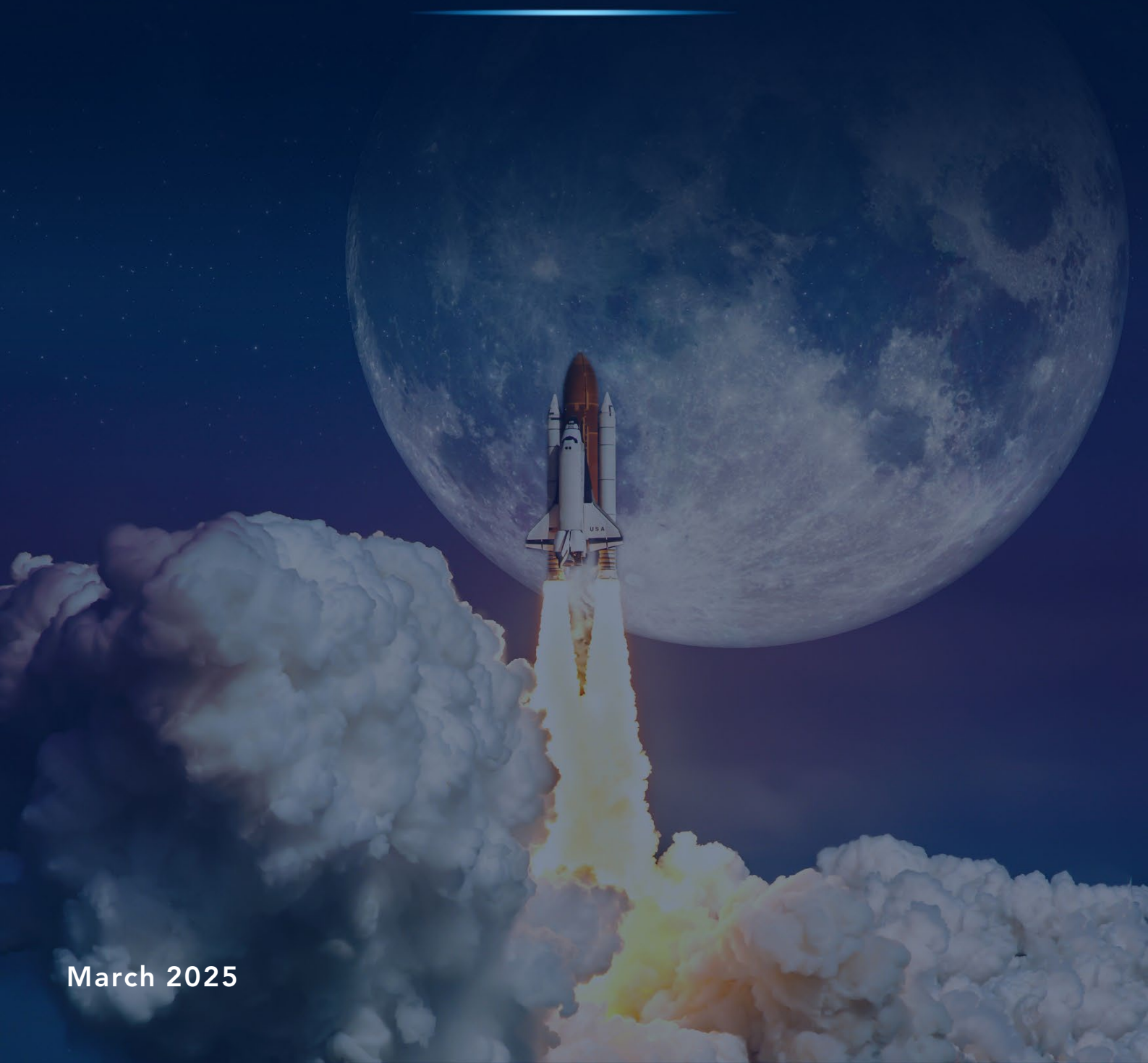




# Rise of the Space Economy

March 2025



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## OVERVIEW ON SPACE ECONOMY

### KEY TAKEAWAYS



The space economy is growing rapidly, expected to reach \$1.8 trillion by 2035, with a 9% annual growth rate.<sup>1</sup>



Global space spending reached a record \$135 billion in 2023, driven by defense and growing investments from nations like China, the UAE, and Saudi Arabia.<sup>2</sup>



Key innovations like reusable rockets, small satellites, and space tourism are transforming the industry and creating new investment opportunities.



Private investments reached \$6 billion in 2023, with major players like SpaceX and Blue Origin driving strong growth in a competitive market.<sup>3</sup>



The global space economy has emerged as a powerful catalyst for innovation, economic expansion, and technological progress, shaping our daily lives in ways we may not always realize. As it continues to evolve, industries both on and beyond Earth are experiencing a profound transformation.



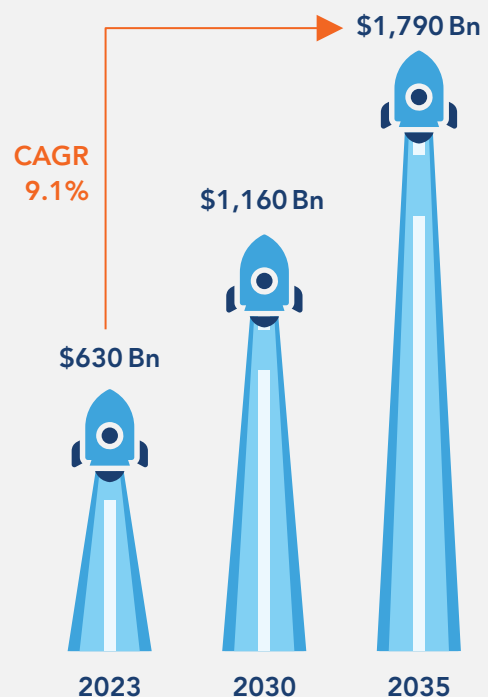
Over the past year, the space economy has reached significant milestones, solidifying its position as a major driver of technological and economic innovation. From \$280 billion in 2010 to \$630 billion in 2023, the industry continues to experience robust growth, with projections now pointing to an impressive \$1.8 trillion by 2035.<sup>1,4</sup> This growth, driven by a 9% annual increase, is fueled by rising investments from both private and government sectors, technological breakthroughs, and the increasing commercialization of space.

Advancements in **Artificial Intelligence (AI)**, **Internet of Things (IoT)**, and **5G** are driving the growth of the space economy, addressing global challenges and transforming sectors like **climate monitoring**, **agriculture**, and **disaster management**. The space economy is broadly divided into two segments: **upstream**, encompassing activities from Earth to space such as rocket launches, and **downstream**, which involves space-based technologies like satellites providing services back to Earth. While these are broad categories, there are several subdivisions within them, and in this article, we focus on highlighting the latest milestones in each sector

Source 1: Future of Space Economy Research, McKinsey & Company  
Source 2: Nova Space

Source 3: Generation Space (Seraphim)  
Source 4: A giant leap for the space industry, McKinsey & Company

### Global Space Economy<sup>1</sup>



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## UPSTREAM

**Satellite Manufacturing & Launch:** Advances in **reusable rockets**, **modular satellites**, and **in-space manufacturing** are significantly reducing space access costs, making satellite-based applications more commercially viable. Companies like **SpaceX**, **Rocket Lab**, and **Blue Origin** are lowering costs, with **SpaceX's reusable Starship**, featuring a **100,000 kg payload capacity**, set to enable deep-space exploration and enhance satellite launch capabilities. **Axiom Space** is also advancing commercial space infrastructure, with its fourth private astronaut mission to the ISS scheduled for spring 2025, further solidifying its role in private space station development.

**Next-Gen Navigation & Servicing:** Innovations in Positioning, Navigation, and Timing (PNT), satellite servicing, and orbital debris management are enhancing the effectiveness of space systems and transforming space operations.

**Space Debris Management:** As space traffic increases, managing **orbital debris** has become a critical challenge. The **space debris removal market** is projected to reach **\$2.07 billion by 2032**, with key players such as **Airbus**, **Lockheed Martin**, and **D-Orbit** leading efforts to clean up space.<sup>1</sup> The **European Space Agency (ESA)** is also in discussions with **SpaceX** about joining an international charter to address this issue. To date, **110 countries** have signed the **Zero Debris Charter**, aiming to prevent new orbital garbage **by 2030**.<sup>2</sup>

## DOWNSTREAM

**Low Earth Orbit (LEO) Constellations:** LEO constellations, like **Starlink**, are **enhancing global connectivity** by providing faster internet, bridging the digital divide, and supporting industries reliant on consistent communication. The global LEO satellite market is expected to grow from **\$12.6 billion in 2023** to **\$23.2 billion by 2029**, with a **CAGR of 13.0%**. The expansion of **small satellites**, like **CubeSats**, is reducing manufacturing costs by up to **90%**, enabling the growth of satellite internet coverage, especially in underserved regions.<sup>3</sup>

**Geospatial Imaging & Analytics:** **Satellite-based imaging** plays a critical role in climate monitoring, disaster response, and **urban planning**. It provides **90%** of climate data for policies and conservation, and supports precision farming, improving crop yields by up to **20%**.<sup>4,5</sup> The geospatial solutions market is projected to grow from **\$385.5 billion in 2023** to **\$990.8 billion by 2030**, emphasizing the expanding role of space data in decision-making.<sup>6</sup>

## EMERGING TECHNOLOGIES AND TRENDS



The space economy is transforming like the automotive and aviation industries once did. Technological advancements are lowering costs and creating new commercial opportunities, making space more accessible and driving exploration. Here's snapshot of how the space industry is evolving in ways that will reshape the future:

### INNOVATIVE INDUSTRIES SHAPING THE FUTURE OF SPACE

#### Space tourism



Growing rapidly, with companies like Virgin Galactic, Blue Origin and Halo Space pioneering suborbital flights/balloons. This sector is set to redefine exploration, blending technology with adventure. Tourism, commercialization, innovation, and sustainability will shape the space economy.

#### AI and ML



AI and ML (Machine Learning) are revolutionizing the space economy by enhancing data analysis, autonomous operations, and satellite services. Key applications include autonomous spacecraft navigation, satellite data processing, predictive maintenance and communication optimization, and space robotics.

#### In-Orbit Services



Such as satellite repair, refueling, and debris removal, is becoming increasingly important to extend the lifespan of space assets. Companies like Astroscale and Northrop Grumman are developing these capabilities to ensure sustainability in space.

#### Space-based Solar Power



Space-based solar power (SBSP) is being explored as a potential solution for sustainable, clean energy. The concept involves collecting solar energy in space and transmitting it to Earth. Researchers and companies are making strides in the development of this technology.

#### Quantum Technologies



Quantum computing and quantum communication are emerging fields with potential applications in secure space communications, enhanced satellite-based navigation systems, and improved data processing from space missions.

Source 1: Fortune Business Insights  
Source 2: Reuters

Source 3: Markets and Markets  
Source 4: noaa.gov

Source 5: Grandview Research  
Source 6: Statista

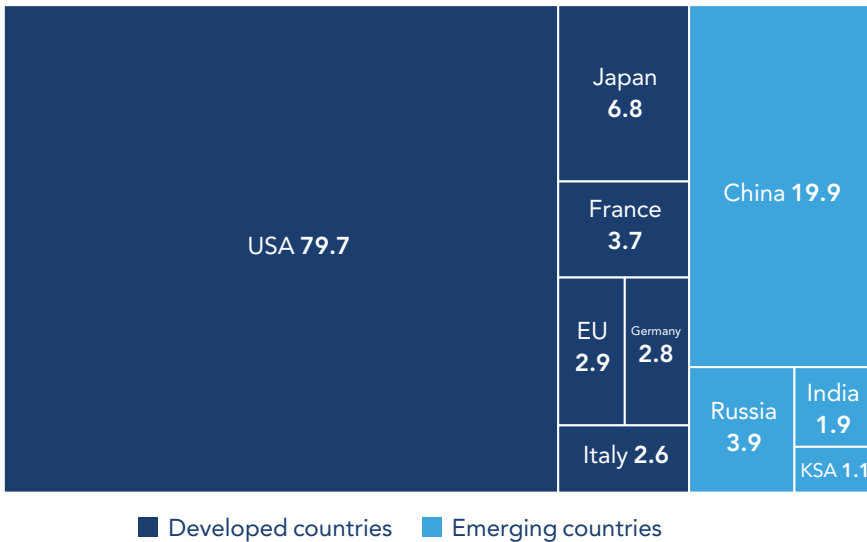


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## GLOBAL GOVERNMENT SPENDING

In 2024, governments invested a record \$135 billion in space programs, with defense spending comprising 54% of the total<sup>1</sup>. Space budgets expanded rapidly in the 2000s but slowed in the 2010s before resuming steady growth in 2016. Since 2022, defense investments have surpassed civil space funding. While civil space budgets, such as those for human spaceflight, continue to grow, the trend reflects an increasing focus on defense-related space programs triggered by global Space Race 2.0.

### Global Government Spending 2024 (\$ Bn)<sup>1</sup>



- The United States maintains its leadership position in space expenditure, emphasizing defense, exploration, and commercial space development.
- China follows as the second-largest investor, concentrating on satellite systems, lunar missions, and military space capabilities.
- ESA's \$8.53 billion budget in 2024 outpaces the collective space spending of the EU, further reinforcing Europe's competitive position in global space innovation.
- Russia continues to maintain its established space programs despite budget constraints, while India pursues cost-effective space exploration and commercial opportunities.

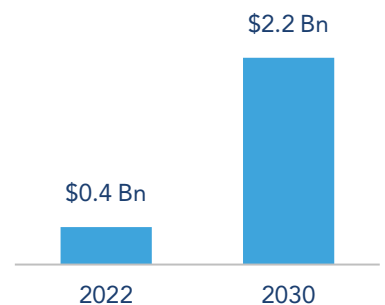
## A GLANCE INTO THE SAUDI ARABIA STORY

Saudi Arabia has made significant strides in developing its space economy, with substantial investments, strategic initiatives, and a long-term commitment to building a strong foundation for future growth, positioning itself as a key player in the space sector with a projected market growth to \$2.2B by 2030.

### Saudi Arabia's Ambitions:

- **Launch of Neo Space Group:** The kingdom's Public Investment Fund (PIF) has made significant contributions, including investments like the Neo Space Group (NSG), which focuses on advancing satellite technology and strengthening Saudi Arabia's role in the global space industry.
- **Participation in Global Initiatives:** Saudi Arabia has hosted and participated in several key space-related conferences in recent years, underscoring its commitment to space. Public-private partnerships are central to Saudi Arabia's strategy, supporting industries such as energy, minerals, and disaster management through space applications.
- **First Saudi Space Accelerator:** The kingdom launched its first space accelerator to support and nurture emerging space startups, fostering innovation and growth within the space ecosystem.

### Saudi Arabia's Space Industry



Source: Communications, Space & Technology Commission (CST).

### Global Collaboration

- The Artemis Accords unite 20+ nations, including Saudi Arabia, establishing guidelines for peaceful space exploration and resource utilization.
- Saudi Arabia leads the launch of the Centre for Space Futures in partnership with the World Economic Forum, to drive innovation and leadership in the space economy.





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## SPACE PRIVATE INVESTMENT LANDSCAPE

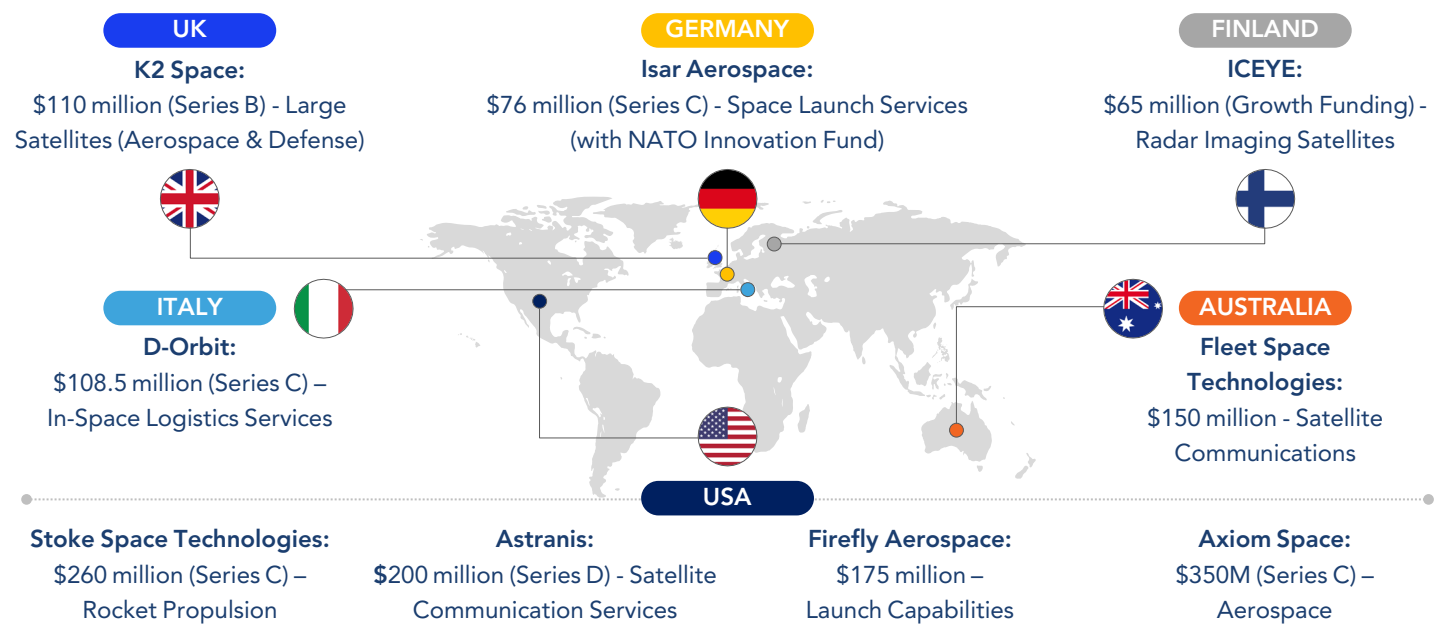
2024 was an exceptional year for space investments, with a **total of \$8.6 billion invested in SpaceTech** companies, marking a 25% increase compared to \$6.9 billion in 2023. Investor sentiment remained highly positive throughout the year.<sup>1</sup>

### PRIVATE SPACE SECTOR GROWTH

The private space sector is experiencing dynamic growth, with leaders like **SpaceX** and **Blue Origin** continuing to dominate. SpaceX, which raised \$750 million in 2023, also conducted a \$1.25 billion secondary share sale in 2024, increasing its valuation to \$350 billion. This reflects strong investor confidence in its satellite internet and space exploration ventures. **Blue Origin** continues to maintain a promising position in the space industry with its launch vehicles; New Glenn.

**In 2024, over 600 private space transactions were completed**, driven by strong interest in seed-stage companies, highlighting the growing flow of capital into emerging space ventures.

Several key funding rounds further underscore this trend:\*



### PUBLIC SPACE SECTOR PERFORMANCE

The public space sector saw remarkable growth in 2024, with **Rocket Lab**, **AST SpaceMobile**, and **Intuitive Machines** soaring by 360.6%, 250%, and 180.6%, respectively, far outpacing the S&P 500. This surge reflects growing investor confidence, highlighted by Intuitive Machines' historic Nova-C lunar landing, the first U.S. spacecraft on the moon since Apollo 17.<sup>2,3,4</sup>

**The ARK Space Exploration & Innovation ETF**, which focuses on disruptive space technologies, delivered a **26.67% return in 2024**, following a **24.37% return in 2023**. This performance highlights the strong growth potential in space exploration. Its top holdings, including **Rocket Lab (9.79%)** and **Kratos Defense & Security (9.55%)**, show its strong exposure to North American companies, particularly Rocket Lab, which significantly contributed to the ETF's performance.<sup>5</sup>

The continued growth and strong investor confidence in both the private and public space sectors highlight the space economy's expanding role in the global market. As technology advances and capital flows into emerging ventures, space will play an increasingly vital role in shaping the future, driving innovation, and addressing key global challenges.

As space becomes a key driver of global progress, it offers vast opportunities for investors, businesses, and governments. Rapid commercialization, driven by AI, satellite advancements, and in-orbit manufacturing, is transforming industries. With growing global competition and investment, space will soon be an essential part of our daily lives, enhancing connectivity, revolutionizing industries, and addressing global challenges to create a more interconnected world.

Source 1: Generation Space (Seraphim)

Source 2: Yahoo

Source 3: S&P Global Market Intelligence

Source 4: Morningsat

Source 5: ARK Invest

Note: The transactions shown on this map represent key deals in the space sector; they do not include all transactions that have occurred.



## CIO Office

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