Feb. 13th

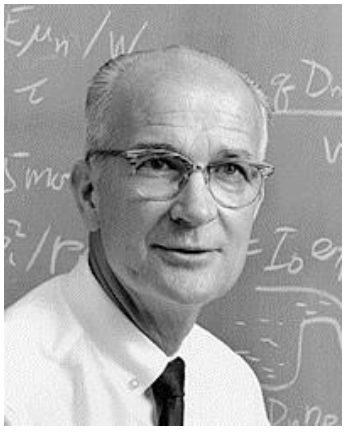
William Bradford Shockley Jr.

Born: Feb. 13, 1910;

London, UK
But his parents were American, from Palo Alto.
Died: Aug. 12, 1989

Along with John Bardeen [May 23] and Walter Brattain [Feb 10], Shockley is credited with co-inventing the point-contact transistor on [Dec 16] 1947, and the three men were awarded the 1956 Nobel Prize in Physics [Dec 10]. However, Shockley believed (and stated) that he should have received all of the credit, and afterwards actively excluded Bardeen and Brattain from new areas of transistor research.

Shockley went on to develop the N-P-N (negative-positive-negative) bipolar junction transistor, which he patented in 1948. Then in 1951, he headed a development group with Gordon Teal [May 10] and Morgan Sparks [July 6] that built the first reliable junction transistor.



William Shockley (1975). Photo by Chuck Painter. CC BY 3.0.

Shockley became increasingly disgruntled with Bell Lab's management, although some people have suggested that the problems had more to do with Shockley's own abrasive style. In any case, on his birthday in 1956, he founded Shockley Semiconductor Lab, located in a former fruit packing shed in Mountain View. Funding came from Arnold Orville Beckman, a noted chemist.

Shockley couldn't persuade anyone from Bell Labs in New Jersey to join him, but he still managed to gather a team of engineering hotshots from other sources. On [Sept 18] 1957, eight of them resigned after Shockley decided to discontinue research into silicon-based semiconductors.

They formed Fairchild Semiconductor [Oct 1], a transfer of talent which seriously affected Shockley Semiconductor. However, the company did earn a reputation for seeding tech firms, and has sometimes been characterized as "putting the silicon in Silicon Valley," along with Hewlett-Packard [Jan 1].

Late in his life, Shockley became interested in race, human intelligence, and eugenics. In 1965, he attended the Nobel conference and gave an infamous speech: "Genetics and the Future of Man," where he warned of "genetic deterioration" and "evolution in reverse".

He was an accomplished climber and a difficult route in the "Shawangunks" in the Hudson River Valley is named "Shockley's Ceiling".

Forrest S. Mozer

Born: Feb. 13, 1929;

Lincoln, Nebraska

Mozer did pioneering work on solid state electronic speech synthesizers and recognizers, and was also involved with the physics of high energy particles, and rocket and satellite measurements.

Mozer first became interested in speech technology in 1970 when a blind student in his class asked whether Mozer could help him design a talking calculator. They spent five years working on it, and the technology was licensed by TeleSensory Systems in 1976 for their "TSI Speech+" talking calculator for the blind.

The calculator's TSI S14001A chip was the first self-contained speech synthesizer, supporting a 24-word vocabulary inside a 4K ROM. The chip also found use in a few arcade games, notably Atari's "Wolf Pack", and Stern Electronics' "Berzerk and Frenzy". Later National Semiconductor licensed the design for its "DigiTalker" speech synthesizer, the MM54104.

At first, all the words were encoded by Mozer personally working in his basement.

Murray Turoff

Born: Feb. 13, 1936;

San Francisco, California

Turoff was a founding father of computer-mediated communication through his design of the "Emergency Management Information System And Reference Index" (EMISARI) in 1971, the first-ever group communication system.

EMISARI's chat functionality, called the "Party Line", was intended to replace telephone conference calls that might have 30 or more participants, making effectively communicate impossible.

Turoff next designed the "Electronic Information Exchange System" (EIES [June 00]), an early online conferencing bulletin board system, which may be the earliest example of groupware.

In 1978, Turoff's book, "The Network Nation," co-authored with Roxanne Hiltz, presented a vision of how computer-mediated communication might revolutionize social and intellectual life. It's been called the "bible" of computer conferencing.

Kurt E. Petersen

Born: Feb. 13, 1948;

San Francisco, California

Petersen works on MEMS (micro-electro-mechanical systems), electo-mechanical machines that might only be 20 micrometers long, packed onto a silicon wafer alongside the circuitry controlling them.

Petersen established the first micromachining research group at IBM in 1975, and his review paper from May 1982, “Silicon as a Mechanical Material” is credited with inspiring widespread research on the topic.

Of course, the potential of very small machines was appreciated long before the technology existed to make them. A good historical starting point is Richard Feynman’s [Dec 29] 1959 lecture, “There’s Plenty of Room at the Bottom.”

Apollo Computer

Feb. 13, 1980

Apollo Computer was the first vendor of graphical workstations through its Apollo/Domain range, built around the Motorola 68000 [Sept 26] and running a proprietary OS, Aegis, because of the large cost of UNIX licenses at the time; it was written in a version of Pascal.

An Apollo DN330 (the "Swallow") (1985). Photo by Jim Rees. CC BY-SA 2.5.

Apollo’s quarterly sales passed $100 million in late 1986, giving it the largest share of the workstations market, twice that of Sun Microsystems [Feb 24], the number two. However, poor marketing, and other problems, eventually led to financial difficulties and Hewlett-Packard [Jan 1] acquired the company for $476 million in 1989.

HP workstations proved a hard sell, and Sun became the new top-dog in the market with over $2 billion in revenue. But the increasing speeds and falling prices of PCs meant that the obsolescence of the workstation wasn't far away.

Prodigy Founded

Feb. 13, 1984

The Prodigy dialup service (originally called Trintex) was a joint venture of Sears, CBS and IBM (hence, the “tri” in Trintex). It offered a broad range of online services, including news, weather, shopping, bulletin boards, games, banking, stocks, and travel. After CBS dropped out, the service was renamed Prodigy (why not Duotex?).

Prodigy promoted itself as the first consumer-oriented online service, playing up its simple GUI to differentiation it from CompuServe [Sept 24] and GEnie [Oct 1], which still lumbered along with command-line interfaces. The GUI relied on a text-based protocol called North American Presentation Level Protocol Syntax (NAPLPS), a product of the Teletext era [Sept 23], and proprietary languages called TBOL (Trintex Basic Object Language) and PAL (Prodigy Application Language). The protocol’s big advantage was its ability to encode complex graphics as short commands.

By 1990, Prodigy had become the second-largest online service provider, with 465,000 subscribers, trailing only CompuServe’s 600,000.

Some geeks still sneeringly referred to it as “Stodigy”, and it gained some bad press for its over-zealous censorship of content. For example, members couldn’t use the word “bitch” in a dog breeders’ group, or the word “beaver” in zoology forums.

In 1994, Prodigy became the first of the dialup services to offer Web access, albeit only via its own lackluster browser. In 1996, the company retooled itself as an ISP, and "Prodigy Classic" closed in Nov.1999, officially because of the imminent apocalypse known as Y2K [Dec 31].

Inktomi

Feb. 13, 1996

The Inktomi Web search engine was created by Eric Brewer and Paul Gauthier based on software they'd developed at Berkeley.

It became the top search engine during 1999, and ended up powering both Yahoo! [March 2] and MSN [Nov 10]. CEO David Peterschmidt predicted that it would soon become an “arms merchant” to numerous content delivery services, and by March 2000 the company had a market cap of $25 billion.

Exactly one year later, the stock had dropped by 99.9%; the reason, of course, was Google [Sept 27], and its ability to generate more relevant results through its PageRank algorithm [Aug 29]. The bursting of the dot-com bubble didn’t help Inktomi either [March 10], and the business was acquired by Yahoo! for $240 million in 2003.

The company’s name, pronounced ‘INK-tuh-me’, was derived from a legend of the Native American Lakota people about a trickster spider.

.NET

Feb. 13, 2002

Microsoft started developing the .NET Framework in the late 1990's, originally under the title "Next Generation Windows

Services" (NGWS). In late 2001, the first beta version was released, and v.1.0 came out on this day.

The framework had two main parts: the Common Language Runtime (CLR; a virtual machine), and the Framework Class Library (FCL). Unfortunately, it was proprietary software, which put off many developers so Microsoft responded with Mono, an open-source project providing compatibility between .NET and other platforms, especially Linux.

Microsoft's grand .NET strategy also apparently involved adding ".NET" to as many product names as possible: Visual Studio .NET, Visual Basic .NET, .NET Passport, .NET My Services, ASP.NET, ADO.NET, and Hair.NET (not really). On June 22, 2000, Steve Ballmer [March 24] managed to say the word ".NET" sixty-two times during a keynote address at a conference.

However, by the mid 2000's the branding offensive was in retreat, apart from products closely associated with the Framework. "Cloud" is much more popular nowadays [Aug 25].

D-Wave Gives a Demo

Feb. 13, 2007

D-Wave Systems, the world's first quantum computing [May 2] company, was founded by Haig Farris, Geordie Rose, Bob Wiens, and Alexandre Zagoskin in Vancouver during April 1999.

On this day, the company demonstrated its Orion prototype system at the Computer History Museum [Sept 24], the first public test of a quantum computer.

In 2010 D-Wave released its first commercial system, the D-Wave One, and since then has steadily produced new machines that support more qubits (and so can solve larger problems). At the beginning of 2017, the D-Wave 2000Q offered 2,048 qubits. The upcoming Pegasus P16 promises 5,640 qubits.

Experts estimate that the number of qubits needed for a 'useful' quantum computer is between 1,000 and 100,000, with likely application areas being cryptography, atomic-level simulations, and faster solutions of linear equations.

There's some debate about whether D-Wave machines are true quantum computers. D-Wave's approach is based on condensed matter physics rather than the more mainstream quantum information fields.

The Seven Keys

Feb. 13, 2007

On this day, ICANN [Sept 18] once again felt the need to post a message online about "the seven people who control the keys to the Internet," to point out that the story is mostly false.

ICANN does manage a hierarchy of cryptographic keys called DNSSEC [Dec 23] used for authenticating the data in the domain name system (DNS). Copies of these keys are stored at two secure facilities located on opposite sides of the US.

At each establishment, the innermost layer of physical security is a device called a hardware security module (HSM), which holds the precious keys.

Access to the HSM requires several people to be present, a hallowed group known as Trusted Community Representatives. Each person has a specific role for accessing the HSM, which happens during a key ceremony, with each possessing a physical key (some are metallic, others are smart cards) that are wielded during the venerated ceremony. These keys are nothing like the seven Horcruxes created by Lord Voldermort.

Since 2010, the esteemed keyholders gather together four times a year, twice on the east coast and twice on the west.

The ceremonies each involve seven custodians, with a further seven acting as backups who can access a last-resort measure to reconstruct the system if something goes very badly wrong ~~with the dark magic~~.

All but one of the 21 keyholders has been with the organization since the very first ritual was performed. Only one has ever resigned: Vint Cerf [June 23]. The fact that "Vint" and "Voldemort" both start with the letter "V" is a pure coincidence.

1234567890

Feb. 13, 2009

At 23:31:30 UTC, UNIX time [Jan 1] reached 1,234,567,890 seconds.

In some parts of the world, this was on Friday the 13th, but was Saturday 14th for locations east of the International Date Line.

For finding out when this happened in your time zone, type: `date -d @1234567890`

For links to more date/time events, see [Jan 1].