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History of Computing
Dr. Begin

**PERIOD PAPER:
1987**

For my period paper, I studied the year, 1987. There were many developments in computing during this year. There were advancements in hardware, software, communications, standards, business applications, databases, as well as developments in certain companies. These developments are outlined in the following pages.

Databases were a very hot topic in 1987. Many companies made advancements in databases. One of these companies is Intellicorp. Intellicorp found a way to link knowledge systems and relational databases. The product that Intellicorp designed was called Knowledge Engineering Environment (KEE). This product was a knowledge-based system software to access mainstream databases easily. Intellicorp was not the only company planning to bridge knowledge-based systems and mainstream databases.

(Moad)

Another popular topic relating to databases was adding value to them. This was discussed in a *Datamation* article written by Paul Hessinger. Hessinger says that there are three key issues that have surfaced in reference to databases and adding value to them. These are “the emergence of SQL as a de facto industry standard for data access, the need for RDBMS repository facilities to support application development and information retrieval tools, and the need to support applications operating in distributed and intelligent workstation environment.” (Hessinger)

During 1987, there were many articles discussing SQL (Structured Query Language). Many of these articles discussed the shortcomings of SQL. One of these articles was written by CJ Date. “SQL is deficient in at least three major respects. It omits important relational features, lacks orthogonality, and is extremely redundant.” (Date)

Another new trend in databases was distributed databases. This new technology was believed to bring everything together. “The distributed databases would have an index that keeps track of all information on all databases on all computers in a network.” (Myers) It was said that this would change the way business was done and add value to current DBMSs. Other than these major happenings, there were a few minor notes. One was that firms were competing to provide PC-based DBMS products. Another was that IBM’s market share of DBMS products decreased significantly.

There were numerous communication advancements in 1987. One of these advancements was the growing popularity of T1 lines. Although they are getting popular, there was a growing opinion that T3 lines could overtake the T1 market. Another trend that the computer industry was going through was the advancement of Integrated Services Digital Network (ISDN). ISDN and fiber optics could force T3 lines to grow in popularity. (Kerr, “T1”)

ISDN was another popular topic in 1987 (mentioned above). ISDN “should give users access to a wide spectrum of voice, data, text, and image communications services over a single network connection.” (Underwood) This network will provide benefits to the user. These benefits include improved services and new applications. It will also give a major reduction of costs to the users.

As I mentioned above, Fiber Optics were growing in popularity. Fiber Optics began to be used for LANs in 1987. This was caused by the increase in distributed systems and the desire for faster networks. “As the use of distributed processing applications and personal computers increases, network planners must develop flexible strategies for local networking. Optical fiber systems offer that flexibility.” (Stallings)

Another option that rivals fiber optic connection was also being discussed in 1987. This option was satellite communication. This type of communication was being used for corporate networks. Satellite connections received an increase after “installation of a relatively new and cheap breed of satellite system takes hold at several big-name customers.” (Kerr, “Pie”) Many companies wanted to obtain this satellite connection to save money on the expensive LAN lines that they were using for their connections.

TCP/IP standards were also advancing in 1987. This advancement was slow however. No one wanted the responsibility of developing the standard and it was being passed around between the Department of Defense and vendors. This lack of ownership of the standard caused a slow-down in the progression of this standard. (Kerr, “Stuck”)

IBM was also a major topic in 1987, like in many other years. IBM however, during 1987 was suffering. “IBM’s revenue in the third quarter of 1986 was only 2% higher than in the third quarter in 1985.” (Withington) Considering that the industry had focused on telecommunications may have been one of the causes of this slow down. IBM had never handled the telecommunication sector well and this was the root of the cause of the financial problems.

Another problem that IBM experienced in 1987 was the “crash” of the 3380. At this time, there were 225,000 IBM 3380s installed in the world. “IBM, which has also felt

the same supply-and-demand tug, chose to offer a trade-in program to migrate users to newer 3380s.” (Wiener) But users faced losses on machines that were subleased. This storage dilemma was also likely to get worse in the following years.

IBM was also having a problem with its vendors. “The vendors were concerned because without the source code they would not be able to develop software products to compete with IBM software products.” (Gullo) This problem began in 1983 when IBM enacted its Object Code Only (OCO). Vendors had been complaining about this for years and were continuing to do so.

There were other advancements in computing. One of these is that Microsoft announced its new operating system that takes advantage of the Intel 80286 microprocessor that supported more than one application at a time. Another development in computing was that companies were beginning to use handheld computers to manage their inventory. One of these companies was Frito-Lay. (Crutchfield) Graphics programs for personal computers were also growing in popularity. These programs allowed companies to make more creative reports and documents. (Fisher)

Another noteworthy topic that was discussed in the literature of the time was that companies were trying to manage the switch from the 5- $\frac{1}{4}$ ’ disk drive to the 3 $\frac{1}{2}$ ’ disk drive. Companies had developed exchange methods to switch current disks to the new format. (McWilliams) Another news story discussed was that Ross Perot resigned from his position as the CEO and Chairman of EDS and also sold his General Motors stock therefore also losing his place on that board. Object-oriented products, artificial intelligence, and information centers were also major topics of interest in 1987.

There were many new products in 1987. One of these was a new Laser Jet printer by Hewlett Packard. This was an eight page per minute printer that comes with 512 KB of memory resident. Another new product was a streaming tape drive. Hewlett Packard also extended the 9000 series. This was done with a new high-end workstation. NEC also produced a new piece of hardware. This was a two-speed laptop computer, the Multispeed. This laptop operated at both 4.77 MHz and 9.54 MHz. It had two 3 1/2' floppy disk drives, ran on MS/DOS 3.2 OS, had a detachable screen with LCD display. The laptop also had 512 KB of ROM and 640 KB RAM. It was priced at \$1995. (Barry) There were also software developments. One of these was an enhanced spreadsheet program by Access Technology. Another was a PC Graphics Package by Lotus.

Every year Datamation has a Top 100 issue. This issue discusses the top companies in different products. In 1987 the top five companies overall were IBM, Unisys Corp, Digital Equipment Corp, Fujitsu Ltd, and NEC Corp. The leaders in Mainframes were IBM, Fujitsu Ltd., and NEC Corp. The leaders in Minis were IBM, Digital Equipment Corp., and Hewlett Packard Co. The leaders in Micros were IBM, Apple Computer Inc., and Olivetti SpA. The leaders in Software were IBM, Unisys Corp., and Digital Equipment Corp. The leaders in Services were TRW Inc., ADP Inc., and General Motors Corp. Datamation has a special category called Lucky 13. This category lists the companies with the highest return on sales. The top 5 companies in the Lucky 13 category are Microsoft Corp., Cray Research Inc., Norsk Data AS, Lotus Development Corp., and Seagate Technology. ("The Datamation 100") As you can see, 1987 was a busy year in the computer industry.

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