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History of Computing
Period Paper
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The year nineteen seventy is the year of the development of superior hardware, software and communication networks. There are many major events that took place and drew a lot of attention by computer historians. One of them would be announcement by IBM that it will no longer sell its hardware with free of charge software. Another one is the introduction of low-cost PDP-8/E that will certainly change the market of full-scale computers. In addition there were some discoveries concerning database applications. Moreover, various computer languages were introduced. Additionally, as the information system grew, people became aware of security problems. This paper will examine and explain some of those major events that took place in the year 1970.

Unbundling

Unbundling software from hardware was one of the biggest events in computer history. Even though the event took place in the year 1969 the effects would not be seen until the year 1970. "IBM's unbundling announcement certainly created the biggest furor in the software/user industry. Along with this announcement came a tremendous

growth in software suppliers and announced packages" (P. Briggs). There are several factors that unbundling has created. One of them that has already been mentioned is the tremendous growth of the software industry. In addition, users became more aware of software pricing and availability. IBM was definitely the company with a lot to lose. Nevertheless, IBM came out strong and surprised the rest of the software industry by offering low priced software packages. The rest of the industry did not fall behind and introduced various applications, software packages, operation systems and debugging programs. The variety of software applications make it easier for users to achieve their goals. It is also easier for debugging and error tracing. While software companies enjoyed the benefit of unbundling, they also started to fall behind in terms of software support. This issue was mainly pointed towards some of the smaller companies. Smaller companies "began to learn one of the major lessons about supplying software - you have to be able to both sell and support it" (P. Briggs). Because of the burst in software development it was hard to evaluate which company was producing reliable packages. Nevertheless, most of the users felt that they were better off buying software from vendors instead of those who produced their hardware. Overall, the

unbundling of software from hardware had given a new perspective to the software industry and many would agree that this was the right decision for the entire computer industry.

PDP-8/E

In the article "Low-Cost PDP-8/E is Family-Compatible" that appeared in Computerworld, the author, Frank Piasta, describes the introduction of a full-scale computer. Even though PDP stands for programmed data processor it was in fact a full-scale computer. The reason it was called PDP basically had to do with IBM's domination of the computer market. According to the author, one of the most important characteristics of this machine is the cost, which is just a little under seven thousand dollars. An important fact is that a variety of computers up to the year 1970 had cost anywhere between hundred of thousands to millions of dollars. Needless to say, the entire PDP computer line had drastically decreased the cost of full-scale computers. In addition to low cost, the PDP-8/E was one of the computers that could be freely configured. Moreover, "the PDP-8/E marks the first use of Omnibus, an internal bus system that DEC says allows processor, memory, and peripherals to be interfaced in any available position in the CPU with each slot in the bus electrically identical" (Piasta). The

author points out that this machine included sixteen new microinstructions that controlled a teletypewriter, processed interrupts and more. The important feature of PDP-8/E is that it was compatible with the software of the previous version of PDP. The software package included four assembly routines, a mass storage program, a disk monitoring system and variety of language compilers. Overall, the family of programmed data processors made full-scale computers more available and more affordable to a number of companies and organizations.

MDB/70

MDB/70 is a communication-oriented database system that was introduced by RCA in 1970. According to RCA the system can perform an operation on both online-processing and batch modes. "By using MDB/70, the time required for the system installation and program reorganization can be reduced to a fraction of that generally needed for standard bill of material processors. As a result, set-up costs and programming requirements are significantly reduced (Computerworld, November Issue, 1970)". RCA claims that the system is easy to use and can be mastered in two or three days. An important point about the system is that it can update all the necessary files with just one single entry. For example, when a store makes a sale records such

as inventory, customers, request from a vendor, and record of sale are all updated with just one entry of information. The system also includes input editing, sequence checking with vendor item, quantity ordering, order point and safety stock determination, forecasting and inventory management. All of the features proved to be very important when conducting business. This is one of the first times the basics of managing a database had been incorporated into a system.

Polypac

Polypac was a meta-compiler system that was introduced by the Adpac Computing Language Corporation (ALC). According to ALC, "Polypac itself is a "neutral" high level software language that is completely machine-independed" (D. Leavitt). There are two processes that take place in the system. First Polypac takes the original program or source and converts it to its own language. After that it generates the source for the desired language. The output can be stored on disk, card or tape according to a programmer's choice. "Each of the source-to-Polypac and Polypac-to-subject language modules are self contained. There is no limit, theoretically, to the source-to-subject combination that can be implemented with such an approach" (D. Leavitt). Although the system can virtually generate

any available language, it is mainly used to convert programs into COBOL language that seemed to be the dominating language on the market. There are still some problems towards generating random access and sequential files, but ACL claims that the next version of Polypac will have them perfected. Polypac is not the only compiler system available to the public and it proves that the computer industry is concerned with making available a "translator" for computer languages.

System Security

William Bates who is the author of the article called "Security of Computer-Based Information Systems" that appeared in Datamation in May 1970, discusses some of the security issues that are related to database systems. The purpose of this "article is to acquaint business and data procession managers with areas of vulnerability of information systems and to present a security system framework upon which an organization may build and develop to suit its individual needs" (W. Bates). The author basically explains different methods of protecting information systems that are very well known today. Those include, passport protection, external protection, backing up files, integrity checks and more. The important thing to understand is that security problems occur at the same time

when information systems became more available to various companies and organizations. This is where the basic concepts of system security that are being implemented now were born. It was crucial to make the public understand what precautions can be taken to insure the safety of valuable information.

Conclusion

The year 1970 was definitely an exciting year for the computer industry. In my opinion the two most important events were the effects of unbundling and the introduction of low-cost computers. These two events indefinitely changed the future of the computer's industry. It is important for us to understand past events and how they occur. Without the understanding it is hard to explain what we have now and what we might see in the future in terms of computer achievements.

Reference:

William S. Bates, "Security Of Computer-Based Information Systems," *Datamation*, Volume 16, Number 5 (May 1970), pp.60-64.

Don Leavitt, "'Polypac' Allows Source Level Language Conversions," *Computerworld*, Volume 4, Number 31 (August 5, 1970), pp.19.

Frank Piasta, "Low-Cost PDP/8E Is Family-Compatible," *Computerworld*, Volume 4, Number 22 (July 15, 1970), pp.

Unknown, "MDB/70 Can Update All Files With Single Transaction," *Computerworld*, Volume 4, Number 31 (August 19, 1970), pp.20.

Peter L. Briggs, "IBM Unbundling Biggest Software Event in 1969," *Computerworld*, Volume 4 (December 31, 1969-January 7, 1970), pp.15.