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NANORACKS LEO COMMERCIALIZATION STUDY: EXPERIENCES AND OUTCOMES

Abstract

This paper discusses the conclusions and implications of NanoRacks' NASA-Commissioned Low Earth Orbit Commercialization Study, or LEOCOM. The objective of this study was to leverage NanoRacks' decade of expertise as a user of the ISS as a commercial platform to describe the commercial future of the LEO economy and commercial ecosystem.

To complete this study, NanoRacks created a comprehensive team of 11 commercial suppliers, service providers, and users, and engaged the services of insurance and financial modelers. The data these partners provided was utilized by NanoRacks, and combined with existing knowledge on current markets to compile a set of key policy and market recommendations.

Along with this analysis, NanoRacks also took the unprecedented step of engaging key NASA staff in a Policy Simulation. This simulation would be based around three hypothetical scenarios that NanoRacks wrote in consultation with NASA, and that were composed with NanoRacks' best assumptions about what form future real-world policy challenges might take. The purpose of this exercise was not necessarily to receive a response from NASA regarding the particular question, but rather to exercise and analyze the process that NASA undertook in order to answer that question.

The most important conclusion to come out of the data gathered is that there can be no single point solution for the challenge of creating a commercial marketplace in space. Rather, an ecosystem of service providers, hardware manufacturers, and consumers (to include government customers) are required to make space a viable location for commercial activity. As such, NASA and the U.S. government should consider LEO activity a Public Private Partnership, or PPP. Since an ecosystem requires multiple elements functioning together, NanoRacks argues that upcoming solicitations for commercial elements of the ISS must allow for more than one platform, including 1 attached to the node and 1 or more free flyers in ISS orbit, and nearby enough to be serviceable by commercial resupply and crew missions. The government must also provide the market with necessary signals that investment in commercial LEO actors is financially sound by stating unequivocally that the ISS is the final government owned and operated space station in Low Earth Orbit.

NanoRacks also finds that, within such a domain where government plays an important role in funding infrastructure, investors in ISS hardware must have guaranteed access to their own hardware.