

The Future of Space Exploration, Private Enterprise Roles, Costs, and Benefits

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### The Future of Space Exploration, Private Enterprise Roles, Costs, and Benefits

NASA continues to be a leader in space exploration, and the agency has a lot of plans for the future. Recently, NASA announced a new program called the Space Launch System (SLS). The SLS is a massive rocket that is meant to take astronauts to Mars. The SLS will have five engines, and it will be the most powerful rocket in the world. However, in the future, space exploration may even become a commercial enterprise, meaning that private companies will be the ones conducting these missions; this could have a number of implications for both NASA and the future of space exploration as a whole. The role of entities like the private enterprise in future space exploration highly determines the cost benefit of sending humans to the Moon and Mars by factoring in its significant contribution in bearing the costs.

### **Evaluating the Future of Space Exploration**

NASA has a long history of advancing space exploration. The entity is one of the most iconic and well-known organizations in the world, and its work continues to help in learning more about the universe. There are many potential future endeavors for space exploration that NASA could be involved in, such as sending astronauts to Mars or exploring the outer space beyond our planet, earth. There are many challenges that need to be overcome before these ventures can be successfully executed, but NASA is well-positioned to address them.

As NASA looks to the future, in a recent report by the National Research Council, the entity called for a balanced portfolio of science, technology, and exploration that would enable NASA to meet its strategic goals (Szocik, 2020). Also, they indicated that it is essential for NASA to maintain a robust science program that can make significant contributions to the understanding of the universe and human's place in it. Notably, technology development is critical for enabling future exploration missions and for maintaining U.S. leadership in space.

Therefore, looking to the future, NASA is working on a number of ambitious projects that could see humans return to the moon, establish a permanent presence on Mars, and even venture out beyond the solar system.

### **The Benefits of Sending Humans to the Moon and Mars and Its Worth**

The benefits of putting humans on the moon and Mars are immense. First it will help in learning more about our own planet. Through space exploration it will be possible to study the moon's surface and the planets in our solar system, giving us a better understanding of how they work (Bignami & Sommariva, 2016). Second, it would allow us to establish a permanent human presence outside of Earth. Thus, it will show the world humans' capability in accomplishing great feats. Putting humans on the Moon and Mars will also show that we are not afraid to explore new and different worlds and will also provide us with valuable data that could be used in future space missions. Therefore, the scientific value of such missions, the economic benefits of developing new technologies, and the political benefits of demonstrating American leadership in space exploration will be achieved.

### **The Role of Private Enterprise in Space Exploration**

Private enterprise has been an important part of space exploration throughout its history. Private enterprise has contributed to space exploration in a variety of ways, including developing new spacecraft and technologies, providing funding, and providing personnel. Private enterprise has also played an important role in space exploration by creating new markets for space goods and services (Asmar, 2022). Space exploration is important for private enterprise because it provides new opportunities for growth.

The use of commercial spacecraft has allowed for more rapid and cost-effective exploration, as well as opened up new opportunities for private companies to profit from the

exploitation of natural resources or the deployment of satellite services. Private enterprise has driven innovation and progress in space exploration by providing access to resources and technology not available from government-operated entities. Additionally, private enterprise has been instrumental in developing new spacecraft and propulsion technologies, and has provided crucial support for the development of space infrastructure (Bignami & Sommariva, 2016). Private enterprise has also played a significant role in the development of commercial space transportation services. In summary, private enterprise space exploration can help stimulate the economy and create jobs, help advance scientific knowledge and explore unknown territories.

### **Private Enterprise Should Bear the Costs and Reap the Benefits in Space Exploration**

The costs and benefits of space exploration should be borne by entities with a vested interest in the success of such endeavors, such as governments and private enterprise. Governments and private companies have the finances and expertise to undertake space exploration, while space agencies should focus on developing and maintaining the infrastructure necessary for space exploration (Asmar, 2022). Particularly, the cost of space exploration should be borne by entities that reap the profits from it, such as private companies. Private enterprise has a history of innovation, and is best equipped to bear the costs and reap the profits from space exploration. Private enterprise is motivated by profit, which is always in the best interest of shareholders. Asmar (2022) additionally indicates that private enterprise has the capability to rapidly respond to new opportunities and challenges in space exploration, which is essential for ensuring that the United States maintains its leadership position in space.

Private enterprise has been able to capitalize on the benefits that space exploration has provided, like increased knowledge and technology. The costs of space exploration have been borne by the taxpayers, who have funded many of the space programs. Consequently, private

enterprise should bear the costs and reap the profits from space exploration because it is in their best interest. Private entity plays a significant role in the economy, contributing billions of dollars to the GDP each year (Szocik, 2020). Also, space exploration helps to maintain national security and space research is essential for developing new technologies that can be used in defense programs.

### **Conclusion**

Future space exploration depends on the private enterprise as the entity takes care of the costs by providing the resources, technology, and scientific knowledge. Space exploration has captured the human imagination for centuries. From early science fiction to real-world satellite programs, space exploration has been a popular topic. The future of space exploration is an important question for the 21st century. With advances in technology, there are many potential avenues for space exploration. As such, a number of entities have a vested interest in space exploration including government agencies, private companies, and individual investors. Future space exploration should encourage competition amongst countries to place bids in various departments to further advance the expedition.

## References

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