November

The Machine Stops

Nov. 1909

"The Machine Stops" is a SF short story by E. M. (Edward Morgan) Forster (1879 - 1970), set in a world where mankind lives underground in cubicles serviced by a giant Machine. Face-to-face interaction is avoided, replaced by technologies similar to instant messaging and the Web. Inevitably, the Machine begins to exhibit ever more serious defects, and due to a lack of satisfactory hardware maintenance protocols, civilization falls.

The space rock band "Hawkwind" released a concept album titled "The Machine Stops" in April 2016.

The Model K

Nov. 1937

George R. Stibitz [April 30], a researcher at Bell Labs, used flashlight bulbs, surplus relays, tin-can strips, and other assorted bric-a-brac to construct the "Model K", the first binary adder, capable of adding two bits and displaying the result.

It was called the "Model K" (or perhaps the "K-model"), after where it was designed – on Stibitz's kitchen table at home. The name was suggested by his wife, Dorothea.

With this device, Stibitz showed that boolean logic circuits could be built using electromechanical relays. More importantly, he also realized that this approach could be scaled up to create a relay-based calculator that could perform a sequence of calculations, and store interim results.

When Stibitz first demonstrated the "Model K" to company executives, they were unimpressed. "There were no fireworks, no champagne," Stibitz later remarked.

But less than a year later, Bell management changed its mind, due to a commercial need to calculate more complex equations. Bell agreed to finance Stibitz's construction of a large experimental model, which became the CNC, and was first operational on [Jan 8] 1940.

A few months before Stibitz's kitchen breakthrough, on [Aug 10], Claude Shannon [April 30] had submitted his Master's thesis which drew the same parallels between relays and logic. However, Stibitz only heard of this work later.

The Vacuum Tube Multiplier

Nov. 1943

IBM's Vacuum Tube Multiplier was the first machine to perform arithmetic electronically, by replacing mechanical relays (as used in the Harvard Mark I [Aug 7] for example) with vacuum tubes [July 00].

Key advantages were that tubes were faster (some said 1000x faster), smaller, and easier to replace than electromechanical switches. Up to that time, they'd primarily been used in the radio industry.

IT Coined

Nov. – Dec. 1958

The Oxford English Dictionary (OED) attributes the first recorded use of the term "information technology" (IT) to the 1958 article, "Management in the 1980s" by Harold J. Leavitt and Thomas L. Whisler, published in the *Harvard Business Review*.

However, the "It" concept can be traced back to 1927 at least, as popularized by the novel "It" by Elinor Glyn, and by the actress Clara Bow in the Paramount Picture's movie of the same name; Bow is considered the first "It girl".

She later said she wasn't sure what "It" meant, although she also identified Lana Turner and Marilyn Monroe as "It girls", and Robert Mitchum as an "It man".

Clara Bow, the "It" Girl (1921). Photo by Nickolas Muray, Brewster Magazine.

After Bow retired from acting, she and her husband opened The 'It' Cafe in 1937, located in the Hollywood Plaza Hotel in Los Angeles.

Elliott 803

Nov. 1959

Elliott Brothers [Oct 00] delivered the first Elliott 803A to DuPont in Texas. The "A" model was quickly replaced by the 803B in 1960 (larger memory and hardware floating-point operations), to become one of the most successful British computers of the Swinging Sixties. In the middle of the decade, most UK universities possessed an Elliott 803.

The 803 series was an early example of a transistorized computer with ferrite core memory [May 11]. It could be plugged into a normal power socket, consuming around 3 KW of power, but required air conditioning.

The magnetic tape units were unique in that they used 35 mm film stock coated with magnetic material. The film was manufactured by Kodak and then formatted by Elliott Brothers themselves. Elliott's was located next door to the Elstree Film Studios in

Borehamwood, so probably recruited engineers from there.

Another unique feature was a loudspeaker connected to a memory bit of the currently executing instruction, which caused every program to play a characteristic 'tune' as it ran.

PDP-1 Ships
Nov. 1960

DEC's [Aug 23] PDP-1 (Programmed Data Processor-1) is considered by many to be the first commercial minicomputer (and the company's first computer). Its lead engineer was Benjamin Gurley [Dec 12] who had worked on display elements of the TX-0 [Nov 20] at Lincoln Labs.

PDP-1 at the Computer History Museum with Steve Russell, creator of Spacewar! The Type 30 display is to the far right. Photo by Alex Handy. CC BY-SA 2.0.

Gurley somehow managed to build the entire system in around three-and-a-half months.

The PDP-l employed one of the TX-0's most innovative features: Direct Memory Access (DMA), which allowed I/O to move directly between a device and core memory.

The PDP-1's famous output device was the "Precision CRT display: Type 30", an innovative 9.3"-diameter, circular monitor capable of displaying 1024x1024 points drawn at 20,000 points per second. A light pen could also be used to pick out locations on the display.

DEC chose the "Programmed Data Processor" name for the line based on advice from their venture capital firm. At the time, many organizations weren't authorized to buy "computers" but were permitted to purchase "processors."

DEC delivered the first PDP-1 to Bolt, Beranek and Newman (BBN [Nov 00]) in Nov. 1960. Probably its best known use at BBN was to run an early time-sharing system [Jan 1] developed by Ed Fredkin [Oct 2] in the summer of 1962, encouraged by John McCarthy [Sept 4] who was a BBN consultant at the time. Other software hits were the MinskyTron [Feb 29], and the "Munching Squares" and "Snowflake" graphics programs.

In 1961, DEC donated a prototype PDP-1 to MIT, where it was placed in the room next door to its ancestor, the TX-0. That PDP-1 soon became legendary for inspiring MIT's hacker culture [Nov 20]. Famous results included the controller for the Tech Model Railroad Club's (TMRC [Sept 6]]) layout, Steve Russell's Spacewar! [May 17], and Peter Samson's [Aug 16] Harmony Compiler for playing music. It was also home to the first text line editor (McCarthy's [Sept 4] Colossal Typewriter), and the first page layout program (Samson's TJ2). Jack Dennis led a team that developed a time-sharing system on the machine.

R.E.S.I.S.T.O.R.S
Nov. 1966

The RESISTORS (or R.E.S.I.S.T.O.R.S) was one of the first computer clubs for school kids, founded by students from the Hopewell Valley High School in New Jersey. The club's name stood for "Radically Emphatic Students Interested in Science, Technology, and Other Research Studies".

In May 1967, Claude Kagan, an engineer at the Western Electric Research Center, began helping out, and the club soon moved into his barn where he stored unwanted computer equipment.

The barn's primary machine was a Burroughs 205 [Jan 12], a vacuum tube behemoth weighing about 9 tons. It generated enough heat to warm the building during winter, but couldn't be used during summer for the same reason. There was also a ASR-35 teletype [April 00] dial-up terminal in Kagan's house, which the club used to access a PDP-8 [March 22] at Western Electric.

Ted Nelson [June 17] became involved with the club in 1970, and had the RESISTORS help out with the "Software" show at the Jewish Museum in NYC [Sept 16].

Sadly, the barn burned down in 2009, but by then Kagan's collection had been moved to the InfoAge Museum in New Jersey.

Kagan was also a co-founder of The American Federation of Information Processing Societies (AFIPS) which sponsored many computing conferences between the 1960s and 1980s [Oct 3; Oct 27; Dec 1; Dec 9].

Behold the Computer Revolution
Nov. 1970

National Geographic magazine published a 41-page article entitled "Behold the Computer Revolution", written by Peter T. White (vol. 138, no. 5). Luminaries mentioned and pictured in the piece included Ross Perot [June 27], Joseph Weizenbaum [Jan 8], Jay Forrester [July 14], John G. Kemeny [May 31], and Thomas J. Watson, Jr. [Jan 14].

Pictured machines included: the IBM 370 [June 30], Shakey [Dec 7] (and a PDP-10), NORAD [Aug 1], the ILLIAC IV [Sept 7], and one of Dartmouth's computer labs [May 1]. One of the users

was printing a teletype picture of Snoopy.

President Richard Nixon [May 19] was quoted in the essay: "If computers can match boys and girls for college dates, they can match job-seeking men for man-seeking jobs."

For more 1970's computing in magazines, see [Oct 00] and [Dec 7].

Tymnet

Nov. 1971

During the 1970s and early 1980's, Tymnet was a major player in the public packet switching network business, supporting both dial-up users and private networks.

Tymnet grew out of a 1960's time-sharing company called Tymshare. In 1968, LaRoy Tymes and Norm Hardy had idea of adding support for routing and connection capabilities at their customer's facilities. In Nov. 1971, the first Tymnet Supervisor program became operational, to manage data routing. It was written in assembly for the popular (but aging) SDS 940 [June 00].

In 1979, Tymnet was spun off from Tymshare to offer dial-up modem access in most US cities. Tymnet also became popular as a means for large companies to provide dial-up services to their "on the road" employees. Later it became a gateway to connect to large online services such as CompuServe [Sept 24] or "The Source" [Dec 3].

Tymnet wasn't the first packet-switched network service for the general public; that was probably Telenet, which became operational on [Aug 16] 1975.

Computing Then and Now

Nov. 1975

The Science Museum in London opened a redesigned gallery called "Computing Then and Now", and took the opportunity to update its 1926 "Calculating Machines and Instruments" catalog by David Baxandall. It was revised by Jane Pugh, resulting in over 100 pages of detailed notes on most of the exhibits, plus 30 photographic plates.

The 1926 edition had been used by Howard Aiken [March 8] when he was writing his funding proposal for what became the Harvard Mark I [Aug 7]. In that edition, two of the thirteen plates were of Babbage's [June 14] and Scheutz's [Sept 23] Difference Engines, both large enough to show their internal mechanisms.

Probably the first international exposition of scientific instruments was held at the museum in 1876, back when it was called the South Kensington Museum. A description of the event was published, called the "Handbook to the Special Loan Collection of Scientific Apparatus" (online at https://archive.org/stream/handbooktospecia00soutrich#page/n9/mode/2up). The section on calculating machines included the work by Babbage, Scheutz, and Thomas de Colmar [May 5]. Unfortunately there were no illustrations.

IBM's "A Computer Perspective" [Feb 17] was another important 1970s computing exhibition.

SWTPC 6800

Nov. 1975

The SouthWest Technical Products Corporation (SWTPC) became one of the first suppliers of microcomputers to the general public when it began selling the SWTPC 6800 computer kit designed by Gary Kay. Flyers were first distributed in August 1975, and the first deliveries occurred in November.

It was the first system based on the Motorola 6800 [March 7], and used a SS-50 bus which was less expensive than the S-100 bus [Aug 28] used by its rivals, the Altair [Dec 19] and IMSAI 8080 [Dec 16]. It included a 2 KB static RAM card and a serial I/O card, but the user had to buy another terminal to enter information.

A SWTPC 6800. Photo by Michael Holley.

AppleSoft BASIC

Nov. 1977

Prev: [June 5] Next: [Dec 00]

When Applesoft BASIC was released, it's big selling point compared to Steve Wozniak's [Aug 11] Integer BASIC was its support for floating point numbers. Despite the name, it was essentially a licensed version of Microsoft's 6502 floating point BASIC, developed by Marc McDonald and Ric Weiland.

The Microsoft deal came about because Apple had been receiving lots of requests for a floating point BASIC for the Apple II [April 15]. Wozniak was busy designing the Disk II interface card, so didn't have time to modify his BASIC (even though it contained some hidden floating point routines). Therefore, in August 1977, Apple made a $10,500 payment (or perhaps $31,000) to Microsoft to license the source. This is rumored to have rescued Microsoft from imminent insolvency.

At Apple, Randy Wigginton (still a teenager) and Cliff Huston were assigned the job of making the code backwards-compatible with Integer BASIC, and adding graphics commands. Wigginton would later become better

known for coding MacWrite [July 10] for the Macintosh [Jan 24].

The source code for version 1.1 of 6502 BASIC was released in 2015, and contains Bill Gates' [Oct 28] WAIT 6502 Easter egg, which replaces the word "COMMODORE" on the screen with "MICROSOFT" when a certain string is entered.

The more feature-rich, and successful, Applesoft II BASIC was released in April 1978. It was burned into the ROM of the Apple II Plus and subsequent models.

Atari 400 and 800 Released

Nov. 1979

The Atari [June 27] 400 and 800 are usually considered the best 8-bit 6502 [Sept 16] machines for games and color graphics. They were the first home computers designed with custom co-processor chips, the ANTIC and CTIA/GTIA, for video display [Oct 14], and the POKEY chip for I/O. They also supported plug-n-play peripherals based around the Atari SIO serial bus system.

All of this gave the Atari better graphics and sound capabilities than contemporary machines like the Apple II [April 15] or Commodore PET [April 15], and the platform's killer App [Sept 8] was the hugely popular game, "Star Raiders" [next entry]. The line sold two million units during its production run between 1979 and 1985

The 400 was marketed primarily as a computer for kids, with an "advanced child-proof design featuring a pressure-sensitive, wipe-clean keyboard". The 800 was designed to look more professional, a bit like a typewriter.

The successor to the 8-bit 400/800 was the 16-bit Atari ST [Jan 10].

Star Raiders

Nov. 1979

"Star Raiders" was a first-person space shooter for the Atari 8-bit family [prev. entry].

The game provided forward and rear first-person views within a fully navigable 3D star field. It was written by Doug Neubauer based on a demo he'd written to show off the Atari's POKEY I/O chip.

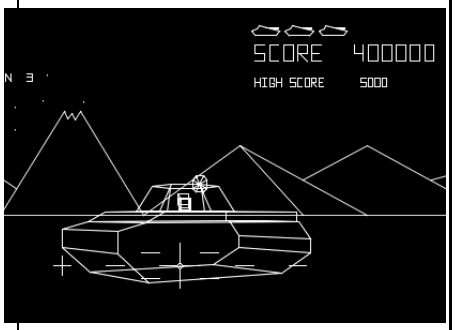
The game became a common sight in computer stores of the early-1980s, showing off the Atari's graphics capabilities. BYTE magazine wrote in 1981: "What can you say about a game that takes your breath away?"

It inspired many later space combat games, such as Elite [Sept 20] and the "Wing Commander" series [Dec 31].

Battlezone Released

Nov. 1980

Battlezone was a first-person tank combat arcade game produced by Atari [June 27]. It used wireframe vector graphics to simulate a huge 3D landscape containing distant mountains, an erupting volcano, a crescent moon, pyramids, and (of course) other tanks to blow up. UFOs occasionally appeared for a bonus opportunity.



An enemy tank in "The Bradley Trainer" Photo by US Army.

Battlezone was housed in a standard upright arcade cabinet but came with a novel "periscope" viewfinder.

A version of Battlezone called "The Bradley Trainer" (aka "Army Battlezone" or "Military Battlezone") was built for the US Army starting in Dec. 1980 with an extremely tight 3-month deadline. It differed from Battlezone in featuring helicopters, missiles, and machine guns (but no UFOs). Also, the tank didn't move: only its gun rotated.

Some developers within Atari initially refused to work on the project because of its association with the army, most notably the original Battlezone programmer Ed Rotberg. He later recalled, "I was vehemently against it, but it became readily apparent that there was no one else familiar enough with the software in Battlezone to make the modifications by March. I ended up losing three months of my life, spending every waking minute at Atari, coming home at 1 a.m., going in at 6 a.m. The game got done."

3½-inch Disks

Nov. 1981

Sony released the first commercially available 3.5-inch floppy disks, and the OA-D30V drive for reading and writing to them. The first computer to use the drive was Sony's SMC 70 in 1982.

The new format was not that popular at first – the 5.25-inch format had too much market share. But things began to change in Jan. 1983 when the Microfloppy Industry Committee, a consortium of 23 companies, agreed upon a 3.5 inch specification based upon Sony's design. It also helped when the disc was adapted by Apple in its Mac [Jan 24].

The original single-sided disks had a capacity of just 360 KB, but Apple introduced (and popularized) the double-sided, 720 KB disk in 1986, and a "high-density" 1.44 MB format, in 1987.

Incidentally, the so-called 3.5 inch disk did not have a

diameter of 3.5 inches. A more accurate measurement was 90mm for one side of its case (3.54 inches). The disk inside the case had a diameter of 85.8 mm (about 3.38 inches).

The Graphics Magician

Nov. 1982

"The Graphics Magician" (or "Picture Painter") was a utility for drawing bitmapped images. Although mostly forgotten today, it was the dominate graphics utility of the mid-1980's, and its routines were licensed by almost every other software publisher.

It employed a novel approach to save space – it didn't store images as bitmaps, but recorded the commands to recreate them. The software "played back" the commands to reconstruct the image.

The "Magician" was originally written for the Apple II [June 5] by Mark Pelczarski and Jon Niedfeldt, and later ported to the Atari 8-bit family [four entries back] and the Commodore 64 [Jan 7]. The routines for playing back graphics and animation were written by David Lubar and Chris Jochumson.

Flight Simulator

Nov. 1982

The release of Microsoft Flight Simulator (often abbreviated as MSFS or FS) on this day makes this product Microsoft's longest-living software product, predating Windows by three years [Nov 20], and probably the longest-running PC game series (the current version came out on Aug. 18, 2020). Version 1 was based upon work by Bruce Artwick [Aug 8].

Advertisements claimed "If flying your IBM PC got any more realistic, you'd need a license", and promised a "full-color, out-the-window flight display". Early versions were often used as a handy test of PC compatibility. It was said that if a computer could run MSFS and Lotus 1-2-3 [Jan 26], then it should be deemed 100% IBM PC-compatible [Aug 12].

HP-150: Infrared Touchscreen

Nov. 1983

The HP-150 (aka HP Touchscreen) was one of the earliest commercial touch screen computers. Codenamed "Magic", the design team was led by Jim Sutton and John Lee.

However, it wasn't actually a touch screen in the modern sense, but a conventional 9" monitor surrounded by LEDs and photodiodes. Some of the LEDs' beams would be interrupted when a finger touched the screen and, after a bit of math, this allowed the cursor to be positioned.

Touchscreen of the HP-150. Photo by Cinecol. CC BY 3.0.

The emitters and detectors were placed in small holes on the monitor's bezel. Unfortunately dust would sometimes settle in the holes at the bottom causing errors. Also, the sensor grid was quite coarse, only offering a resolution two characters wide. This was good enough for rough cursor positioning, but couldn't be used for drawing pictures.

An earlier patent for an infrared touchscreen was issued in [Nov 11] 1973 for use with the PLATO IV system [July 00].

Lasseter on the Queen Mary

Nov. 1983

According to Edwin Catmull's [March 31] book "Creativity, Inc.", at around this time, he accidentally met his old pal John Lasseter while attending the "Pratt Institute Symposium on Computer Graphics" on board the RMS Queen Mary in Long Beach. When it became clear that Lasseter was currently unemployed, Alvy Ray Smith [June 4] and Catmull, as founders of the Lucasfilm's [Sept 12] Computer Division, hired him on the spot.

Lasseter's first project was Lucasfilm's first computer animated short: "The Adventures of André and Wally B." [Sept 8] which featured the first use of motion blur, complex 3D backgrounds, and lighting with particle systems. Some shapes were capable of being squashed and stretched, unlike earlier CG models which were typically rigid geometric shapes. The cartoon was first shown on July 25, 1984, at SIGGRAPH.

The 1.8-minute cartoon had been rendered using five VAX's at Lucasfilm, ten VAX's at MIT's Project Athena [June 19], and two Cray's at Cray Research in Minnesota. The Crays were two-processor Cray X-MP/2s [Dec 4] and a four- processor Cray X-MP/4, the most powerful machines in the world at the time.

Lasseter and Catmull's collaboration would ultimately result in "Toy Story" ([Nov 22] 1995), the first-ever computer-animated feature film.

DeskMate Released

Nov. 1984

DeskMate was a PC GUI environment that ran on top of Tandy's [Feb 2] TRS-DOS on their TRS-80s [March 29], and competed with Microsoft Windows 3.11 [April 6] (which at the time ran atop MS-DOS).

DeskMate included a basic word processor ("Text"), a spreadsheet ("Worksheet"), a calendar, and a database program ("Filer"), all amazingly crammed onto a single 5.25 inch 360 KB floppy disk.

As the IBM PC began to dominate the microcomputer market, DeskMate was ported across to it as DeskMate 2, coded in C and assembly for speed.

DeskMate 3 added a drawing program ("Draw"), an audio editor ("Sound"), a music player ("Music"), and access to an online service ("PC Link"). There was, of course, a game: "Hangman" that many DeskMate users recall fondly. And all the programs could still fit onto one disk, albeit a 1.2 MB high density one.

QuantumLink Serial

Nov. 1988

The online services company, Quantum Computer Services, began hosting the "QuantumLink Serial" written by Tracy Reed. It was released episode-by-episode, via the system's chat, and e-mail systems.

Rather confusingly, it was also known as the "PC-Link Serial" and the "AppleLink Serial" since Quantum ran it on three separate services aimed at the Commodore, PC, and Apple markets. When the three services were unified, the company also changed its name to AOL [Oct 2].

A clever feature of the serial was that readers could write in to suggest ways they could be added to the narrative. Each week, a handful of readers were given "guest star appearances".

Within three months, it was the highest-rated text segment of AOL, and ran until 1989.

The World

Nov. 1989

Bill Henneman and Barry Shein originally set up their company "Software Tool and Die" (STD) to offer UNIX consulting, but they soon realized that many more people wanted e-mail and newsgroup access. Unfortunately the National Science Foundation (NSF [July 16]) banned commercial ISPs from the Internet at the time, only allowing access to government agencies and universities. This meant that online services such as Quantum Link (later AOL) [prev entry], The Well [April 1], CompuServe [Sept 24] didn't have direct Internet links.

Things began changing at the end of the 1980's when the NSF decided they'd wanted to be less involved in running the Internet.

UUNET [May 12] responded by forming a new company called Alternet to provide Internet services, and soon after Alternet and STD became partners. The result was "The World", the first service to offer public Internet access, for just $20 per month, including e-mail and newsgroup access.

Initially, "The World" was run on a Sun4/280 [Feb 24] with two 474 MB disks, and six 2400 bps modems. Much of "The World"'s functionality was built from scratch by Spike Ilacqua.

Then the NSF got a bad case of cold feet, and decided that selling access to individuals was a problem, and blocked "The World" from about 2/3 of the Internet.

However, change was inevitable, and on [Oct 23] 1992 the NSF officially allowed companies to sell dialup Internet access. "The World" became an official ISP on Aug. 13, 1992.

Cranium

Nov. 1989

Cranium, billed as "The Game for Your Whole Brain" hit retail toy stores. The game tests a variety of skills, including humming, drawing, sculpting dough, and backwards spelling. The company dubs its followers "Craniacs."

It was the first game to be sold on Amazon.com [July 16], also the first in Barnes & Noble, and the first non-coffee product available at Starbucks [Jan 9]. It went on to sell more than 40 million games worldwide.

Whit Alexander and Richard Tait created Cranium after Tait and his wife easily defeated another couple at Pictionary but lost miserably at Scrabble. He wanted a game that would allow everyone to have a good time.

Tait's first job was at Microsoft in 1988, in the OS division, then as a senior manager for Encarta [March 22], and he also started a number of online services. He was named "Employee of the Year" in 1994.

Alexander and Tait met in the 1990's while working on Encarta, and both resigned at about the same time, "ready to try something else." Tait later remarked, "[Microsoft] was fantastic. But all of a sudden, in 1998, I became old school. I was referred to as old school. I felt alienated in my own environment. I saw it go from 2,300 people to more than 80,000 people."

Unemployed, the two men began to meet regularly for breakfast at Seattle's Jitterbug restaurant to discuss starting their own business.

Tait said of these times, "At Microsoft, we learned how to go from concept to prototype to shipping product in 6-8 months. Trivial Pursuit took four years.

Pictionary took three years. We got Cranium from idea to shipped product in six months – January to June."

The "Cranium" name came from Tait: "I'm Scottish, so I love anything with a long "r" in it. I was watching the movie 'So I Married an Axe Murderer' with Mike Myers, whose dad is Scottish, and he would say these phrases like, 'Look at the cranium on that boy!'".

ANSNET Operational

Nov. 1991

The ANSNET network was an important step on the way to the commercialization of the Internet.

In Sept. 1990, IBM, Merit Network, and MCI formed the nonprofit "Advanced Network Services" (ANS) to run the upgraded NSFNET [July 16] network. Once ANSNet was operational, the companies decided it might be nice to make some money from it, and formed ANS CO+RE (COmmercial plus REsearch) to sell commercial access.

Naturally, this led to all manner of arguments about how commercial traffic should be carried over what had, until recently, been a government sponsored network.

The other important commercial network of that time was CIX [Aug 2], and for a while CIX and ANS CO+RE refused to talk to each other. The antagonism only really went away with the shutdown of NFSNET (and also ANSNet) in 1996.

The Palace Opens

Nov. 1995

"The Palace" was a graphical chat system produced by Time Warner Interactive [Jan 10], which replaced the notion of chat "rooms" by the far grander idea of "palaces". Users could now not only type messages but see each other's cartoon avatars against a 2D backdrop. These avatars could also interact with things in the palaces.

The system was created by Jim Bumgardner using his Idaho authoring tool, which was built around a Forth-like language [Nov 13].

"The Palace"'s popularity peaked around 1999-2000, when metal band Korn reigned in their own palace, and there were other palaces for "South Park" and various TV shows. Several artists used the site to hold experimental live performances.

Although official support has long since ended, many palaces are still operating via 'The Palace Portal".