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EMERGING LEO ECONOMY

Abstract

This paper discusses the emerging low Earth orbit (LEO) economy in terms of three basic elements: investment, supply, and demand. In the case of the LEO economy, we could see new products and services in a wide range of markets.

Commercial space activities in LEO have increased significantly. Business ventures are seeking to offer passenger flights, platforms, and infrastructure for tourism, research, and manufacturing. The suborbital, orbital, and destination segments of the LEO economy are at different stages regarding investment, demand, and supply.

The paper reports specifically on the level and various types of investments and investors, the current status of systems and developers, and the demand for services, based on the best available market data, across the LEO economy. Each element is addressed for suborbital activity, orbital activity, and platform/destination activity. This paper also compares U.S. and non-U.S. activity.

There are three types of investment in space: advocacy, strategic, and financial. Advocacy investment is characterized by investors who fund space ventures because they have a deep connection to and belief in space. Strategic investment is characterized by investors that have a pre-existing, business interest that makes a particular investment more attractive. Finally, financial investment is characterized by investors putting money into the most profitable venture they can find.

There are differences in investment, supply, and demand among the three market segments in the LEO economy. In the suborbital market we have seen advocacy, strategic, and financial investment. Suborbital supply has developed more slowly than many in the industry predicted; multiple providers are still working toward suborbital human flights. Suborbital demand appears fairly robust, considering suborbital spaceflight is a new space venture offering a product that has really never existed.

Investment in commercial orbital human spaceflight has been a combination of advocacy and strategic investment. NASA, the most important investor in this arena, behaves mostly like a strategic investor, with some flavor of an advocacy investor. Commercial supply for orbital spaceflight is relatively robust, with four firms actively developing capabilities. However, demand for commercial human spaceflight is uncertain.

Investment in platforms and destinations is largely dominated by advocacy investment from space billionaires. Supply for these activities is in relatively early stages of development, and demand is highly uncertain.