STRATEGIC REVIEW: THE SPACE LAUNCH SECTOR

Geopolitics and the New Space Economy in a Multipolar Era

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Executive Summary

This report, Strategic Review: The Space Launch Sector, is produced by Challenger Research, an organisation focused on the intersections of geopolitics, security, and strategic industry dynamics. The report assesses how space launch capabilities have become central to global power projection, economic resilience, and military deterrence.

Once the preserve of state space agencies, the launch sector is now a crucible of geopolitical rivalry, commercial innovation, and military integration. The global landscape is shifting fast, with states and private actors competing to secure access to orbit, reduce dependency on rivals, and shape the rules governing space itself

The space launch sector has entered a period of rapid transformation and strategic significance, marked by both technological advancement and intensifying geopolitical competition. Once the exclusive domain of a handful of established state actors, the launch landscape is now characterised by the rise of commercial enterprises, the proliferation of new national capabilities, and the emergence of launch infrastructure as a critical lever of global power. This report examines the multifaceted evolution of the sector up to the halfway point of 2025, with a particular focus on its geopolitical, strategic, and economic dimensions.

The report is structured to provide a comprehensive examination of the space launch sector, beginning with a market and industry overview (**Chapter 2**), followed by technology and industry trends (**Chapter 3**), an assessment of national programs/strategies (**Chapter 4**). **Chapter 5** addresses the interplay of geopolitics and security, including the proliferation of new spaceports and the need for a skilled workforce. **Chapter 6** provides a deeper look into the market dynamics (including government spending) shaping the space launch future trajectory. lastly, **Chapter 7** provides our strategic recommendations for policymakers, commercial actors, and international institutions.

Key Findings

Accelerating Growth and Demand: The recent surge in government and commercial interest- driven by the proliferation of satellite constellations for communication, surveillance, and military applications - has created unprecedented demand for reliable launch services. Notably, 97% of all spacecraft launched in 2024 were smallsats, leading to a persistent supply shortage expected to endure for a decade at current capacity.

The Rise of China: China's space launch capabilities have begun to rapidly overtake Europe and Russia and look set to challenge the US. China plan for this eventuality over the next two decades. Where they are vulnerable in capital market trust, they make up for in the sheer scale of government support through CASC and other government bodies that plan all their programs around strategic advantage – particularly with being the first to set up an outpost on the moon.

Proliferation of National Capabilities: In response to both supply constraints and growing strategic imperatives, over a dozen countries are developing indigenous launch vehicles and/or constructing spaceports. These efforts span a broad spectrum of payload classes and regional contexts, reflecting a global push for greater access and autonomy in space operations.

Shifting Geopolitical Landscape: While the dominance of the US space sector remains strong, due to Space X's meteoric rise, it is being gradually challenged by China's rapid ascent and the strategic aspirations of Europe. The global South are also becoming more involved in the space launch sector, with Oman prepping for 5 launches from their spaceport in 2025.

The exclusion of Russian launch vehicles from many markets has further fragmented the sector, compelling nations to diversify both their technological base and international partnerships.

Militarisation and Security Concerns: Space is increasingly regarded by leading powers as a strategic military domain. Alongside the pursuit of launch capacity, the US, China, and Russia are advancing doctrines and capabilities oriented towards space deterrence, including cyber and kinetic operations targeting adversarial space assets. The 'Golden Dome' and other missile deterrence proposals speak to the global unease around hypersonic missiles after their claimed use in Ukraine by the Russians. This has heightened concerns regarding the vulnerability and resilience of launch infrastructure (spaceports in particular) and the broader space ecosystem.

Strategic Importance of Infrastructure: Successful space operations depend not only on advanced spacecraft but also on reliable launch infrastructure - launchpads, integration facilities, telemetry, and robust supply chains. Control over this infrastructure now constitutes a vital element of national security, strategic autonomy, and geopolitical influence.

Global Distribution of Spaceports: The construction and modernisation of spaceports in both established and emerging spacefaring nations are reshaping the access landscape. The pursuit of geographically advantageous locations - such as Brazil and Hainan Island-reflects both commercial opportunity and strategic calculation, with major powers investing in overseas infrastructure to project influence and diversify launch options.

Rise of Commercial Actors and PPPs: The entrance of private companies such as SpaceX, Rocket Lab, and ULA has fundamentally altered the industry, shifting launch responsibility from state agencies to the private sector and driving innovation in both technology and business models. The mechanism most favourable is the Public-Private Partnerships (PPPs) which allow risk sharing between governments and their top companies in the sector. This dynamic is reshaping the traditional state-industry relationships and fostering rapid launch sector growth.

Dynamic Policy and Regulatory Environment: The rapid pace of technological and market change has outstripped existing governance frameworks, prompting calls for updated multilateral and national policies capable of ensuring security, sustainability, and equitable access to space launch capabilities.

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(LauncherOne) are the key examples in this class. The demand for dedicated smallsat launch capacity has surged due to the proliferation of satellite constellations for Earth observation and communications, with the small sat market predicted to have a 16.4% CAGR over the next decade (GMI 2025). Rocket Lab's (2025) CEO has remarked on several occasions that once you Electron you never go back, given the ability to place a satellite within meters of its intended deployment location without the need satellite launch systems used in rideshares like Carbonix (Exolaunch 2022).

Table 2.1. Small Lift Launch Vehicles (≤2,000 kg to LEO).

Vehicle	Origin	Payload to LEO(KG)	First Flight	Status
Astra Rocket 3	USA	500	2021	Active
Ceres-1	China	1400	2020	Active
Electron	NZ/USA	300	2017	Active
Epsilon	Japan	1200	2013	Active
Firefly Alpha	USA	1000	2021	Active
HANBIT-Nano	South Korea	50	2023	In development
Isar (Spectrum)	Germany	1000	2023/24 (planned)	In development
Kairos	Italy	700	2025 (planned)	In development
Miura 5	Spain	1200	2026 (planned)	In development
PALLAS-1	China	1200	2024 (planned)	In development
PALLAS-2	China	2000	2025 (planned)	In development
PSLV (Variants)	India	1600	1993	In development
RS1	USA	1350	2022/23 (test)	In development
SSLV	India	500	2022	In development
Tronador II	Argentina	500-750	2030 (planned)	In development
Yanxinghe-1	China	1000	2025 (test/demo)	In development
ZERO	Japan	1000	2025 (planned)	In development

Medium Launch Vehicles

A medium lift launch vehicle (MLV) is a class of rocket capable of delivering payloads roughly between 2,000 and 20,000 kilograms into Low Earth Orbit (LEO), according to NASA classification; Russian classifications typically start around 5,000 kilograms at the lower end but share a similar upper bound. This category sits between small-lift launch vehicles (under 2,000kg) and heavy-lift launch vehicles (above 20,000kg), making medium-lift rockets the workhorses in the space industry for all major space powers. Their payload capacity allows them to deploy a wide range of satellites, involved in communications, Earth observation, scientific, and military payloads, as well as cargo for space stations and some crewed mission elements. Medium-lift vehicles form the backbone of many national space programmes and commercial launch services, offering a balance of capability and cost-efficiency for medium-sized payloads that do not require the immense power of heavy-lift rockets. They are also much more difficult and expensive to undergo, which is why new space entrants in Latin America and elsewhere, who tend to begin space programs at the lower end of the small lift class rockets. Examples include widely used launchers like the Soyuz and Falcon 9. The Falcon series has been tectonic in reshaping the launch landscapes by reducing launch costs (per kg) by many multiples (Venditti 2022). These rockets are vital for deploying satellite constellations, supporting space station resupply, and enabling diverse orbital placements with a reliable cadence and relatively lower cost compared to larger classes.

Table 2.2. Medium Lift Launch Vehicles (2,001–20,000 kg to LEO).

Vehicle	Origin	Payload to LEO(KG)	First Flight	Status
Ariane 6	Europe	7600	2025	Active
Altas V	USA	18850	2002	Active (final flight 2025)
Falcon 9 (reusable)	USA	18500	2010	Active
Firefly MLV	USA	16300	2026 (planned)	In development
H3	Japan	4000-16000	2024	Active
Long March 12	China	10,000	2025 (planned)	In development
Long March 8	China	7600	2020	Active
Neutron	USA	13000	2025 (planned)	In development
PSLV-C61	India	3800	1993	Active (changing variants)
Soyuz-2	Russia	8200	2006	Active
Vega C	Europe	2300	2022	Active (after 2-year haitus)

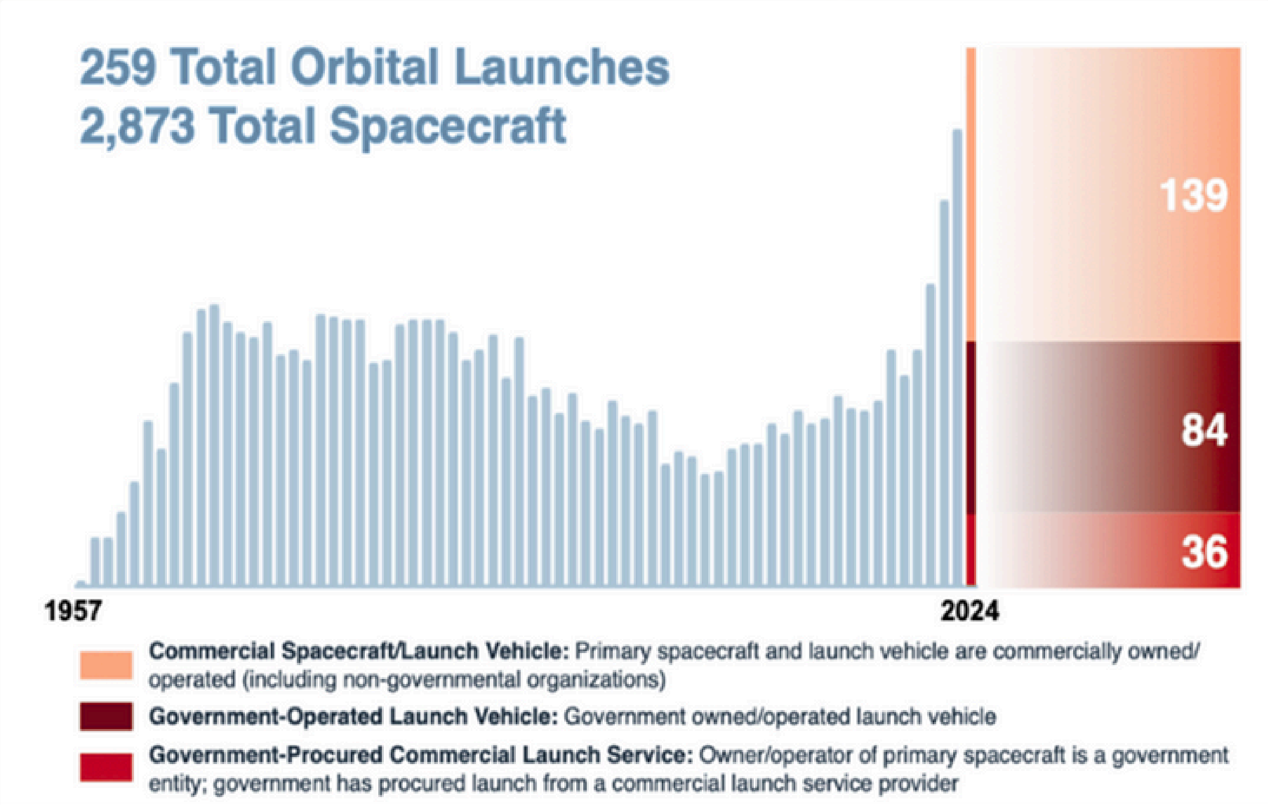

Figure 2.2.1. Number of orbital launches by type (commercial/government) between 1957 and 2024 (BryceTech 2025)

growth of space tourism (Tran 2025b). A large portion of this reduction has come from the reusable technology development (Agrawal 2025) that saves a large portion of the vehicle for future use.

Modern Launch Economics – Mission Trade-offs

The economics of space launch have shifted dramatically in the past decade, driven by both technological advancements and market demand (Fey & Peeters 2025). A key trade-off in modern launch planning lies in balancing payload capacity, cost per kilogram, reusability, and mission flexibility. Two emblematic examples are Rocket Lab's Electron and SpaceX's Falcon 9. Electron, a small-lift launch vehicle, is optimized for rapid, low-cost deployment of small satellites into precise orbits. It caters to customers who value schedule control and orbital specificity over mass efficiency, and the speed contract to launch that it is capable of can be crucial for a company needing a satellite launched as soon as possible (see Section 6.2.5). Although the cost per kilogram is relatively high (roughly $20,000–$25,000/kg), the overall mission cost is lower due to its smaller scale and responsiveness.

By contrast, the Falcon 9, a medium-to-heavy lift vehicle, offers significant economies of scale with a cost per kilogram as low as ~$2,700/kg. When reused for small satellite operators, rideshare spacecraft can be 10x cheaper than it was even a decade ago (Venditti 2022). This figure is expected to grow further, particularly with the growth of space tourism (Tran 2025b).

efficiency and reliability. The trade-off here involves less schedule flexibility and shared payload constraints, but far superior efficiency for mass-to-orbit missions. These differing approaches reflect a broader trend: launch providers are diversifying to meet the needs of both bespoke and bulk missions in a rapidly expanding space economy that is involving commercial customers at a faster clip.

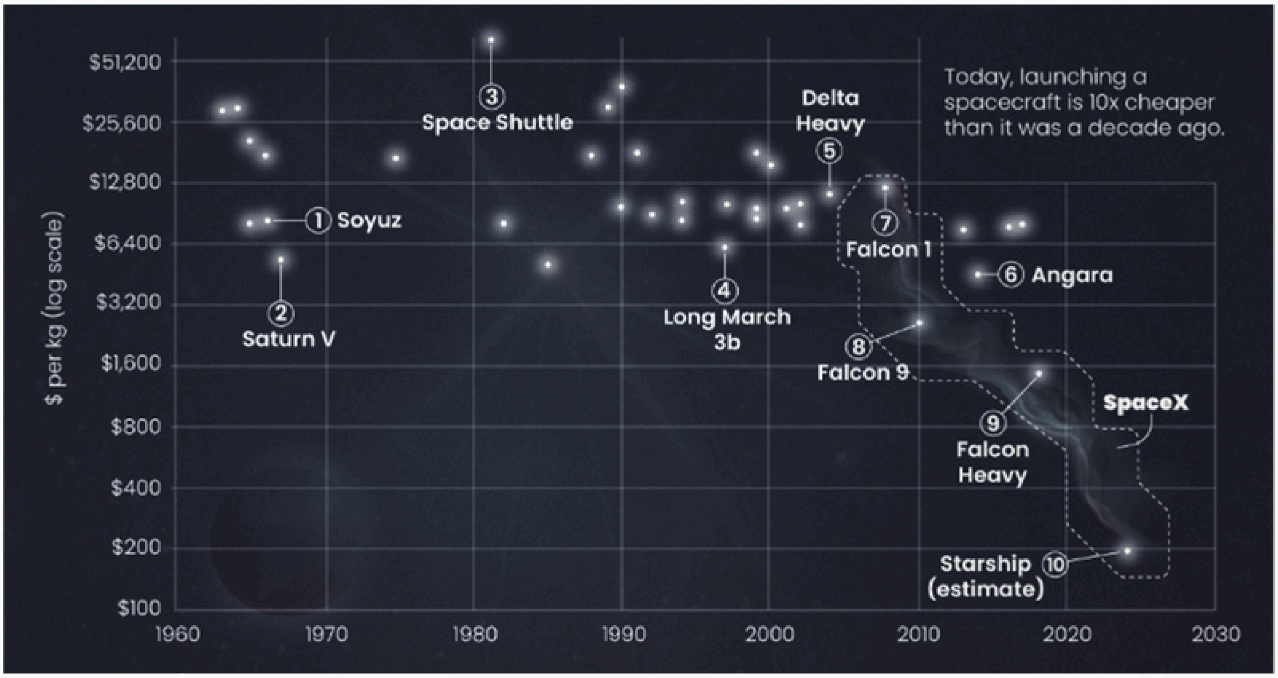

Figure 2.2.2. Chart showing the declining cost of spaceflight (log scale) for certain key launch vehicles by $ per kg, between 1960 and (forecasted for) 2025 (Venditti 2022).

Smallsat Launch Dominance

Smallsats are defined as satellites having a mass of 500kg (Motta, Pessoa Filho & de Oliveira Moraes 2024). Their prevalence in launch missions cannot be overstated. In 2024, 81% of all spacecraft upmass was in smallsats, compared to 63% in 2023 – 199 out of 259 total orbital launches in 2024 (BryceTech 2025). Around 73% of the 2,790 smallsat launches were for communications. Companies like Space X and (to a lesser extent) OneWeb's Low Earth Orbit (LEO) satellite constellations dominate this market. The number of smallsat launches is predicted to rise to 26,104 between 2023 and 2032 (Motta, Filho & de Oliveira Moraes 2024). The Satellite Launch Vehicle Market is projected to skyrocket from USD 18.4 billion in 2025 to USD 64.5 billion by 2034, driven by a 15% CAGR (Research and Markets 2025). This demand strains manufacturing suppliers, with lawsuits being raised against certain part suppliers (Cross 2024).

Supply Side Shortfall

Despite rapid technological advances and an abundance of new rockets in development, industry experts caution that new launch vehicles are unlikely to reach full operational capacity earlier than six years after their inaugural flights, leading to a near-term shortfall in launch capacity. McKinsey & Company acknowledged that while satellite deployment level models had large outcome variance, launch capacity is at a tipping point, with many medium and heavy launch vehicles being retired and most remaining capacity is already booked (Daehnick, Gang & Rozenkopf 2023). This lag is expected to constrain the sector's momentum, with uncertainty on the supply side outweighing concerns over demand, making the market supply-limited for the foreseeable future.

At the Satellite 2023 conference, Tory Bruno, CEO of United Launch Alliance, highlighted that the combined pressures of mega-constellation deployment and the withdrawal of Russian rockets have created a shortage that could persist for up to a decade (Richards 2023). Tim Ellis, CEO of Relativity Space, echoed these concerns, noting widespread anxiety among companies about access to medium and heavy lift capacity, and pointing to Amazon's Project Kuiper securing large volumes of launch slots at premium prices as evidence of intense competition for available capacity (Richards 2023).

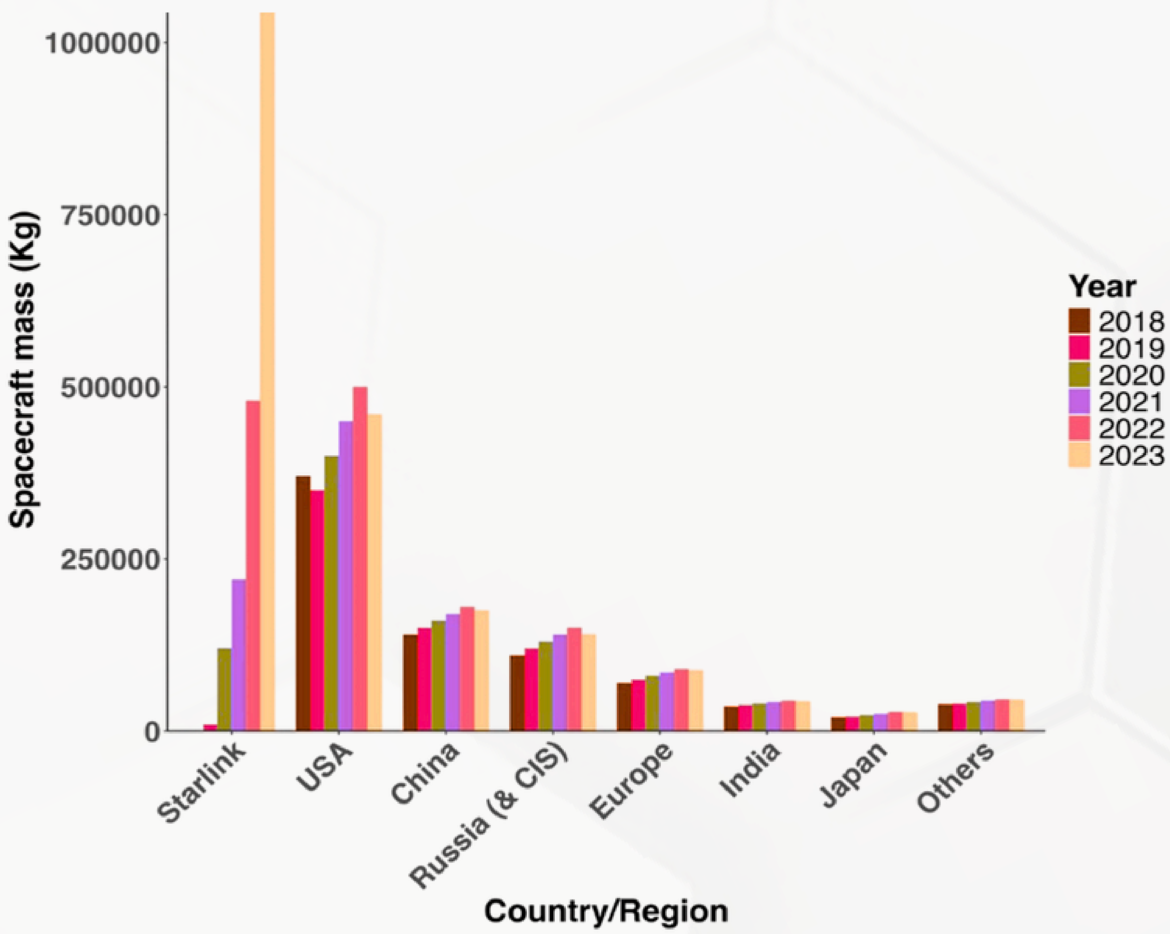

Figure 4.1.1.3. Spacecraft mass launched by years, with Starlink on the side (data from Eurospace.org 2025).

NASA contracts were arguably critical to the early survival and success of SpaceX.

SpaceX's breakthrough came in 2006 when NASA selected the company for its Commercial Orbital Transportation Services (COTS) programme. NASA awarded SpaceX $278 million in seed funding to develop the Falcon-9 rocket and Dragon spacecraft, with additional milestone-based payments (Rauf 2023). This initial contract provided not just capital, but also credibility, helping SpaceX attract private investment and accelerate development. By 2012, after successful demonstration flights, the total COTS contract value had grown to $396 million (Rauf 2023). NASA's continued support for SpaceX has been pivotal, with a series of significant commercial crew and cargo contracts underpinning the company's growth.

In 2011, SpaceX received $75 million under the Commercial Crew Development (CCDev) programme to develop a launch escape system for the Dragon capsule. This was followed in 2014 by a $2.6 billion award through the Commercial Crew Program to develop Crew Dragon and provide astronaut transport to the International Space Station (ISS) (NASA 2019). In addition to these high-profile contracts, SpaceX secured multiple agreements for ISS cargo resupply missions, with NASA funding regular Falcon-9 launches and Dragon flights (SpaceX 2021).

SpaceX's partnership with NASA has expanded significantly in recent years, underscoring its pivotal role in the United States' civil space programme. In 2021, NASA awarded SpaceX a $2.9 billion contract to develop the Starship Human Landing System for the Artemis lunar missions, with funding tied to technical milestones (Ralph 2021). In the 2022 fiscal year, NASA allocated approximately $2 billion in contract volume to SpaceX from a total agency budget of $24 billion.

satellites with its Atlas and Delta rocket series. It had little competition at the time, and while SpaceX soon put a stop to its dominance, it remains one of the US government's most trusted launch providers today. Despite progress, launches fell from 6 to 4 launches between 2023-2024, largely due to the transition to the new Vulcan Centaur rocket and the retirement of the Delta IV (Seibert 2025). ULA hopes the Vulcan will be their lower cost and more effective answer to Space X continued dominance in the launch sector.

Like with Rocket Lab, ULA is nowhere close to SpaceX launch capacity or cadence as things stand. In 2023's fourth quarter, SpaceX rockets lifted 382,080 kilograms into orbit: about 318 times what ULA sent up (Seibert 2025). However, the Vulcan Centaur heavy-lift rocket is an impressive feat of engineering and design. Offering a payload capacity of 27,200 kg to LEO and 6,500kg to geostationary transfer orbit (GTO), the Vulcan dwarfs the Neutron, but much lower than the Falcon-9 heavy-lift at 63,800kg LEO and 16,800kg GTO (Swayne 2025a).

ULA's Vulcan Centaur vehicle received certification from the U.S. Space Force to fly National Security Space Launch (NSSL) missions in March 2025, becoming the second certified provider after SpaceX (AIAA 2025). The certification process had been delayed for several months due to an anomaly during Vulcan's second demonstration flight in October 2024 (Erwin 2025b). In an effort to differentiate Vulcan in an increasingly competitive launch market, ULA CEO Tory Bruno has proposed a novel defensive application for the rocket. Speaking at the Spacepower Conference in Orlando, Florida, Bruno suggested that the Vulcan Centaur's upper stage could remain in orbit and function as a space interceptor, designed to counter potential threats to U.S. space assets (Swayne 2025a).

4.1.5 Europe

Europe relies upon 55 defence-related satellites, compared to Russia's 88, China's 206 and America's 366 (Seraphim 2025). Intelligence gathering satellites is where the gap is even more concerning. Europe have just 16 compared to 213 for the US (Seraphim 2025). We have talked in our work on European defence spending of Europe's push to do more. This has not translated to meaningful progress in space, with only 12 satellite launches in the last 5 years, versus China's 189 (Ibid 2025). **Figure 4.1.5.1** at least tells a more upbeat story in the capital markets. Collectively, the European nations surpass that of China in venture capital investments by a large margin.

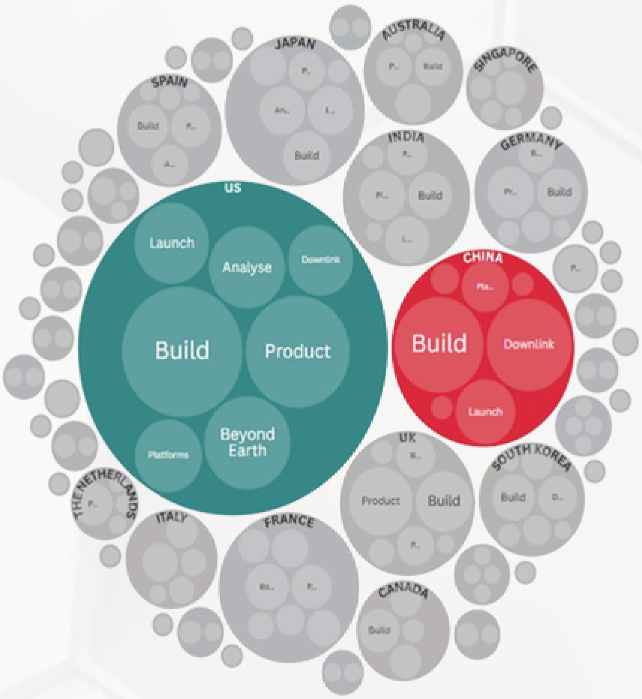

Figure 4.1.5.1. Diagram displaying the number of space tech venture capital deals by country and category (Irwin-Hunt 2025).

Much like its defence sector, Europe's space industry lacks globally competitive champions with the scale and resilience to sustain capital-intensive projects over long development cycles, unlike counterparts in the United States and China (Goldstein 2025). Europe's Ariane 5 used to be the globally leading launcher until around 2017 when SpaceX's reusable rockets started to reshape the market with its remarkable cost advantage. Since then, Europe has been lagging in the competition of launcher development, with the delay of Ariane 6.

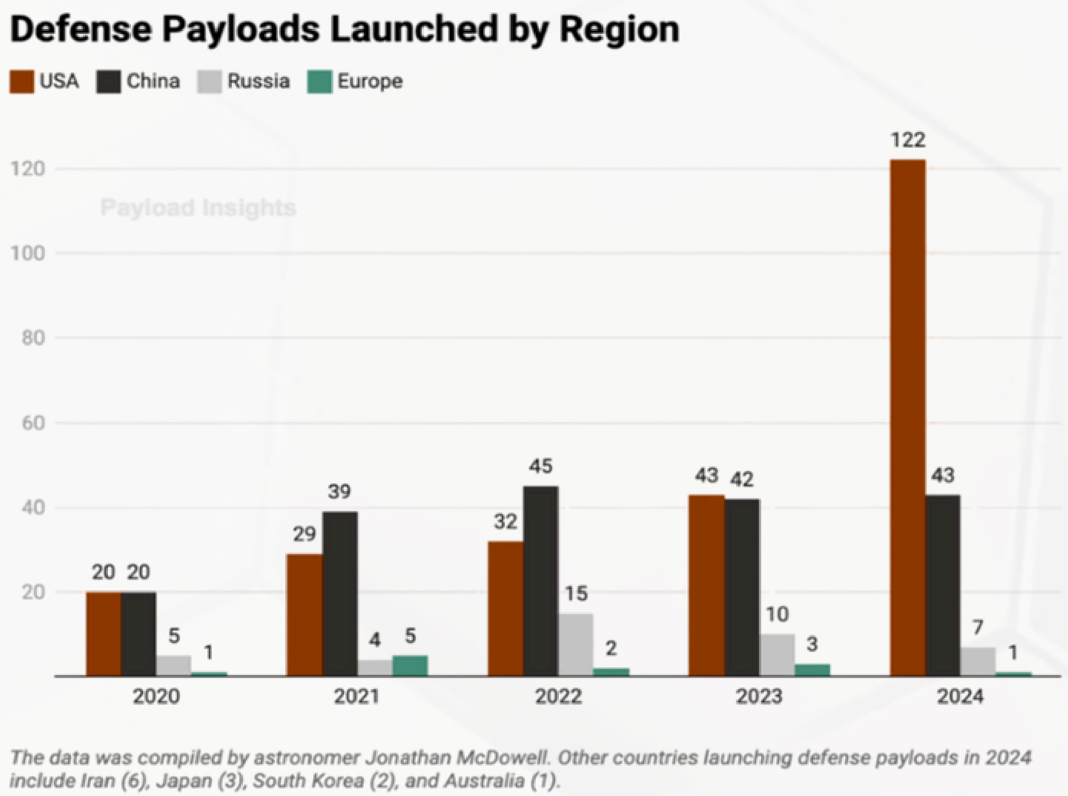

Figure 4.1.6.1. Defence payloads launched into space by region between 2020-2024 (Payload: Kuhr 2025).

Integration, marked the beginning of China's opening to private investment in the space sector, encouraging state-owned military-industrial conglomerates to generate revenue by marketing Long March launch services internationally (Yuan & Peters 2019). This approach helped initiate and monetise China's space programme through global commercial engagements.

The second phase emerged with the 2019 Notice on Promoting the Orderly Development of Commercial Launch Vehicles, issued by the State Administration of Science, Technology and Industry for National Defence (SASTIND), which set out an initial regulatory framework for private launch companies and local governments (Tronchetti & Liu 2021). It sought to shift focus toward domestic competition and the fostering of innovation ecosystems. Most recently, the 2023 Guiding Opinions on the Development of Commercial Aerospace, issued jointly by the National Development and Reform Commission (NDRC 2023) outlined a more mature strategic vision. It emphasised international competitiveness, industrial licensing regime, and created economic incentives for both state and private actors (Sénéchal-Perrouault 2023).

Aiming to match the United States' geostrategic power in space, China has significantly expanded its orbital activity, conducting approximately 295 launches between 2020 and 2024 (Curran 2025). In 2024 alone, China launched 43 defence payloads (Kuhr 2025). Partly in response to this surge, the United States launched a staggering 122 defence payloads into orbit (**Figure 4.1.6.1**). Reactionary developments in space technology will likely increase both superpower's space launch capacity and services in the coming years, given the increased importance placed on the space sector; evidenced by the billions of dollars allocated to the sector in the 'Big Beautiful Bill' (Anderson 2025).

enhances the value of products in these sectors, and produces sophisticated solutions for customers on Earth (OECD 2021). Moreover, space construction projects foster the emergence of new markets by increasing demand for Earth-space collaborations and the development of space infrastructure, paving the way for the commercialisation of Low Earth Orbit (LEO) (Demaire & Malisuwan 2025).

5.2 Geopolitical Flashpoints

5.2.1 US-China Tensions

The intensifying strategic competition between the United States and China is fundamentally reshaping defence priorities and investment in the space launch sector. As both powers recognise space as a critical domain for military, economic, and technological dominance, their respective approaches to launch infrastructure, satellite constellations, and counterspace capabilities have become central to national security policy.

Global investment in space startups reached $8.6billion (USD) in 2024, a jump fuelled by US–China tensions propelling private-sector competition and government backing (Sriram 2025). Seraphim have argued that the Trump administration will only increase spending given the increased US-China tensions that will arise. We concur with this assessment given the China deterrence focus of the Trump administration. For instance, national security policy chief, Elbridge Colby, was behind the pause in Ukraine air defence shipment to Ukraine in June/July 2025 (Crilly 2025), with his career focus always being on the US pulling away from Europe and MENA to focus on the Indo-Pacific.

China have responded in kind. China's total space expenditure soared from US$2.2billion in 2022 to US$14.3billion in 2023, according to one estimate (Nadarajah 2024). Concerningly for western firms, Chinese commercial space companies have raised over $5 billion in funding since 2020, with financial support split between state-led industrial funds and private venture capital (Lafleur 2025). This money has not been wasted, with China successfully launching a robotic spacecraft to the far side of the moon in 2024 (Davidson 2024), paving the way for a landing by 2030. It's not just the strategic positioning of the moon that concerns the US. China's development of counter-space weapons is gaining momentum, with anti-satellite missiles and spacecraft that can pull satellites out of orbit (Davidson 2024). The Chinese official figures for defence spending in 2025 is $245 billion. This official figure is dubious given it equates to just 1.5% of GDP (Beaver 2025). The real figure is estimated to be as high as $700 billion (Velez-Green 2024), though estimates vary widely and could sit between $330 and $471 billion (Fravel, Gilboy & Heginbotham 2025). If overall defence spending could be more than 2x the official figures, then it would not be unreasonable to suggest a similar figure for the space sector.

China has significantly advanced its space capabilities over the past two decades, supported by a robust global infrastructure of telemetry, tracking and command (TT&C) stations, and reinforced by international cooperation. According to research by the International Institute for Strategic Studies, China now operates nine domestic TT&C stations and 18 overseas stations with varying control levels, four satellite launch sites, and five sea-launch barges. Its expanding satellite intelligence (SIGINT) network spans both low Earth and geostationary orbits. China also maintains four active Yuan Wang space and missile-tracking vessels, alongside the recently commissioned Liao Wang-1 vessel as of April 2025 (Boyd, Green & Nouwens 2025). Building up deterrents for such threats takes significant resources and time, so the US Space Force must remain vigilant – and well-funded.

China have also taken from the West's playbook to strengthen alliances with other nations. Its space diplomacy has grown through

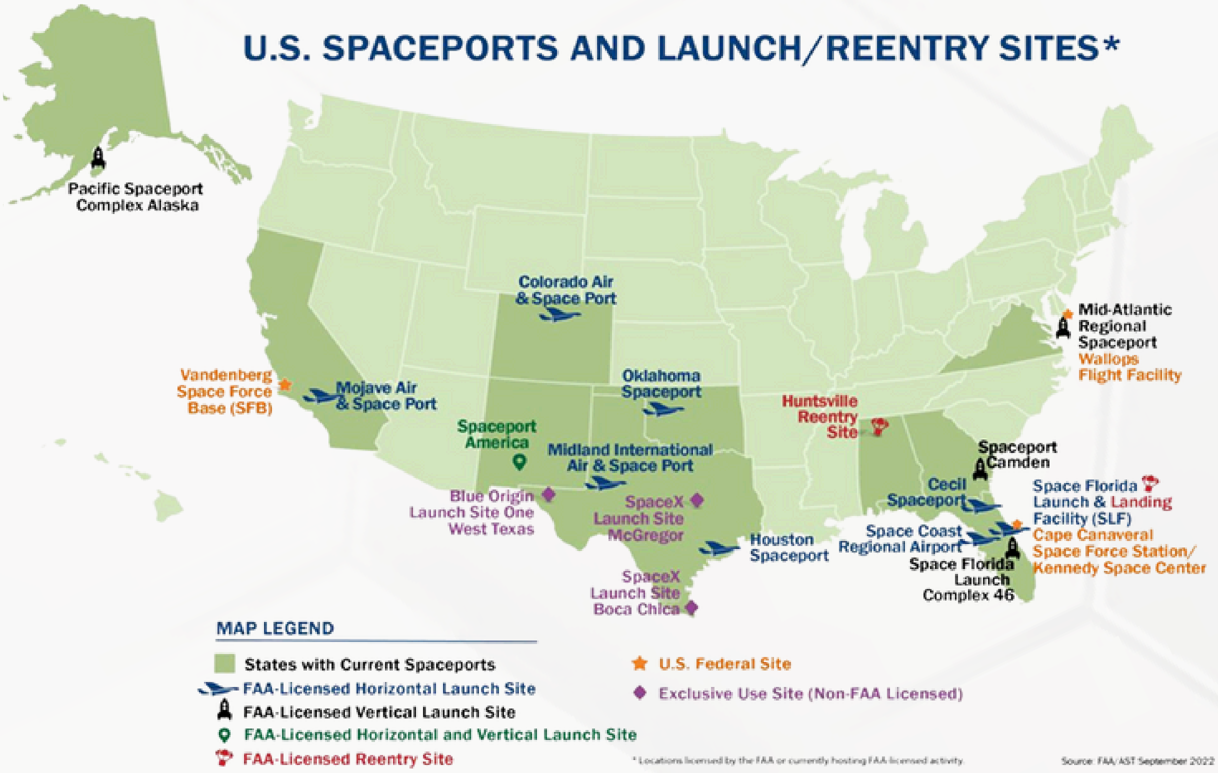

Figure 5.2.1.1. Map of United States launch & re-entry sites as of 2022 (FAA 2025).

Figure 5.2.1.2. Map of the 4 major Chinese spaceports with typical rockets launched from each (CASC 2025).

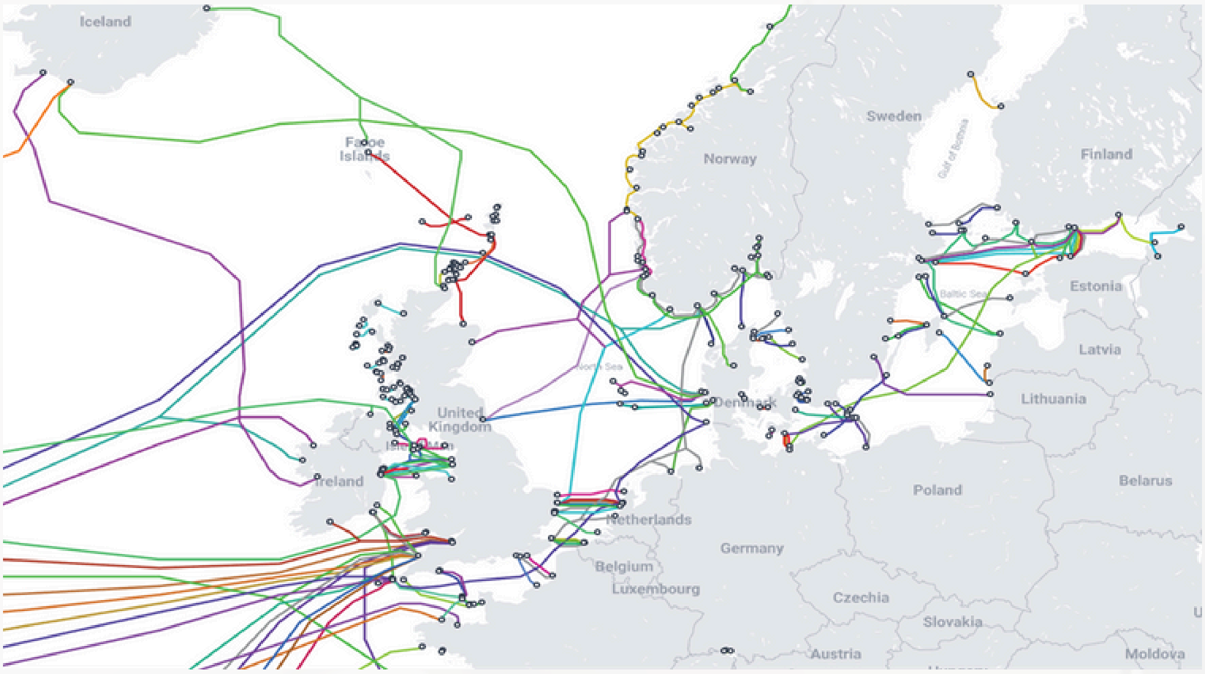

Figure 5.2.3.1. Submarine cable map of North & East Europe (submarinecablemap.com 2025).

LEO Sat Solution?

LEO satellite constellations like Starlink provide a parallel, space-based internet infrastructure that is physically independent of undersea cables. When cables are cut or sabotaged, data can be rerouted through the satellite network, maintaining connectivity for users on the ground.

A recent example of LEO satellite effectiveness when the undersea cable network falters was West Africa after a landslide in 2024. During a major undersea cable outage along Africa's West Coast (Munga 2025), Starlink users reported uninterrupted internet access (Labuschagne 2024). The system leveraged its inter-satellite links to route data across space, bypassing terrestrial disruptions entirely.

Starlink and similar systems require only portable ground terminals, which can be deployed quickly in response to emergencies or in areas where terrestrial infrastructure is compromised (Windward 2025). Further improving security, Starlink satellites communicate via high-speed optical links, allowing data to be relayed across the constellation (Starlink 2025) and downlinked at unaffected ground stations, further insulating the network from regional cable outages. While not matching the total throughput of undersea cables, modern LEO constellations offer high bandwidth and low latency, supporting critical communications, financial transactions and - most notably, as demonstrated in Ukraine - defence operations during crises.

The effectiveness of LEO satellite communication was clear to both sides when non-US NATO nations grew concerned when Musk selectively removed access to Starlink during certain Ukraine attacks (Dress 2023). Though they have made attempts (Swope & Young 2024), undermining satellite communications is much more difficult than undersea cables. Because of this reliability in war, government agencies and military units in Ukraine increasingly rely on LEO satellite services for resilient, secure communications in contested environments, supplementing traditional terrestrial and undersea networks. In Ukraine, even Starlink alternatives like the currently inferior Eutelsat service can provide enough service for vital government communication (Zadorozhnyy 2025).

7. Strategic Recommendations

7.1 Europe: Accepting the New Reality

The global paradigm is shifting from the long-held principle that control of the skies determines dominance on the battlefield, to a new reality: control of space will define future military superiority. While it is impossible to fully anticipate the technological advancements that will emerge in the space domain, current developments - such as the military applications of Starlink and Israel's Iron Dome - already demonstrate the strategic importance of satellite networks and rapid launch capabilities. In this context, access to reliable and independent launch services will be critical. Yet Europe continues to severely underinvest in this sector, hindering its ability to respond to future security challenges and maintain strategic autonomy.

The lack of unified vision and support across Europe is evident throughout space launch sector. Programmes like ESA BIC and UKSA's grants - designed to help several startups at the seed stage - lose momentum due to fragmentation, risk aversion and unclear long-term strategies. Many argue that rather than trying to compete with the US market, Europe should prioritise skillsets and focus on technologies it already excels in: RF/antenna systems, scientific instruments, Earth observation, and telecommunications. This is outdated thinking that ignores the geopolitical reality of an uncertain US ally.

Should Elon Musk choose (or be compelled) to restrict European access to Starlink, and should undersea cables be compromised, then much of the high-tech equipment Europe acquires - drones, armoured vehicles, and command systems - would be rendered ineffective in integrated warfare environments. Given the long development timelines of space programmes, often spanning decades, Europe must act now. This requires a significant increase in funding for strategic programs like IRIS² to ensure the system can come close (at the very least) to matching the coverage that Starlink currently provides to Ukraine. The current funding levels, fragmented industrial base, and lack of shared political goals amongst nations, has already jeopardised its impact, with several industry experts claiming the same.

One such expert, Sven Meyer-Brunswick (principal at Alpine I Space Ventures) even said, "IRIS² is dead in the water". He goes on to say, "It is a non-competitive programme that should have been started differently. We need to look at the US and the Space Development Agency [SDA] and what they're doing, cost effectively, multiple tranches with multiple suppliers. This is what should have happened with IRIS² but has not. The end user was never asked about his needs," which is a common trend with several other ventures too. Gathering customer needs, or being aware of the future space market and anticipating what customers could need, before needing them is what the approach needs to be. Not waiting for another major player to make the first moves and then try to compete or match them.

The ReArm Europe Plan and Readiness 2030 strategy together outline an ambitious roadmap for strengthening European defence capabilities, calling for more than €800 billion in public-private investment and collaborative efforts among EU member states (European Commission 2025). In comparison, funding allocated to IRIS² represents a mere 1.3% of that total - despite the failure of such a venture potentially rendering the other 98.7% of purchased defence equipment obsolete.

Underfunded space programs are not uncommon outside of China and the US. LACA's budget of $100 million (Santana 2022), for example, falls significantly short if Latin America is to achieve genuine autonomy in space systems. However, LACA's purpose is commercial/scientific, while Europe's challenges are existential. Europe is dealing with significant threats from Russia, who are already using kinetic weapons against satellites. They cannot approach space launch systems like emerging space nations, and must dramatically increase launch capability. If they do not act - as with their defence industry and AI - they risk surrendering their strategic autonomy to the goodwill of an increasingly unfriendly superpower.

There are also several minor issues that play into making the infrastructure difficult to accelerate. Major players like Airbus and Thales face internal setbacks. Airbus recently announced 1,500 job cuts and voluntary redundancies, and BAE's acquisition of In-Space Missions faltered due to poor integration and strategy. Thales Alenia's merger struggles also highlight that scale alone is not enough without innovation. European companies must stop relying on legacy platforms, and instead foster flexible, risk-tolerant R&D environments. On this front, Airbus and Thales have launched their own accelerators to push a more innovation-driven culture and foster collaborations. However, they still struggle to adapt and remain agile to shifts in the space ecosystem & industry. With the success of SpaceX, analyst arguments that large organisations struggle to facilitate innovation do not hold water. Instead, a shifted risk-on mindset should be adopted - a mindset backed by significant European backing, in the form of PPPs, sharing the responsibility.

Accepting reality does not mean accepting decline, quite the opposite. In today's world where China is deploying AI-driven constellations, and the US is commercialising at a rapid pace, delay is a choice. In space launch innovation, choosing to delay can mean your industry falls meaningfully behind. Europe have the talent, workforce and resources, it is a choice not to deploy them strategically.

7.2 Unify European Strategy

While we highlighted the importance of some national capabilities – depending on the strategic focus of each nation – Europe can only hope to rival US and Chinese project funding if they work in unison. Simply put, Europe's current fragmented model is not sustainable if it wishes to remain competitive. It must treat launch capability as a strategic asset, not a scientific/commercial endeavour. This means elevating space policy to the level of core defence planning, and adopting a collective, long-term vision that prioritises strategic outcomes over short-term domestic political gains. The ESA should continue to receive support, but defence titans should be made a priority. Defence and aerospace giants like BAE Systems and Airbus should work together to both support innovative startups, whilst providing the backbone for multinational projects like $IRIS^2$. In the same vein, Europe needs to reform its current geo-return principle and find the balance between encouraging performance-based competition and incentivising member states to invest in collective space programmes.