

SPACE Takes Off



The S-Network Space Index (TICKER: SPACE) Provides the Most Accurate Measure of the Performance of Global Space Equities

By Space Investment Services LLC and S-Network Global Indexes, Inc.

The global space economy is presently valued at over \$383.5 billion per year, according to the nonprofit Space Foundation. Approximately 80% of this total is driven by commercial activity, ranging from commercial launches to the delivery of media and data via satellite. NASA accounts for a mere 5%.¹

According to a number of prominent financial institutions, this is just the beginning of what promises to be one of the most dynamic growth sectors of the global economy. Both UBS Wealth Management² and Morgan Stanley³ are forecasting that the space economy will roughly triple in size over the next twenty years. And these forecasts are at the conservative end of the spectrum.

Both Merrill Lynch⁴ and Goldman Sachs⁵ predict that space will become a multi-trillion-dollar sector over the same time frame.

Clearly space is big business and getting bigger every day.

¹ Space Foundation, *The Space Report 2018*, (July 19, 2018) <https://www.thespacereport.org/>

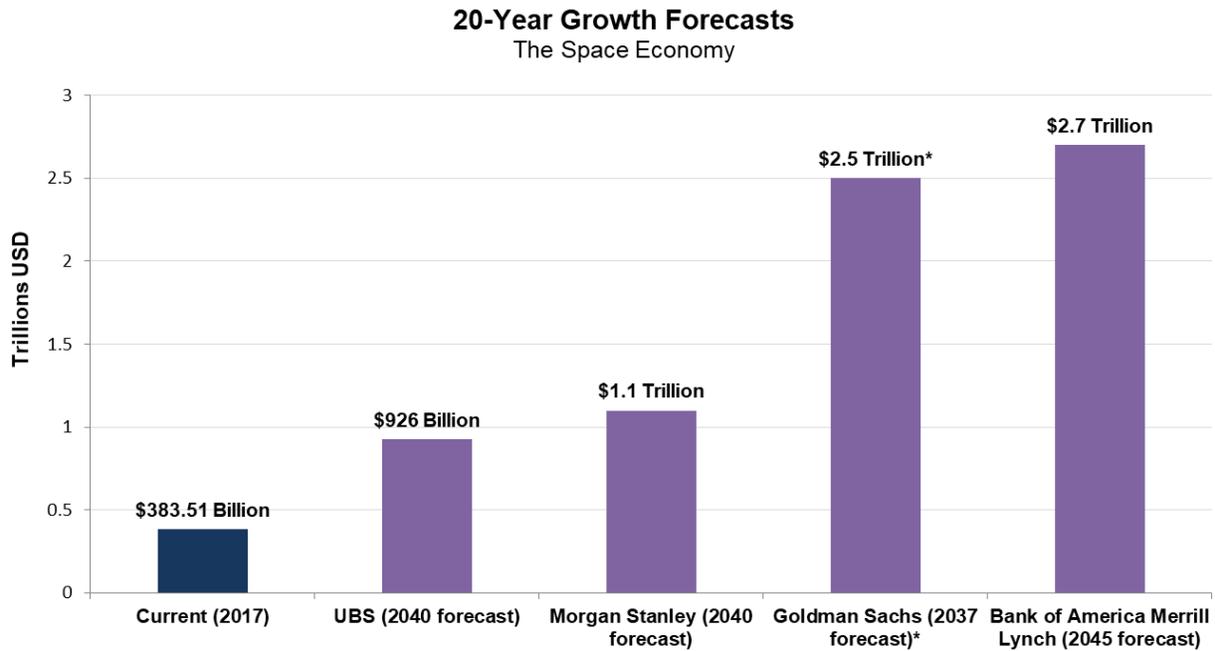
² UBS, *Longer Term Investments: Space*, (November 30, 2018)

³ Morgan Stanley, "Space: Investing in the Final Frontier," (November 7, 2018)

⁴ Bank of America Merrill Lynch, *To Infinity and Beyond – Global Space Primer*, (October 30, 2017)

⁵ Goldman Sachs, *Profiles in Innovation: Space – The Next Investment Frontier*, (April 4, 2017)

Figure 1: Current and Forecasted Size of the Space Economy



* Estimated number based on non-specific forecast contained in the report.

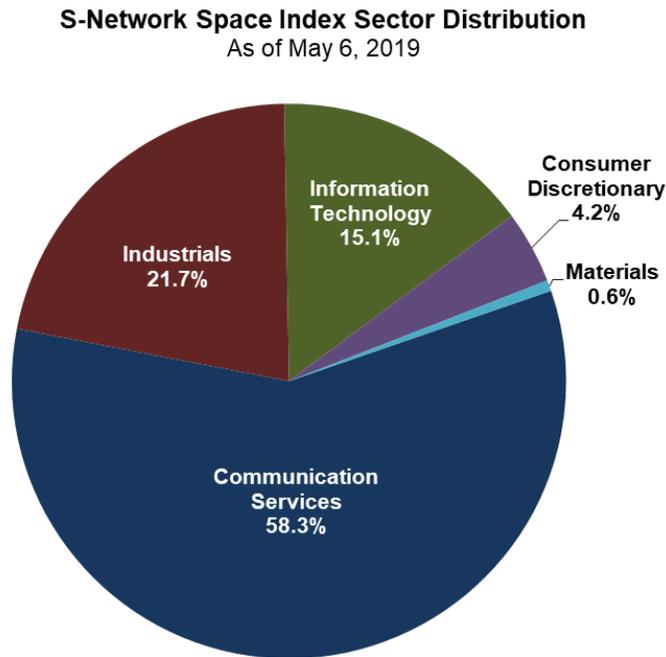
The S-Network Space Index

These forecasts were one of the reasons why S-Network, in concert with Space Investment Services LLC, developed the S-Network Space Index (TICKER: SPACE), which seeks to measure the opportunity embedded in one of the world's fastest growing sectors. The index serves as the underlying index for the Procure Space ETF (TICKER: UFO), which recently listed on the NYSE.

Interestingly, UFO is the only Exchange-Traded Fund permitted to use the word “space” in its name. This is because SPACE is the only pure-play space economy index available today. It has been named the first Certified Data Product by the nonprofit Space Foundation, which uses the index in its quarterly reports as a benchmark for measuring the financial performance of the space industry.

Over 80% of the index constituents by weight derive over 50% of their revenues from space. The remaining 20% of the index constituents by weight derive at least 20% of their revenues and/or more than \$500 million per year from the industry. On a weighted basis, the index derives over 80% of its revenues from space-related activities.

Figure 2: SPACE Index Sectors by Weight



Defining the Space Economy

The space economy is made up of four primary sectors, of which “commercial space products and services” accounts for the largest share at 55%, including subsectors such as satellite transmission of media and data content, satellite communication services, satellite-based navigation software and services, and satellite imagery of Earth. The second-largest sector includes commercial infrastructure and support industries, such as satellite manufacturing and launch for non-government customers, and manufacturing ground equipment and consumer devices. Together, these two sectors garner over \$300 billion in annual revenues.¹

Somewhat surprisingly, the combined space budgets of all governments worldwide in 2017 amounted to just over \$76 billion.¹ Clearly, space is already being driven by the private sector, which is expected to account for the lion's share of growth in the years ahead.

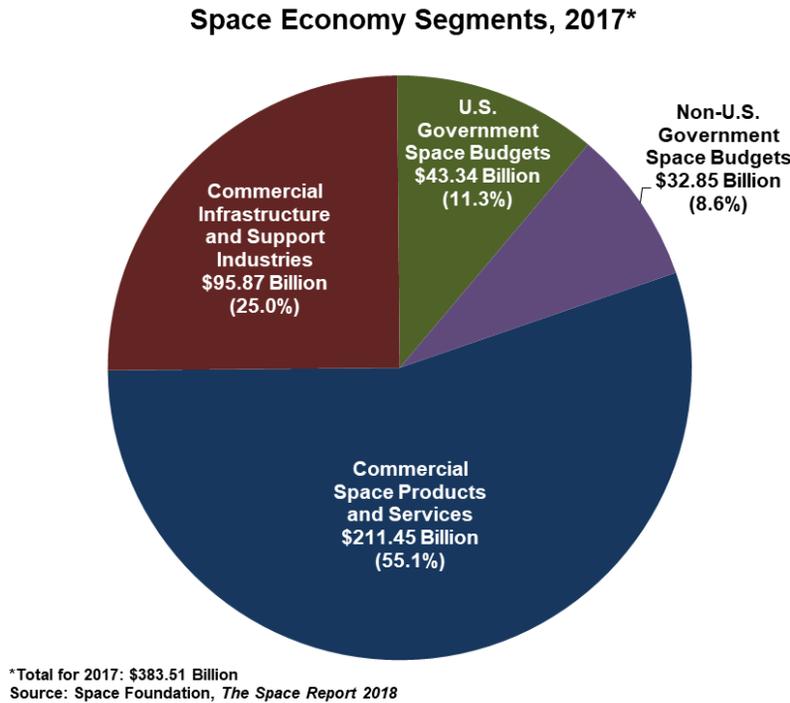
Presently, the commercial activities driving the global space economy concentrate in three key business segments: a) commercial launches and satellite manufacturing, b) delivery of media and data via satellite and c) the manufacture of GPS chips that enable smartphones and other devices to use location-based services.

All of these segments are represented in SPACE, and the forecasted growth described earlier in this piece will rely principally on the continued growth of these well-developed space businesses.

But there is also more to come from companies not traditionally involved in the space industry. For example, Amazon recently announced a multi-billion-dollar initiative to establish a satellite network

aimed at bringing broadband connectivity to even the most remote corners of the planet.⁶ The Amazon initiative is well within the framework of current space technology and, like many other space initiatives, can no longer be considered "pie-in-the-sky."

Figure 3: Global Space Activity, 2017



Defining the Space Growth Trajectory

While growth forecasts are almost entirely based on the present realities of the space economy, the future could well hold some significant game-changers that could accelerate the pace of growth beyond what is clearly forecastable today.

For example, space tourism, including transportation and hospitality, is about to get underway as entities like Richard Branson's Virgin Galactic complete flight testing and begin furnishing their vehicles in preparation for paying customers.

In the longer term, space resource exploration and extraction could provide abundant new sources of key minerals, including rare earth metals that are so essential to the manufacture of smartphones and related technologies.

Space-based defense initiatives — such as the US DoD proposal of a Space Force⁷ — are expected to rely heavily on the private sector for launch vehicles and related technologies, adding yet another

⁶ CNBC, "Here's why Amazon is trying to reach every inch of the world with satellites providing internet," (April 7, 2019) <https://www.cnbc.com/2019/04/05/jeff-bezos-amazon-internet-satellites-4-billion-new-customers.html>

⁷ U.S. Department of Defense, "DOD Submits U.S. Space Force Proposal," (March 1, 2019) <https://www.defense.gov/explore/story/Article/1767808/dod-submits-us-space-force-proposal/>

massive new dimension to the growth equation for space. More broadly, there are multinational efforts to better track and manage space traffic.⁸

Many companies engaged in these new space initiatives remain privately held. But one of the defining characteristics of SPACE is its quick uptake of the IPOs expected to dominate in these new segments of the space economy.

Conclusion

The S-Network Space Index captures the performance of the space industry as well as can be reflected in an investable portfolio of public companies. Thanks to a carefully tuned balance — emphasizing pure-play space companies but allocating some weight to those more broadly diversified — the index accounts for the complexity of the industry while also satisfying investment regulations and investors' enthusiasm for undiluted exposure. This balance makes the index appropriate for both academic and investment purposes, leading to its use by both a nonprofit research periodical (the quarterly *Space Report*) and an exchange-traded product (UFO).

The published rule book for SPACE is already looking ahead to the potential business activities that the space revolution may spawn, from near-Earth tourism and defense to distant exploration and human habitation. The intent is to evolve along with the industry, always remaining a relevant measure — boldly going where no index has gone before.

⁸ European Space Agency, "About SSA," (March 14, 2018)
https://www.esa.int/Our_Activities/Operations/Space_Situational_Awareness/About_SSA