

Many people don't realize that the Cold War was an era of achievement and economical growth, especially for the United States. This era provided us with a lot of inventions that make our lives more comfortable. For instance, one of the things that was dramatically improved during that time was the computer. If we sum up all the electronics that were invented or improved during that time, all of them have something to do with the space race either directly or indirectly. Without the Cold War and the hatred it made between the two countries, we would not have as sophisticated electronics and probably would still use huge and ineffective PCs and carry walkmans instead of iPods. John F. Kennedy's decision to invest money in the space race, which led to several electronic inventions, was a direct result of the Cold War.

To fully understand the magnitude of the situation, we need to understand how and why the Cold War started. There are many factors that led to this competition between the countries, and of course there are just as many myths. Staughton Lynd, a well known professor and historian, states that the Cold War was started because of American political beliefs which were different than Russian. American president believed that Eastern European countries should become democratic, and as democratic countries they should host free elections. The Russian government didn't like that idea because it wanted to keep those countries communist, especially Poland which was in the middle of Europe. It was even called a "syndrome of American attitudes" (Lynd 6-10). United States started to pour a lot of dollars into Europe to help it get free from the

communist regime. After America helped France and Italy, contact with the Kremlin (the Russian equivalent of the White House) became much colder. We need to understand that Russia wanted to build a wall of communist countries as a shield around itself to help in case of any emergency. American help to those countries around Russia was a milestone of future Cold War. “Faced with these alarming object lessons, both the Senate and House overwhelmingly passed an initial appropriation of \$6,098,000,000 for the relief of the European countries and China” (Bailey 340). Since Russia was weakened by the end of World War II, this war was only a conflict of power and ideology between the two biggest, most powerful countries in the world, which means it became a Cold War rather than full-fledged war.

The American government wasn’t interested in space exploration during the beginning of the Cold War, but in building European democracies. It could be even said that they had little or no interest in sponsoring such a huge project as space discoveries and things related to it. The government spent trillions of dollars on helping European countries rather than throwing money into the unknown universe. Everything changed after Russia launched Sputnik I into Earth’s orbit. Sputnik’s launch gave America totally new field for competition. Bradley G. Shreve, a writer from International Journal on World Peace, highlights that “...political and military leaders in the US saw outer space as a new arena for superpower sparring, while its exploration was simply viewed as Cold War strategic positioning” (Shreve 67). It was the biggest triumph of the USSR during that time. It not only showed the incredible amount of power that Russia had, but it also served as propaganda. America was always perceived as a country of wealth, power, and crazy smart scientists, but now Russian technologies and engineers seemed to be not only

better than American engineering but more effective as well. After that event, the American government wanted to spend more money on space exploration, but it didn't meet with public approval. Since the Cold War was always about showing and gaining power the American Government needed to take a stance and invest more and more money into all space programs just to be on "top." As a nation, we like to be the best, but since Russia was first into the orbit, the United States felt behind. It was even said by a military expert, "The launch in the Soviet Union of the world's first earth orbiting satellite and then the flight by Yuriy Gagarin were perceived by U.S. public opinion as acts of national humiliation" (Zhuk 212). He meant that the public was not only open now to spending money on the space race but felt it was necessary.

During the Cold War a focus on national security was important. It would not have been such a big deal during normal years, but we cannot forget that during the Cold War, this one breakthrough made a lot of controversies over unanswered questions. Because the biggest concern was the aspect of national security, some senators were worried that it might give the USSR a huge advantage in its military power. Gerard DeGroot writes, "Worse still, it seemed that if the Russians could put a satellite into orbit, they could surely fire intercontinental ballistic missiles at American cities with deadly accuracy, a point made repeatedly by Senator Lyndon Johnson, the Democratic frontrunner in the race for the presidency" (11).

During that time, this concern was on the mind of almost every American. John F. Kennedy, who at that time was only a senator, didn't agree with that statement completely. For him space attacks were fictional ideas taken straight from a comic book. He didn't want to stay behind in his political campaign however, so Kennedy added fuel

to the fire with his statement, “If the Soviets control space... they can control the earth, as in past centuries the nation that controlled the seas dominated the continents.... We cannot run second in this vital race. To insure peace and freedom, we must be first” (DeGroot 11). He decided to be first in a space race.

This manipulation and preying on space race helped him in the election for United States President in 1960. After becoming president, Kennedy remained true to his beliefs and wanted to end this whole idea of the space exploration and all other ideas that came with it. Unfortunately it was too late. NASA was so powerful and fast growing that his vote could not stop it. American society pick up the idea of “the universe” and was happy that the United States was doing something that possibly could help the man kind in the future discoveries. DeGroot claims that Professor Jerome Weisner, Kennedy’s science advisor, believed that NASA was capable of spending tons of money. He even advised Kennedy to abort the whole idea of space exploration because it lost its main purpose. It was looked like a military thread in the beginning but now it was not (12).

During the first year of Kennedy’s candidacy, the Space Race shifted from the military point of view to more humanistic one. At the end of 1961 NASA was too big to stop and Kennedy admitted to that; he “gave birth” to a huge monster that consumed millions of dollars and the only way to deal with it is to accept it. Government was giving big scholarships to students that wanted to major in engineering and science to later on work in NASA.

The next years were not so successful for NASA. The USSR already sent a lot of its rockets called Sputnik into the space, and one of them carried a dog called Laika. It proved that they could artificially sustain life out of the Earth’s orbit, and American

technologies were not as good as Soviet ones. The U.S. was behind in the studies and there was little hope that they could ever surpass Soviets. It was hard for the government to explain it to the people that even though NASA took huge amount of resources it could not find a breakthrough. Kennedy had a lot of explaining to do, and he was searching for another category of space race in which United States could be dominant. He asked his Vice-President, “Do we have a chance of beating the Soviets by putting a laboratory in space, or by a trip around the moon, or by a rocket to land on the moon, or by a rocket to go to the moon and back with a man? Is there any other space program which promises dramatic results in which we could win?” (DeGroot 13). Thanks to smart advisors from NASA he chooses the moon. After Kennedy’s assassination the works on the space program faded a little bit as the result of the Vietnam war but they were never stopped; mainly because of his memory.

The biggest achievement of the United States, and mankind as well, was the first moon landing. At 4:17 p.m. Eastern Daylight Time, on Sunday, July 20, 1969, man was safely on the moon! Almost every American television set and radio was on. It felt as if time stopped for a while and started just after the huge applause and cheers which broke out around the nation. No one who watched will ever forget Neil Armstrong’s proud words, “Houston, Tranquillity Base, the Eagle has landed;” his words are known to almost every human being on the planet, “That is one small step for man; one giant leap for mankind.” Richard S. Lewis, a great scientist and journalist of that time, states that “We have clearly entered a new era. The voices that we hear coming back from these brave men on the surface of the moon are still hard to believe, and yet it’s true. I think that this success is something that has raised the spirits around the world and it has

caused us to pause and ponder its meaning which only history in the final analysis will reveal to us” (Lewis 514).

In the eight years since Kennedy called for the moon landing, the nation’s mood changed spontaneously. From total excitement at the beginning, to disappointment and defeat during the Vietnam War, and finally to pride at an event that showed the greatness of the nation. America showed that even though it is hard, time consuming, and extremely expensive, it is possible to land on the moon. As a strong nation we can overcome any obstacles and achieve something that people dreamed about for centuries. This huge achievement secured the winning position of the U.S.A not only in the Space Race but in the Cold War as well.

The Space Race and the Cold War had a tremendous effect on electronics and technology during that time. It is unthinkable that NASA was able to control a 13,000 kg spaceship, which landed on the moon with high accuracy, and was able to get it safe to the Earth when the commercial computers around the world were similar in their calculating power to our graphic calculators. We owe this astonishing achievement to MIT Instrumentation Laboratory, which worked day and night to improve our technological advantage over Soviets. Of course there was an option of controlling everything from Houston, but planners were concerned that the Soviet Union might try to jam any navigational information sent from the ground, so the on-board computers had to be capable of controlling the whole operation as well as giant “computers” on the ground. We need to realize that some computers were as big as gymnasium. The computers that formed the basis of the Apollo Navigation System were at the leading edge of technology in the 1960s. Microsoft didn’t exist yet, and Linux was just in the initial phase. Even

though computers weren't the fastest, the operating systems were well designed and worked perfectly.

Another reason that the government was willing to spend millions of dollars on computers was the military aspect. Since Russia was working on their technologies, falling behind in this electronic competition might result in a huge disaster. The government did not want that to happen, so Congress increased the budget of computer research. It gave a huge amount of resource to universities around the country to work in certain fields of electronics and computer science. On top of that, the government gave out a lot of scholarships to students just to lure them to work on computer science. It was so important for the military because the U.S. Armed Forces were worried about the nuclear threat which might occur if our anti-aircraft weapons would not be able to correctly find and destroy enemy rockets outside of our territory. Thanks to that threat a lot of computer bases were build around the country, which later on were converted for civilian use. IBM Corporation, which pretty much mimic majority of NASA and military's ideas, improved dramatically its technologies on computers which lead on to creating first PC in early 1980's.

The second invention that changed the world was a system that transferred data from one place to another. Before the Space Race, everything was transmitted by stationary towers which resonated at AM and FM wavelength. Thanks to the Cold War and the first satellites, the world developed the technology to transfer signals on an international scale. The process was much easier than wires on the bottom of the ocean, and of course it was much cheaper. The stations sent signals out of space to man-made satellites that were synchronized together. The satellites deflected that signal and sent it

back to any location on the Earth. Motorola invested millions of dollars into research and development of this new technology, but it was not the only company interested in this new process. AT&T introduced the idea even before the space race, but the company was not able to develop it first. After hard and time consuming work Motorola's investment paid off. At the end of 1960's Motorola proudly demonstrated the first cell phone that could use that network and made tons of money on it. AT&T was always a step behind the mighty Motorola, but during the period of 60's and 80's they just couldn't compete with Motorola. Thanks to this unpredictable investment the company was able to employ thousands of workers, which made an influence on American economy (Lewis 232-242).

The idea of space exploration, and all the gadgets that followed it, made their mark in everyday life and the culture as well. The space race started a cosmic wave of pop culture that brought us space like cartoons and movies. David Schwartz, chief curator of the Museum of the Moving Image in New York, said that it would not be possible without Walt Disney. Disney started the whole idea of space exploration and put it into his work. With the help of the space scientist, Disney designed the looks of the average looking American family living in a cosmic universe. Of course he wanted to make tons of money on the just open "Space Disney Land," but still his cartoons made a big imprint on American culture ("Space Race Permeated Pop Culture" 1).

The best known space related cartoon made in 60's was "The Jetsons." It was a space age counterpart to "The Flintstones." "The Jetsons" was projecting contemporary American culture and lifestyle into another period of time. The important thing is that it was used as an inspiration for the later shows. Based on the cartoon, a lot of shows involving space exploration were made. The most known ones are "Star Trek" and "Lost



in Space." Those shows changed the lives of some people that just fell in love with the idea of an unknown future, and made a different social group in the culture. It is hard to picture an average American city without Star Wars nerds dressing up for the opening of new movie or the premiere of the new comics. Sometimes, they do not realize that the space race pop-culture originated from one man and his funny looking cartoon.

Walt Disney was not the only one who had a brilliant idea to make money on the whole space exploration theme. Andrea Seabrook, a well known radio host, states that many people tried to capture the momentum and use it as an advertisement for their products. Television and radio programs were full of cosmic looking/sounding commercials ("Space Race Permeated Pop Culture" 2). All those factors made an average "Joe" interested in new technologies and maybe less scared of them. As a result, a big economic expansion followed, increasing the standard of living of Americans.

The biggest success of 60's technologies was the creation of the first computer game. It was called *Spacewar!*, which was a hot name back in those days. The game was designed mainly by Steve Russel, a member of the Hingham Institute. It was an extremely simple designed game that won the hearts of young Americans. The game engine was based on the trigonometric functions of "sine's and cosine's" which were provided by Alan Kotok. The PC was not designed yet so players needed to play on PDP-12's, which basically looked like a huge wardrobe with a screen and couple of buttons. Of course the "players" did not own that huge and expensive piece of technology. To play the game, they needed to go to a computer convention or special game room just to play it. The controls and game play was at the beginning level and even the creator of that game knew that it was not the best that he could do.

Despite the inconvenience of play, more and more players joined in the fun of virtual entertainment. The business grew bigger and bigger and after the introduction of personal computers, the market exploded with opportunities for new games and ideas (Adams 62-65). Today, video game business is a multi million dollar part of the economy which is still growing. A simple game involving two triangles and square bullets opened the way for computer giants like Insomniac Studios, BioWare, and Ubisoft to start their work on complicated games like Crysis.

It is hard to believe that Cold War had something to do with improvements in technologies, everyday life and American economy. Such huge military and political competition between U.S. and USSR changed the life of common people around the world. Thanks to the great president John F. Kennedy and his decision to bet on the fiction idea of ruling the space it all become non-fiction to us right now. A well known historian Gerald DeGroot sums up Kennedy's greatest achievement as, "One of Kennedy's most stunning achievements was the way he managed to convince Americans that he actually cared about space. He sold them a sublime adventure which he said was part of their destiny, but was instead motivated by nothing more than a cheap desire to kick lunar dust in Soviet faces. Americans went to the moon for the sake of the President who never really cared" (DeGroot 17). All those space age technologies and inventions not only changed our comfort of living, but they brought something special and beautiful to a society already rich in culture and traditions.