TA Tomorrow's Affairs
Analysis of today
Assessment of tomorrow

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A Quick Look at Space Economy Before Aliens Show Up

Lately, I've been seeing a lot of posts on social media saying things like, "Aliens exist, some governments know about it but aren't revealing anything, and soon everything will come to light."

It does make me wonder, though—if the universe is so vast, how could we ever be alone? But then again, I can't help but ask, "Why now?" Are we really on the brink of nuclear annihilation? Or are aliens coming to save the Earth from us? These are questions that will make you smile but also leave a bitter taste in your mouth.

Now, circling back to the main topic from the title, since humanity started exploring space, we've witnessed significant growth in the space economy, first through government initiatives and now alongside the private sector. So, I thought I'd put together a short summary based on insights from various consulting firms and news agencies for you.

First, let's keep some numbers in mind: So far, revenues from commercial space activities have reached $336 billion, and government spending on space programmes has hit $87 billion.

If this trend continues, the space economy is projected to balloon to around $1.2 trillion by 2040. Plus, it's creating significant job opportunities; for instance, about 50,000 people are employed in the space economy in Europe.

Space mining

It's worth checking out the analysis from the Turkish Financial Executives Foundation on this. According to the report, the first commercial flight by Virgin Galactic in 2023 and the space travels conducted by companies like Blue Origin and SpaceX are just the beginning of innovations in this field.

On another note, space mining presents a huge economic opportunity with the potential to extract valuable resources from space. Ambitious plans, like missions to Mars, have attracted significant investments from venture capitalists and institutional investors, and this excitement led by governments and the private sector could trigger a whole new technological era.

Future developments could be another chapter in the wave of geographical exploration. But what does this space-driven economy really look like, and how will discoveries in the universe change finance?

> Sectors like space tourism, space mining, and logistics are gaining importance day by day

For instance, I found PWC's report on "Space Economy and Taxation" particularly intriguing. It starts by saying, "There's never been a time when the private sector showed so much interest in participating in space activities."

While we were celebrating victories like the first moon landing 50 years ago, today, we're selling tickets for low-orbit commercial flights and dreaming of colonising Mars.

Even though much of today's space economy consists of satellite and R&D activities, sectors like space tourism, space mining, and logistics are gaining importance day by day.

Revenue growth remains limited for now

Even though we can't predict the future, according to Morgan Stanley, the global space economy is expected to generate over $1 trillion in revenue by 2040, suggesting that investing in the space industry is likely to be a rising trend in the coming years.

On top of that, UBS predicts that in the next decade, high-speed travel from outer space could represent a market of at least $20 billion annually, competing with long-distance air travel.

UBS even forecasts that long-haul flights

lasting more than 10 hours could be replaced by point-to-point flights using rockets. However, since the space economy is still in its infancy, revenue growth in the sector remains limited for now. This means that most of the income generated so far has been traditionally taxed by the respective governments in those countries.

> The opportunities in the space economy are shaped by regulations

The opportunities in the space economy are also shaped by regulations. Changes in regulations and policies affecting financial markets determine investors' perceptions and investment strategies.

Especially in new and innovative fields like space mining and space tourism, it's crucial to keep a close eye on regulations. This is where new areas like space law have emerged.

Shaping the regulatory environment

One of the forefront countries in this field is Luxembourg, which has provided significant support to the sector with its space resources law. This law offers companies stability and predictability, thus enhancing the sustainability of space mining operations.

Firms like Deloitte and PwC are playing a critical role in shaping the regulatory environment for the space mining sector. They provide guidance on harmonising international regulations, risk management strategies, and technology integration.

This guidance helps investors and companies navigate the uncertainties in the sector, supporting long-term sustainability and growth.

> Since 1961, about 600 people have travelled to space

An article by Hatip Yurgiden (2023) provides insights into the dimensions of space tourism. Since 1961, about 600 people have travelled to space, with most space tourists being millionaires and billionaires.

American businessman Dennis Tito became the first space tourist by financing his personal trip to the International Space Station (ISS) through Russia on April 28, 2001.

To go to the ISS, Tito paid $20 million out of his own pocket in 2001. Accompanied by two Russian cosmonauts on Soyuz TM-32, Tito spent 6 days aboard the ISS, earning himself the title of the first space tourist.

The impact of entrepreneurs

Virgin Galactic has announced that it has already sold about 600 tickets for suborbital flights, with the upfront ticket price for a suborbital trip dropping to $250,000.

These upcoming flights, which haven't yet happened, are reaching a broader audience of potential travellers interested in space tourism. Later, in 2002, South African entrepreneur Mark Shuttleworth paid similar fees to visit the ISS, followed by American scientist and entrepreneur Gregory Olsen in 2005, Iran-born American entrepreneur Anousheh Ansari in 2006, American video game developer Richard Garriott in 2008, American billionaire Charles Simonyi in 2009, Canadian entrepreneur Guy Laliberte, and in 2021, Japanese billionaire Maezawa Yusaku and his assistant Hirano Yozo.

> It's predicted that by 2030, 5 million tourists will travel to space

Guy Laliberte paid $40 million for space travel, which is double what the first tourists paid.

It's important to remember the impact of entrepreneurs like Jeff Bezos, Elon Musk, and Richard Branson in opening the doors to space tourism. Meanwhile, it's predicted that by 2030, 5 million tourists will travel to space.

Satellites

Now, let's look at another aspect of the space economy: satellites. According to the Anadolu Agency, the number of active satellites around the Earth reached 9,691 by the end of 2023, marking a 361% increase in the last five years.

The records show that these satellites are operated by organisations based in 87 countries. When looking at the distribution of these satellites based on their functions, it was found that 69% are for commercial communication, 12% for remote sensing, and 9% are used for R&D purposes.

Among the active satellites, those used for government communication and military surveillance accounted for around 3%, while navigational and scientific satellites made up about 2% each. Notably, U.S. organisations operate over 6,500 satellites, some in partnership with other countries.

As technological innovations continue to improve cost efficiency and effectiveness, revenues from satellite production, ground equipment, and launches also increased in 2023.

Countries that are ahead in the space race tend to believe that whatever they find in the universe belongs to them - Emre Alkin

Last year, the commercial satellite industry drew attention, contributing to the global space economy's revenue of $400 billion. The sector saw a 2% increase in revenue in 2023, rising to $285 billion while capturing 71% of the global space economy.

The area generating the most income in the satellite sector was ground equipment. The continuous growth in global navigation satellite services (GNSS) and network equipment seems to have helped achieve $150.4 billion in revenue in this area last year.

The combination of increased broadband subscriptions and revenues, alongside growth in remote sensing revenues, led to a total of $110.2 billion in satellite service revenues in 2023. Meanwhile, satellite manufacturing revenues reached $17.2 billion last year.

Competitive pricing and innovations have sparked increased launch activities and record-high launch numbers. In total, 190 launches were conducted in 2023, resulting in global launch revenues of $7.2 billion.

Additionally, sustainable practices for commercial satellites started generating significant income throughout the year, exceeding $300 million last year.

By the way, the revenue from the U.S. satellite industry reached $105 billion, with the country's share of global satellite revenues averaging about 37% over the last five years.

The revenue from satellite services that the U.S. earned is also quite noteworthy. Last year, the U.S. generated $44.5 billion in this area, capturing 40% of the global satellite services revenue. The U.S. continues to lead in the commercial satellite sector, producing 85% of the launched commercial satellites.

After laying out all these numbers, I won't delve into "space mining" just yet, as it's not currently of significant economic size. However, the effort and work being put into it are certainly commendable.

Of course, if aliens really did show up and say something like, "Hey, why are you eyeing what belongs to us?" then that's another story. Just kidding!

But seriously, countries that are ahead in the space race tend to believe that whatever they find in the universe belongs to them. If

something surprising were to happen, who knows what the outcome would be?