

The Continuing Impact of the Space Industry

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On my honor as a University of Virginia Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

Advisor

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Abstract

This paper looks into societies continuing need for space exploration and how NASA and other space companies or organizations have made positive impacts on technology in the past 60 plus years. Since the Apollo missions, NASA has continued to do a lot of research and scientific development on a limited budget. This paper looks at the issue of space exploration by using the Social Construction of Technology (SCOT) framework. This framework states that society shaped technology and this is very evident in the history of space exploration. The human population decided that they were going to land a person on the Moon and then they created the technology capable of doing that feat. Throughout human history, people have faced impossibly difficult tasks and found ways to overcome them. The SCOT framework ties into this in that people have to make the technology to reach their goals, such as going to the Moon or Mars. The SCOT framework is used in this paper to show that society needs goals in order to develop technologies and continue to advance. Technologies are not going to be created without people working hard to make them. NASA has created numerous technologies that everyone uses every day and has been at the forefront of research since they have been in existence. All of the new technologies have greatly benefited countries other than the United States, especially developing countries that cannot afford to do research themselves. The new privatization of the space industry has allowed for new technologies to be developed at a greater rate. With so much money going to the space industries it was important to first look at how this money was being used and what results have been made in recent years. This paper investigates what private companies are doing within the aerospace industry and how these companies are making an impact in society. Private companies are more concerned with generating profits than government agencies are and therefore should lead to quicker results. Getting to these results may be very costly, however.

NASA and other space organizations provide jobs and economic benefits that would not exist without them. While the private space industry is likely to lead to some problems, the economic and technological benefits will be of great benefit of society.

This study argues that NASA and other space science organizations still have a very relevant place in this society and should receive more funding. The increase in funding would lead to even more technological advances and increase excitement in science and technology in the society. This thesis tells people why so much time and money is spent toward space exploration and how it is helping them in ways they do not now. The continued spending in this area of science is only helping society and giving society tangible goals that should be celebrated.

Studying this topic is important because people spend a lot of time and money in this area of study, and this should not be done without first making sure it is necessary and good.

For the technical design project, the team I was a part of designed and built an Electrical Discharge Machining device. This device was designed to be able to drill a hole through a piece of metal using sparking. A voltage difference will be applied between the piece of metal being machined and another piece of metal, called the tool piece, and a spark will occur causing part of the metal to chip away. The two pieces of metal are sitting in a tub of water so that the electrons can flow from one piece of metal to the other through the water. For this project, the team had to design the device, present the idea, order the materials, build the device, test the device, and present the final project. The project team encountered many challenges throughout the project and learned many lessons. Such lessons include the limit of a budget and the value of a good design.