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Computers Have Revolutionized Our World

Thirty years ago, spreadsheets were done by hand. It took days for a written letter to get from one city to another. Corporations had rooms filled with nothing but paper records of their finances and business and employee data. Libraries had row after row of drawers filled with small index cards to help patrons locate books. Vehicles were only a method of transportation. Today, spreadsheets are built with a few simple keystrokes, letters travel around the world in seconds, corporate records are being kept on computers, the rows of library card catalogs have been replaced by computer screens, and cars have become mobile entertainment centers. Computers have affected life at home, work, and in the car in ways we never imagined possible. As technology continues to improve and simplify our lives, our gadgets are getting smaller and more powerful and we rely on them more now than ever before for everything from the storage and organization of data to caring for our own bodies.

The ENIAC, the world's first computer, was built between 1944 and 1945 by the United States Army. This monstrous machine took up several rooms with its thirty units that weighed in at more than thirty tons. The system was made up of 19,000 vacuum tubes and thousands of other small electronic parts. The $487,000 ENIAC consumed a colossal 200,000 watts of electrical power and allowed for the storage and processing of just twenty 10-digit numbers (Weid). It is amazing to think that just 60 years later we have machines millions of times faster that have become so small that they will fit into our pockets.

Much of what has made the information age possible is the development of two components, the microprocessor and the computer hard drive. In the mid-1960s, Intel developed the first microprocessor for a Japanese manufacturer of calculators. The Intel 4004 consisted of transistors instead of the vacuum

tubes that powered ENIAC. Capable of 45 total instructions and costing only $200, the 4004 was smaller than a thumbnail and as powerful as ENIAC (Taylor). While the microprocessor refined the data, it had no provision for long-term storage. For this, the hard drive was needed. In the 1950s, IBM engineers developed the technology needed for hard drives, however the technology required to actually manufacture these disks did not come about until 1973 (Kozierok). By today's standards, these first drives held only a miniscule amount of data, but for the time, these first 5-megabyte drives held more than enough information. Text takes up very little space on a disk, and in 1973, text was the only thing necessary to store. As hard drive technology improved, data capacity increased. This improvement in capacity allowed the development of other new technologies which eventually resulted in record archiving, computer graphics, computer gaming, sound reproduction, animation, and more.

The advances in both the microprocessor and the hard drive have allowed for many new ways for companies to do business. Many companies now track everything regarding a customer: full name, address, phone numbers, email addresses, and sometimes even the products or services the customer has purchased from that company. This is good for the company because it allows them to target specific products or services toward a particular customer. Decisions such as this are typically made by comparing the purchasing trends and requirements of the customer against the benefits the product would have for the customer. This increases the likelihood that the customer will see the advertisement as beneficial rather than junk (*History, Challenges, and…*). Some see this as an invasion of privacy. Should this not depend on how the information is used? Without this type of database, the manufacturer of your car would have a difficult time warning you of a defect that if not corrected by a dealer could harm your life. Because this type of database does exist, the car manufacturer can contact you by phone, mail, or email depending upon the severity of the problem.

At home, we rely on microprocessor-driven products more than we typically think about. Everything from your television, VCR, and stereo to your alarm clock, microwave, and cellular phone are

driven by microprocessors. If you have a new washing machine, chances are that even that is driven by a microcomputer. Most families now have at least one personal computer in their home. We use computers to play games, track finances, conduct online research, write papers for school, and to communicate with friends and family. Technology has taken us from days where our writing had to be transported across the country by truck to a time where we can email the letter instead, even including sound and pictures. If email was not fast enough, instant messaging programs allow us to communicate with people anywhere in the world, both cheaply and in the comfort of our own homes.

This sort of technology has moved into the car as well. Many cars now come equipped with an onboard computer that can be programmed to tell you where and which direction to turn to arrive at your desired destination. If you are in an unfamiliar area, these cars are also capable of giving directions to the nearest gas station or Italian restaurant. A DVD player can also be built in to keep the kids occupied on long car trips, just one more example of how technology has gotten smaller and more efficient. Some of these features are available only in more expensive models, but as the price of this technology decreases, it will surely be placed in more affordable vehicles.

Computer technology has also had major effects on personal health. For instance, products such as LifeScan's OneTouch Ultra allow those with diabetes a quick and easy method for testing their glucose levels. The product even makes the process less painful by allowing the patient to test with blood taken from the fingertip or the arm, which has fewer nerve endings (*One Touch Ultra*). Computer technology has also led to the development of tests such as the CT scan and Magnetic Resonance Imaging, which help to save lives every day by providing early information about potentially life threatening conditions.

It is hard to say what computers have changed the most, but there is no question that computers have had an effect on almost everything. These effects will continue indefinitely. No one person can predict what the future might hold, but there is little doubt that the technology of today will be built upon to mold and shape our lives tomorrow.

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