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OPPORTUNITIES TO INCREASE EFFICIENCY AND COLLABORATION THROUGH OPEN DESIGN

Abstract

NASA is challenged to embark on a new great adventure, reach farther into our solar system and accomplish something no government agency or commercial provider has done before. They must do this while both providing value to its stakeholders and surviving under tight budgetary restrictions. To accomplish this feat, NASA must assume the various challenges that come along with it. In particular, the advanced technologies required can be a barrier to success for future human spaceflight missions. However, even if the knowledge to overcome the technological barrier could be obtained, the vast resources necessary to implement such missions are generally agreed to be impossible for one nation to acquire alone. Therefore, NASA must allow for both domestic and international contributions through various implementations of open design.

Open design is the concept that organizations can make use of external ideas and technologies in their own system, and derive benefit from unused internal ideas by allowing them to flow out to others. Open designs work off of network based models where there is not necessarily a central hub and most of the activity occurs at the periphery.

While this model is increasingly employed in for-profit companies, there is also a growing interest in the concept of "open government" in the form of collaboration, transparency, and participation. This paper uses previous research on open design to analyze NASA's current initiatives to determine if NASA's goals reflect the type of open designs they are employing. Key differences between open design in the for-profit context versus the government context are also defined. NASA's open government initiatives are then compared to initiatives at other federal agencies.

Finally, the paper will define key obstacles and challenges to open design and how these affect implementation of open design within the NASA architecture. Challenges including the International Traffic in Arms Regulation and Intellectual Property management are just a few of the issues that NASA must consider when sharing information and partnering with others. Based on this analysis, policy recommendations for open design implementation appropriate to NASA's resources, goals, and limitations are provided.

Employing an effective open design can enable NASA to create more meaningful partnerships with non-NASA entities, which can be especially useful under tight budgetary environments. This paper shows how appropriate implementation of open design can help NASA reach its goal of providing value to the public and pursue more challenging and resource intensive human spaceflight missions.