

New Business Models for Space Exploration (14)

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OPPORTUNITIES FOR NASA TO IMPROVE 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. One way to cope with these challenges is to allow for both domestic and international contributions through various implementations of open design.

Open design can be described as a process that starts with looking outside the organization as you think about things to do inside. It is about using other people's wheels to get you moving. However, as a U.S. government agency, there are challenges that come along with partnering with non-NASA entities. International Traffic in Arms Regulations (ITAR) and Intellectual Property (IP) management are just a few of the issues that NASA must consider when implementing open models and partnering with others.

This paper describes how NASA currently employs different types of open design models to leverage knowledge and resources to increase NASA's value to the public. It then looks at one open model in particular as it relates to the NASA technology transfer process. It identifies the main challenges in this process by analyzing the incentives involved for both NASA and non-NASA partners. It also looks at current IP management strategies and how that affects this process. Lastly, it shows how ITAR reform may affect this system. Based on this analysis, opportunities for improvement based on clear incentives are outlined.

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 changes in incentives can help NASA reach its goal of providing value to the public and pursue more challenging and resource intensive human spaceflight missions.