Sept. 25th

Motorola

Sept. 25, 1928

Motorola was founded in Chicago as Galvin Manufacturing by Paul V. and Joseph E. Galvin. It helped popularize car radios in the 1930s, with devices marketed under the "Motorola" brand name ("motor" plus "-ola," to signify sound). In 1947, the company changed its name to Motorola.

The company's semiconductor group manufactured its first transistor in 1952, a three-amp device and, in 1955, it released the world's first commercial germanium-based transistor.

Motorola announced its first microprocessor, the 8-bit MC6800 on [March 7] 1974, and its 32-bit chip, the 68000, on [Sept 26] 1979. Its PowerPC family (1992) was developed in partnership with IBM and Apple in the AIM alliance [Oct 2].

Motorola's Martin Cooper made the first private handheld mobile phone call on [April 3] 1973. On Sept. 21 1983, the FCC approved its DynaTAC 8000X telephone, the world's first commercial cellular device [Oct 13]. Motorola also pioneered the "flip phone" in the mid-1990s with its MicroTAC, and StarTAC [Jan 3].

By 1998, cellphones accounted for two thirds of the company's gross revenue. In 2002, it introduced its first 3G cellular phone, the A830 model, and the Motorola Razr (pronounced "razor") was a popular phone of the mid-2000s, after which the company focused on Android [Nov 5] smartphones.

Recent times have not been so happy: after having lost $4.3 billion between 2007 and 2009, the company was divided into two, Motorola Mobility and Motorola Solutions, on Jan. 4, 2011.

Steven J. Wallach

Born: Sept. 25, 1945;

Brooklyn, New York

Wallach has contributed to high-performance computing through the design of vector and parallel systems, notably the Convex mini-supercomputer series.

Bob Paluck and Wallach founded Convex Computer in 1982 to produce a vector processor machine similar to Cray's [March 4], but with a better price/performance ratio.

His design work for the Data General [Sept 20] Eclipse MV/8000 processor at the end of the 1970s was memorably chronicled in Tracy Kidder's "The Soul of a New Machine" [July 00]. Wallach is portrayed as a man with a photographic memory who likes rearranging his office when frustrated. Supposedly, after his mother read the book, she asked him, "Where did you learn to speak that way?"

Steven K. Roberts

Born: Sept. 25, 1952;

Pennsylvania

From 1983 to 1991, Roberts rode a variety of computerized bicycles across the US. He went through three iterations of his touring rig: the Winnebiko, Winnebiko II, and BEHEMOTH.

The Winnebiko covered approximately10,000 miles between 1983 and 1985. Roberts wrote articles in a tent and filed the pieces via pay phone, submitting them to publications such as *Time* and *Newsweek*.

Among the electronics mounted on the bike was a CB radio for emergencies, a paging security system, a 12V battery, and a five-watt solar panel. Steve's Tandy TRS-80 Model 100 [March 29] sat in the rear pack but was replaced by a more advanced HP 110 portable in 1984. Although Winnebiko lacked provisions for writing while riding, it featured a remote-controlled cassette deck that he could use for recording voice memos on the go.

Winnebiko II was a substantial leap forward, but getting its five computers and two solar panels to work together proved challenging. Thanks to a built-in keyboard, Roberts says he may have the dubious honor of being the first person to text while driving.

BEHEMOTH, which stood for "Big Electronic Human-Energized Machine… Only Too Heavy," included multiple computers, satellite communications, a heads-up display, a head-controlled mouse, a multimode ham station, speech synthesis, and cellular connectivity. It weighed around 580 pounds.

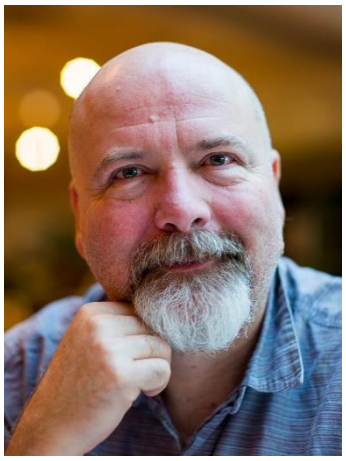
William Daniel "Danny" Hillis

Born: Sept. 25, 1956;

Baltimore, Maryland

During his college years, Hillis and Brian Silverman built a computer out of Tinkertoys, which is now exhibited at the Computer History Museum [Sept 24]. It contains about 10,000 wooden parts, plus fishing line and sinkers. The machine plays tic-tac-toe [Aug 25], with the human player allowed to move first, but still unable to win. As a graduate student at MIT, Hillis became interested in tendon-controlled robot arms and touch-sensitive robot "skin".

In May 1983, Hillis co-founded Thinking Machines Corporation (TMC) with Sheryl Handler, to develop the Connection Machine (CM-1), a massively parallel supercomputer. The CM-1 used up to 65,536 one-bit processors and could complete several billion operations per second. Each processor had its own small memory linked with others through a network that users altered through reprogramming. The company's motto was: "We're building a machine that will be proud of us."



Danny Hillis (2014). Photo by Joi Ito. CC BY 2.0.

With the CM-5, announced in 1991, TMC switched from an architecture of simple processors to a multiple instruction, multiple data (MIMD) design. A CM-5 was featured in the film "Jurassic Park" ([June 9] 1993) in the island's control room (instead of a Cray X-MP [Dec 4] used in the novel).

In July 2005, Hillis and others started Metaweb Technologies, to develop semantic data storage for the Internet, and Freebase, an "open, shared database of the world's knowledge". Metaweb later became the basis of Google's Knowledge Graph. Its information is typically presented in a box to the right of Google's search results [Aug 29].

Computer Dating

Sept. 25 (??), 1959

Philip A. Fialer and James Harvey took Jack Herriot's course, "Math 139, Theory and Operation of Computing Machines," at Stanford in the fall of 1959. Their course project, "The Happy Families Planning Service", became the earliest computer dating service.

They matched partners by correlating answers to a 30-question questionnaire. One of the questions asked about politics (choose one of Communist, Socialist, Democrat, New-Deal Republican, Old-Guard Republican, and Fascist), and another had the participant choose from six religious groupings (Mystery Cults; Jews; Quakers and Mormons; Protestants and Non-Religious; Christians, etc.; and Catholics).

The matched pairs met at a party hosted by Fialer and Harvey in Portola Valley. None resulted in the sound of wedding bells.

Commercializing the idea never occurred to them. "I wish I could have had the foresight," said Harvey later, whose actual career path was in aerospace engineering. "Maybe I would have been a Google or something."

"The Happy Families Planning Service" received an "A" from Professor Herriot.

A possible earlier computer dating service was developed in 1956 for the TV show "People Are Funny" [Nov 17]. For more dating, see [April 22].

Marc Russell Benioff

Born: Sept. 25, 1964;

San Francisco, California

Benioff began Salesforce in a San Francisco apartment in March 1999 with the mission statement: "The End of Software." Salesforce was a pioneer in hosting software in the cloud, rather than on their clients' computers. Along the way, Benioff coined the phrase "platform as a service".

This was not his first business endeavor – when 15-years-old, he had founded Liberty Software to create games for the Atari 400 and 800 [Nov 00]. At 23, he was named Oracle's "Rookie of the Year". During his 13 years at Oracle, Benioff became close friends with Larry Ellison [Aug 17], and some people even wondered if Benioff was Ellison's nephew.

David A. Kaplan of *Forbes* has described the 6-foot-5, 290-pound Benioff has having "the mind of a fox and the body of a bear."

MCM/70

Sept. 25, 1973

Canadian Micro Computer Machines (MCM) announced the MCM/70, featuring an Intel 8008 [April 00], 8 KB of RAM, a one-line plasma display, one or two cassette drives, a keyboard, and 14 KB of ROM. An APL [Dec 17] interpreter was built in, along with a keyboard specially designed to support the language's extended character set.

Although the MCM/70 was announced on this day, the first systems were only shipped to dealers in the autumn of 1974. This made it the second ever microcomputer to be released in a pre-assembled form, and the first portable (or, more accurately, "luggable", at 20 pounds). The first pre-assembled PC is generally agreed to be the Micral [Jan 15].

The MCM Model 70. Photo by Nash Gordon. CC BY-SA 4.0.

The manual contained a note from MCM's president, Mers Kutt, which ended with "Enjoy the privilege of having your own personal computer."

Kutt knew Bob Noyce [Dec 12], and had been following Intel's work on the 1201, an 8-bit chip that was eventually renamed the 8008. In May 1973, MCM had received one of the earliest SIM8-01 8008 development kits and started work on the "M/C".

Sadly, despite its historical significance, the MCM/70 was a commercial flop. Also, a "MCM/700" was proudly launched in late 1975, but this was pure marketing: the only difference between the 70 and the 700 was the extra zero printed on the case.

Telesoftware

Sept. 25-29, 1978

Telesoftware ("software at a distance") was pioneered in the UK during the 1970s and 1980s, and referred to the transmission of program code via broadcast teletext [May 12], by encoding each byte as a pair of teletext characters. A paper about it was presented on this day by R. H. Vivian and William J. G. Overington at the International Broadcasting convention, and by the early 1980s software was being broadcast in this format by all the UK TV channels (e.g. Ceefax [Sept 23] published code for the BBC Micro [Dec 1] using this approach).

Belle Wins

Sept. 25-29, 1980

The Belle chess computer, developed by Joe Condon (hardware) and Ken Thompson [Feb 4] (software) at Bell Labs, won the Third World Computer Chess Championship (WCCC [Aug 5]) in Austria this week.

Three years later, in 1983, it became the first machine to achieve master level game play, when the US Chess Federation assigned it a rating of 2,250 points. By comparison, only 2,500 players had ratings above 2,000, and Bobby Fischer, a former world champion, was ranked at 2,850 at the time.

Thompson began working on Belle in the summer of 1972, as a break from UNIX [Oct 15]. The hardware came later – a LSI-11 (the CPU of the PDP-11 [Jan 5]) controlled three custom boards for move generation, four boards for position evaluation, and a microcode implementation of alpha-beta pruning. These hardware elements increased Belle's speed from 200 nps (number of positions checked/sec) to 160,000 nps.

Thompson concluded that adding another level of move searching improved Belle's chess rating by approximately 250 points. But beyond 2,000, the improvements leveled off.

When Thompson traveled to Moscow in 1982 he sent Belle along in a crate to compete in a tournament. However, the US Customs Service confiscated the machine at Kennedy Airport as part of Operation Exodus, which stopped the export of high technology items to the Soviets.

Belle is now spending her retirement at the Smithsonian.