

A Comprehensive Perspective of the History of Computing in 1972

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Science and technology dominated the major events in 1972. Medical breakthroughs, the ability to communicating globally through a computer, and the development of programming language standards we use presently were all developed during this year. At the same time, the historical events that shape the year 1972 make it ever more fascinating. From the first cable network broadcast to the Supreme Court deciding that the death penalty was unconstitutional shape the events that make this year remarkable. The year 1972 was a remarkable year for the history of computing as well as from a global perspective.

World Events

During the year 1972, President Richard M. Nixon was president of the United States. During February of 1972, Nixon made a trip to the Communist China for eight days to meet Mao Zedong, the leader of the nation. This was the longest trip ever made to a communist country by a United States President.¹ In late March of 1972, the Great Britain government takes over direct rule of Northern Island in an attempt to establish peace. Later that year, the Olympics were filled with bloodshed because eleven Israel athletes were killed in Munich, the site of the 1972 Olympics, after an Arab terrorist group invades the Olympic village.² This resulted in the Yom Kippur War. Finally, President Nixon orders to the “Christmas Bombing” of North Vietnam, which has a direct link to the Vietnam War.

¹ See Source: Information Please

² See Source: Information Please

US History

Death and crime was a major theme during the year of 1972. On May 15, 1972, Arthur Bremer shot Gov. George Wallace of Alabama at a Laurel, Maryland political rally. In addition, June 17, 1972 marked the beginning of one of the largest presidential scandals ever. Police apprehended five men in attempt to bug the Democratic National Convention headquarters in Washington, DC.³ The location: the Democratic National Convention's offices that were located at the Watergate complex. This event was a critical component into the events that surround the Watergate Scandal.

Sports

Athletic teams from across the United States had equally made a substantial impression on the events of the year 1972. The Super Bowl was between the Dallas Cowboys and Miami Dolphins where the score was 24-3. The World Series, the biggest baseball event, was played between the Oakland A's and the Cincinnati White Sox. The Oakland A's won with a game streak of 4-3. The NBA Championship was a coastal event since the West Coast Los Angeles Lakers played against the East Coast New York Knicks. The LA Lakers won with a game streak of 4-1. Finally, the Stanley Cup, the main event for the world of hockey was between two east coast rivals, the Boston Bruins vs. the New York Rangers. Boston won by winning the series with a score of 4-2.⁴

Entertainment

Music, movies, and print media all had an equal influence in the year 1972. The two most impressive contributions that have a conjunction with technology is the transmission of cable television over a network. In addition, the introduction of the Atari game system, an advanced

³ See Source: Information Please

⁴ See Source: Information Please (All Content)

arcade system computerized game system. The first game was created by Nolan Bushnell.⁵ These two events have made a contribution into our digital generation.

The year of music, movies, and print media was one that should be dubbed the year of the woman. Mostly woman won the Grammy Awards for the year of 1972. The Album of the Year went to Carole King for “Tapestry.” Roberta Flack wins Record of the Year with the release of “The First Time I Ever Saw Your Face.” Carly Simon wins the Grammy for the best new artist. In addition to woman dominating the Grammy awards, Gloria Steinem published the first truly exclusive woman’s magazine in the year 1972. The now popular, MS., debuted that year.⁶

The movie and television world were treated to the first of many installments of Francis Ford Coppola’s Godfather series while the television focused its attention to M*A*S*H which first aired in the fall of 1972. The other highlights for that year were the release of the movie version of Cabaret coming to the big screen. Interestingly, the National Institute of Mental Health and Generals came out with their first report on the exposure of violence on television and in theaters in comparing it with the aggression of children.

Science in Review

New media formats, high tech x-ray technology, and medical breakthroughs are all facets that create a remarkable year in science. Both the Compact Disk (CD-ROM) and the Video Disk are introduced to the world. The Compact Disk was developed by RCA in the United States while Philips Laboratory in the Netherlands introduced the video disk.⁷ Computerized Axial Topography technology (CATSCAN) was developed in England and began showing up in medical institutions in late 1972. The space program put yet another group of astronauts into

⁵ See Source: Burgess, Angela

⁶ See Source: Information Please

⁷ See Source: Gardner, David

space. In particular, the Apollo XVII became the last manned moon landing to date, returning to earth with almost 250 pounds of lunar topology.⁸ Finally, a medicine to treat anti-depression was created by Scottish scientist Bryan Mallow of Scotland and Klaus Schmiegel of the US. The medication, a form of fluoxetine was named Prozac⁹. Prozac has become the number one anti-depression medication on the market.

History of Computing

Calculators, programming languages, microprocessor computing and the Internet were all part of the history of computing in the year 1972. Scientific calculators became necessary during this period because of their robust calculating ability. The size of all these devices made quite an impression to the tech savvy individual. In addition, the microprocessor was becoming a more powerful system tool in the development of personal computing. Much of the micro processing technology had a direct relationship with the new breadth of programming languages that were being conceived. Finally, global communications became more apparent thanks to ARPAnet.

Calculators

The calculator generation sure dazzled most individuals at this time. The first scientific calculator was invented. Dubbed as the “The First Slide Rule Pocket Calculator” by Hewlett Packard, the HP-35 had brought the functions of scientific mathematics to the world. The HP-35 was Hewlett Packard’s first pocket calculator. Most calculators at the time only had four functions but this was not true for the HP-35. The HP-35 had many transcendental functions. Hewlett Packard admits they did not realize how much of a demand their was going to be for this calculator, therefore, they later had to warn people to expect waiting lists in the Hewlett-Packard

⁸ See Source: Information Please

⁹ See Source: Information Please

Journal.¹⁰ An interesting piece of trivia is that when the calculator first came out HP was the only symbol on the case. It was not until later on that the number “35” was added. The early models said only Hewlett Packard on the faceplate. "35" was added to later models.

Semiconductor / Microprocessors

Semiconductor powerhouse Intel first develops the 8008 processor, an 8-bit microprocessor that appears for a short while only to be replaced by the 8080 microprocessor. This microprocessor discontinued the 4004, created in 1970 that was claimed to be a breakthrough invention that powered the Busicom calculator and paved the way for embedding intelligence in inanimate objects including the personal computer. The 8008 were twice as powerful as the 4004.¹¹ This series of micro processing technology would be developed for two years until the 8080 processor comes out in 1974.

Programming Languages

Programming languages also dominated the computing world. The year 1972 introduced the world to the language of C, Smalltalk, PL/M, and PROLOG to the industry. Early in 1972, MAA (predecessor of Digital Research) defined together with Intel a new system-programming language called PL/M (Programming Language for Microcomputers) that ultimately replaced the assembly language used to program Intel's 8-bit processors.¹² Developed by Gary Kildall in 1972, most in the technological community recognize that PL/M was the first high-level programming language for the Intel microprocessor.

¹⁰ See Source: Hicks, David

¹¹ See Source: [Intel Microprocessor: Hall of Fame](#)

¹² See Source: Sammet, Jean

The second language to become a powerful force in the development arena was the first implementation of PROLOG (Programming in Logic) developed at University of Aix-Marseille. Many computer scientist claims that it is the preferred language for the 5-th generation of machines. PROLOG was structured on the calculus principles and represented a new paradigm in programming languages-logic programming.¹³ PROLOG is used mainly in artificial intelligence research and is considered by some to be an attempt to create intelligent machines by moving away from imperative languages. The developers of the language are Alain Colmerauer and Phillip Roussel.

Following the release of both PL/M and PROLOG comes a language that has become a technology standard used in the 21st century. This is the invention of the C Language. The conception and invention of the C language, developed by Dennis Ritchie at Bell Labs becomes a popular language for professional development. According to Ritchie: “The C programming language was devised in the early 1970s as a system implementation language for the nascent Unix operating system. Derived from the typeless language BCPL, it evolved a type structure; created on a tiny machine as a tool to improve a meager programming environment, it has become one of the dominant languages of today.”¹⁴ Ritchie and his colleagues at Bell Laboratories created the UNIX operating system that was programmed in the language of C. C remains a heavily used programming standard in which many sub-languages have been derived.

Another language that made a substantial contribution into the history of computing was SMALLTALK. SMALLTALK was the competing language of C that was developed at the XEROX PARC Learning Research Center. The model of the SMALLTALK was loosely based

¹³ See Source: Thieus, D. J.

¹⁴ See Source: Ritchie, Dennis M.

on the ideas of Alan Kay.¹⁵ Smalltalk made large contributions to two areas of computing, even though it is not widely used. The first is object-oriented programming. Before SMALLTALK, the architecture for an Object oriented language was never as concrete. Although OO concepts were originally designed in SIMULA, Smalltalk was the first language to make full use of these concepts. Smalltalk, however, is not just a programming language. The designer, Alan Kay, created an entire operating environment. Kay's vision was to create a future where users could interact with small, powerful desktop machines. Smalltalk is believed to be the system which modern windowing systems are modeled after. It made extensive use of windows, a mouse, and pop-up menus. Such user interfaces were almost unheard of during the late 60's when Smalltalk was being developed. XEROX introduced SMALLTALK in their Palo Alto Research Center (PARC) in 1972.

Astronomy and the space program also had a credit in the history of computing in 1972. The first achievement was the development of a programming language that eventually became the standard language used in astronomy. The language, FORTH, appears to be a medium-level language that uses a small numbers of very brief instruction words designed for telescope control.¹⁶ That same year, Apollo XVII goes into space to collect samples on the moon. In addition, the space craft also carrier the first of the Intel 4004 processors. Simply put, the space program was now using technology to improve science.

Development of the Internet

The Internet also stands out as a major facet of the history of computing. ARPAnet, the Department of Defenses' initial system that is later deemed as the Internet was demonstrated to colleagues at CS-ACM ICCG in Washington, DC. It was not until 1973, however that ARPAnet

¹⁵ See Source: Burgess, Angela

¹⁶ See Sourxe: Burgess, Angela

came to fruition. That same year, the first electronic email program was developed. Ray Tomlinson of BBN invented the first e-mail program.¹⁷The interesting notion for the development of email during this period is the fact that over the years, an odd fact became clear. Instead of using the ARPANET for long distance computing, the scientists used it for communicating internally within the organization for communicating everything from research results to small chat.

Conclusion

Computing history in the year 1972 truly influenced the inventions, the development, and discovery of modern Information Technology. Granted, much of what was being developed at this time did not become full blown development tools that were implemented until years later. Nevertheless, the groundwork that was set surely does provide an excellent understanding as to the precedent that makes our technology today and in years to come so sophisticated. The events that shaped the year 1972 support the notion that the world was in for a big change in standards. In essence, the year of 1972 set new standards for the global and technological world alike.

¹⁷ See Source: Thieus, D.J.

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