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EVOLUTION OF GOVERNMENT AND INDUSTRIAL PARTNERSHIPS TO OPEN THE SPACE
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Abstract

Many of the world's space agencies have started on a new course toward sustained exploration and development of space. These government sponsored space agencies have long-standing practices of cooperation together and have evolved a symbiotic relationship with aerospace industry. These relationships have developed over the years and produced successful space programs primarily for specific scientific or applied missions. Looking at NASA, the long-term goals have changed drastically and is reflected in the mission type from primarily those connected by theme but separable missions for scientific and/or applications, to a strategy of human and robotic missions building on each other to the Moon, Mars, and beyond with the intension of someday having a sustainable presence in the Solar System. The new Vision for Space Exploration's far ranging goals demand a reassessment of our traditional approaches toward exploration and our relationship with industry. This paper will focus on the US space goals and discuss new approaches in relationships with industry that are necessary to open the frontier.

It is difficult to imagine a thriving settlement on the Moon or Mars that is totally depended on government for all major aspects of its success, such as transportation, habitation, work priorities (what it does), etc. This approach is not affordable nor would it accomplish the goal of sustainable exploration and development. It is necessary that commerce drive the long-term sustainability of future off world settlements.

This paper will begin by taking a brief look at the relationship between US aerospace industry and the civilian space program to benchmark some parameters such as technology development, risk reduction, and support for the development of new industrial capabilities. Then it will explore how these parameters might evolve and change to create sustainable exploration after a transition point where critical mass of capability and commerce is reached. The important aspects of this process will be to understand how the role of government needs to change over time to fulfill the long-term goals laid out by the Vision for Space Exploration. Current new approaches such as the Commercial Orbital Transportation Services (COTS) and the NASA-Google relationship will be explored as they relate to the evolution of government and industrial partnerships and the goal of opening the frontier of space.