



The Revolution of the Space Economy Will Democratize It

By [Rainer Zitelmann](#) August 02, 2024

NASA Hubble

CNBC has called space “Wall Street’s next trillion-dollar industry,” Bank of America predicted that “the growing space economy will more than triple in the next decade to become a 1.4 trillion market,” and according to a study by the World Economic Forum in April 2024, the space economy is expected to grow to be worth 1.8 trillion dollars by 2035. Morgan Stanley expects a space-based business to create the world’s first trillionaire.

Chad Andersen, author of the book *The Space Economy* (Wiley) and founder of the US investment firm “Space Capital” estimates: “Over a quarter of trillion dollars has been invested into nearly 2,000 unique space companies over the past decade alone.”

In his book, he showcases a range of cutting-edge companies, including Planet Labs, a San Francisco-based company that specializes in the development of miniature satellites known as Doves. These satellites are equipped with a powerful telescope and a camera, allowing them to capture images of various parts of the Earth’s surface at regular intervals. Each miniature satellite is programmed to continuously scan the Earth and transmit data to ground stations as it orbits overhead.

The images collected by the satellites provide information that is crucial for various applications, such as climate and environmental protection, forest monitoring, crop yield prediction, water quality assessment in lakes, and disaster management.

Whereas in the past, satellites were as large as school buses – which led to considerable transport costs, the Dove satellites are the size of a shoebox and can be launched into space at a much lower cost.

Figures on the number of satellites in orbit confirm the explosive growth of the space industry: “In 2010, 74 satellites were launched into space. Ten years later, the Satellite Industry Association reported nearly 1,200 – a 16-fold increase – and projected rapid growth from there. As of this writing, there are well over 4,000 active satellites in orbit, with estimates of as many as 100,000 more in the decade to come.” The increase is so rapid that there are now almost 10,000 active satellites!

But space, Anderson points out, is developing into a “hot market” and it is important to distinguish between the areas where real money is being made today and what will only be feasible the day after tomorrow (such as asteroid mining). “Nearly all equity investment into the Space Economy over the past decade has been made in Satellites and Launch.” Anderson also identifies Stations, Lunar, Logistics, and Industrials as four emerging industries in the Space Economy. These projects are exciting and attract a disproportionate amount of media coverage compared to satellites, for example. “Over the past decade, a relatively minor 2.7 billion has been invested across all four. However, while most investment capital in the Space Industry has gone toward satellites and launch, we are beginning to see founders raise capital and build businesses around ambitious new directions ranging from commercial space stations to Lunar transportation services.”

Elon Musk’s colossal Starship, which designed to carry crew and cargo to Earth orbit as well as the moon,

Mars, and beyond, is poised to revolutionize space travel. “Able to launch 100 tons inside 1,100 cubic meters for just the cost of fuel, Starship will completely change how we operate in space and enable the four Emerging industries.” Of course, it is an exaggeration to say that Starship will do all this “for just the cost of fuel,” but Elon Musk has indeed succeeded in drastically reducing costs through the reusability and series production of rockets. According to German space expert Eugen Reichl: “Space X currently builds about 6-8 first stages per year, about 120-140 second stages and about 230 Merlin engines per year. In comparison: at its peak, ArianeGroup only managed to build around seven Vulcain engines per year.” And this is just the beginning!

Musk’s Starship, Anderson is convinced, “will change everything.”: “Starship will further remove the barriers to entry and stimulate the development of entirely new applications. Space exploration has stagnated for decades. Today, commercial capabilities are quickly outpacing those of governments.”

Musk has also changed – at least for his company – the nonsensical rules of the game when it comes to government contracts, which in the past led to such high costs. Anderson describes the cost-plus system that was prevalent before Musk arrived on the scene as follows: “If NASA wanted a rocket or satellite built, it went to a small group of defense contractors and paid one of them a vast sum of money to go build it according to a fixed set of specifications. These were known as ‘cost-plus’ contracts. The contractors figured out pretty quickly that they could make more money by dragging things out than by getting the job done on time and under budget. If they spent years and billions working toward a critical objective without much progress, they could go back to the trough for more money: ‘This engineering stuff is tougher than we’d expected,’ they’d tell the bureaucrats. ‘We need two more years and X billion more dollars to finish the job.’”

Elon Musk refused to accept this absurd system and instead arranged delivery at fixed prices. This gave him a financial incentive to cut costs. Today, Musk can transport a payload into space at a cost of around 2,000 dollars per kilogram. This is a significant improvement from previous decades when the cost remained stagnant at around 10,000 dollars.

Rainer Zitelmann is the author of the book [How Nations Escape Poverty](#).

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