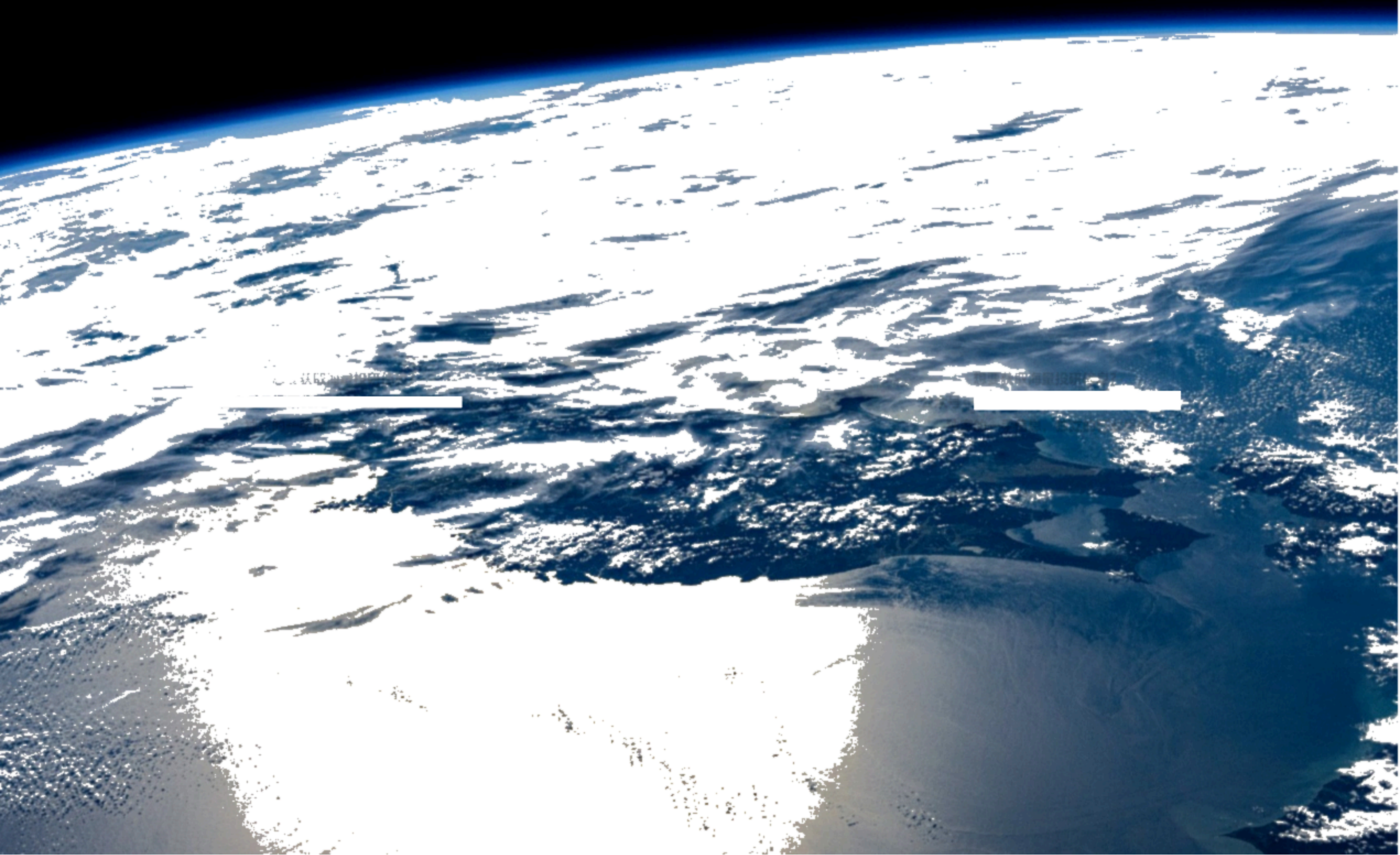
Goldman Sachs Global Institute

The Second Space Age

How Markets, Technology, and Power Are Reshaping the Final Frontier

AUGUST 2026



Contents



For most of human history, space has occupied a unique place in our imagination.

The night sky has served as a canvas for myth, navigation, and wonder, a domain whose scale defies ordinary understanding. And yet, much of our modern economy depends on the orbital infrastructure operating hundreds of miles above Earth. From global logistics and modern defense architectures to AI, strategically important industries all rest in part on technologies that circle the planet every 90 minutes.

For most of the 20th century, these systems were built almost entirely by governments, fueled by geopolitical rivalry during the Cold War. Space exploration served national prestige, scientific ambition, and military competition. The institutions that shaped early space activity were designed for this environment, when exploration was the domain of nation states and the number of actors was limited.

In the last few decades, that model has given way to something entirely different as the economics of reaching space have fundamentally shifted—reusable launch systems, smaller satellites, advances in computing, and modern manufacturing techniques have reduced the cost of sending payloads into orbit. In turn, private-sector companies now build the infrastructure once exclusive to government programs, and capital markets provide the critical funding for space exploration and commercialization.

Space is becoming a new pillar of the industrial economy, one that is increasingly important to life on Earth. As the economic frontier of space extends, so will competition for orbital access, launch capacity, and space-based services. As with other industrial systems, the space economy will develop supply chains, infrastructure nodes, and points of concentration where economic power accumulates. Similarly, the space economy will face the same technology, financial, and regulatory bottlenecks that impact traditional industrial supply chains. The firms and countries that control launch capacity, manufacturing capability, orbital infrastructure, and space-derived data will shape how value is created in the emerging space sector.

As space becomes more economically central, it also becomes more strategically important to national security. And with corporates preparing to build and operate much of this critical space infrastructure, the line between public- and private-sector interests is blurred.

These converging forces are fueling a new space age defined not only by exploration but also by economic competition—a domain where capital markets, industrial capacity, and national strategy collide. Control of infrastructure, access to scarce resources, and mastery of emerging technologies will shape the orbital ecosystem.

This paper examines the trajectory—and opportunities—of that orbital economy. It explores how falling launch costs and private investment are reshaping access to space, how new industrial supply chains are forming around satellites and orbital services, and where critical technological and economic chokepoints are likely to emerge. It considers how geopolitical competition will extend into these emerging systems and why the structure of the space economy will matter for governments, investors, and corporates alike.

Navigating the Space Economy

Satellite Communications

Transmit data—including from radio, TV, mobile communications, and internet—from space to Earth.

Position, Navigation, and Timing Services

Provide location and timing data for devices, enabling everything from ridesharing and aviation to financial transactions.

Space Domain Awareness

Technology for tracking satellites to both avoid collisions and catalogue all objects in orbit.

Earth Imaging and Observation Services

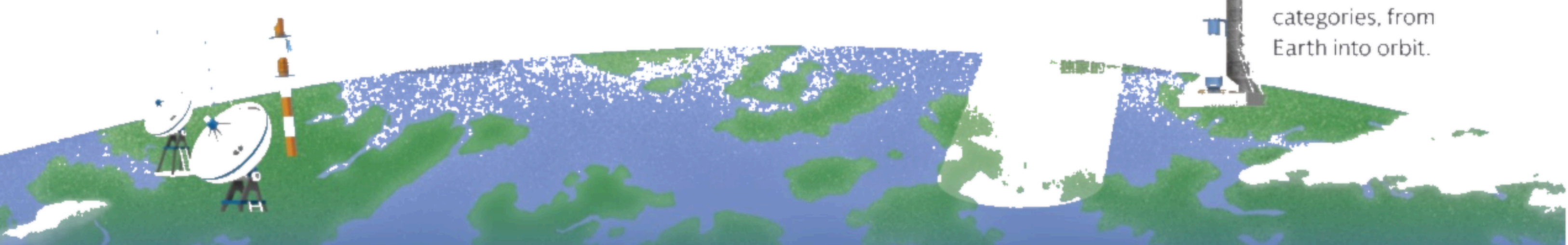
Satellites that scan and measure Earth to create actionable data using optical images, thermal infrared radiation, lidar, and more.

Ground Infrastructure

Connects Earth and satellites, routing received data globally via a largely privatized network of ground stations, teleports, and fiber networks.

Launch Services

Deliver payloads, ranging from light to superheavy launch categories, from Earth into orbit.



25x
reduction in launch costs since 1981[1]

600+
global ground stations[2]

65%
commercial space revenue from satellite communications[3]

$1.4tn
economic value generated by GPS since 1980[4]

$700bn
global value of Earth observation data by 2030[5]

3.9x
growth in number of space-launched objects since 2010[6]

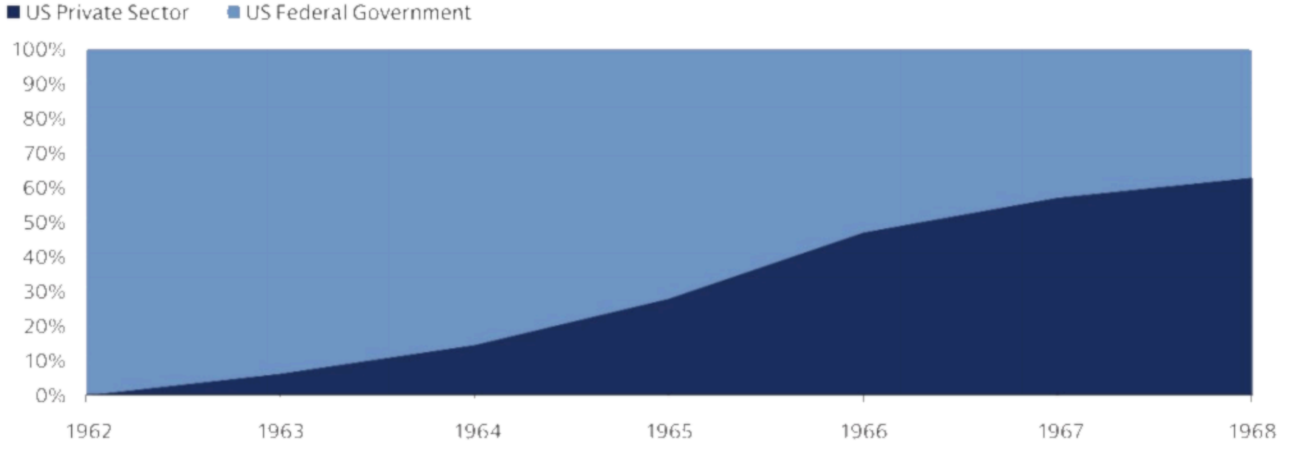
The First Space Race: Governments at the Frontier

When President John F. Kennedy told the audience at Rice University that NASA's budget had tripled[7] in a single year, there were just 45 satellites in space. By 1980, there were 1,685 launched objects[8] orbiting Earth; today, there are more than 18,000.

Although President Ronald Reagan famously quipped "The nine most terrifying words in the English language are 'I'm from the government, and I'm here to help,'" the government has played an irrefutable role in funding nascent technologies.

There is perhaps no better illustration of the government's ability to back transformative technological innovation than the original space race. Spurred on by intense rivalry with the Soviet Union, the US government invested $26 billion (~$318 billion today)[9] on the Apollo Program through 1973 and ultimately fulfilled President Kennedy's objective in 1969 when Neil Armstrong made that giant leap for mankind. In the process, an entire industry was formed around reaching this singular goal of putting a man on the moon: ~400,000 people and ~20,000 companies were involved in the Apollo Program.

The US government accounted for ~100% of integrated circuit orders during the early 1960s.



Source: Anna Slomovic, *Anteing Up: The Government's Role in the Microelectronics Industry*, RAND Corporation, 1988

This enormous moonshot effort also helped seed a budding US semiconductor industry. NASA's decision in 1962 to use integrated circuits for the guidance systems on Apollo missions, along with the Air Force's adoption of integrated circuits for its Minuteman II missiles, yielded massive federal contracts for Texas Instruments and Fairchild Semiconductor, two major domestic players. Massive government orders unlocked economies of scale, and long-term revenues helped fund further R&D breakthroughs. The cost per microchip fell from $32 (1961) to $1.25 (1971).[11] Today, microchips are fundamental building blocks of advanced defense technologies, including modern spacecraft.

Although government-led spending and innovation defined this era, it gave rise to many of the commercial space-based technologies and services that have revolutionized life on Earth for the past several decades. Today, these innovations support diverse sectors spanning telecommunications, logistics, agriculture, defense, and finance.

> "We set sail on this new sea because there is new knowledge to be gained, and new rights to be won, and they must be won and used for the progress of all people."

President John F. Kennedy (1962)

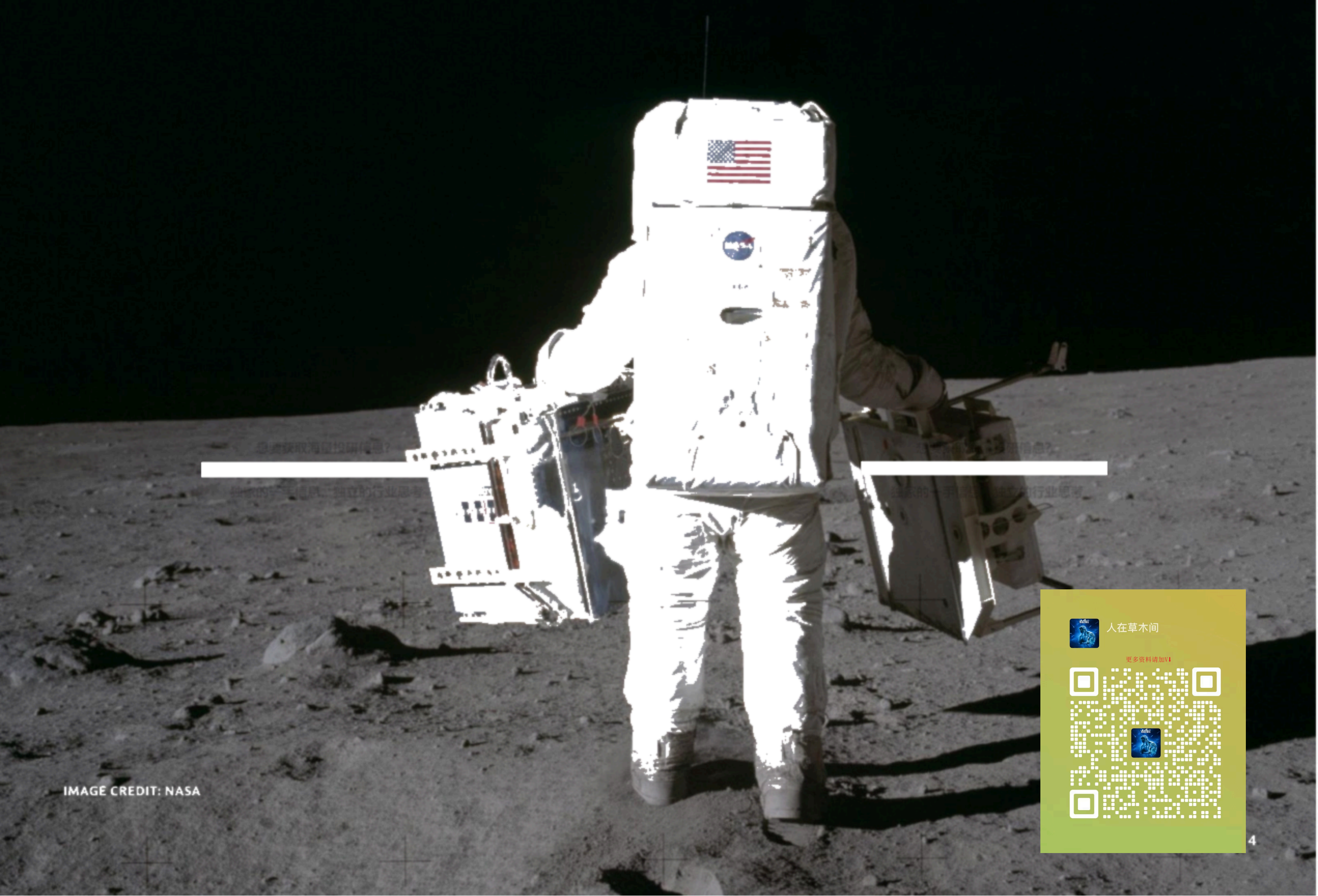
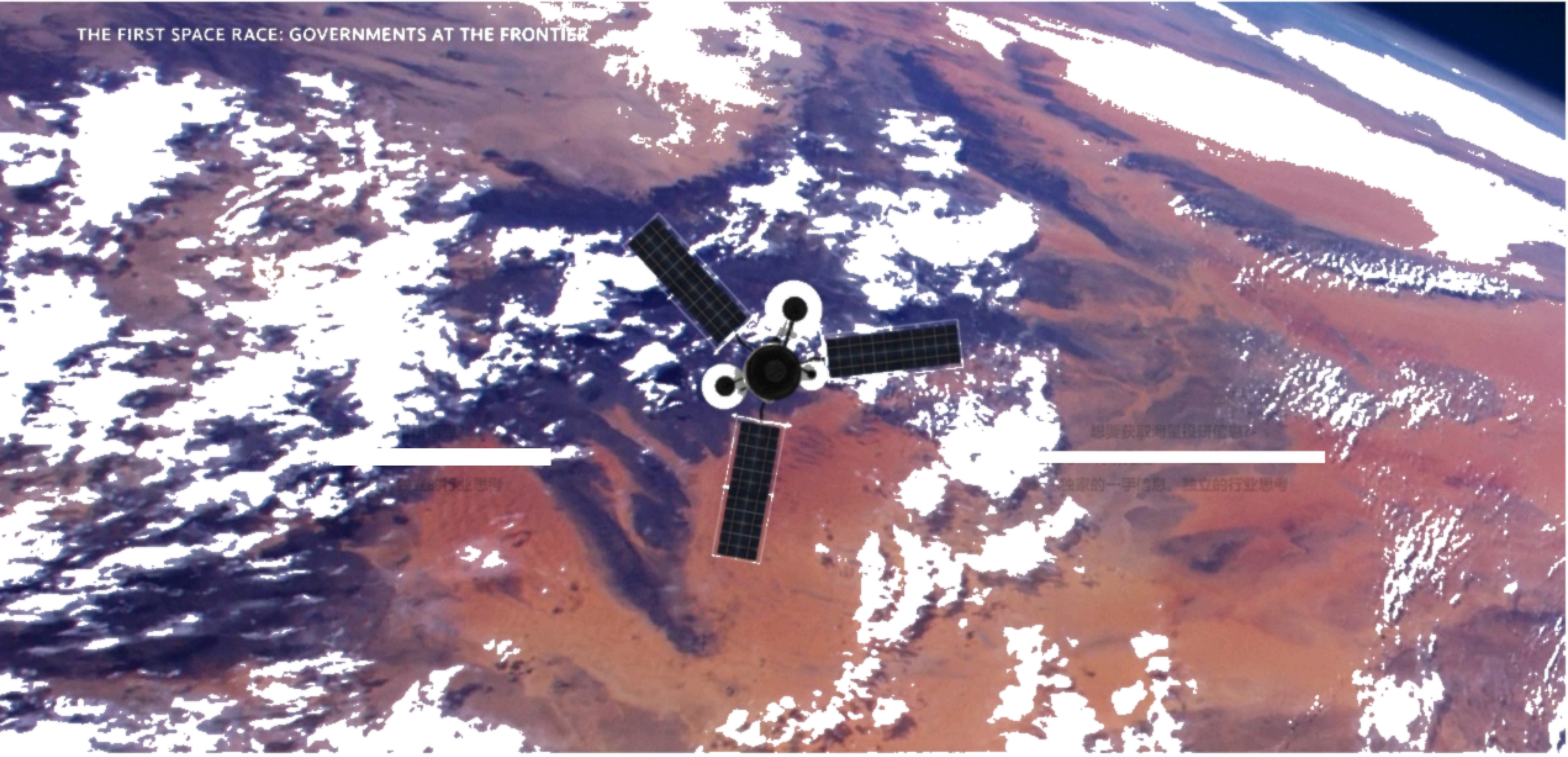


IMAGE CREDIT: NASA



Many of the most important space-based commercial services evolved out of government R&D efforts originally developed for military applications.

Satellite communications originated from Cold War–era US military command-and-control technology, beginning with the US Army's first launch in 1958. Since then, its wide-ranging applications have fueled massive sector growth.

Television drove the industry's first mass-market adoption, initially using ground stations to deliver satellite signals into homes via cable. By the 1980s, smaller household dishes enabled direct-to-home broadcasting.[11] Broadband later transformed one-way broadcasting into two-way connectivity, extending internet access beyond traditional fiber networks. Today, SpaceX's Starlink[12] and Amazon Leo[13] are developing communications constellations in low Earth orbit (LEO) that can serve internet broadband and, increasingly, direct-to-cell (DTC).

Positioning, navigation, and timing (PNT) constellations, like GPS, were funded by the US Department of Defense for military purposes like locating ballistic missile submarines. But by serving as a public good, PNT constellations like GPS have enabled massive downstream economic growth.[14] And while PNT constellations have historically been sovereign, commercial providers now offer augmentation and alternatives, particularly for denied environments.

Earth imaging and observation services also originated from US military applications. In the 1950s and 1960s, the CIA and US Air Force launched the Corona Program, which used reconnaissance satellites to track Soviet nuclear and military activity. The development of a regulatory framework governing private remote sensing satellites in the 1990s, coupled with the advent of small satellites in the 2010s, has catalyzed commercial activity as imaging technology and unit economics improved.[15]

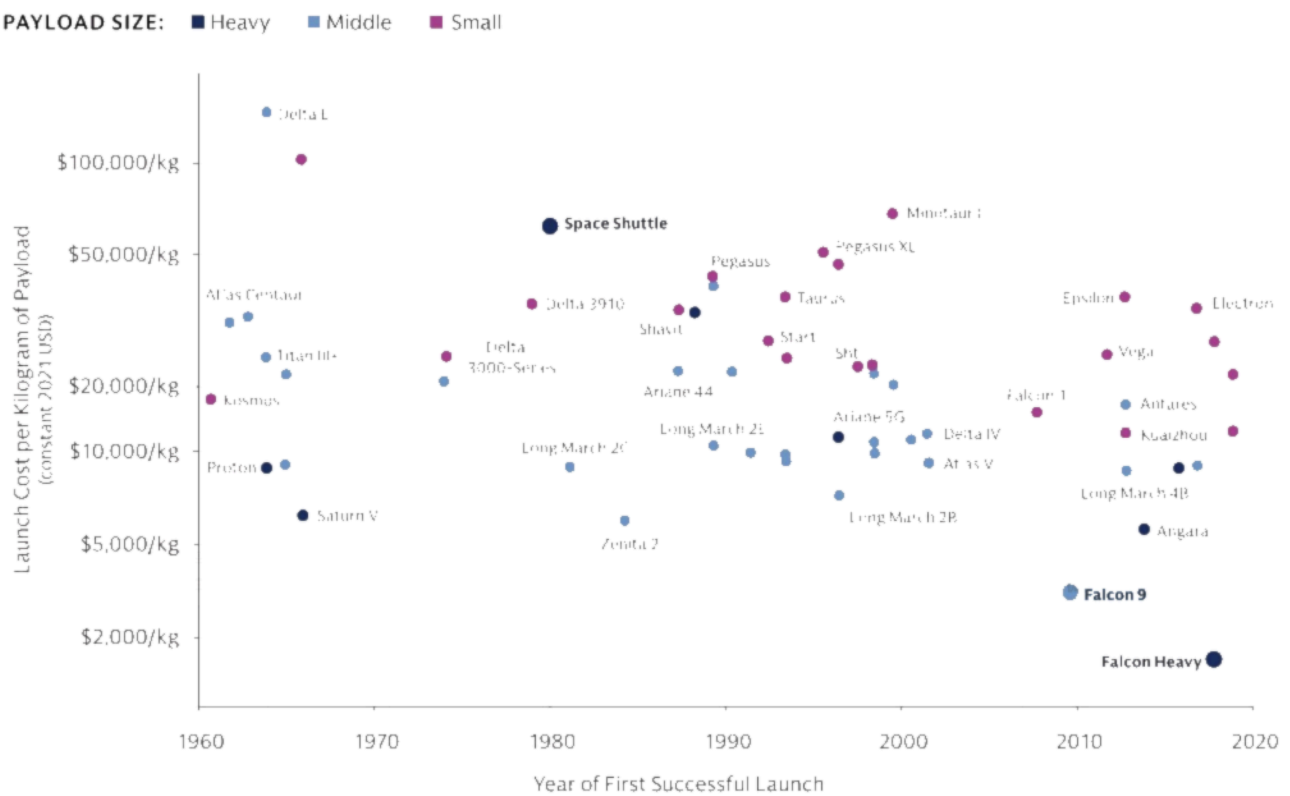
The Evolution of the Modern Space Economy

The modern space economy is structured into two primary segments: upstream and downstream. The upstream segment encompasses the manufacturing and deployment of space assets, including satellite production, launch services, and ground infrastructure. Conversely, the downstream segment focuses on the operational utility of these assets, delivering space-enabled services that support a vast range of terrestrial activities. These capabilities—spanning Earth observation, global communications, object tracking, and precision PNT—serve a diverse array of end users from nearly every global industry.

Since the early 2000s, the modern space economy has been revolutionized by three interconnected innovations: the advent of reusable rockets, the phenomenon known as the "SmallSat revolution," and the growing use of LEO.

Because of the limited number of launch service providers globally, launch acts as the upstream chokepoint for every aspect of the space economy and defines the cost structure for all other segments of the industry. In 1981, getting a kilogram of mass into LEO cost $65,400/kg[16] on the US Space Shuttle. Today, SpaceX Falcon Heavy has brought costs down to $1,500/kg.[17] This massive decline in costs has been enabled by the advent of partially reusable rocket boosters, an innovation that transformed the massive fixed costs of building rockets into an asset that can be recycled for multiple launches. As a growing number of companies seek to replicate and improve upon this innovation, launch costs could continue to decline, democratizing space access even further.

Cost of Launch over Time



Source: Thomas G. Roberts, "Space Launch to Low Earth Orbit: How Much Does It Cost?," Center for Strategic and International Studies, updated September 1, 2022

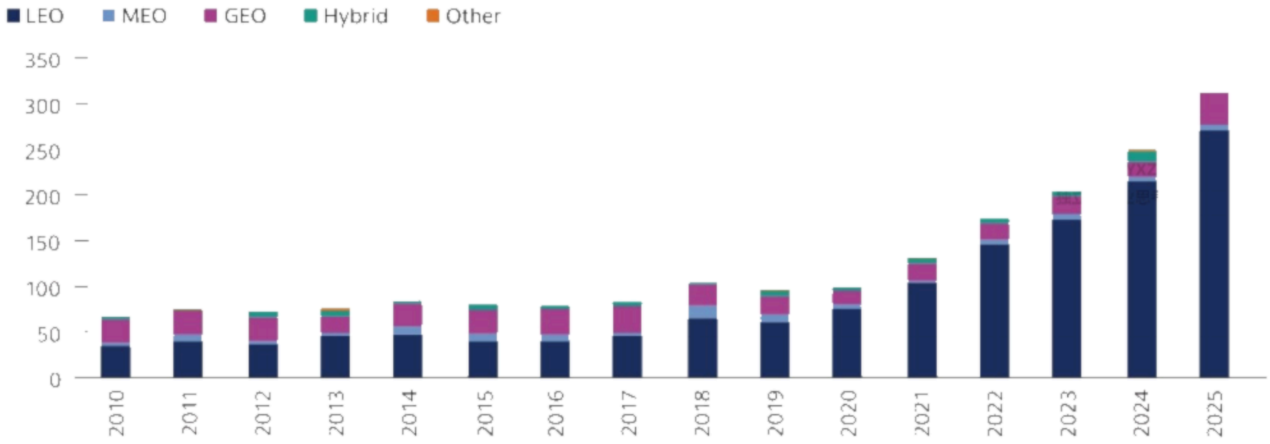
At the same time, technical innovations and cheaper manufacturing techniques have led to a decline in the size and manufacturing cost of most functional satellites, creating new form factors and dramatically decreasing the complexity of reaching orbit with SmallSats. Until the mid-2000s, the industry had been dominated by large, school-bus-sized satellites in geostationary equatorial orbit (GEO) (35,786 km above Earth's equator[18]) that cost $100 million to $200 million[19] to build, with launch costs on the order of $50 million. These custom-built satellites were designed to remain in orbit for decades,[20] making them prohibitively expensive for most actors except governments and telecommunications giants.

Concurrently, more satellites began to move into LEO (~550 km from Earth) from higher orbits, taking advantage[21] of lower latency and cheaper costs. While the LEO constellations of the 1990s (Iridium, Globalstar, and Teledesic) failed spectacularly, by the 2010s a new class of space startups were launching commercially viable, large-scale LEO constellations. Operating closer to Earth offered several advantages. First, lower radiation makes it viable to use commercial-grade electronics. Second, LEO satellites require less intense receiving infrastructure and user terminals on Earth, enabling devices as small as a satellite phone to communicate with a satellite (and further reducing infrastructure costs). Finally, with reduced latency, the LEO revolution expanded the types of activities that could be conducted, such as video calls and online gaming.

LEO infrastructure is one of the clearest commercial beachheads of the modern space economy, extending, supplementing, and even competing with terrestrial networks.

In the four years since launch, Starlink, SpaceX's fully operational global broadband LEO constellation that provides high-speed low-latency internet, has served more than 10 million customers, generating more than $11 billion in revenue in 2025.[22] The Starlink network currently has almost 10,000 satellites in LEO, with thousands more approved[23] for deployment in the next few years. Amazon, too, is investing significantly to build up its LEO satellite network, known as Amazon Leo,[24] that can serve broadband internet and DTC—most notably through its announced agreement to acquire Globalstar,[25] which includes radio spectrum rights for DTC communications.[26] DTC, normally considered a low-data operation for edge-processing use cases in remote environments, is likely to expand to high-data operations in the future and complement regular LTE service.

Orbital Launches by Year and Type



Source: Jonathan C. McDowell, General Catalog of Artificial Space Objects, release 1.8.4, 2020

Although the markets for DTC and broadband services are converging and are being pursued by many of the same players, the competitive dynamics of these markets differ. The physical terminal required for broadband services means that the switching costs in this market are higher, providing an advantage to first movers. For example, Starlink terminals generally cost between $200 and $600, depending on product and geography,[27] and the upfront cost deters customers from switching easily to other providers. On the other hand, companies pursuing DTC can partner with existing cell carriers to add space-based coverage, instantly granting them access to large existing customer bases without selling any hardware. This also means DTC users will face lower switching costs compared to broadband, which could make competition in this sector stronger as it develops.

Regardless of how these competitive dynamics resolve, a trend line is forming: As LEO networks become denser and latency improves, satellite communications are likely to become an embedded feature of the broader digital economy, supporting direct-to-device mobile connectivity, aviation and maritime broadband, emergency response, autonomous vehicles, electric vertical takeoff and landing (eVTOL) crafts, mixed reality, telemedicine, smart cities, and machine-to-machine communications.

Over time, the most important commercial shift may be that LEO makes connectivity ambient—available across geographies, modes of transport, and industrial settings where terrestrial networks are intermittent or uneconomic.

That creates a platform for second-order applications: autonomous systems that require continuous data links, cross-border enterprise networks that avoid terrestrial chokepoints, resilient backup communications during disasters, and eventually space-to-space communications that support a more complex orbital economy. In that sense, LEO is not merely a substitute for fiber, 5G, or submarine cables; it is becoming a new connectivity layer that expands the addressable market for communications, enables new categories of digital services, and reinforces the report's broader argument that space infrastructure is moving from a specialized frontier to an essential pillar of the industrial economy.

	GEO (36,000 km)	MEO (5,000–20,000 km)	LEO (500–1,200 km)
Altitude Latency	High	Low	Very Low
Earth Coverage	Very Large	Large	Small
Satellites Required	Three	Six	Hundreds
Data Gateways	Few Fixed	Regional Flexible	Local Numerous
Antenna Speed	Stationary	One-Hour Slow Tracking	10-Minute Fast Tracking
Characteristics	• Fewer satellites over large fixed geographical areas • High-altitude and distant ground networking impacts latency-sensitive applications • Signal power losses require larger satellites and antennas	• Proven low latency comparable to terrestrial networks, offers fiber-adjacent performance • Simple equatorial orbit covers 96% of global population • Dual tracking antennas required to maintain continuous connectivity	• Smaller, lower-power satellites batch-launched more cheaply than GEO • Very complex tracking and ground network plus complete constellation must be in place before service starts • High-density collision and debris risk
Use Cases	Broadcast TV, weather monitoring, telecommunications, surveillance	Global navigation satellite systems (GPS, Galileo, GLONASS, and BeiDou), broadband, government communication, Earth observation	Communications (Starlink), Earth observation, scientific research, IoT, geolocation

Sources: SES, *GEO, MEO, and LEO: How Orbital Altitude Impacts Network Performance in Satellite Data Services*, May 2020; Mahashreveta Choudhary, "What Are Various GNSS Systems?," *Geospatial World*, November 20, 2019.

Note: For altitude latency, total end-to-end network latency is dependent on ground infrastructure.

New Frontiers Spur New Industries

As launch costs plummet and technological capabilities mature, improvements to existing capabilities are also likely on the horizon: PNT improvements could create perfect and continuous object tracking for any logistics, shipping, or industrial context, while persistent Earth observation could improve at sub-meter resolution with minute-by-minute revisit and better radar capacity for inclement conditions. DTC, as mentioned, could scale from emergency and remote capabilities for basic text and data to a quotidian technology, and satellite broadband could replace fiber and large segments of traditional backhaul (the connections that route local traffic back to the core network).

Space innovation is also accelerating beyond the services and sectors that exist today. The next phase of development may be defined by advancements in in-space servicing, assembling, and manufacturing (ISAM), which could prove to be a gateway to a host of new space-based technologies by allowing objects larger than current payload capacity to be manufactured in orbit, as well as enabling lighter satellites through mid-flight refueling. It could also give way to in-orbit manufacturing of goods that benefit from microgravity, such as biomanufacturing. In turn, resource extraction, solar energy production, and large-scale lunar activities could all become commercially viable. As these activities scale (and enabling capabilities mature), they could justify a continuous lunar presence, which in turn could support a wider lunar economy spanning transport, communications, energy, construction, and space tourism.

Orbital compute has emerged as a particularly dynamic vector for development. Compute already exists in space, largely for edge-processing use cases, but companies are now exploring what it would take to develop more wide-scale capabilities, given the exponential growth in token demand and the challenges facing terrestrial data center development (namely, limited power availability, long grid interconnection queues, and permitting delays). With solar panels in sun-synchronous orbit, space could potentially offer almost limitless power and fewer regulatory hurdles.[28] However, challenges remain. Although space is cold, the environment is a near vacuum, creating engineering difficulties for the radiators designed to dissipate heat from the GPUs. Uplink and downlink capacity currently limit bandwidth and latency capacity, and the ability to maintain or repair parts in orbit (particularly chips) remains constrained. The GPUs themselves may also require engineering modifications for radiation hardening.

However, progressing toward the commercial era of space will require governments and companies to confront new challenges. The proliferation of satellites in LEO has led to an increase in orbital congestion: While a single satellite in GEO can cover a large section of Earth from just one position, at their low altitude, LEO constellations[29] require many more satellites to reach full coverage. Both countries and companies are competing to obtain satellite slots, which the International Telecommunication Union allocates on a first-come, first-served basis.[30] As a result, early movers like SpaceX have a significant advantage, but the competition for orbital slots will only grow more acute as launch activity continues to accelerate.

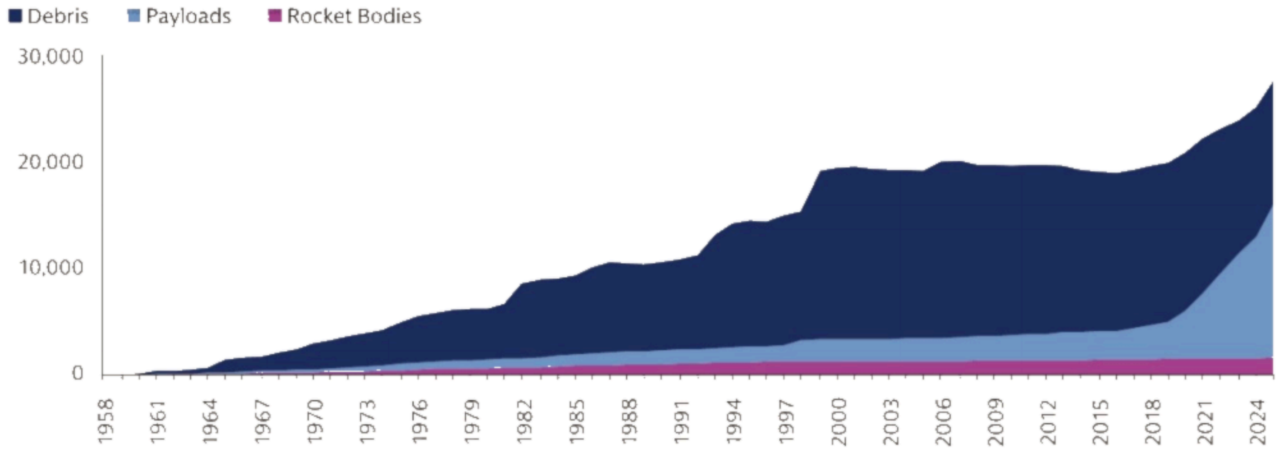
And congestion is only one dimension of a broader governance gap. Many of these novel space capabilities also fall within a legal gray zone. Clarifying regulatory frameworks for these emerging capabilities will be a critical part of spurring the investments needed to reach commercialization.

IMAGE CREDIT: NASA/BILL INGALLS

Collision risks are rising as the number of objects in orbit surges.

With US and Chinese companies planning to launch tens of thousands of satellites into LEO over the next decade, orbital congestion and a growing amount of space debris[31] will become critical obstacles affecting surveillance systems, communications networks, and every industry reliant upon LEO satellites. Additionally, the more crowded orbit becomes, the greater the risk that just a single breakup event carries cascading effects. While companies' collision-avoidance algorithms largely prevent incidents today, managing future congestion will require increasingly sophisticated space domain awareness to prevent collisions[32] that could threaten space infrastructure.

Objects Orbiting Earth



Source: United States Space Force, "Tracked Objects in Low Earth Orbit, by Type," 2026, via Our World in Data

New Funding Models Accelerate Commercial Space Activity

Space was the exclusive domain of national governments for much of the 20th century. The financing model was straightforward: Governments set the mission, appropriated the capital, and contracted with industrial suppliers to execute. As a result, public-sector budgets absorbed the risk of frontier technology while private companies acted as government contractors to fund their transformation into commercial leaders. That architecture was logical when launch costs were high, technical risk was extreme, and the number of capable actors was limited.

When the Soviet Union collapsed in 1991, however, that military impetus catalyzing investment disappeared, and NASA's budget has steadily declined since—from a peak of 4.5%[33] to less than 0.5%[34] of federal spending today.

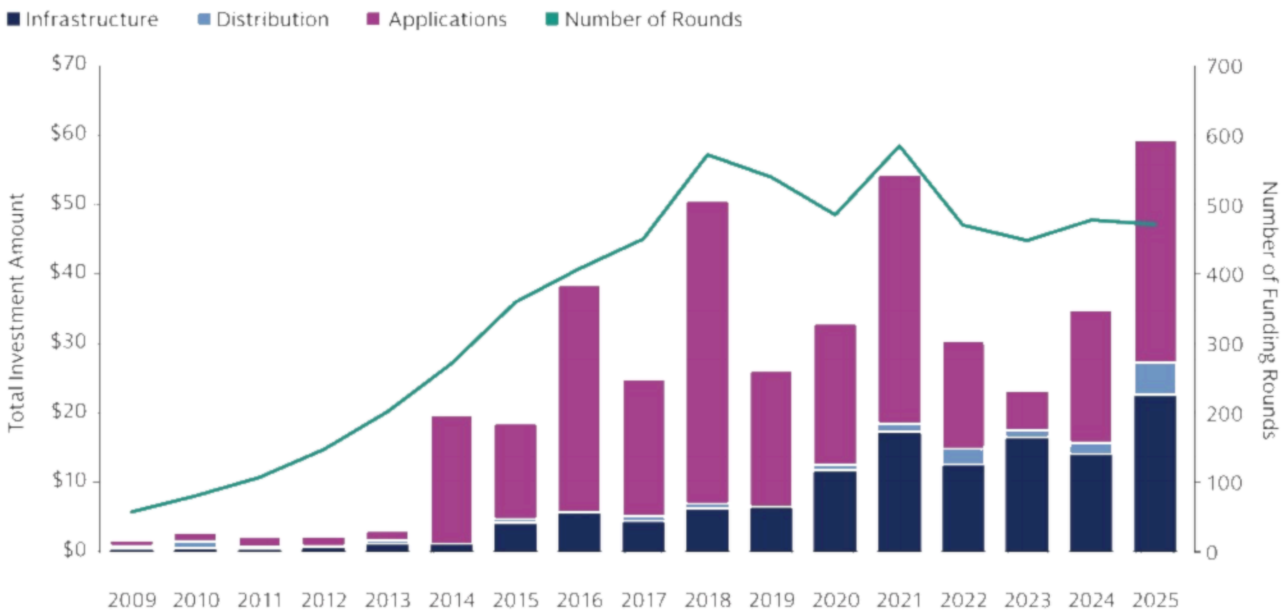
The retreat in government spending sowed the seeds for today's commercial space age.

Government agencies started contracting private companies for space technologies and services. To help drive down costs, NASA shifted from cost-plus to fixed-price contracting in the early 2000s, which forced firms to absorb cost overruns and thereby incentivized maximum efficiency. SpaceX won its first[35] government contract in 2004. Just a few years later, it debuted its partially reusable Falcon 9 rocket, a step-change innovation that cut the cost of sending payloads into LEO by nearly 90%.[36] As other companies followed suit, the payload capacity[37] per launch for partially reusable launch vehicles dramatically increased. The consequences have compounded steadily since, with lower launch costs spawning new market entrants that push the bounds of innovation and expand the range of commercial opportunities in turn.

The evolution of the public-private partnership model also drove vertical integration across the commercial space sector. This shift was born out of necessity, as space startups found themselves struggling to fill orders from a legacy defense industrial base characterized by a fragmented and hyper-specialized supply chain. Greater control of their supply chains[38] allowed space startups to speed up "fail-fix" innovation cycles, insulating themselves from procurement delays and capturing higher margins. Pursuing a full-stack approach means that space companies may increasingly be valued as integrated infrastructure platforms, rather than just providers of space services.

These emerging platforms have attracted significant institutional capital, with the global space-based economy forecasted to reach $1.8 trillion by 2035.[39] More than $55 billion[40] was invested into the space ecosystem in 2025, and Q1 2026 posted a record $36 billion[41] of investment.

Annual Space Investment by Layer ($bn)



Source: Space Capital, *Space Investment Quarterly*, Q1 2026

Falling launch costs, reusable rockets, SmallSat manufacturing, and software-enabled space systems have unlocked commercial business models that extend beyond a single government contract. Space is becoming a new pillar of the industrial economy, with supply chains, infrastructure nodes, and value pools that resemble other sectors. How companies finance themselves has evolved accordingly: Rather than relying solely on government programs, venture rounds, or strategic investors, space companies are increasingly turning to public equity markets to fund growth.

Since the start of 2025, aerospace companies have raised $89 billion through IPOs—tapping public equity markets to raise capital, scale manufacturing, and fund R&D. Firefly's IPO raised ~$999 million and followed the company's successful Blue Ghost lunar mission, York Space Systems raised ~$629 million to support its role as a national-security space prime, and HawkEye 360 raised ~$478 million to expand its space-based signals intelligence platform. Finally, SpaceX raised more than $86 billion in its IPO, the largest in history.[42] These listings represent a broader institutionalization of space as a distinct sector within public equity markets.

This maturation is crucial, as the next phase of space industrialization will require enormous sums of capital to build launch capacity, satellite factories, lunar infrastructure, space-based data platforms, and resilient communications networks—up-front investments beyond what venture-backed companies can secure through private rounds alone. As space becomes a core platform for defense, communications, data, and AI, the geopolitical value will only compound—accelerating government demand and contracts in turn.

The strategic implication is clear: As space becomes more economically central, access to capital will become a competitive advantage in its own right. Companies that can pair technical execution with public-market credibility will be better positioned to scale, consolidate, and navigate critical chokepoints in the orbital economy.

The Rise of Astropolitics: How Strategic Competition Extends into Orbit

Although the private-sector commercialization of space has rapidly accelerated, the military advantages offered by space have only deepened with the advances of modern warfare. The basic architecture of military power—communications, command and control, intelligence, early warning systems, precision weapons, and navigation—runs through orbital infrastructure.

Superior capabilities in these areas can confer real strategic advantages. When Russian cyberattacks produced widespread internet blackouts in Ukraine, the Starlink constellation ensured reliable internet connectivity and communication for Ukrainian citizens and military.[43] Similarly, during the ongoing Iran conflict, Russia reportedly shared satellite imagery with Iran to help target US military assets and regional allies.[44] Disrupting critical PNT services like GPS through spoofing (broadcasting fake signals) or jamming (disrupting satellite signals through radio frequency noise) has also become a common tactic in gray-zone warfare.

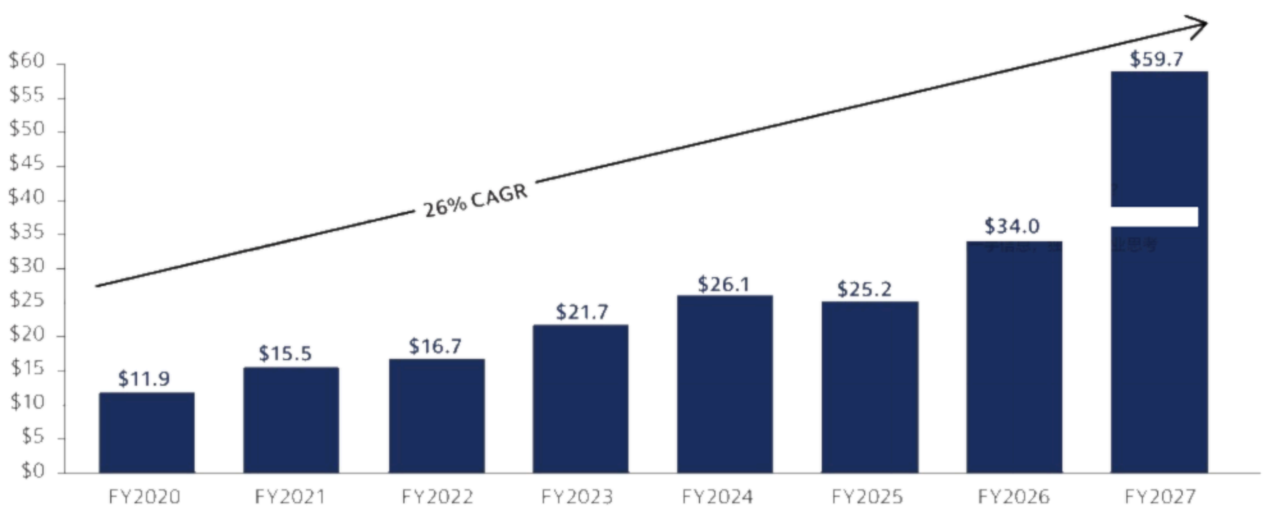
Governments are therefore heavily investing in their domestic space and defense industries. Funding for space across the US Department of Defense will reach $57.7 billion[45] in fiscal year 2026, and the administration's 2027 budget proposal requests $71 billion.[46] Moreover, the US Space Force has begun issuing contracts for the Golden Dome missile defense umbrella,[47] a project the White House estimates will cost $175 billion through 2028. The European Union is also accelerating the development of its sovereign space capabilities, with the European Space Agency planning to increase investment[48] by 31% over the next three years. China, too, is investing enormously[49]—from just $340 million in 2015 to $2.9 billion in 2024—to grow its space sector and catch up to the United States.

$55bn
invested into the space ecosystem in 2025[50]

$89bn
raised through aerospace IPOs 2025–2026[51]

$1.8tn
projected global space economy by 2035[52]

Department of Defense Spending on Space-Based Systems ($bn)



Source: U.S. Department of Defense, FY2027 Program Acquisition Cost by Weapon System
Note: 26% CAGR is calculated for FY2020–FY2027.

One clear sign of governments' renewed focus on space leadership is the return of ambitions to advance human lunar exploration.

While American agencies and companies accounted for ~82%[53] of objects launched into orbit last year, over the last several decades, the United States deprioritized human spaceflight and exploration, relinquishing the arena that had marked it as the winner of the Cold War space race.

But that era is over. The successful conclusion of NASA's Artemis II mission marked the first time humans have traveled to the moon in over half a century. It also provided the opening gambit of President Trump's space agenda, outlined in a December 2025 executive order that included[54] a crewed lunar landing (Artemis IV mission) by 2028 and establishing the first elements of a permanent lunar outpost by 2030. Through this lens, the Artemis Program underscores the United States' intent to maintain its space leadership and architect an entirely new orbital ecosystem.

But if the previous space race was defined by competition between the United States and the Soviet Union, the next era is likely to revolve around the United States and China. Chinese President Xi Jinping aims[55] to transform China into a space power equal to the United States, and the scale of China's ambitions means that US leadership in space is no longer self-sustaining. Through concerted effort over the past two decades, China has built up a space program that now spans the full stack of space capabilities and has even achieved milestones[56] the United States has not. As with other cutting-edge technologies, China benefits[57] from its ability to take a long-term, whole-of-government approach to aggressively expand its military, civil, and commercial space capabilities.

CATEGORY	MAJOR MILESTONES	UNITED STATES	CHINA
Human Spaceflight	Operation of permanently crewed, Earth-orbiting station	✓	✓
	Crewed moon landing	✓	×
Robotic Deep Space and Planetary Exportation	Robotic landing and surface exploration of the moon	✓	✓
	Robotic landing and surface exploration of the lunar far side	×	✓
	Robotic lunar sample return	×	✓
	Robotic lunar far side sample return	×	✓
	Robotic landing and surface exploration of Mars	✓	✓
	Outer planet exploration (beyond Mars)	✓	×
	Asteroid landing and sample return	✓	×
Launch Capabilities	Heavy-lift capabilities	✓	✓
	Superheavy-lift capabilities	✓	×
	Partially reusable rockets	✓	✓
	Fully reusable rockets	×	×
Satellite Infrastructure	Operation of a space-based global navigation and positioning constellation	✓	✓
	Operation of high-resolution, high-frequency Earth-observation constellation	✓	✓
	Operation of satellite internet constellation	✓	✓

Sources: Special Competitive Studies Project, *Space Race in the 21st Century: Assessing China's Challenge to American Leadership*, 2025; Stephen Clark, "China Recovered Its First Reusable Rocket and Showed a New Way to Do It," *Ars Technica*, July 10, 2026

This intensifying geopolitical rivalry is ultimately anchored in the stark physical and economic realities of space access, where the high barriers to entry create a tiered system of global influence. The ability to place objects into orbit independently is held by only a handful of countries: the United States, Russia, China, and a small number of others with partial or emerging capabilities. For the remaining ones, access to space depends on a commercial or diplomatic relationship with an actor that can launch, particularly as most states cannot justify large-scale national space programs. As space-derived services become increasingly essential, that dependency becomes politically significant.

China has made its space sector a central instrument of economic statecraft, engaging at least 64 countries in various forms of space cooperation, with particular emphasis on Africa and the developing world. More than 70% of the satellites[58] China has launched for foreign customers since 2010 have gone to developing nations. This cooperation serves to both deepen China's political influence and grow its market access. Although the United States' launch cadence still far exceeds China's, including in emerging markets, China is competing for those markets. This integration of strategic and commercial objectives is not incidental: Chinese officials have been explicit[59] that commercial and civil space capabilities are designed to serve military ends as well.

For the United States, the growing role of the private sector adds a layer of complexity. American launch capacity increasingly runs through a small number of private operators rather than through government programs. China's commercial space sector, by contrast, functions as an extension of state strategy. The United States has no equivalent mechanism for directing private capability toward strategic ends; this gap between the two models may prove to be one of the defining structural challenges of the emerging space order. As competition in space intensifies, Washington will need to continue to find ways to align private commercial interests with national strategic ones.

The Governance Question

When the rules are unclear, those with the most capability shape the norms in practice. Increasingly, who *governs* space is becoming inseparable from the question of who *dominates* it.

The five existing international treaties underpinning space law were negotiated during the Cold War. Together, they enshrined several foundational principles: the prohibition of nuclear weapons in orbit; the prohibition of national appropriation of celestial bodies through claim, use, occupation, or other means; and the obligation of states to authorize and supervise the space activities of both governmental and nongovernmental actors in space.

Government signatories to these treaties built regulatory regimes to meet their legal obligations under this framework. The United States, for example, developed a patchwork regime for regulating space activities spread across the National Oceanic and Atmospheric Administration, the Federal Aviation Administration, and the Federal Communications Commission.

But private space sector growth and the evolution of modern space activities have revealed the shortcomings of this framework. For one, it fails to provide clear guidance on addressing the challenges of an increasingly crowded orbital environment, including space traffic management—satellite deployments alone are expected to reach 20,000 by 2030—and debris removal. Many novel space capabilities, such as lunar resource extraction and in-space manufacturing, operate in a legal gray zone without clear regulatory oversight. The gap between legacy governance frameworks and what's required today has implications beyond commercial gains.

Governments are focused on closing these regulatory gaps. In 2020, the United States spearheaded the Artemis Accords—a framework signed by 61 countries—to establish standards for responsible behavior in space across transparency, interoperability, and the peaceful use of space resources. The accords represent an effort to align allied and partner nations to a US-led vision of space.[60] However, Russia and China, the two other major spacefaring nations, have not signed on to the accords.[61]

Domestically, the United States is working to clarify regulatory processes for commercial space activities and accelerate investment. The Trump administration's approach has combined tax incentives[62] meant to encourage investment in space infrastructure with efforts[63] to streamline licensing and permitting approvals for commercial launch and reentry, as well as for spaceport development. The administration is also working to establish an authorization process for novel space activities and update licensing procedures[64] for new types of spacecraft that don't fall under a clear regulatory authority.

Preparing for Orbital Industrialization

The coming space age will create new strategic realities for corporates and governments at various positions in the growing space ecosystem. For space companies, the trajectory points toward continued ecosystem innovation as capabilities mature and the cost of reaching orbit continues to decline. As space companies increasingly enter public markets, capital markets activity is expected to intensify. This may drive a rise in M&A activity and support the evolution of space as an institutional asset class, subject to investor sentiment, capital availability, industry performance, and broader economic conditions. In the same way trade networks allowed for geographic specialization in goods and services, orbital specialization could emerge as a result of lower launch costs, driving terrestrial services to space. And as space grows more important to the global economy, so too will space supply chains, and the firms that control critical chokepoints in this value chain will be positioned to capture disproportionate value as the sector scales.

For governments, the calculus is increasingly strategic as well as economic. Space infrastructure is becoming a foundational layer of national competitiveness and security. Governments will face consequential choices about how to build sovereign capabilities, how to regulate a rapidly evolving commercial sector, and how to align private enterprise with national strategic objectives. The US-China rivalry will sharpen these choices, and nations that fail to develop either domestic capability or reliable partnerships risk meaningful dependency on actors whose interests may not align with their own.

There will also be second-order effects. For companies that consume space services, the development of a more robust space infrastructure layer will unlock new opportunities. As the cost and availability of space-derived data, connectivity, and timing services continue to improve, companies all over the world will begin to see these capabilities as baseline expectation. Just as virtually every firm considers itself an internet enterprise today (not just internet technology firms), going forward, companies may consider the space stack in the same way they do the internet: as essential infrastructure.

As the world progresses into an age of orbital industrialization, the distinction between space infrastructure and terrestrial infrastructure will continue to dissolve. The organizations and nations that recognize this early and position themselves accordingly will help define the shape of the economy that follows. The future of space will stretch beyond the bounds of current imagination.

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