

The Importance of Nonprofit Organizations in the Space Industry

Introduction

The main purpose of nonprofit organizations is to advocate for their respective causes. These organizations bring awareness and support to certain issues (Leroux & Goerdel, 2009). They provide education to the public and government officials and therefore serve as a vital resource due to their extensive knowledge of specific topics. Nonprofits involved in the space community aim to promote both the public and private space industries (Reibaldi & Grimard, 2015). They increase public knowledge of space activities and the societal benefits that they provide and motivate the public and government officials to support the space community.

There are several avenues for space advocacy in the United States. Nonprofits can support the National Aeronautics and Space Administration (NASA), which serves as the public space program that leads U.S. government-led efforts in space exploration, discovery and technological development (National Aeronautics and Space Administration [NASA], 2019a). Nonprofit organizations can also promote the interests of the growing private space industry, which consists of commercial aerospace companies (Whealan-George, 2018). The purpose of this study is to analyze the different approaches used by space-related nonprofit organizations in the U.S. to advocate for the space community. Research shows that these organizations engage in public outreach, collaboration, and policy advocacy and lobbying to advance their causes.

Public Outreach

An important advocacy strategy for many nonprofit organizations is public outreach. Nonprofits engage the public and are vehicles that encourage civic participation (Leroux & Goerdel, 2009). They bring awareness and provide useful background information on specific topics. In this way, nonprofits draw people together who are interested or concerned about similar issues. They give people the opportunities and resources they need to take up causes themselves that are important to them. For example, many people use these opportunities to support governmental programs, funding levels, or certain industries. By providing this avenue of education and engagement, nonprofits have positioned themselves as an essential part of the country's democratic society in which the public is involved in the actions of government (Boris & Mosher-Williams, 1998).

In the public sector of space activity, public support is necessary for the funding of scientific and technological missions in space (Ehrenfreund, Peter, & Billings, 2010). However, NASA, the U.S. government's space program, is chronically underfunded. At the height of the Apollo moon landing program in 1966, NASA's budget accounted for 4.41% of the federal budget, but it has fallen to just 0.48% of the federal budget in 2018 (NASA, 2019b). Over the past several decades, public opinion polls have shown that space is not a priority among U.S. citizens (Reibaldi & Grimard, 2015). However, due to the vast distances of space and therefore the long-term nature of missions, public support is required to procure funding for these complex programs (Ehrenfreund, Peter, & Billings, 2010). Currently, these types of missions are not sustainable under the current NASA funding levels (Reibaldi & Grimard, 2015). However, considering that NASA is a government agency that serves the public interest, increased public support could encourage elected officials to raise funding amounts (Ehrenfreund, Peter, & Billings, 2010).

The purpose of many nonprofit organizations is to engage the public on relevant issues (Avner, 2016). Many space-related nonprofits raise awareness and provide education on space exploration to raise support for the space community. They also offer citizens the opportunity to participate in space-related activities. For example, The Planetary Society is a nonprofit whose mission is to “empower the world’s citizens to advance space science and exploration” (Planetary Society, 2019a, para. 2). The organization includes citizens in exploration and technological projects such as the LightSail, a solar powered spacecraft designed to orbit the Earth, and test solar sailing technology (Planetary Society, 2019b). The project is citizen-funded and relied on Society members, private citizen donations, and a fundraising campaign. Research on the project and solar sailing technology was made available to the public by the Planetary Society. The organization also encouraged citizens to look for the spacecraft in orbit and even communicate with it using Morse code.

Additionally, the Planetary Society seeks to educate the public on space activities to increase support (Planetary Society, 2019a). The organization routinely provides the public with information on a wide variety of space topics (Planetary Society, 2019c). Examples include scientific and technological research reports, information on the Society’s projects, and Mars rover mission reports. They also publish the Planetary Report, which is an internationally read magazine that documents space-related activities developed around the world. The organization also publishes explanations of the budget awarded to NASA each year to inform their constituents on the funding issues plaguing the agency.

The National Space Society (NSS), a nonprofit aimed at promoting change to expand human civilization beyond Earth, engages in public outreach by providing educational opportunities to students at the elementary level to the doctoral level (National Space Society [NSS], 2019a, 2019b). The organization hosts several different competitions and contests every year which allows students to work on projects in settlement design, lunar explorers, satellite development, and business in space. Entries come in from all over the world and are meant to engage the younger generations in space science.

Many of the nonprofit organizations dedicated to activities in space anticipate that this public awareness will lead to civic engagement, where citizens become involved in public policy formation by voicing their opinions (Avner, 2016). This expression of public desires is necessary for a functional democratic society (Boris & Mosher-Williams, 1998). By participating in the formation of space policy, the public will feel a sense of ownership over the country’s space program, which makes public support over time more likely (Ehrenfreund, Peter, & Billings, 2010). Many nonprofits encourage this display of grassroots organizing, in which citizens mobilize political action (Leroux & Goerdel, 2009). This “outsider” strategy that garners broad public support is necessary for the continuation of long-term advocacy (Avner, 2016). Citizens use the organizing efforts of nonprofit organizations to get informed on relevant issues, participate in issue-related events, and encourage others to join in the cause (Fyall & McGuire, 2015).

In addition to public participation and education, the Planetary Society also encourages citizens to become involved in space policy advocacy. They urge members to advocate for core issues in space science and exploration in multiple ways (Planetary Society, 2019d). In addition to participating in group activities, the Society also encourages members to write to their elected officials and request an increase to NASA funding levels. The organization also hosts a monthly podcast that covers topics related to space policy and the effects of politics and offers an online

course on space advocacy. These efforts help to ensure that an educated and motivated constituency are aware of and engaged in opportunities to influence space policy.

Although research has shown that public support is necessary for the continuation of the public space program, nonprofit organizations in the field certainly have their work cut out for them (Ehrenfreund, Peter, & Billings, 2010). Public opinion data has consistently shown that space exploration is not considered a priority and is not viewed as a meaningful use of taxpayer dollars (Delgado, 2016). Even during the Apollo program, when NASA funding was at its highest, polling data still revealed a lack of public support for the mission and for funding increases. Instead, President Kennedy advocated for the Apollo program to respond to the Soviet Union's activities in space, which included the successful launches of the *Sputnik* satellite and Yuri Gagarin, who became the first person ever in space in 1961. The President used the Apollo mission to show the United States' technological and political superiority.

Moving forward, the space community will need to find new motivations to garner interest and support for space activities. Research has shown that younger generations are not motivated by this same sense of national pride that President Kennedy drew on to support Apollo (Delgado, 2016). Instead, the public is driven by more practical concerns that include economic prosperity and technological development. Nonprofit organizations must be aware of the actual justifications that motivate people to support space activities beyond patriotism and scientific discovery. They need to take into account these changing motivations among the public and adjust their outreach programs accordingly. Currently, citizens are largely unaware of how they are impacted by NASA programs and do not realize the many personal and professional benefits and opportunities they gain from those missions. A focus on how NASA's programs benefit the everyday lives of citizens would be extremely valuable and would show the usefulness of activities in space. Additionally, nonprofits should promote the potential economic potential of the space industry and the many possible employment opportunities that the industry creates.

Raising this type of broad public support is necessary for the advancement of space activities. Long-term missions will require decades of continuous support. Fortunately, nonprofit organizations have the resources needed to engage the public. These organizations seek to educate and involve the public in space science and exploration. These activities lead to citizens taking up the cause themselves and advocating for political support. As long as nonprofits are successful at motivating the public, the space community will benefit from the increased awareness and support.

Collaboration

Another important advocacy method is collaboration, in which organizations partner with other nonprofits or private businesses. Research has shown that the missions of nonprofits will benefit from entering into a collaboration with others (Leroux & Goerdel, 2009). For the partnership to be successful, the organizations involved must have shared interests (Austin & Seitanidi, 2016). They should be compatible and able to bring resources together that will bring value and contribute to the missions of all involved. Value is created when the collaboration gives rise to a greater amount of support for specific issues and gives organizations the opportunity to establish their relevance in the field (Leroux & Goerdel, 2009).

Space-related nonprofits often partner with other nonprofits and private businesses in the space industry. They work towards the common goals of advancing space science and development and promoting the space community (NSS, 2019c; S. Sidorek, personal

communication, May 6, 2019). They join together to raise their collective voices in an effort to support and meet the needs of the continuously evolving space industry. These groups are united over their common beliefs and formed an advocacy coalition designed to promote the exploration and development of space (Jenkins-Smith, Nohrstedt, Weible, & Ingold, 2018). They coordinate their actions to influence policy and advocate in support of specific programs, funding levels, and changes in industry regulations.

The growth of the private space industry gives nonprofit organizations another avenue through which they can promote the space community. In 2016, the industry was valued at \$38 billion, which accounted for two percent of the total U.S. GDP, and is expected to grow at a rate of seven percent annually (Whealan George, 2018). These companies are involved in space travel manufacturing, satellite development, scientific experiments, and eventually commercial travel and tourism. SpaceX, a company that builds rockets and spacecraft, has developed reusable rockets capable of carrying all types and sizes of payloads into space. Virgin Galactic, another private business dedicated to space travel, has built a reusable space plane that travels in suborbital flight. NASA itself has had to increase its level of involvement with these private companies to complete its missions due to the agency's limited funding (Mahler, 2016). Congress has shown that it is more willing to allocate funds for private industry contracts as these projects tend to be viewed more in terms of employment and economic purposes. This competition for contracts spurs innovation and drives the cost of space programs down, giving rise to the growth of the industry.

Nonprofit organizations frequently collaborate with these private businesses from the space industry. Research has shown that nonprofits and businesses are moving towards shared goals and partnerships between them can create value (Austin & Seitanidi, 2016). In this field, shared value is created with the promotion of the societal and economic value of the space industry. The National Space Society (NSS) takes part in multiple alliances to advance the organization's goals of exploration, development, and settlement (NSS, 2019a, 2019c). The NSS collaborates with corporate partners for financial support and to raise awareness of accomplishments made in the space industry (NSS, 2019a). Corporate members include many of the industry's leading aerospace companies including Arianespace, Orbital Sciences Corporation, SpaceX, and the United Launch Alliance.

Similarly, the American Institute of Aeronautics and Astronautics (AIAA) is another nonprofit in the aerospace community that collaborates with peer organizations. The purpose of the AIAA is to promote the space industry by "igniting and celebrating aerospace ingenuity and collaboration and its importance to our way of life (American Institute of Aeronautics and Astronautics [AIAA], 2019a, para. 1). According to Steve Sidorek, AIAA's director of public policy and government relations, the organization has almost 100 corporate members that it partners with to promote the objectives of the space industry (personal communication, May 6, 2019). AIAA takes great care to coordinate messaging and content so that the needs of all members are met.

Along with private businesses, nonprofits organizations also partner with other nonprofits to pool resources, encourage awareness and education, and promote political activity (Fyall & McGuire, 2015). They have common interests and can unite to raise support for shared objectives (Austin & Seitanidi, 2016). The NSS takes part in two alliances with other nonprofits in the field to further the organization's goals of space exploration, development, and settlement (NSS, 2019c). The Alliance for Space Development (ASD) hopes to reduce the cost of access to space and stimulate the growth of the space industry. In addition, the Space Exploration Alliance

(SEA) hosts a convention in Washington, D.C. where organizations gather to support space exploration by encouraging higher levels of NASA funding.

The AIAA also collaborates with sister societies to promote and support the policy needs of the space community (S. Sidorek, personal communication, May 6, 2019). One way this is achieved is by partnering with eight other organizations and arranging and hosting the International Astronautical Congress (IAC). The IAC will take place in Washington, D.C. in October, which will be the first time the convention has been held in the U.S. since 2002. The main objective of the IAC is to educate lawmakers and staff on the benefits of the space industry so that they gain a better appreciation for how the space community contributes to society.

While these partnerships have tremendous potential, collaborating with another organization with differing goals puts a nonprofit's mission at risk. If partners are working towards different goals, resources can be wasted, productivity can suffer, and opportunities can be squandered. Therefore, it is important to have shared interests and goals. Nonprofit organizations need to take care to only enter into partnerships where shared value is created (Austin & Seitanidi, 2016). All parties need to benefit from the collaboration, which should assist in the achievement of organizational missions. While nonprofits often partner with private businesses to promote the space industry, they must ensure that the economic interests of corporate partners don't overshadow or hinder the nonprofit's goals. The parties should work together to advance the interests and ambitions common to both.

This collaboration between nonprofit organizations and others in the field raises the level of support for the space community. The growth of the private space industry gives nonprofits the opportunity to enter new partnerships and promote the benefits and successes of the space industry. Nonprofit organizations also collaborate with other nonprofits to combine their efforts and raise awareness and provide information on activities occurring in space. As long as shared value is created, collaboration will help these nonprofits succeed in their missions.

Policy Advocacy and Lobbying

Many nonprofit organizations also use policy advocacy as a method to support particular issues (Avner, 2016). They aim to educate and motivate the public and elected officials to shape the policies that assist and promote certain interests (Leroux & Goerdel, 2009). Lobbying is a type of advocacy in which an individual or organization is seeking to influence policy by asking a government representative to take a particular stance on a specific policy proposal (Avner, 2016). It often involves direct communication such as letters, calls and meetings between nonprofit representatives and government officials in which the official is being asked to take a certain policy position (Prentice & Brudney, 2017).

Space-related nonprofits advocate for policies that aid in the expansion of both the public and private space industry (Reibaldi & Grimard, 2015). They provide vital information to lawmakers on the importance of the country's space enterprise. They support NASA and the exploration efforts of the United States as well as encourage the consideration of the interests of the private space industry when passing legislation and regulation. These organizations use direct and indirect approaches to achieve their objectives (AIAA, 2019b; NSS, 2019d; Planetary Society, 2019d). Many advocate on behalf of the space community to raise awareness and grow public and political support. Their goal is to be viewed as experts in the field of aerospace science and become resources for government officials. Some engage in lobbying activities and request that lawmakers take a particular action on specific policy, such as budget increases,

project or mission support, or industry regulations. Studies have shown that both direct and indirect types of advocacy are needed to influence policy (Fyall & McGuire, 2015).

Nonprofit organizations advocate for their causes by increasing awareness and knowledge of the space industry. They provide education on exploration and technical developments in the field to the public and government officials, thereby establishing themselves as experts on aerospace issues. They are utilized by lawmakers as a resource when forming opinions on policy and when drafting legislation. Policy advocacy is an important part of the mission of the American Institute of Aeronautics and Astronautics (AIAA). The Institute has a Public Policy Committee that identifies the key issues that guide the organization, organizes congressional visits and seminars, and provides policy-related information to public events (AIAA, 2019b). The AIAA also holds a Congressional Visit Day where members meet with delegates and promote the Institute's key issues (S. Sidorek, personal communication, May 6, 2019). During that event, they also provide educational briefings on specific aerospace topics. Leadership from the organization has also testified in front of congressional committees and provided analysis of government space programs and offered strategies and possible solutions to problems faced in the field (AIAA, 2018).

Similarly, the National Space Society (NSS) advocates to encourage the social and political change necessary to expand civilization beyond Earth (NSS, 2019a). The NSS Policy Committee is responsible for preparing the Society's positions on space activities in the public and private sectors (NSS, 2019d). Those positions are shared with the public and with elected officials. The NSS also hosts congressional visit days in Washington, D.C. to advance the issues of space exploration, technological development, and settlement by providing information to members of Congress and their staff (NSS, 2019e).

The Planetary Society advocates to shape policy and encourage the advancement of space exploration (Planetary Society, 2019a). They support a NASA budget capable of sustaining ambitious projects and provide resources and knowledge to government officials to aid in the development of policy solutions. The organization assisted in the creation of the Planetary Science Congressional Caucus, which was founded in January 2018 (Planetary Society, 2019e). The bipartisan group consists of congressional members from both houses and is dedicated to the promotion of scientific and exploration efforts in space. The Society also encourages its members to urge their representatives in government to join the Caucus.

Some space-related nonprofits engage in lobbying by asking members of government to take a particular policy position on a specific proposal (Avner, 2016). This is more of a direct, insider approach that involves direct communication (Fyall & McGuire, 2015). It goes beyond giving information and expert opinions on policy topics to asking the representative for a particular action. Although nonprofit organizations are legally allowed to lobby for government action, it seems that many are reluctant to do so. The influence of multiple stakeholders can affect or even hinder lobbying activities (Prentice & Brudney, 2017). Nonprofits also do not want to risk the informative position they hold with government officials due to its importance to future advocacy efforts (Fyall & McGuire, 2015). According to AIAA's director of public policy and government relations, the Institute does not lobby and only serves as a resource for elected representatives, their staff, and government agency officials (S. Sidorek, personal communication, May 6, 2019). The AIAA does not have a political action committee, and its government relations are for educational purposes only.

Nonprofits are, however, legally allowed to lobby the government as long as a substantial amount of the organization's activity and resources are not dedicated to influencing legislation

(Avner, 2016). Some nonprofits do engage in direct lobbying activities. The NSS includes lobbying for particular exploration and development programs as part of the organization's strategic plan (NSS, 2011). The nonprofit also informs the public that its political activities are governed by IRS filing requirements (NSS, 2019a). Similarly, although lobbying activities are not mentioned in the organization's strategic framework, the Planetary Society does ask its members to encourage political support of specific programs. For example, the Society instituted a successful letter writing campaign to encourage the government to continue its support and funding of the New Horizons program, which became the first spacecraft to explore Pluto (Stern & Grinspoon, 2018). However, studies have shown the importance of both approaches to the shaping of policy outcomes and decisions (Fyall & McGuire, 2015). Nonprofits use both to provide the encouragement and support necessary to assist in policy formation.

In advocating for the space community, nonprofit leadership puts a significant amount of time and effort into building relationships with politicians and staff (Fyall & McGuire, 2015). They create a mutually beneficial relationship that's comprised of learning and cooperation. Election changes disrupt those collaborations built between nonprofits and elected representatives. For example, the Planetary Society reported that many of the members of the Planetary Science Congressional Caucus lost their seats in Congress in 2018 and many of the congressional committees involved in the aerospace industry had new leadership (Dreier, 2019). As a result of the election, the Planetary Society had to begin rebuilding the Caucus.

Nonprofit organizations must recognize that changes in the government are both inevitable and out of their control. Nonprofit leadership should work to forge relationships with the newly elected representatives and make an effort to understand their priorities. They should promote the successes of the industry while also informing them of the space community's needs moving forward. By doing so, the organizations will reestablish themselves as experts in the field and remain an important and useful resource for policy formation.

Conclusion

In conclusion, this analysis has shown the importance and usefulness of nonprofit advocacy in the space industry. Nonprofit organizations are an important resource with expert knowledge on space-related topics used by both the public and government officials. Although these findings do offer valuable insight into advocacy strategies, there are some limitations to the study. This analysis was limited to the evaluation of three space-related nonprofits based in the U.S. Further research will need to be conducted on additional organizations in order to gain a more complete interpretation of the strategies used in the field. In addition, the issue of lobbying among nonprofit organizations is a topic that needs further study as many organizations seem hesitant to engage in such activities. Additional research into these subjects will be useful in creating a deeper understanding of these advocacy efforts.

This study's implications on the field of space policy consist of the conclusion that advocacy on behalf of nonprofit organizations is an important and necessary aspect of policy formation. These organizations engage in public outreach and bring awareness and education to the public on activities in space and motivate them to support the cause. Nonprofits also collaborate with both nonprofit and private organizations to increase support for the space community. Many organizations engage in policy advocacy and support policies that benefit the space industry; however, only a few seem to participate in direct lobbying activities. All of these strategies are used by nonprofit organizations to promote both the public and private space

industries. These efforts will assist in ensuring the promotion of the space community and supporting its evolving needs in the future.

References

- American Institute of Aeronautics and Astronautics. (2018). AIAA Annual Report 2017-2018. *American Institute of Aeronautics and Astronautics*. Retrieved from https://www.aiaa.org/docs/default-source/uploadedfiles/about-aiaa/governance/annual-report-2017-2018.pdf?sfvrsn=4670f6c3_0
- American Institute of Aeronautics and Astronautics. (2019a). About AIAA. *American Institute of Aeronautics and Astronautics*. Retrieved from <https://www.aiaa.org/about>
- American Institute of Aeronautics and Astronautics. (2019b). Public Policy Committee. *American Institute of Aeronautics and Astronautics*. Retrieved from <https://www.aiaa.org/advocacy/Public-Policy-Committee>
- Austin, J. E. & Seitanidi, M.M. (2016). Value creation through collaboration. In D.O. Renz (Ed.), *The Jossey-Bass handbook of nonprofit leadership and management* (4th ed.) (pp. 427-443). San Francisco, CA: Jossey-Bass.
- Avner, M.A. (2016). (2016). Advocacy, lobbying, and social change. In D.O. Renz (Ed.), *The Jossey-Bass handbook of nonprofit leadership and management* (4th ed.) (pp. 396-426). San Francisco, CA: Jossey-Bass.
- National Aeronautics and Space Administration. (2019a). About NASA. *National Aeronautics and Space Administration*. Retrieved <https://www.nasa.gov/about/index.html>
- National Aeronautics and Space Administration. (2019b). Budget documents, strategic plans and performance reports. *National Aeronautics and Space Administration*. Retrieved from <https://www.nasa.gov/news/budget/index.html>
- National Space Society. (2011). NSS Strategic Plan. *National Space Society*. Retrieved from <https://space.nss.org/media/NSS-Strategic-Plan.pdf>
- National Space Society. (2019a). About NSS. *National Space Society*. Retrieved from <https://space.nss.org/about-national-space-society/>
- National Space Society. (2019b). Education. *National Space Society*. Retrieved from <https://space.nss.org/education/>
- National Space Society. (2019c). Alliances and affiliates. *National Space Society*. Retrieved from <https://space.nss.org/alliances/>
- National Space Society. (2019d). NSS Policy Committee. *National Space Society*. Retrieved from <https://space.nss.org/nss-policy-committee/>
- National Space Society. (2019e). Political action network. *National Space Society*. Retrieved from <https://space.nss.org/join-our-political-action-network/>
- Planetary Society. (2019a). Strategic framework. *Planetary Society*. Retrieved from <http://www.planetary.org/about/strategic-framework.html>
- Planetary Society. (2019b). LightSail. *Planetary Society*. Retrieved from www.planetary.org/explore/projects/lightsail-solar-sailing/
- Planetary Society. (2019c). Explore. *Planetary Society*. Retrieved from www.planetary.org/explore/

Planetary Society. (2019d). Space policy and advocacy. *Planetary Society*. Retrieved from www.planetary.org/get-involved/be-a-space-advocate/

Planetary Society. (2019e). Space Science Congressional Caucus. *Planetary Society*. Retrieved from <http://www.planetary.org/get-involved/be-a-space-advocate/the-planetary-science-congressional-caucus.html>

S. Sidorek, personal communication, May 6, 2019.

Stern, A. & Grinspoon, D. (2018). *Chasing New Horizons*. New York: Picador.