23000 floppy disks taken, 25 BBS shut down

6/90 Mitch Kapor, co inventor of Lotus 123 and founder of Lotus Inc., and John Perry Barlow, Grateful Dead lyricist (Mexicali Blues, I Need A Miracle), form Electronic Frontier Foundation in Pinedeal, Wyoming. Kapor writes Crime and Puzzlement, manifesto of digital first amendment rights

6/90 Second meeting of Kapor and Barlow with Stewart Brand, EFF given its name, the WELL declared as its home

1991 Apple introduces powerbook 100



1/91 Compaq announces 1st billion dollar quarter

3/25-3/28/91 Computer fraud and privacy conference in SF

4/91 Intel introduces 486SX chip \$258

6/91 DOS 5.0

11/91 Intel introduces 486DX \$550

11/91 Windows 3.1

1991 Wide Area Information Server (WAIS) invented by Brewster Kahle and released by Thinking Machines Corp.

1991 Gopher released by Paul Lindner and Mark McCahill at University of Minnesota

1991 World Wide Web released by CERN

1991 Creative Labs introduces stereo sound card

1991 US v Morris (2d Cir): affirms conviction of Morris for his worm

1993 Steve Jackson Games v United States Secret Service, 816 F.Supp. 432 (W.D.Tx.)

3/93 WIRED published



4/1/93 Internic formed

1993 1,000,000 Internet hosts

1993 16 million cell phones in US

1993 Mosaic, first web browser, released

1993 IBM reports loss of \$4.6 billion

1993 Broderbund releases Myst



1993 Id releases Doom



1993 Global Positioning System (GPS) declared complete and accurate to within 100 meters

1993 IBM and Motorola introduce PowerPC 601 microprocessor, 2.8 million transistors, bringing RISC technology to mass market PCs, used in power macs

3/93 Intel introduces Pentium 60 MHz \$878, 3.1 million transistors

4/93 Microsoft announces billion dollar quarter

4/93 Lotus v. Borland: District Court finds infringement

11/93 3x CD-ROM

11/93 Dos 6.2

12/93 IBM year end loss \$8.1 billion

1993 Apple introduces Newton, hand held computer



1/94 4x CD-ROM

1994 David Filo and Jerry Yang, two Stanford doctoral students, compile an online database of web sites soon to be known as Yahoo!

YAHOO!

1994 Linux 1.0 released

2/94 Windows 3.11

2/94 DOS 6.21 removes compression bug

4/94 Netscape Navigator 1.0

5/94 DOS 6.22 with new compression program

7/94 U.S. Robotics introduces 28.8 modem

1994 Arizona law firm Canter & Siegel spams Internet, advertising green card service; netizens flame back

1994 Jim Clark and Mark Andreessen found Netscape



1995 AOL, Prodigy and CompuServe provide Internet access

1995 Netscape goes public ending first day of trading at \$58.25

1995 MP3 format developed

1995 Sun Microsystems introduces Java

3/95 Lotus v. Borland: Fifth Circuit reverses finding no infringement

6/95 Intel introduces Pentium 133mhz \$935

7/95 Amazon.com goes live

8/95 Windows 95 released, 32 bit OS, 1 million sold in 4 days, includes Internet Explorer 1.0

12/95 Alta Vista launched with 16 million indexed pages

1995 Intel introduces Pentium Pro, 5.5 million transistors

1/96 Lotus v. Borland: Supreme Court affirms with 4/4 vote

2/96 Communications Decency Act signed; on same day suit brought to enjoin enforcement by ACLU, EFF, AOL, Microsoft, Netcom, Wired and others

3/96 Palm Pilot released

4/96 Netscape's share of browser market peaks at 87 per cent while Explorer takes 4 per cent

4/96 Unabomber Theodore Kaczynski arrested after issuing manifesto blaming computers and technology for society's ills



4/96 9,400,000 Internet hosts, 40,000,000 people access the Internet

4/96 Yahoo goes public opening at \$24.50 and closing the day at \$43.00; market cap hits \$1 billion

6/11/96 ACLU v Reno: District Court holds Communications Decency Act unconstitutional

12/96 eBay's AuctionWeb receives its millionth bid and shortens name to eBay

12/96 Alan Greenspan warns of "irrational exuberance"

1996 Id releases Quake

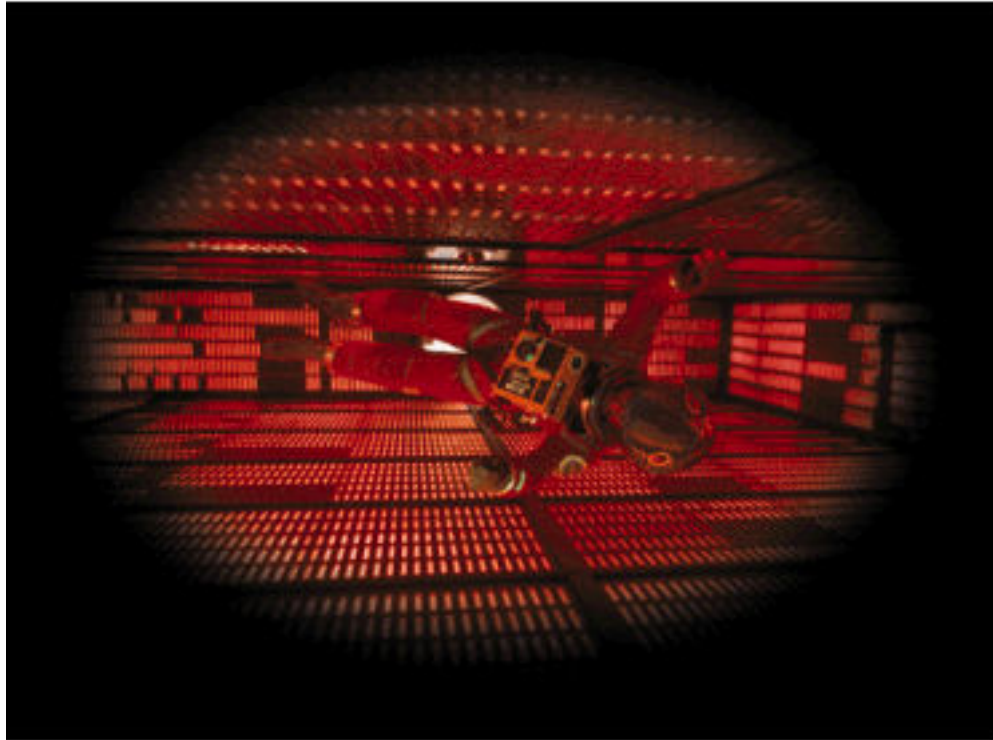


1997 Intel releases Pentium 200mhz with MMX technology

1997 Intel engineers announce chip which performs 1 trillion operations per second

1997 Supreme Court holds Communications Decency Act unconstitutional

3/12/97 HAL 9000 born at University of Illinois, Urbana



5/11/97 Amazon.com IPO: market cap \$503 million

5/97 Grandmaster Gary Kasparov loses chess match to IBM's Deep Blue



8/6/97 Microsoft announces it will invest \$150,000,000 in archival Apple

8/97 TiVo launches

1997 Intel Pentium II

1997 Microsoft releases Internet Explorer

1998 Windows 98

1998 Apple releases iMac



1998 DVD drives become available

1998 Microsoft's Internet Explorer overtakes Netscape

9/98 Larry Page and Serge Brin launch Google from a garage in Menlo Park, California



9/98 Starr Report on Clinton Lewinsky affair released online making for busiest day in internet history to date

11/98 Netscape surrenders in browser war, bought by AOL for \$4.2 billion

12/98 Final 21 countries come online making Web truly World Wide

1999 AOL buys Netscape for \$4.2 billion

1/1999 Amazon.com reaches market cap of \$9.1 billion as internet stocks boom

2/1999 Intel Pentium III

3/1999 Melissa virus, named for an exotic dancer, released infecting 1,000,000 computers

6/1999 18 year old Shawn Fanning writes source code for Napster, a P2P (peer to peer) software program which allows users to trade MP3 music files over the web



Shawn Fanning, creator of Napster

1999 Tivo introduced

12/1999 Yahoo! Stock hits high at \$224 from split adjusted \$02.4; AOL hits 95 from split adjusted \$0.139

1/1/2000 Y2K



1/2000 Dow tops out at 11,722.98

3/2000 NASDAQ closes at 5,048.62

3/2000 Metallica files suit against Napster

4/6/00 After five years of litigation, US District Judge Thomas Penfield Jackson finds Microsoft repeatedly violated antitrust laws by, among other things, bundling its browser with the Windows operating system

4/2000 Internet stocks particularly and tech shares generally collapse

6/2000 More than 30 million users swap music on Napster

7/06/2000 US District Judge Marilyn Patel issues an injunction shutting down Napster on the ground that it is a system intended to violate US copyright laws; her opinion exhibits a thorough misunderstanding of P2P technology and of the reality of the Net; the Ninth Circuit thereafter stays the injunction as millions begin to fully utilize the Napster system

2000 Celera completes first model DNA sequence of human genome

2000 Digital video disc debuts

1/2001 Apple introduces itunes a music app for mac Os9.4

2001 HAL 9000 malfunctions killing Frank Pool aboard the Odyssey spacecraft on the way to Jupiter; "I'm afraid I can't do that," he tells Dave Bowman when asked to let him back on board to take the computer off line

2001 Ninth Circuit affirms Patel's ruling shutting down Napster; other sites take its place including kazaa

2001 Videogame receipts top \$9.4 billion, \$1 billion more than box-office receipts

2001 FCC approves AOL-Time Warner merger

2001 Xbox released

9/11/2001 9-11

10/2001 Yahoo! stock falls to \$8.02

10/23/2001 Apple introduces iPod



6/2002 Explorer's market share peaks at 96 per cent

7/2002 AOL stock falls to \$8.70

10/2002 NASDAQ hits low of 1108.5

2002 Microsoft releases XP

2003 Hewlett-Packard merges with Compaq

2003 More than 40 million Americans swap music files online

2003 More than half of all internet searches handled by Google which contains more than 3 billion URLs

2003 eBay has 12 million ongoing auctions

2003 Number of cell phones in US tops 180 million

2003 NEC's Earth Simulator the world's fastest supercomputer at 35.61 trillion operations per second

2003 Amazon.com announces first quarterly profit

2003 4 million Xbox consoles sold

2003 4 million cars enabled with GPS

2003 10 billion emails sent daily

3/2003 Intel introduces Centrino chip for notebook PC

5/2003 Kazaa becomes most downloaded software in history



8/2003 Apple introduces itunes store and within 5 weeks sells its 5 millionth download

8/2004 Google goes public at \$85

11/2004 Mozilla browser Firefox launches

12/31/2004 Having sold 2 million iPods since its introduction in 2001, Apple sells 8 million of the devices in 2004, 5 million of which were sold in the last quarter alone

6/13/2005 IBM releases Watson Blue Gene, the world's fastest computer with a processing speed of 91.29 teraflops

6/20/2005 Google hits \$300 a share; its search engine indexes 8 billion pages

6/2005 Supreme Court decides MGM v Grokster affirming Napster and the death of P2P