هيئة الاتصالات والفضاء والتقنية
Communications, Space & Technology Commission

KSA
SPACE MARKET
Report
2025

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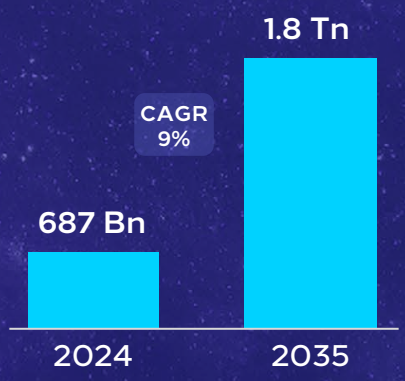
The Expanding Global Space Sector

The global space sector is positioned for significant expansion

The **global space sector has undergone a significant transformation**, evolving from an area primarily dominated by government agencies to a dynamic industry involving both public and private players. This evolution is expected to continue, with the industry expected to undergo rapid expansion, driven by technological advancements and increasing demand for satellite-based services.

The terms **Space Market** and Space Economy have become key in the expanding space sector. The Space Market, valued at **USD 176 billion**[1], includes core segments like satellite manufacturing, launches, ground infrastructure, satellite communication, Earth observation, and navigation. In contrast, the broader **Space Economy**, estimated at **USD 687 billion**[2], encompasses all activities that generate value from the space market.

Global Space Economy



The Global Space Economy is expected to reach **$1.8 trillion by 2035**, growing at a **9% CAGR** from **$687 billion in 2024**. This broader space economy includes all value-added activities derived from space technologies, such as **downstream applications, commercial services, and economic benefits across multiple industries**.

Global Space Market

The **Global Space Market** is projected to grow from **$176 billion in 2024 to $377 billion by 2035**, with a **7% CAGR**. The global growth is driven by increased demand for **satellite manufacturing, launch services, Earth observation, and satellite-based communication and navigation**.

[1] Source: Analyses Mason [2] Source: WEF

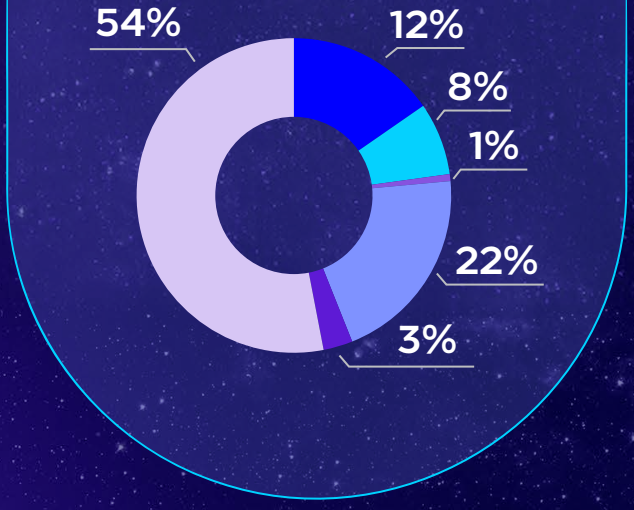
EXECUTIVE SUMMARY

The Expanding Global Space Sector

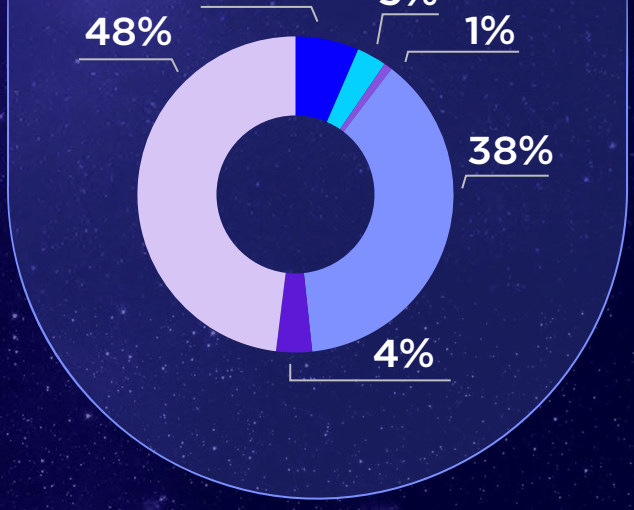
Key Verticals Propelling the Growth of the Space Market

There are **six main verticals** contributing to the growth of the space market. **Satellite navigation** will remain the largest vertical, while **satellite communications** is set to grow the fastest, driven by broadband demand and emerging direct-to-device (D2D) services via LEO constellations. **Earth observation (EO)** will see moderate growth, supported by increased adoption in defense, urban planning, and agriculture. Meanwhile, **satellite manufacturing** and **launch** will lose market share due to cost reductions from smaller, more efficient LEO satellites Lastly, Deployment of new constellations is likely to drive increased demand for the ground segment.

Market size by vertical, 2024



Market size by vertical, 2035



- Satellite manufacturing
- Satellite communication (satcom)
- Earth observation (EO)
- Satellite navigation (satnav)
- Ground segment
- Launch

EXECUTIVE SUMMARY

The Expanding Global Space Sector

Downstream segment to drive the growth in the market

The space market is divided into **upstream and downstream segments**. Upstream covers satellite manufacturing, launch and ground segment, while downstream, led by communications, navigation, and earth observation, drives the majority of market revenue.

Upstream

Manufacturing	Launch	Ground segment
2024 **USD 20 Bn**	2024 **USD 14 Bn**	2024 **USD 1 Bn**
2035 **USD 24 Bn**	2035 **USD 11 Bn**	2035 **USD 3 Bn**

The upstream segment serves as the backbone of the space industry, driven by technological innovation and an ongoing shift towards the production and launch of small satellites. This transition is reducing both manufacturing and launch costs. Additionally, governments play a pivotal role in advancing the development of the upstream segment.

Downstream

Satcom	EO	Satellite Navigation
2024 **USD 39 Bn**	2024 **USD 6 Bn**	2024 **USD 96 Bn**
2035 **USD 143 Bn**	2035 **USD 14 Bn**	2035 **USD 181 Bn**

The downstream segment is the driving force of the space industry, expected to experience substantial growth driven by large-scale consumer and business applications, along with new and innovative niche market opportunities. Satellite communication and satellite navigation are expected to be key drivers of the overall market growth in the global space sector.

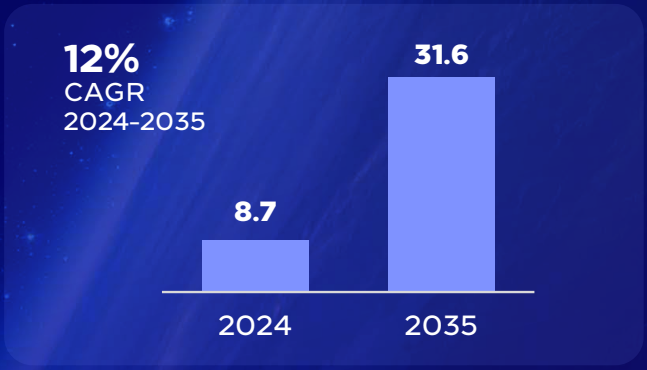
EXECUTIVE SUMMARY

The Evolving KSA Space Sector

Saudi Arabia's space sector is on a remarkable upward trajectory, driven by robust government initiatives, strategic investments, and a growing commitment to innovation.

The Kingdom's space sector has seen a steady rise as a regional hub for **space technologies, investments, and innovation**. The **Saudi space economy**, valued at **USD 8.7 billion in 2024**, is expanding at an even faster pace, projected to reach **USD 31.6 billion by 2035 (12% CAGR)**. This signals Saudi Arabia's commitment to leveraging space as a key pillar for economic diversification and long-term growth.

KSA Space Economy (USD Billion)



KSA Space Market (USD Billion)

The domestic space market is currently valued at **USD 1.9 billion in 2024**, reflecting a **13% year-on-year (YoY) growth**. With **strong governmental support and strategic** initiatives, Saudi Arabia is rapidly advancing its space capabilities.

Over the **next decade**, the KSA space industry's **average annual market size is anticipated to double**. While the upstream segment is set to expand as capabilities develop, **downstream segment will continue to dominate**, retaining a significant market share.

EXECUTIVE SUMMARY

The Evolving KSA Space Market

Downstream segment to drive the growth in the market

Upstream

Average Annual Value (2025-2035)

Manufacturing	Launch	Ground segment
USD 0.34 Bn	USD 128 Mn	USD 32 Mn

The upstream segment is expected to grow in Saudi Arabia's space sector, propelled by relentless technological innovation and a paradigm shift toward small satellite ecosystems. Forecasts for 2025–2035 highlight sustained growth across critical verticals. This decade-long financial growth is accelerating cost efficiencies in production and deployment, while government policies continue to reinforce upstream advancements, ensuring long-term scalability and competitiveness.

Downstream

Average Annual Value (2025-2035)

Satcom	EO	Satellite Navigation
USD 1.8 Bn	USD 208 Mn	USD 1.5 Bn

Downstream is the main engine driving Saudi space sector growth, fueled by widespread adoption of satellite-enabled services and emerging applications. **Satellite communication and navigation** serve as twin pillars, reshaping connectivity, logistics, and data-driven industries—ultimately underscoring downstream's pivotal role in unlocking the Kingdom's space potential.

EXECUTIVE SUMMARY

Investments in the Space Sector

The KSA space sector replicates the surge in the investment activities seen globally

Global Investments in the Space Economy in 2024[1]

USD 25.8 Bn	390
Investments Size	Unique Companies Received Investments

The global space sector has experienced notable investments and consolidation in recent years, particularly within the satellite communications segment, driven by the need to address the competitive threat from NGSO constellations. For instance, in 2024, SES announced its acquisition of Intelsat in a deal valued at USD 3 billion. Another significant transaction was the merger between Eutelsat and OneWeb in 2023, reflecting a shift towards a **'multi-orbit' strategy**.

The space sector in Saudi Arabia is experiencing a surge in investment activities similar to the trend observed in the global space industry. Saudi companies have actively **invested in both local and international space ventures**, such as Aljazira Capital's investment in Axiom Space and Waed Ventures' support for OQ Technology.

Investor	Target	Transaction value
الجزيرة كابيتال ALJAZIRA CAPITAL	AXIOM SPACE	USD 350 mn
WAED by aramco	OQ TECHNOLOGY	USD 13 mn
SeedFord Partners	Saudi space fund	USD 150 mn
NSG NEO SPACE GROUP مجموعة نيو للفضاء	تقنية الفضائية TAQNIA SPACE	Undisclosed
F6	SARsatX	Undisclosed
NEOM نيوم	OneWeb	USD 200 mn

[1] Source: Space Capital (licensed under CC BY-ND 4.0).

EXECUTIVE SUMMARY

Investments in the Space Sector

The KSA space sector presents compelling opportunities

The **KSA space sector offers short-to-medium term opportunities** that can be realised relatively quickly with minimal lead time, and **long-term opportunities** that are more strategic but require substantial investments and longer lead times. These opportunities are shaped by **various challenges**, such as high capital requirements, shortage of skilled talent, etc. but are supported by **key enablers** like government support, access to financing, and streamlined regulatory frameworks.

Opportunities

Short-to-medium term	Long term
Ground segment as a service	Manufacturing smallsats
Multi-orbit services	Building a spaceport
Integrated NTN	Space Situational Awareness
EO analytics	Deep space exploration
Multi-modal sensor solutions	Localisation of space logistics
Social welfare EO solutions	
Commercial augmentation	

Challenges	Enablers
Capex intensive services	Gov. sponsored programs
Lack of trained local talent	Easily available funding
International competition	Well-defined regulations

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GLOBAL SPACE SECTOR

- Evolution & Outlook
- Space Value Chain
- Market Size and Trends
- Key Investments Developments

GLOBAL SPACE SECTOR

Evolution and Outlook of the Global Space Sector

From government dominance to a public-private ecosystem

The space industry has changed dramatically, evolving from a field dominated by government agencies to a dynamic sector that now includes **both public and private players**.

For many years, space exploration was mainly driven by government organisations like NASA, Roscosmos and the European Space Agency (ESA). These agencies focused on scientific research, exploring other planets and developing the technologies needed for long-term space travel. The launch of the International Space Station (ISS) in the late 1990s was a major achievement, showing the power of international co-operation and what humanity can achieve together.

In the 21st century, the space industry has undergone a significant transformation with the increasing involvement of private companies. This shift began with the rise of **"NewSpace"**, a term that describes the emerging private spaceflight sector, known for its innovation, cost-cutting, and broader vision for the commercialisation of space. Companies like SpaceX revolutionised the industry by developing reusable rockets, dramatically reducing the cost of space access. In response, governments worldwide have adapted by forming partnerships with private players, fostering public-private collaborations.

This shift is driving rapid evolution across various verticals of the space sector, **both upstream and downstream**, with governments providing funding and regulatory support while private companies lead the technical innovation. This has led to significant developments across key verticals of space value chain.

The expansion of satellite networks, such as SpaceX's Starlink and Amazon's Kuiper, is expected to boost the global connectivity and data collection. These constellations are set to improve internet access in remote areas, helping bridge the digital divide.

Earth observation technology is also advancing rapidly, with new satellites offering higher resolution and more frequent revisit times, enhancing environmental monitoring, disaster response, and urban development tracking. Furthermore, the integration of data analytics and AI will improve the analysis of satellite data.

In satellite navigation, the development of more precise systems will enhance navigation and timing services across a range of applications, from transportation to consumer apps. Additionally, emerging sectors like space tourism are becoming more accessible, with companies such as SpaceX and Blue Origin leading the charge.

GLOBAL SPACE SECTOR

The Space Value Chain

The upstream segment forms the backbone of the satellite industry

Companies in this segment focus on **creating and deploying** the space infrastructure

Manufacturers produce satellites and related components, launch service providers facilitate the deployment of satellites, and ground segment operators manage and maintain communication with satellites

Key players

AIRBUS · SPACEX · LOCKHEED MARTIN · LEAFSPACE · MDA · ROCKETLAB · arianespace (ariane GROUP) · KSAT (KONGSBERG SATELLITE SERVICES) · Azure · KRATOS (READY FOR WHAT'S NEXT)

Upstream

Downstream

The downstream segment delivers the end-user satellite services

This includes satellite operators and service providers which **own the satellite constellations and render services** to end users, respectively

Three key services offered by the service providers are satellite communications, Earth Observation and satellite navigation

Key players

SES (your satellite company) · hughesnet · iridium · MAXAR · STARLINK · OneWeb · BLACKSKY · SATELLOGIC · planet.

The participants across the upstream and downstream parts of the space value chain are supported by '**enabling organisations**' such as national regulators, research and academic institutions, space agencies, ministries and other institutions which aim to facilitate the growth of the space ecosystem through policy, regulation, research and innovation.

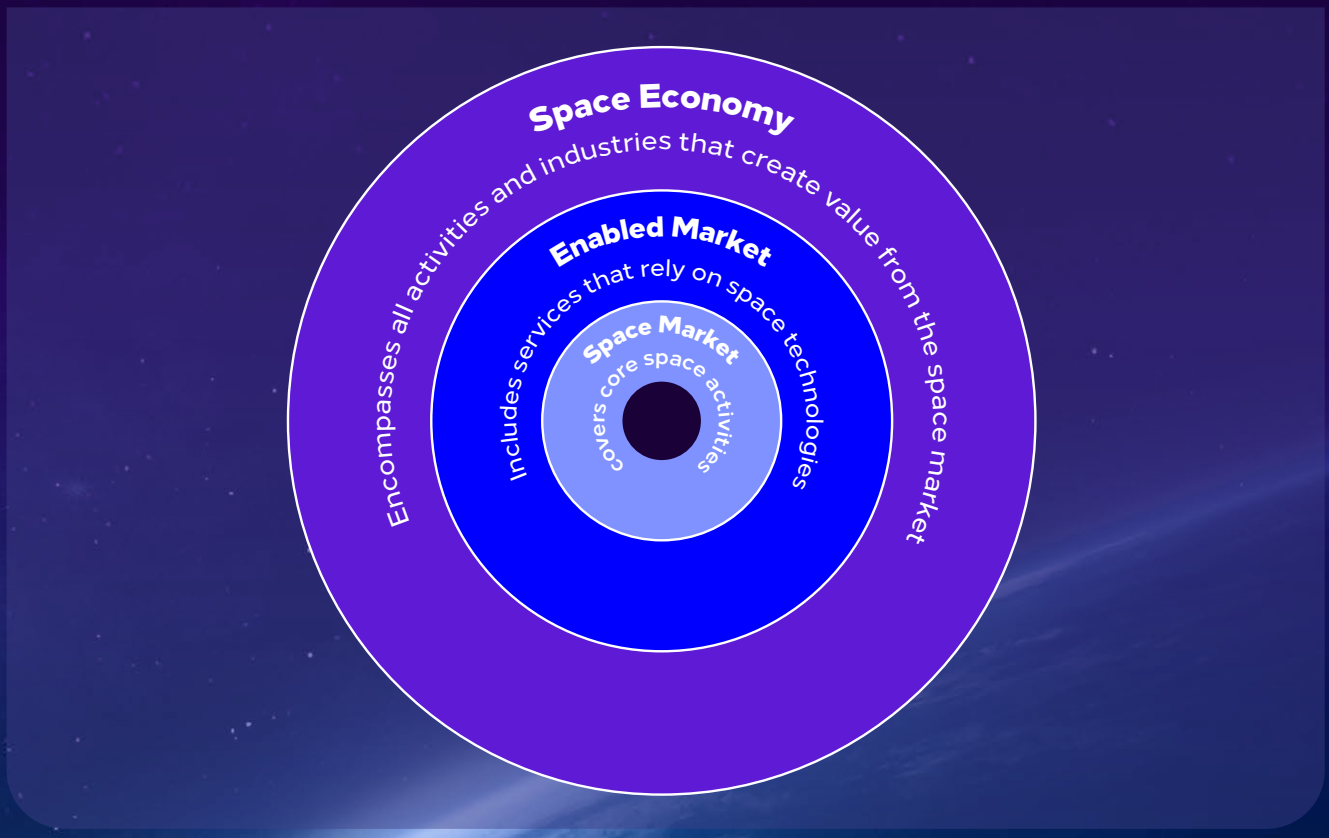
GLOBAL SPACE SECTOR

Defining the Space Economy

Space Market within the context of the Space Economy

The space sector's scope has been debated, **traditionally focused on core activities** satellites manufacturing, launches, and navigation. It has **expanded** to include space exploration, tourism, and advanced technologies, as well as applications like fleet management, ride-hailing, and gaming, blurring its boundaries. This **evolution** has led to three main categories.

Space Market	Enabled or Extended Applications	Space Economy
Refers to **the core verticals of the space sector**, including satellite manufacturing, launch services, ground infrastructure, satellite communications, Earth observation, and satellite navigation. These activities are directly tied to space infrastructure and technologies.	**Includes sectors using space technologies outside core space industries**, such as TV broadcasting, ride-hailing (e.g., Uber), fleet management, gaming, and food delivery. They rely on space-enabled data (e.g., GPS) but aren't part of the direct space market.	**Includes all industries leveraging space technologies**, from core space sectors to enabled applications, capturing the full economic impact—from satellite operations to consumer services like broadcasting.

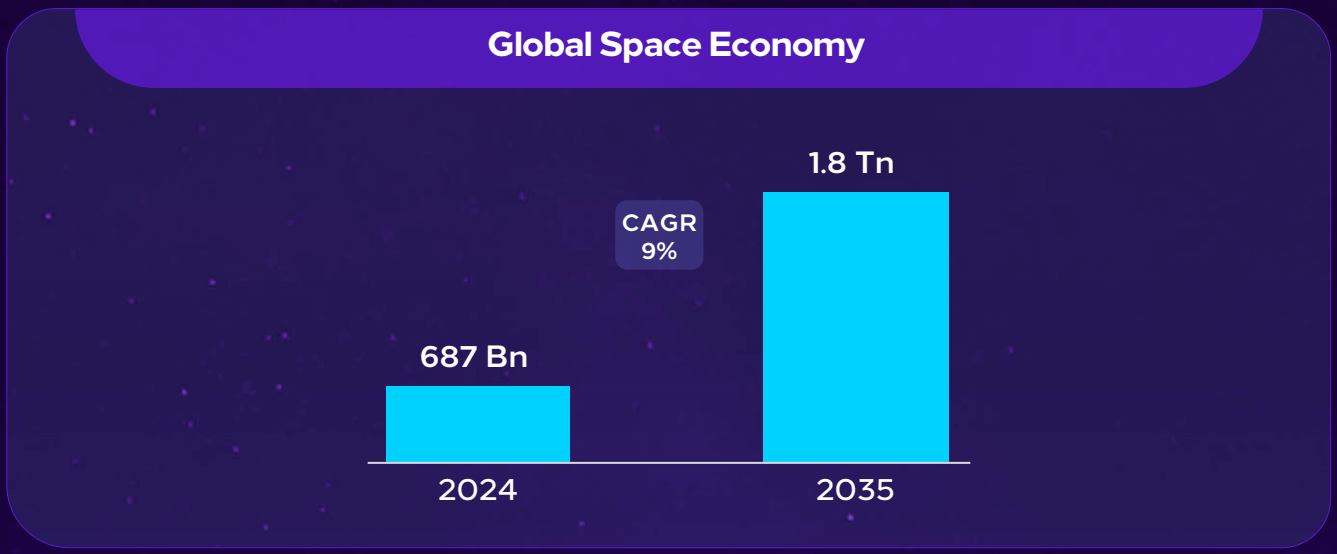


GLOBAL SPACE SECTOR

Global Space Economy

The Transformative Growth of the Space Economy

This distinction between the Space Market, Enabled Applications, and the broader Space Economy provides a clear framework for understanding the various components of the space industry and their economic contributions. The World Economic Forum (WEF) estimates the total **Space Economy** in 2024 at **USD 687 billion**, reflecting its wide scope.



This report focuses specifically on the Space Market, which is estimated at USD 176 billion in 2024. It emphasizes the core verticals of the space sector, including satellite manufacturing, launches, ground infrastructure, satellite communications, Earth observation, and satellite navigation. By narrowing its scope, the report excludes extended applications and non-core industries, such as consumer applications and broadcasting (valued between USD 275 billion and USD 295 billion, respectively), which, while economically significant, fall outside the core analysis of the space sector. This targeted approach provides a clearer understanding of the foundational components driving the space market

GLOBAL SPACE SECTOR

Estimated Space Market Size Snapshot[1]

2024 USD 176 Bn		2035 USD 377 Bn
USD 21 Bn	Manufacturing	USD 24 Bn
USD 14 Bn	Launch	USD 11 Bn
USD 1 Bn	Ground segment	USD 3 Bn
USD 39 Bn	Satellite communication	USD 143 Bn
USD 6 Bn	Earth observation	USD 14 Bn
USD 96 Bn	Satellite navigation	USD 181 Bn

Source: Analysys Mason

[1] Rounding may cause individual verticals to not sum exactly to the total

GLOBAL SPACE SECTOR

Overall Market Size

2024 **USD 176 Bn** → **7%** (CAGR) → 2035 **USD 377 Bn**

The global space market is projected to grow at a 7% CAGR, primarily driven by expansion in the downstream segment. Currently, the **upstream segment accounts for 21%** of the total global space sector market size. The satellite manufacturing and launch sectors are projected to see a marginal decline in their market share due to falling prices driven by the shift towards smaller, more cost-effective satellites. Conversely, the downstream segment, driven by growing demand in satellite communication, EO and satellite navigation services, is projected to **expand its share from 79% to 90% by 2035**.

Global space market split by client type, 2024

USD 36 Bn — **48%** Commercial | **52%** Government

Manufacturing | Launch | Ground segment

Commercial players are driving the demand for non-geostationary orbit (NGSO) satellites, while the government and military sectors continue to dominate the geostationary orbit (GEO) market.

Upstream

Downstream

USD 140 Bn — **88%** Commercial | **12%** Government

Satellite communication | Earth Observation | Satellite navigation

Downstream segment sees minimal revenue contribution from the government sector, with most investments focused on the commercialisation of use cases driven by the private sector.

GLOBAL SPACE SECTOR

Overall Market Size

Global space market split by region, 2024

North America (NAM)
- USD 56 billion
- CAGR: 5% (2025-35)

Latin America (LAM)
- USD 11 billion
- CAGR: 10% (2025-35)

Europe (EU)
- USD 32 billion
- CAGR: 5% (2025-35)

Asia
- USD 58 billion
- CAGR: 8% (2025-35)

Middle East and Africa (MEA)
- USD 19 billion
- CAGR: 10% (2025-35)

North America is the leading market across all the verticals in the upstream and downstream segment, including satellite manufacturing, satellite launch, satellite communications and EO. This dominance is driven by strong demand from USA-based companies in these sectors. The region is anticipated to grow at a CAGR of 5% from 2025 to 2035. Despite the market being relatively mature, growth will be primarily fuelled by advancements and expansions in the satellite communications vertical.

Asia holds the largest market share for satellite navigation or positioning, navigation, and timing (PNT) services. This is largely due to the high population density in India and China, which significantly drives the demand for PNT devices.

The space market in Middle East and Africa, valued at USD 19 billion in 2024, is expected to experience the fastest growth among all regions, with at a projected CAGR of ~11% from 2025 to 2035. This rapid growth is attributed to ongoing investments by companies and governments in commercial space applications, particularly in satellite communications and EO verticals.

GLOBAL SPACE SECTOR

Overall Market Size

Key developments in the Middle East region

The Middle East is expected to be one of the fastest growing space markets worldwide as the governments in the region is significantly focused on investing in initiatives which help in diversify their economies.

Local governments driving space-related initiatives

- KSA formed the Saudi Space Agency in 2018, recently established the Neo Space Group (NSG) in 2024.
- The UAE formulated the National Space Strategy 2019 and established a National Space Fund of USD 800 million in 2022.
- National Aerospace Services Company (NASCOM) in Oman is in the process of building the first spaceport in the Middle-East region – Etlaq Spaceport – in Duqm.

Partnerships with international private players

- In Saudi Arabia, Aramco invested USD 13 million in satellite IoT company OQ Technology in 2022. Additionally, OneWeb and Neom established a USD 200 million joint venture in 2021.
- In the UAE, SES provides backhaul services to Du, Airbus has established partnerships with the UAE Armed Forces, and Planet collaborates with the UAE Space Agency.

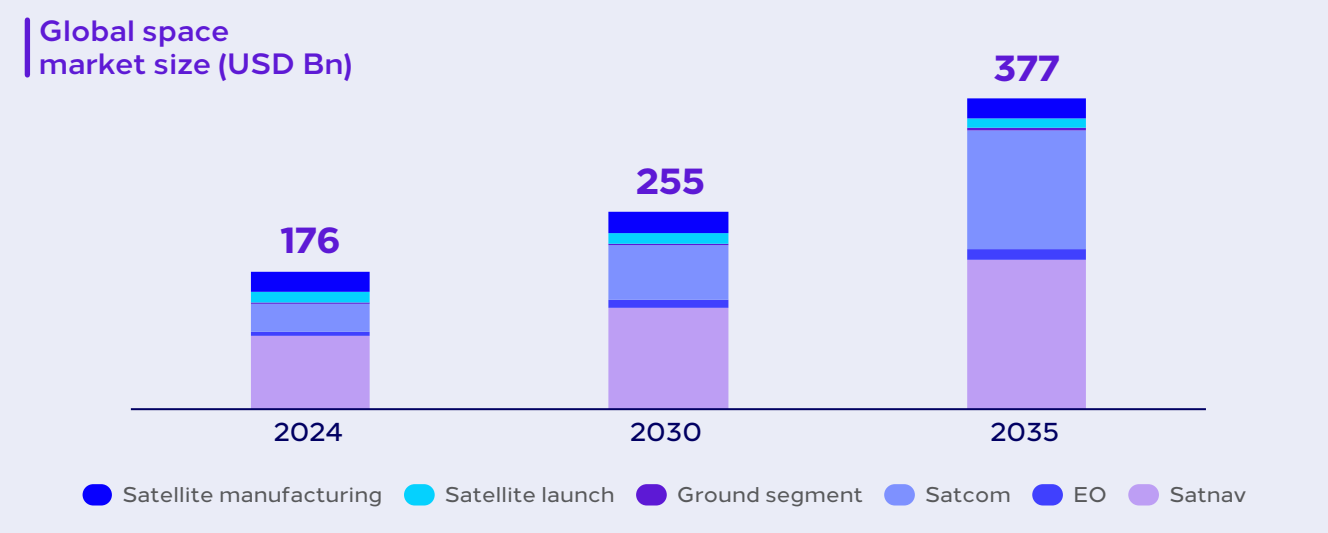
Growing and upcoming local players

- In Saudi Arabia, PIF-owned NSG has already secured an EO platform services licence. SARsat in KSA is also looking to deploy satellites to provide EO services.
- In UAE, Bayanat and Yahsat merged to create Space42, which aims to be an AI-based space technology company serving the MENA region.

GLOBAL SPACE SECTOR

Overall Market Size

Global space market split by vertical



Satnav

Largest vertical

38%

Share of satcom by 2035

While satnav would continue to be the largest vertical, **satcom is expected to grow the fastest**. This growth is attributed to the expansion of broadband services for military, enterprise, and household applications, as well as the anticipated rise in direct-to-device (D2D) services facilitated by LEO constellations..

The EO market would witness moderate growth on account of increasing adoption of the technology by **government and enterprise customers** for a variety of applications, such as defence, urban planning, agriculture, finance and insurance, etc.

The satellite manufacturing and launch verticals are projected to see a decline in their market share, despite an increase in the number of satellites launched and manufactured due to the **falling prices** driven by the shift towards smaller, cost-effective satellites designed to operate in LEO.

GLOBAL SPACE SECTOR

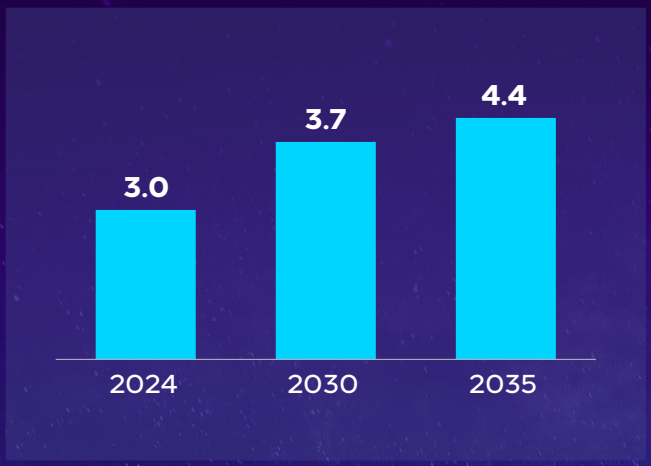
Satellite Manufacturing

2024 **USD 24 Bn** — **2%** (CAGR) — 2035 **USD 24 Bn**

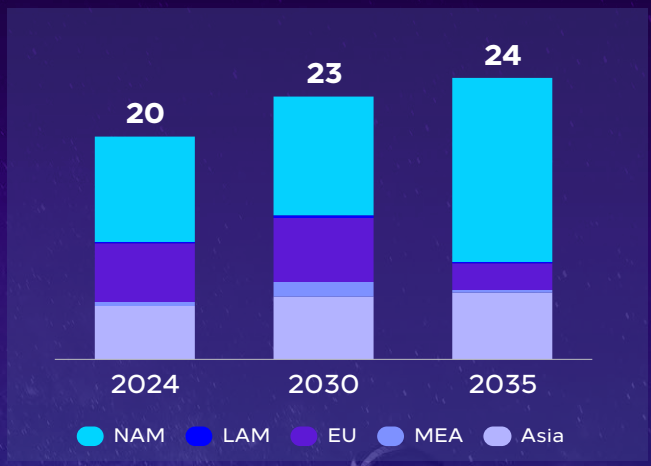
The satellite manufacturing market is gradually shifting from GEO satellites to NGSO satellites, which are typically lower cost and lower mass. As the industry transitions towards these NGSO satellites, **unit production costs are expected to decrease**, resulting in a slight decline in overall market size.

Satellite orders are forecast to rise driven by expansion of NGSO constellations, Despite growth in number of satellite orders, revenue is projected to remain flat due to the lower production costs of these smaller satellites. GEO satellites are expected to contribute only 1% of satellites manufactured over the next decade. While North America leads, the market in Asia would grow significantly as facilities emerge in China, Japan and India.

No. of satellites ordered ('000)



Market size (USD Bn)



2,900+
No. of satellites manufactured (2024)

Asia
Fastest growing region (3% CAGR)

GLOBAL SPACE SECTOR

Key Trends in Satellite Manufacturing

Communications satellites expected to drive orders

- Communications satellites currently hold the largest share of the satellite manufacturing market (~30%), driven by the demand for numerous low-mass satellites.
- By 2035, these would make up 60% of the market size and over 90% of total satellite orders. This growth is primarily driven by the manufacturing and launch of second-generation communication satellites.

Shift towards commercial players

The government and military sector is increasing its spending on commercial satellite manufacturers, driven by shorter timelines, greater cost efficiencies and improved reliability.

Consolidation through acquisitions

- In 2024, Airbus U.S. bought out Eutelsat's 50% stake in the joint venture between the two firms.
- Additionally, Boeing acquired Millenium Space Systems in 2018 to enhance its satellite manufacturing capabilities.

GLOBAL SPACE SECTOR

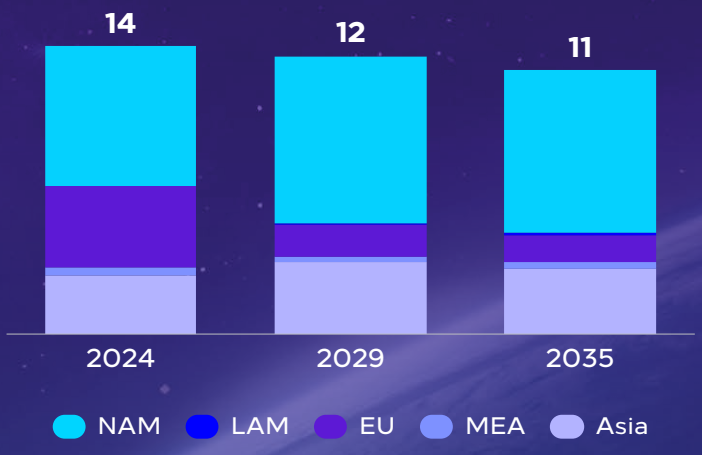
Launch

2024 **USD 14 Bn** → **-2%** (CAGR) → 2035 **USD 11 Bn**

Like the manufacturing market, launches are shifting from GEO to NGSO satellites. The size of the market is expected to remain flat due to **reduced revenue from lower-mass satellites** and advancements in technology that are likely to decrease launch prices.

In 2024, communication satellites made up ~80% of the satellites launched, largely driven by SpaceX deployments. However, the communications satellites generate lower revenue due to their low mass resulting in reduced launch costs per satellite. North America leads the market due to the concentration of the satellite operators in USA, but Asia's market share is expected to grow with increasing number of launches from China, India and Japan.

Market size (USD Bn)



250+
No. of orbital launches in 2024

NAM
Region with highest demand (1% CAGR)

GLOBAL SPACE SECTOR

Key Trends in Satellite Launch

Limited satellite launch vehicles as new vehicles experience delays and failures

The development of launch vehicles is delayed for many service providers due to slow, costly and challenging technology development, which restricts satellite operators' access to space.

USA based companies dominate satellite launch market

Companies based out of USA such as SpaceX, United Launch Alliance, Rocket Lab, etc. dominate the launch market. SpaceX, with its low-cost, reliable services is the largest player. Outside USA, Arianespace in Europe is another key player and has strong support from European Space Agency (ESA).

Evolving market to address lunar and deep space mission demand

NASA's Artemis programme aims to return humans to the Moon by the mid-2020s to establish a sustainable presence, which could pave the way for future missions to Mars. China's Chang'e programme focuses on lunar missions.

Launch services market in MENA is in early stages

Oman has plans to establish MENA's first spaceport (Etlaq) and has invested in SpaceX. The region's proximity to the equator is advantageous for launches, and ABL Space Systems of USA and Etlaq signed an MoU recently to explore the possibility of launching ABL's RS1 launch vehicle from Oman.

GLOBAL SPACE SECTOR

Ground Segment

2024 **USD 1 Bn** — **8%** (CAGR) — 2035 **USD 3 Bn**

The ground segment equipment market encompasses the **equipment used at Earth stations**, which are terrestrial facilities equipped with antennas, RF chains and other equipment to receive, process and transmit signals to and from satellites in space.

Deployment of new constellations is likely to drive increased demand for ground station infrastructure. This expansion will be crucial for ensuring global coverage and reducing latency. Most ground stations are either owned by commercial operators like Starlink and OneWeb or managed by ground station service providers such as Kratos and KSAT. Ground station operators are increasingly focusing on multi-orbit compatibility, automation and AI integration.

29%
Share of Asia region in 2024

MEA
Region with fastest growth (10% CAGR)

GLOBAL SPACE SECTOR

key Trends in Ground Segment

Rise of ground segment as a service (GSaaS)

Traditionally, building and operating Earth stations required substantial capital investment and specialised expertise.

GSaaS addresses these challenges by enabling multiple users to share critical ground infrastructure, reducing the high capital and operational expenses associated with maintaining dedicated facilities, which are often underutilised when managed by a single operator.

Cloud Service Providers are also entering the space sector by using their existing capabilities to offer cutting-edge ground segment solutions. By expanding their cloud services to include GSaaS, CSPs are providing virtualised ground segments.

In addition, Cloud Service Providers are leading the way in data processing and analytics, offering sophisticated tools and platforms that enable satellite operators to efficiently analyse satellite data.

Cloud Service Providers bring advanced security measures and compliance standards to the space industry, ensuring the protection of sensitive satellite data and adherence to regulatory requirements.

They also use their global network of data centres to provide low-latency, high-speed connectivity, crucial for real-time satellite communications.

GLOBAL SPACE SECTOR

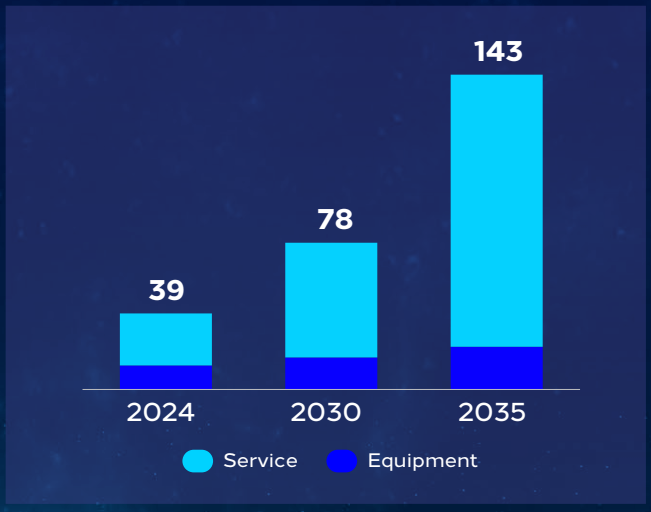
Satellite Communication

2024 **USD 39 Bn** — **14%** (CAGR) — 2035 **USD 143 Bn**

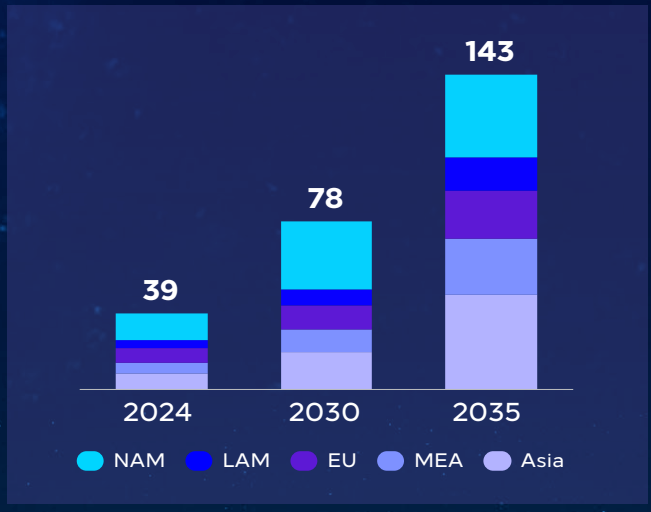
The satcom market encompasses **residential, enterprise, military broadband and mobility**. Demand for residential broadband, particularly in rural and remote areas, is anticipated to grow rapidly, driven by evolving consumer preferences, government initiatives and intense competition.

LEO operators like Starlink and GEO operators such as Viasat are increasingly adopting vertical integration by manufacturing own equipment which helps control costs amid intense market rivalry. This competition has led to a decline in capacity prices over last four years of ~14% and ~10% annually for residential and non-aero mobility use cases, respectively. Additionally, the demand for HTS capacity is estimated at 3,000Gbit/s with a yearly growth rate of ~40% over the next decade.

Market size, by segment (USD Bn)



Market size, by region (USD Bn)



70%
Share of service segment

Asia and MEA
Regions with fastest growth (16% and 15% CAGR respectively)

GLOBAL SPACE SECTOR

Key Trends in Satellite Communication

Emergence of D2D technology

A key innovation in the satellite communication market is D2D technology, which could enable **seamless connectivity for unmodified smartphones and IoT devices** leading to satcom being viewed as complementary to terrestrial 5G and laying the groundwork for the development of 6G systems that are non-terrestrial network (NTN)-native. The Apple–Globalstar partnership was the first to commercialise this technology, offering emergency messaging for iPhones using D2D even in the absence of a terrestrial cell signal. Service providers are adopting two distinct spectrum strategies for delivering D2D services:

Terrestrial spectrum

Operators like Starlink, Lynk and AST SpaceMobile plan to use the spectrum holdings of partner terrestrial mobile network operators. For instance, Starlink has partnered with T-Mobile (USA) to offer D2D services, likely on a wholesale roaming model. However, these operators may face technical challenges, including interference issues.

Mobile satellite services (MSS) spectrum

Operators such as Echostar, Iridium, Omnispace and Viasat-Inmarsat, which own spectrum in the L-band and S-band designated for mobile satellite services, may face fewer regulatory and technical challenges. However, they might enter the market at a slower pace compared to those using terrestrial spectrum.

GLOBAL SPACE SECTOR

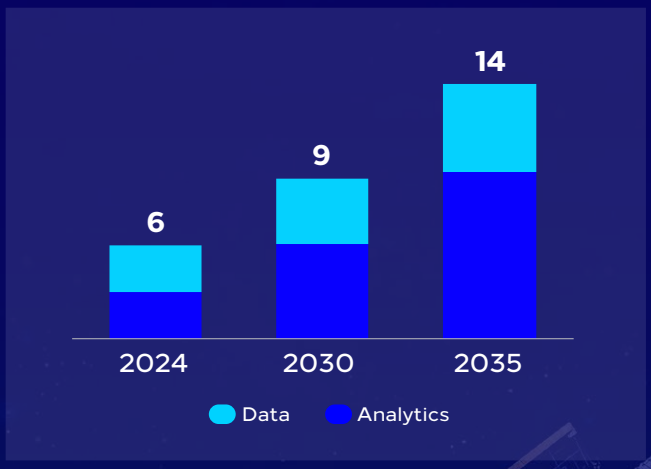
Earth Observation

2024 **USD 6 Bn** — **10%** (CAGR) — 2035 **USD 14 Bn**

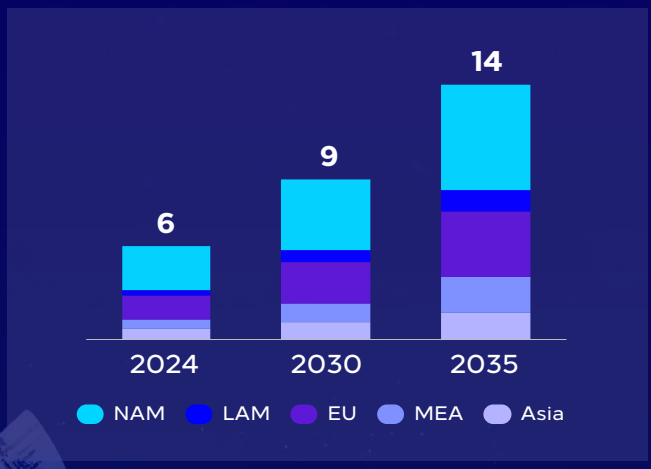
Earth observation involves the use of satellites to monitor and collect data. It provides critical insights for applications such as **weather monitoring, disaster management, agriculture, defence**, etc. This technology is essential for informed decision making in both government and commercial sectors.

Data analytics is expected to be the main driver of demand in the EO market. As awareness increases, the focus will shift towards enhancing data analysis by incorporating information and forecasting trends. North America holds the largest share of the market, largely due to the presence of satellite EO companies such as Maxar, Planet and BlackSky, which are based in the USA. Europe follows closely, with Airbus as the leading firm.

Market size, by segment (USD Bn)



Market size, by region (USD Bn)

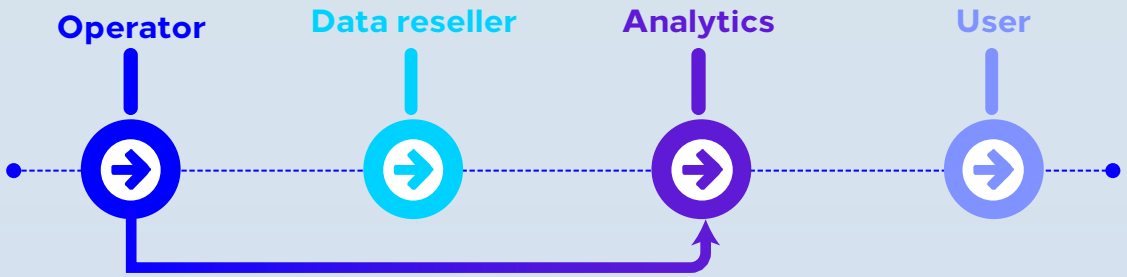


65%
Share of EO analytics by 2035

NAM and EU
Regions with established EO firms

GLOBAL SPACE SECTOR

Key Trends in Earth Observation



Key players in the market, such as Maxar, Airbus and Planet, are shifting downstream and providing not only satellite imagery, but also analytics solutions offering actionable intelligence. Also, operators are incorporating edge computing platforms to enhance space-cloud computing capabilities and AI models, leading to improvements in storage, and accessibility of large datasets.

Government expected to contribute significantly to Earth observation demand

Defence and intelligence and public authorities expected to drive demand

Defence and intelligence, and public authorities, are driving the demand for data, and account for 40–45% of the overall size of the EO market for use cases such as intelligence, surveillance and reconnaissance (ISR), border monitoring, disaster planning and first responders, etc.

Shift in EO industry towards data analytics

The EO industry is seeing a shift from end users purchasing data to purchasing final analytics-based solutions to gather direct insights instead of running analytics internally within their organizations. This had led to existing data specific players such as Maxar and Airbus moving downstream to provide analytics services as well as development of niche analytics players.

GLOBAL SPACE SECTOR

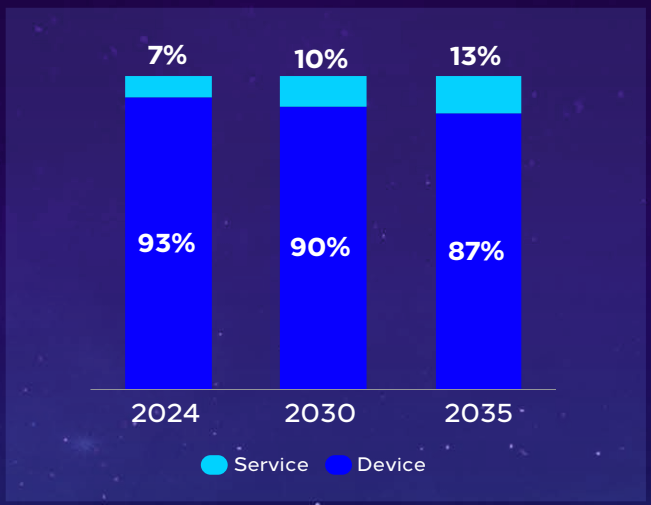
Satellite Navigation

2024 **USD 96 Bn** — **7%** (CAGR) — 2035 **USD 181 Bn**

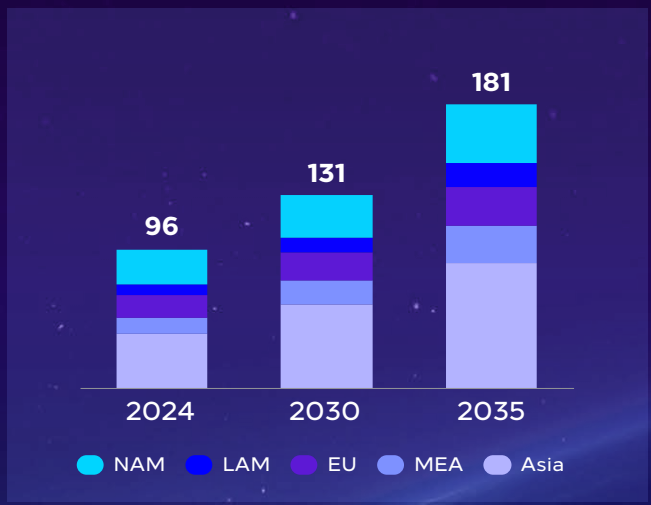
The satellite navigation market is valued at USD 89 billion, with device sales contributing ~90–95% of the market. **Revenue primarily comes from Global Navigation Satellite Systems (GNSS) device sales** that enhance signal accuracy for satellite navigation for civilian and military uses such as mobility, consumer solutions, surveying, defence, etc.

GNSS devices, integrated into aviation systems, autonomous vehicles, surveying instruments, etc. often need commercial augmentation services to further obtain increased accuracy, reliability, and availability of GNSS positioning. Asia forms the largest market for satellite navigation services contributing ~40% to market size, primarily driven by a vast and growing population demanding navigation services across sectors such as mobility and consumer electronics.

Share of market, by segment (%)



Market size, by region (USD Bn)



87%
Share of devices by 2035

40%
Contribution of Asia to market size

GLOBAL SPACE SECTOR

Key Trends in Satellite Navigation

Alternative-PNT (Positioning, Navigation and Timing) services

Emerging PNT players are making strides in enhancing resilience and security for government systems. Notable developments include TrustPoint, Inc. and NAVSYS Corporation securing government contracts. These companies are advancing efforts to offer commercial PNT services that can serve as back-ups for traditional GNSS-based services in case of failure or unavailability.

The mobility segment will account for the largest share of the satellite navigation market (~55%), followed by the consumer segment (31%)

#1 Mobility

The satnav market is predominantly driven by the mobility segment (passenger vehicle, commercial vehicle, autonomous cars, etc.). Within this segment, road transportation constitutes ~95% and is expected to grow at a 6% CAGR. While the passenger car market is substantial, it remains price sensitive with minimal demand for commercial augmentation services.

#2 Consumer

The consumer segment also plays a significant role in the GNSS market. Low-cost receivers are increasingly standard in devices such as wearables (e.g. activity trackers) and smartphones. This segment benefits from high volumes in consumer electronics, including smartphones and robotics. However, commercial augmentation services are rarely required in this segment.

GLOBAL SPACE SECTOR

Key Investments Developments

The global space sector has experienced notable investments and consolidation in recent years, particularly within the satellite communications segment, driven by the need to address the competitive threat from NGSO constellations. For instance, in 2024, SES announced its acquisition of Intelsat in a deal valued at USD 3 billion. Another significant transaction was the merger between Eutelsat and OneWeb in 2023, reflecting a shift towards a '**multi-orbit' strategy**.

Global Investments in the Space Economy in 2024[1]

USD 25.8 Bn

Investments Size

390

Unique Companies Received Investments

Asia

In 2023, China allocated USD 14 Bn for its space program, while India's ISRO received approximately USD 2.5 Bn for projects, including the Gaganyaan mission, enhancing its space endeavors

Europe

The new EU Space Programme, supported by USD 16 Bn investment in collaboration with the EUSPA and the ESA, is expected to facilitate a variety of space initiatives and projects from 2021 to 2027

North America

SpaceX and Amazon are intensifying the race for NGSO. In 2023, SpaceX raised USD 750 mn to expand its Starlink service, while Amazon's Project Kuiper, backed by nearly USD 20 Bn, is making significant progress in satellite deployment, further escalating the competition in satellite broadband services

Middle East and Africa

UAE's investments in space-related industries exceeded USD 6 Bn in 2023, including areas such as satellite communications, Earth and space exploration, data transmission, and satellite broadcasting

[1] Source: Space Capital (licensed under CC BY-ND 4.0).

3

KSA SPACE SECTOR

- Overview & Outlook
- Ksa Space Value Chain
- Ksa Space Sector Market Size

KSA SPACE SECTOR

Overview and Outlook of the KSA Space Sector

Renewed focus through institutionalisation

KSA has a rich history of over 50 years in the space industry. With significant accomplishments through both local and multilateral space initiatives, the Kingdom has established its position among the leading space nations in the Middle East and Africa region. In 1976, the Kingdom established Arabsat, and in 1985 it successfully launched its first two satellites, Arabsat-1A and 1B.

In 1985, Prince Sultan bin Salman became **the first Arab to reach outer space**, travelling aboard a NASA space shuttle. Then, in 2023, the Kingdom made history again when two Saudi astronauts travelled to the ISS, including **the first Saudi woman**.

These accomplishments have been strongly supported by the creation of institutions managing and supervising space activities in the Kingdom. In 1977, the Saudi Arabian National Centre for Science & Technology (SANCST) was established and was later renamed KACST. In 2018, the Saudi Space Agency, was established. More recently, in 2022, the Supreme Space Council was created to formulate policies for space. In the same year, the national regulator was allotted regulatory control over the space sector and was renamed the Communication, Space and Technology Commission (CST) to reflect the renewed and enhanced focus on the space economy.

To facilitate its space ambitions, the Kingdom is currently working on initiatives aimed at boosting the investment from both government and private sector. The country is actively building domestic capabilities, in terms of both infrastructure and talent. The government is also leading several initiatives aimed at training and upskilling the local workforce in space activities. Moreover, various platforms and communities have emerged in the country to support start-ups in the space domain.

The Kingdom's footprint in the commercial space sector is expected to expand further. By fostering a **business-friendly environment that encourages participation of private-sector and foreign investment**, the nation is attracting increased interest from international space and satellite companies. This momentum, combined with a supportive regulatory framework, is likely to create new opportunities for economic growth and technological advancement in the coming years.

KSA SPACE SECTOR

The KSA Space Value Chain

Upstream segment

Major players like SAMI and KACST are known to possess satellite manufacturing capabilities in KSA, and there are currently no major players offering satellite launch services within the country's space sector.

Most companies in the Kingdom's upstream segment are primarily focused on the ground segment vertical, responsible for operating and maintaining the satellites.

Key players

SAMI ADVANCED ELECTRONICS · KACST · NEOM · OneWeb · Skyband · NOVOSAT · stc · SAUDI NET LINK · ARABSAT · AL-BABTAIN POWER & TELECOM · TAQNIA SPACE · MODTECO

Upstream

Downstream

Downstream segment

Most downstream companies in KSA such as Arabsat, KACST, etc. are satellite operators as well as satellite service providers

Satellite operators and service providers are responsible for leasing capacity and provisioning services, respectively, for Satellite communication, Earth Observation and Satellite navigation services

Key players

KACST · ARABSAT · SARsatX · NOVOSAT · TAQNIA SPACE · GEO SYSTEMS · DETASAD · NSG NEO SPACE GROUP · FALCONVIZ

In addition to organisations in the upstream and downstream segment, KSA also has '**enabling organisations**' split into two broad categories – governance authorities and other key enabling organisations – which aim to facilitate the growth of the space ecosystem through policy, regulation, research and innovation.

KSA SPACE SECTOR

The KSA Space Value Chain

Governance authorities

In addition to the upstream and downstream segments, various enabling organisations within KSA's space sector play a crucial role in its growth. These enablers can be categorised into two groups – governance authorities and other key enablers. Governance authorities include the following:

Supreme Space Council

- Formulates policies and strategies for space programmes
- Approves annual plans and oversee the implementation of the strategy
- Aligns with various sectors and national needs

Communications, Space, and Technology Commission

- Issues space-related regulations and licences to ensure transparent and equitable competition
- Represents KSA at international organisations such as ITU to empower the space ecosystem
- Collaborates with government entities and others

Saudi Space Agency

- Executes, advances, and localises space technologies in KSA
- Promotes applications of space industries
- Organises events and workshops to cultivate expertise and knowledge in space sector

KSA SPACE SECTOR

The KSA Space Value Chain

Other key enabling organisation

Other enablers include institutes such as KACST and KAUST as well as entities such as PIF, NEOM, Monshaat, the Ministry of Communications and Information Technology (MCIT), and The Garage, which have contributed to the growth of the space sector and start-up ecosystem in KSA in different ways.

KACST operates ~20 satellites in KSA and has also manufactured some of these satellites. It provides services such as high-resolution imagery.

KAUST runs a start-up accelerator, which incubated SAR sat – an upcoming EO firm in KSA; also launched EO satellites with Spire.

PIF owns satellite firms such as Taqnia and recently established NSG, which will provide satellite-based services in KSA and MENA regions.

Monshaat, the General Authority for SMEs, is dedicated to promoting entrepreneurship and innovation in KSA.

MCIT enables space ecosystem with innovation programs, resources, mentorship, and market access both directly or through its support programs like CODE or NTDP.

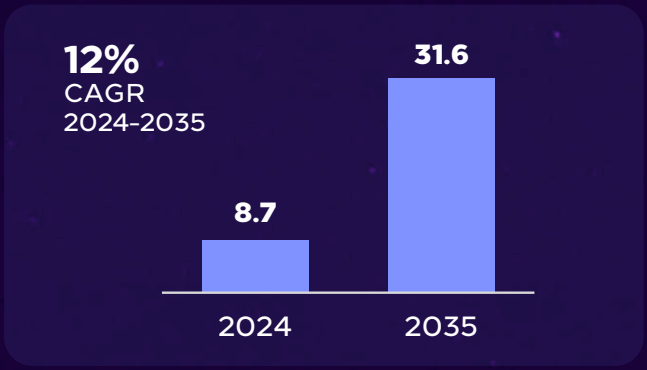
The Garage combines incubators, accelerators and additional resources to equip start-ups with the essential tools for success and growth.

KSA SPACE SECTOR

Overall Market Size

The Kingdom's space sector has seen a steady rise as a regional hub for **space technologies, investments, and innovation**. The **Saudi space economy**, valued at **USD 8.7 billion in 2024**, is expanding at an even faster pace, projected to reach **USD 31.6 billion by 2035 (12% CAGR)**. This signals Saudi Arabia's commitment to leveraging space as a key pillar for economic diversification and long-term growth.

KSA Space Economy (USD Billion)



KSA Space Market (USD Billion)

The domestic space market is currently valued at **USD 1.9 billion in 2024**, reflecting a **13% year-on-year (YoY) growth**. With **strong governmental support and strategic** initiatives, Saudi Arabia is rapidly advancing its space capabilities.

The market size of the **upstream verticals** primarily depends on the number of satellites manufactured and launched on behalf of Saudi operators. Presently, the only major Saudi operators in the market are Arabsat and KACST. Thus, their limited demand becomes the primary contributor to upstream demand. With upcoming players such as NSG, SAR sat, etc., **the demand for upstream manufacturing from local entities is expected to increase**.

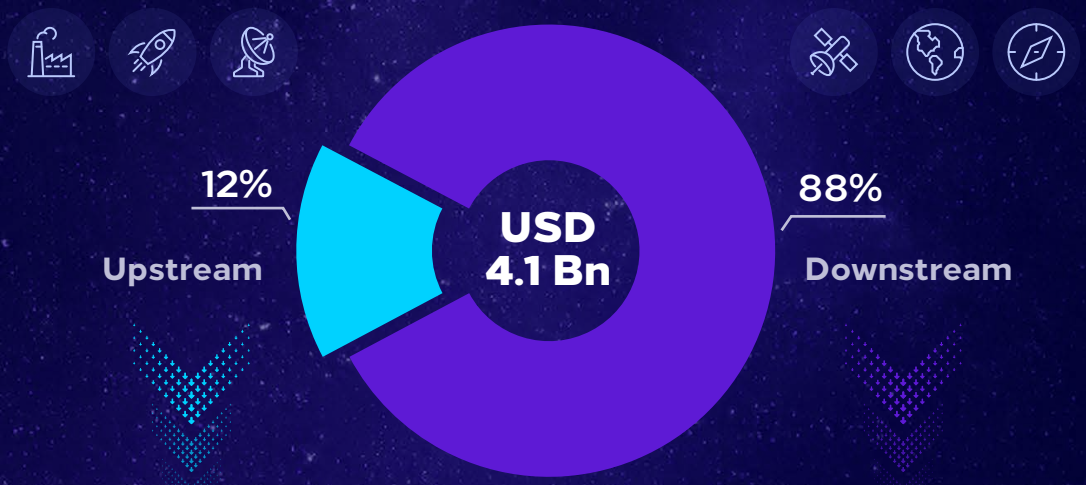
On the other hand, key players such as Arabsat, KACST, and Taqnia are actively addressing the **downstream demand** in KSA, with stc and Arabsat driving growth in this market as well. Upcoming local entrants like NSG and SARsat are also expected to further enhance the sector in the near future.

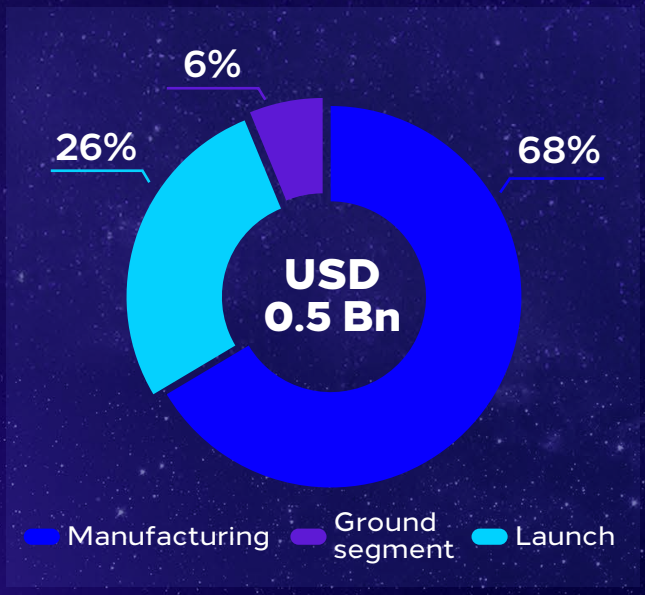
In addition to the above verticals, multiple **emerging markets** such as space situational awareness (SSA), deep space exploration (DSE), space logistics/in-orbit services are gaining traction worldwide and in KSA. The Kingdom has already undertaken initiatives to lead global efforts around these emerging opportunities. For instance, the Saudi Space Agency signed MoUs with Northstar and LeoLabs to exchange expertise related to SSA. Also, the Saudi Space Agency and CST organised the Space Debris conference. Further, KSA became the 21st country to join the Artemis Accords.

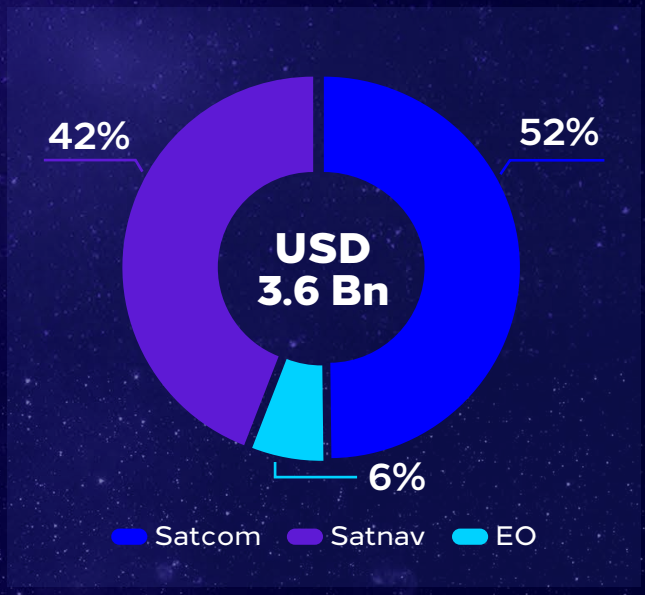
KSA SPACE SECTOR

Overall Market Size

KSA space market, by segment (average annual value, 2025-2035)







In the future, **the upstream segment** is projected to experience significant growth, peaking around 2027-2029, led by rising demand for NGSO satellites from emerging players like NSG. Beyond 2029, market will primarily be driven by the need to replace satellites that have reached the end of their operational life.

Meanwhile, **the downstream market** segment is expected to maintain a **CAGR of 11%, thereby driving the overall space market's growth at the same rate**, given that it accounts for 85–90% of the annual average market size.

KSA SPACE SECTOR

Overall Market Size

KSA space market, by client type (average annual value, 2025-2035)

7% Commercial **93%** Government

Manufacturing | Launch | Ground segment

Upstream demand is primarily driven by government clients, with satellite operators as the main customers. **Most of the satellite operators in the Kingdom are either directly or indirectly government-owned**. Meanwhile, the KSA commercial operators such as Taqnia space, Novasat, etc. are still in their early stages and are expected to operate small constellations in the future.

Upstream

Downstream

74% Commercial **26%** Government

Satcom | Earth Observation | Satellite navigation

In contrast, most downstream market demand is driven by the commercial customers. **Consumers and enterprises in the Kingdom have a strong need for services** like satellite communications, EO, and satellite navigation. While government entities also use these services, their demand is focused on specific applications, such as military operations, civil government operations, urban planning, etc.

KSA SPACE SECTOR

Satellite Manufacturing

Average annual value (2025-2035)

USD 0.34 Bn

The satellite manufacturing market in KSA average annual value (2025-2035) is expected to be USD 0.34Bn. The market is expected to peak around 2027-2029, with significant contributions from **planned GEO satellites and anticipated LEO constellation from different players in KSA**.

2027-2029 Expected peak demand period

Market size is expected to fluctuate based on the orders placed by various operators. Typically, new orders are placed either to **establish a new constellation, expand an existing constellation or replenish satellites** nearing end of life.

Demand is met by international players, with local capabilities centred around universities and R&D hubs such as KACST. For instance, **SAR sat has already announced that it will order 18 satellites in the coming years** to provide EO services in KSA.

Local firms are expected to capture a small portion of the market, with **most demand being fulfilled by international companies**. This limited market share for KSA-based firms is primarily due to the lack of satellite manufacturing facilities within the Kingdom.

However, in some instances, local companies are contributing by manufacturing payloads for satellites, indicating gradual progress in developing domestic capabilities. For instance, **KSA contributed payloads for China's Chang'e and Indian firm's EO satellites**.

KSA SPACE SECTOR

Satellite Launch

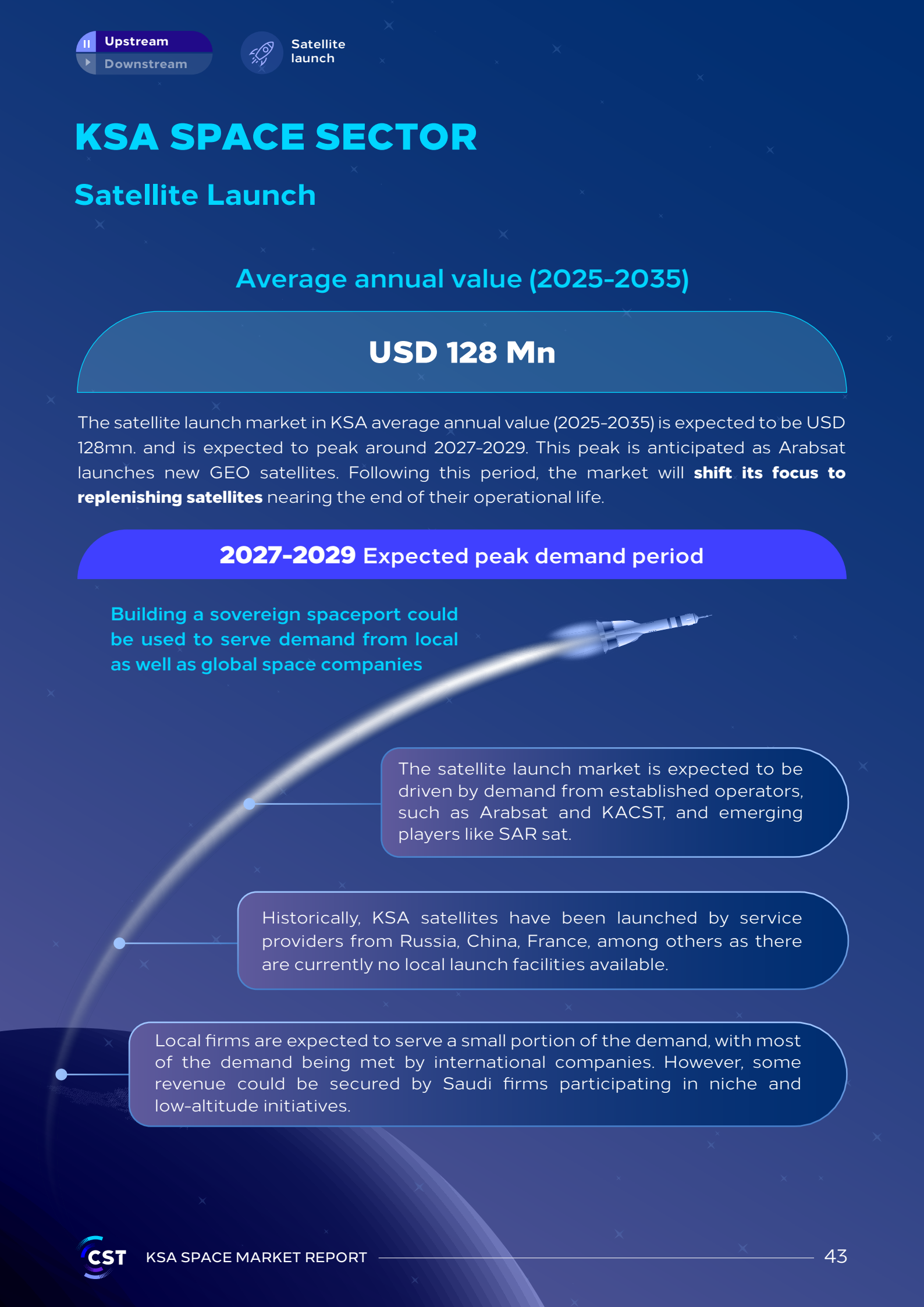
Average annual value (2025-2035)

USD 128 Mn

The satellite launch market in KSA average annual value (2025-2035) is expected to be USD 128mn. and is expected to peak around 2027-2029. This peak is anticipated as Arabsat launches new GEO satellites. Following this period, the market will **shift its focus to replenishing satellites** nearing the end of their operational life.

2027-2029 Expected peak demand period

Building a sovereign spaceport could be used to serve demand from local as well as global space companies



The satellite launch market is expected to be driven by demand from established operators, such as Arabsat and KACST, and emerging players like SAR sat.

Historically, KSA satellites have been launched by service providers from Russia, China, France, among others as there are currently no local launch facilities available.

Local firms are expected to serve a small portion of the demand, with most of the demand being met by international companies. However, some revenue could be secured by Saudi firms participating in niche and low-altitude initiatives.

KSA SPACE SECTOR

Ground Segment

Average annual value (2025-2035)

USD 32 Mn

The ground segment equipment market in KSA is estimated to be USD 1,8 million in 2025. As **new ground stations are set up and existing ground sites are upgraded** to cater to the burgeoning demand for satellite services, the average annual value over the next decade is projected to reach ~USD 32 million.

6% Share in the upstream segment (average over 2025-2035)

The increase in ground stations is expected to be driven by the growing deployment of NGSO satellites both in KSA and across the globe. As LEO-HTS constellations expand, there will be **a need for advanced ground stations** capable of handling higher data rates and managing more complex satellite networks.

New ground stations are being set up by local entities in partnership with international players such as OneWeb & stc, and Lockheed Martin & TAQNIA. Globally, **cloud service providers are entering the space sector** by leveraging their capabilities to offer cutting-edge ground segment solutions.

KSA currently has **several entities which have been awarded license spectrum for ground stations** such as stc and Arabsat. Local companies, such as Albabtain LeBlanc, known for building a ground station in Tabuk for OneWeb and stc, along with Skyband and Saudi Net Link, are actively developing ground stations.

KSA SPACE SECTOR

Satellite Communication

Average annual value (2025-2035)

USD 1.8 Bn

The satcom market in KSA is estimated to be valued at USD 2.8 billion in 2024 and is projected to grow at a CAGR of 15% until 2035. The growth in the KSA satcom market will be primarily **driven by the demand for residential broadband** and will be further supported by the military and enterprise sector.

Traditionally, global operators like Viasat and Intelsat have not offered their services directly within the Kingdom; instead, they have partnered with local providers. Both large and small service providers such as Skyband, Salam, stc, etc. collaborate with operators to lease capacity. However, LEO entrants, such as OneWeb (which has established an office in KSA), and NSG are expected to enter the market soon and offer services directly to end users.

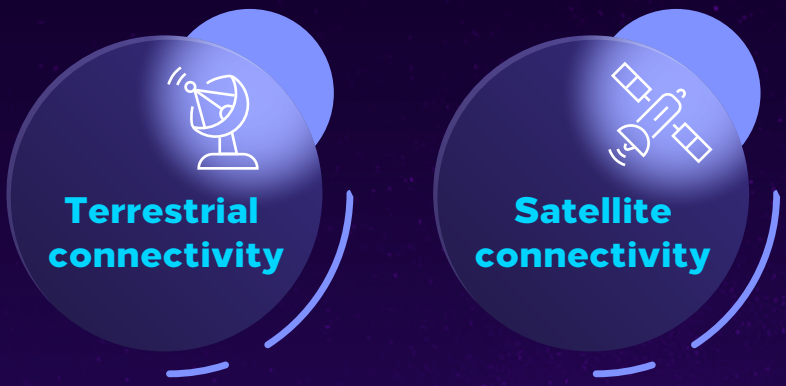
Market size, by segment (USD Bn)

29%
Share of equipment segment (2024)

Entry of global LEOs
Biggest disruption

KSA SPACE SECTOR

Satellite Communication



Satellite communication can complement terrestrial networks to provide connectivity in rural areas where deploying infrastructure is not feasible for telecom operators. As a result, local mobile operators are partnering with satellite providers globally (e.g., Zain with AST SpaceMobile, and stc with Omnispace) to deliver services to customers in regions beyond the reach of terrestrial networks.

Customer segmentation (2024)

20% Commercial **80%** Government

Government demand is primarily driven by military broadband and civil government requirements for satellite broadband, whereas commercial demand is largely led by residential broadband services.

Local players such as stc, which lease capacity from other operators, are expected to serve most of the demand for satellite communication. However, the entry of international players could potentially alter market dynamics. The division of demand will depend on when these new entrants arrive and their ability to partnerships with local providers.

KSA SPACE SECTOR

Earth Observation

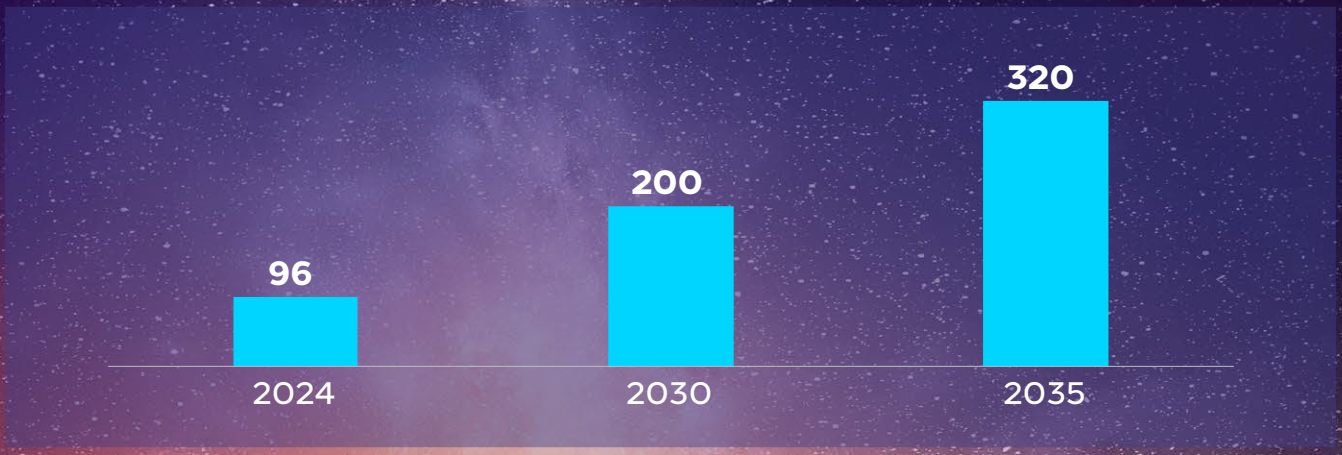
Average annual value (2025-2035)

USD 208 Mn

The growth in the KSA EO market will be largely driven by the **government and military sectors**, as well as applications related to the **oil and gas industry**. There is also increasing demand for environmental EO services, including vegetation feature extraction, carbon calculation, and other applications.

NSG has obtained a permit to establish a platform for Earth Observation services in Saudi Arabia, enabling the collection, processing, and distribution of EO data, including imagery of natural terrain, pollution, and weather patterns. The demand for EO services in Saudi Arabia is expected to be met primarily by local firms such as Taqnia-ETS, Geosystems, and SAR sat. Additionally, some international companies have partnered with these local firms—Blackshark with Taqnia and Planetek Italia with Geosystems—to collaborate on EO projects.

Market size (USD Mn)



NSG
Awarded EO platform licence

18 satellites
SAR sat's EO constellation

KSA SPACE SECTOR

Earth Observation

KSA has seen an increased focus on environment/public-related use cases driven by the Saudi Green Initiative, which aims to plant 10 billion trees, with Geosystems and Planetek Italia involved in the process. Other government entities in KSA are also focusing on land preservation under the National Center for Vegetation Development and Combating Desertification. Additionally, local departments are using EO solutions to monitor wildlife habitats, map important habitats and migration routes, and develop conservation strategies.

Customer segmentation (2024)

10% Commercial **90%** Government

Interestingly, government customers are expected to account for ~90% of total EO demand in KSA driven by defence and intelligence applications such as border security, surveillance, etc. and public authority applications such as disaster planning and urban planning.

Commercial applications are typically in the domains of finance & insurance, agriculture & aquaculture, energy & mining, healthcare, etc. and are expected to account for a small portion of the total EO demand in the country.

KSA SPACE SECTOR

Satellite Navigation

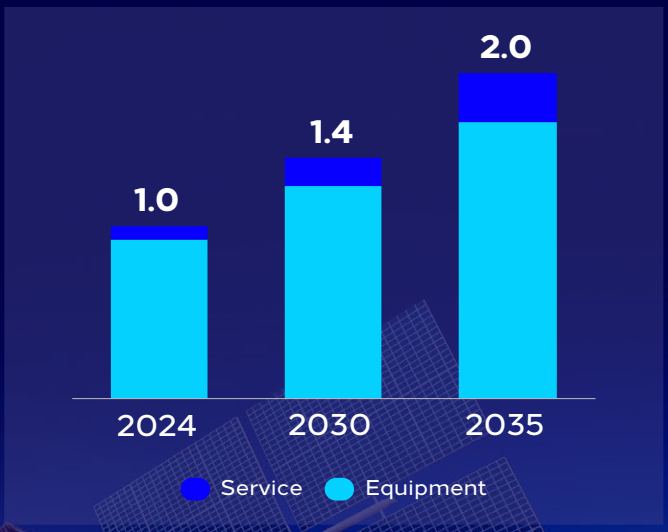
Average annual value (2025-2035)

USD 1.5 Bn

Satellite navigation market in KSA is estimated to be valued at USD 1 billion in 2024 and is projected to grow to USD 2 billion by 2035 (7% CAGR). Key drivers of this demand will be **by passenger and commercial vehicles, consumer appliances**, etc.

GNSS devices dominate the market, offering standard positioning services for smartphones, wearables, and passenger vehicles due to their affordability and adequate accuracy. Commercial augmentation services, which improve satellite signal accuracy to sub-centimeter levels, account for only 10-15% of demand. This niche market serves applications like autonomous vehicles and surveying, where precision is critical. In contrast, price-sensitive segments, such as smartphones and passenger vehicles, do not require such high accuracy.

Market size (USD Bn)



Customer segmentation (2024)

88% Commercial

12% Government

The demand for navigation devices and augmentation services is largely expected to be catered to by international firms given the absence of domestic entities focused on satnav. However, the high adoption of digital technologies amongst the Kingdom's large population, coupled with government initiatives using satnav services, makes the country an attractive avenue for satnav firms.

4

INVESTING IN SAUDI SPACE SECTOR: DEVELOPMENTS AND PROSPECTS

- Key Developments
- Deals And Investment Landscape
- Opportunities, Challenges And Enablers

CST

DEVELOPMENTS IN KSA SPACE SECTOR

Key Developments

The Saudi space sector has made significant strides, showcasing the nation's commitment to becoming a leader in the global space economy. These efforts aim to drive innovation, build capacity, and foster economic growth.

The local industry has witnessed significant advancements in four key areas:

- Space Commercialization
- Human Capital Development and Awareness
- Government and Regulatory Advancement
- International Collaboration

Space Commercialisation

Interest from both local and international private entities in providing services in KSA has increased, driving a shift towards commercialisation of the space market in KSA. This is in line with the global trend, where an increasing number of private players are entering the space market.

Launch of Neo Space Group (NSG) by PIF

In May 2024, PIF announced the establishment of NSG (wholly owned subsidiary), which will provide commercial satellite services locally and internationally.

NSG gets EO platform permit from CST

In July 2024, NSG obtained a permit for EO platform services in KSA, allowing the establishment of a platform for collecting and processing EO data from satellites.

SARsatX to operate 18 satellites

SARsatX, an emerging EO player in KSA, has announced it will operate 18 satellites with a SAR sensor to provide EO services in KSA.

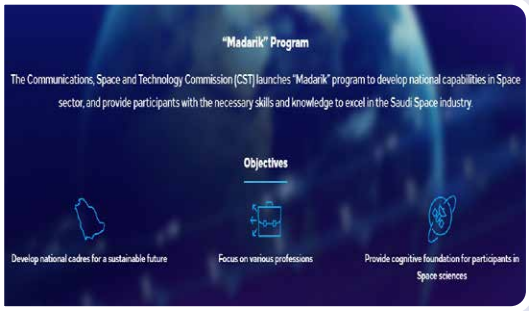
DEVELOPMENTS IN KSA SPACE SECTOR

Human Capital Development and Space Awareness Initiatives

Significant effort has been made to foster growth opportunities for the current and next generation participants in KSA's space sector through targeted training, scholarships, internships, and camps.

Madarik programme

The programme provided participants with the skills to excel in space industry by focusing on three tracks related to space business, space software and data, and space engineering



NASA space apps challenge

The challenge recorded 1,400 participants and 163 teams in 19 cities in the Kingdom, and the best 38 teams were nominated for the Space Entrepreneurship Camp.

Space Debris Conference

SSA organised the conference in February 2024, in collaboration with CST and ITU with the aim of increasing awareness and discussing policy around space debris.

Space Track Stage at LEAP 2024

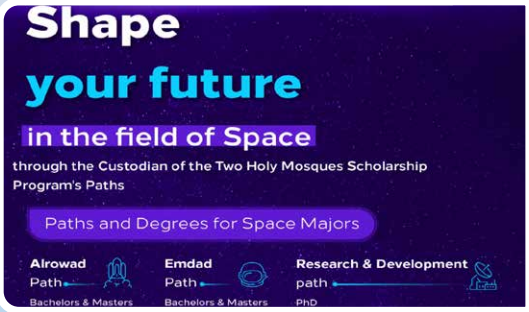
The stage is a platform to unveil the latest trends in space, explore investment opportunities, and promote global collaboration in the space ecosystem.

DEVELOPMENTS IN KSA SPACE SECTOR

Human Capital Development and Space Awareness Initiatives

Empowering Talents at The International Olympiad on Astronomy and Astrophysics

The Saudi Astronomy Team won three bronze medals at IOAA 2024, following training by CST and Mawhiba through dedicated preparation camps.

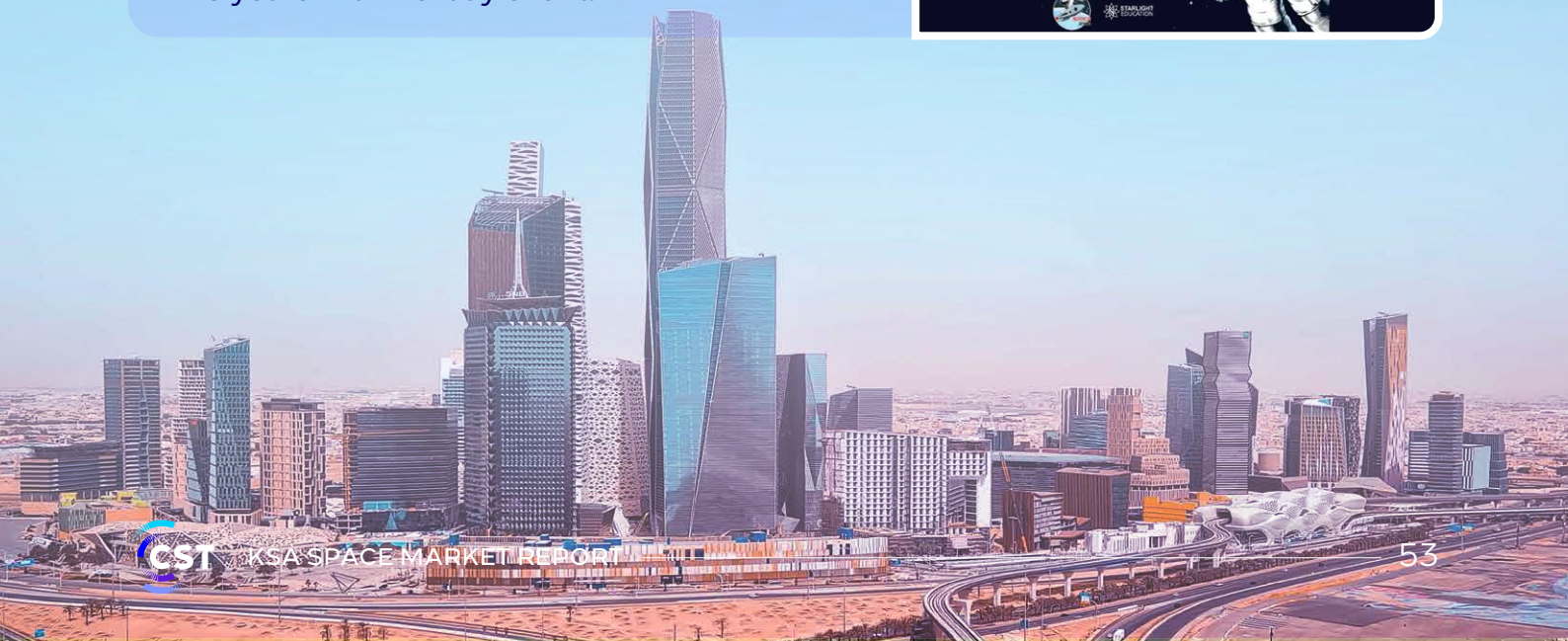


Scholarship programme in space-related fields

CST collaborated with the Ministry of Education (MoE) and the Custodian of the Two Holy Mosques Scholarship Program to promote space specialisations and sciences.

Space 2101 and 2102 Camp Program

KAUST, CST and SSA create opportunities for young people by supporting research and innovation in space, hosting >150 students aged 12-15 years in a five-day event.



DEVELOPMENTS IN KSA SPACE SECTOR

Government and Regulatory Developments

The government in KSA has taken various steps to drive the growth of the space market in KSA, led by the establishment of the Saudi Space Agency and Supreme Space Council. In addition, CST has also conducted trials for satellites services and published policies and roadmaps for satellite services.

Establishment of SSA and the Supreme Space Council

The Saudi Space Agency (SSA) and the Supreme Space Council were established to focus on the growth of the space sector and develop strategic plans.

Non-terrestrial network (NTN) trials and policies

CST conducted trials for satellite services in collaboration with private firms. Additionally, CST has published a policy and held an auction for NTN spectrum in 2022.

Establishment of the Centre for Space Futures

The World Economic Forum and SSA will establish a new Centre for the Fourth Industrial Revolution (C4IR) focused on space known as Centre for Space Futures.

DEVELOPMENTS IN KSA SPACE SECTOR

Government and Regulatory Developments

KSA signed the Artemis Accords

In 2022, KSA became the 21st country to accede to the Artemis Accords, affirming the nation's commitment to sustainable space exploration.

USA and KSA signed a co-operation agreement

The USA and KSA signed a framework agreement for co-operation between the countries on civilian space exploration and research in July 2024.

SSA partnered with international universities

SSA entered into partnerships with the International Space University and the University of Arizona to establish research opportunities and exchange experience.

SSA
وكالة الفضاء السعودية
SAUDI SPACE AGENCY

SSA signed MoUs with several government bodies

SSA has signed MoUs to collaborate with multiple national space agencies, including in Italy, the UK, Egypt, the UAE, etc.

DEVELOPMENTS IN KSA SPACE SECTOR

International Collaborations

In recent years, KSA has made significant progress in the space sector through strategic international collaborations with various global firms and institutions. These partnerships play a crucial role in advancing the **Kingdom's technological capabilities, innovation**, and positioning Saudi Arabia as a prominent player in the global space industry. Through cooperative efforts in satellite development, space exploration, and space situational awareness, Saudi institutions are working with leading international entities to achieve ambitious space goals.

spire | جامعة الملك عبدالله للعلوم والتقنية King Abdullah University of Science and Technology

KAUST and Spire have a partnership since 2021 and launched a satellite in 2023 to deliver high-resolution EO data.

HALO Space announced that its sixth test flight will take place in KSA in collaboration with CST. The test would feature HALO's prototype capsule (Aurora).

CST | HALO SPACE

SSA SAUDI SPACE AGENCY | NORTHSTAR EARTH & SPACE

LEOLABS

SSA signed MoUs with LeoLabs and Northstar to exchange expertise and knowledge related to space situational awareness and explore future collaboration opportunities.

CST and SSTL signed an MoU to promote innovation using space technologies, foster the start-up ecosystem, develop educational programmes to nurture talent and exchange information.

CST | Singapore Space & Technology Ltd

DEALS AND INVESTMENTS LANDSCAPE

The KSA space sector replicates the surge in the investment activities seen globally

The space sector in Saudi Arabia is experiencing a surge in investment, reflecting trends in the global space industry. Saudi companies are actively engaging in **local initiatives and international ventures**, demonstrating the nation's commitment to becoming a key player in the global space arena.

Investment in the Kingdom's space sector is rising as firms commit to ventures that align with the global shift **toward private sector involvement in space commercialization. Meanwhile, organizations** like CST are establishing incubators and accelerators to support start-ups, while government-backed and private entities form international partnerships, positioning the Kingdom as an emerging leader in the global space industry.

Axiom Space raised ~USD 350 million in 2023 in a round led by Aljazira Capital, to invest in the development of a commercial space station.

Waed Aramco invested USD 13 million in satellite IoT firm OQ Technology in 2022.

In 2024, Front End and SpaceKnow entered into a JV to launch SpaceGuardian in KSA to provide analytics for satellite imagery using AI.

In 2024, Front End and SpaceKnow entered into a JV to launch SpaceGuardian in KSA to provide analytics for satellite imagery using AI.

NSG acquired Taqnia ETS for an undisclosed amount, and Taqnia ETS will continue to provide Earth Observation services as a part of NSG.

Flat6Labs, an early-stage venture fund, invested an undisclosed amount in SARsat, an EO satellite company based in KSA, in 2024.

OneWeb and NEOM formed a USD 200 million JV in 2021 giving NEOM exclusive rights to distribute OneWeb's capacity in Middle East.

DEALS AND INVESTMENTS LANDSCAPE

Key Partnerships in KSA

Local public and private entities in KSA have entered into partnerships and signed MoUs with international service providers to accelerate the growth of the Kingdom's space ecosystem. These collaborations aim to leverage global expertise to position KSA as a competitive player in the rapidly evolving global space sector.

أرامكو السعودية saudi aramco | OQ TECHNOLOGY

Aramco signed an MoU in 2023 to receive automation and satellite IoT connectivity for Aramco's remote site infrastructure.

Front End and SpaceKnow entered into a JV to launch SpaceGuardian in KSA to provide analytics for satellite imagery using AI.

FRONT END | SPACEKNOW

stc | omnispace

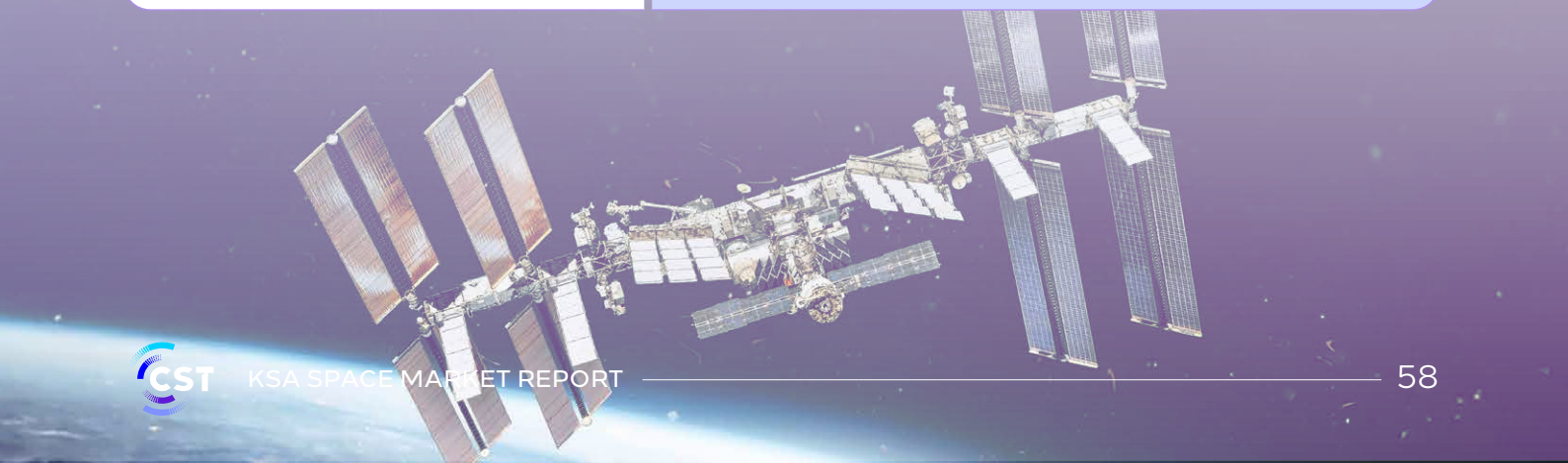
stc will use Omnispace's non-terrestrial network to deliver satellite-based broadband in remote regions in KSA.

Arabsat signed an MoU with Telesat to commercialise Telesat's services in MENA and provide regulatory support.

عـرب سـات ARABSAT | TELESAT

أرامكو السعودية saudi aramco | SES your satellite company

Aramco and SES signed an MoU to use SES's MEO constellation to support Aramco with 5G backhauling for remote sites in KSA and the Middle East.



DEALS AND INVESTMENTS LANDSCAPE

Space Entrepreneurship in KSA

The KSA government has also undertaken multiple initiatives to drive the growth of the space start-up ecosystem in KSA by developing incubation centres and establishing space accelerator programmes to support young start-ups to participate in the space ecosystem.

Space Accelerator Program – Demo Day

15 local and international start-ups from 9 countries participated in the event designed to connect start-ups and entrepreneurs in the space sector with investors.

Space Entrepreneurship Alliance by CST

CST announced the formation of the Alliance in January 2023 to develop a strong foundation to support entrepreneurs in the space sector.

Space Tech incubation Program

CST, KAUST and "Garage" launched the programme to support early-stage start-ups by offering a range of training activities, mentorship and financial assistance

OPPORTUNITIES, CHALLENGES AND ENABLERS IN KSA SPACE SECTOR

The KSA Space Sector Presents Some Compelling Opportunities

The KSA space market is growing at a fast pace, with various key investments, deals and developments shaping the future for satellite services in KSA, which would in turn lead to a **wide range of opportunities across different satellite verticals**. Through **the discussions and surveys conducted with key players and stakeholders in the market**, a list of opportunities themes have been identified. These themes are classified as 'Short-medium term' and 'long-term strategic' opportunities.

Short-medium term are those that can be pursued quickly, with minimal go-to-market time and a short lead time to operationalise. In contrast, **long-term** opportunities are more strategic and have a broader national impact. Across the various space sector verticals, **12 opportunities** that are relevant for the KSA market have been identified and explained

Opportunities

Short-to-medium term	Long term
Ground segment as a service	Manufacturing smallsats
Multi-orbit services	Building a spaceport
Integrated NTN	Space Situational Awareness
EO analytics	Deep space exploration
Multi-modal sensor solutions	Localisation of space logistics
Social welfare EO solutions	
Commercial augmentation	

OPPORTUNITIES, CHALLENGES AND ENABLERS IN KSA SPACE SECTOR

Key Upcoming Opportunities

1 Ground segment as a service (GSaaS)

Overview

- GSaaS presents a significant opportunity in the satellite industry by facilitating shared ground infrastructure, which helps reduce costs.
- As the market expands and lower capex attract start-ups, new GSaaS providers are strategically positioned to meet the growing demand in KSA.

Challenge

- GSaaS requires substantial capital to establish earth stations, whereas sectors such as defense may prefer to maintain their own infra due to security concerns.
- Partnering with international players could offer the investment and expertise necessary to successfully launch GSaaS.

2 Multi-orbit satellite services

Overview

- Multi-orbit services that combine LEO, MEO, and GEO satellites present an opportunity to enhance satellite service offerings in Saudi Arabia.
- In KSA, multi-orbit services would be particularly valuable in sectors such as enterprise and military, etc. where low latency and high reliability are crucial.

Challenge

- Offering multi-orbit solutions can enhance service quality and customer value but may involve high capex due to the need for both GEO and LEO/MEO.
- Partnering with GEO providers or leasing capacity while launching a new LEO/ MEO could be a cost-effective solution.

OPPORTUNITIES, CHALLENGES AND ENABLERS IN KSA SPACE SECTOR

Key Upcoming Opportunities

3 Non-terrestrial network services

Overview

- Complementary use of non-terrestrial and terrestrial network could help in providing all-round seamless connectivity for 5G & fixed broadband network
- As part of Vision 2030, KSA aims to extend high-speed broadband to 70% of households, with satcom expected to play a crucial role in achieving this goal.

Challenge

- Deploying a satellite constellation for continuous broadband coverage in KSA requires many satellites and significant initial investment.
- Government support and potential incentives, could help mitigate the investment risks.

4 Provide analytics solutions for Earth observation services

Overview

- The Earth observation analytics segment is rapidly growing due to the increasing demand for actionable insights.
- While lower-resolution imagery may become commoditized, KSA offers significant opportunities for satellite imagery, supported by analytics services.

Challenge

- Delivering analytics solutions requires a strong technical team; however, sourcing talent with the required skills can be challenging.
- Upcoming space training programs and incubators could help address this issue in the long run.

OPPORTUNITIES, CHALLENGES AND ENABLERS IN KSA SPACE SECTOR

Key Upcoming Opportunities

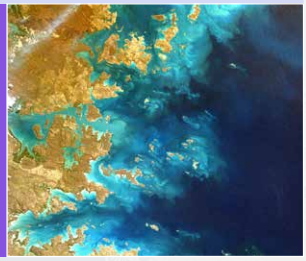
5 Multi-modal sensor satellite solutions

Overview

- As demand for EO services increases in KSA, multi-modal sensor solutions present a valuable opportunity that capitalises on the KSA's expertise in EO.
- By providing satellite imagery through various sensors—such as optical, SAR, etc. – companies can deliver more comprehensive solutions to customers.

Challenge

- Deploying satellites with different sensors can result in significant incremental capex.
- A more effective approach to offering multi-modal sensor solutions is through partnerships with other companies for complementary sensor imagery.



6 Increasing demand for social welfare EO solutions

Overview

- Public authorities, including civil governments, are increasingly using EO solutions for accurate urban mapping, monitoring carbon emissions, and assessing business impacts to support sustainability goals.
- Saudi Arabia has notably adopted these solutions as part of Vision 2030.

Challenge

- The initial investment and operational costs of EO technologies may be a barrier for widespread adoption, particularly for smaller public authorities or organizations.
- However, clear spending policies can effectively mitigate these complications.

OPPORTUNITIES, CHALLENGES AND ENABLERS IN KSA SPACE SECTOR

Key Upcoming Opportunities

7 Commercial augmentation for location sensitive use cases

Overview

- Commercial augmentation services can greatly enhance the accuracy and reliability of navigation and timing data.
- In KSA, these services could benefit industries such as autonomous vehicles, surveying, defense, aviation etc. where precise geolocation is critical.

Challenge

- Implementing commercial augmentation services in KSA faces challenges such as high costs and infrastructure needs.
- Partnership with international provider may be needed to develop the required infrastructure for accurate location and timing services.

8 Manufacturing small/low-mass satellites and payloads

Overview

- The industry is shifting from GEO to LEO/MEO satellites, due to cost efficiencies, tech advancements, enhanced coverage and connectivity.
- Focusing on low-mass satellites could be beneficial, as local facilities could meet KSA's demand for sovereign satellites.

Challenge

- Establishing a manufacturing facility requires significant capital and experienced professionals.
- Building a sustainable manufacturing ecosystem requires access to advanced technology, skilled talent, and streamlined regulatory and supply chain frameworks.

OPPORTUNITIES, CHALLENGES AND ENABLERS IN KSA SPACE SECTOR

Key Upcoming Opportunities

9 Building a spaceport for the Middle East region

Overview

- The Middle East lacks established spaceports. However, KSA's proximity to the equator provides significant advantages for rocket launches.
- This presents a unique opportunity for the kingdom to position itself as a launch hub in the region, meeting both sovereign and regional demand.

Challenge

- Building a spaceport involves substantial investment, expertise, research and development.
- To mitigate risks, it is crucial to assess interest from other launch service providers to ensure there will be sufficient demand for satellite launches

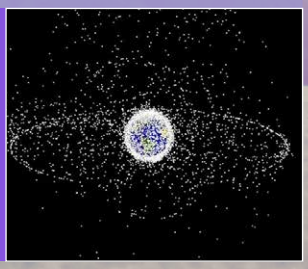
10 Space situational awareness (SSA) services

Overview

- As space traffic grows, importance of SSA is expected to rise in KSA.
- In 2024, the Saudi Space Agency signed MoUs with Northstar and LeoLabs to exchange SSA expertise and, along with CST, organized the Space Debris conference to discuss related policies.

Challenge

- Providing space-based SSA services is still at a nascent stage and could present technology challenges.
- Customers are yet to accept the need for SSA and demand in the next few years could be slow.



OPPORTUNITIES, CHALLENGES AND ENABLERS IN KSA SPACE SECTOR

Key Upcoming Opportunities

11 Deep space exploration (DSE)

Overview

- Deep space missions involve activities beyond Earth's orbit, such as lunar exploration, Mars missions & asteroid mining.
- Participating in deep space missions offers a unique opportunity for KSA to develop cutting-edge technologies and contribute to international research.

Challenge

- Deep space missions require significant up-front capital investment as well as advanced levels of scientific expertise and resources.
- Geopolitical considerations may pose barriers to collaboration limiting access to critical technology & data.

12 Localisation of space logistics

Overview

- Various in-orbit services include life extension, last-mile delivery, automatic debris removal, refuelling, & de-orbiting,
- KSA could promote research in this field, help establish local companies and attract international companies.

Challenge

- The primary challenge is the development of research capabilities related to space logistics in the country.
- Space logistics firms would need to ensure compliance with international standards and regulatory frameworks to ensure a sustainable space ecosystem.

OPPORTUNITIES, CHALLENGES AND ENABLERS IN KSA SPACE SECTOR

Key Challenges

In pursuing the immediate and long-term opportunities, the Kingdom would have to tackle certain challenges.

Capex-intensive services

Most of the satellite services across verticals would require significant capex investments in the initial years, before revenue accrues. For upstream services, heavy capex would be required to develop the infrastructure while for downstream services, capex would be required to deploy the constellation as well as for the procurement of equipment.

Gap of readily available well-trained local talent

While organisations in KSA have made progress with space-based programmes such as Centre of Excellence for Aeronautics and Astronautics (CEAA) at the KACST, a gap still exists between academic degrees and practical job skills, which makes it difficult for satellite companies to find local skilled talent in KSA.

Entry of international players into the market

Certain international players, which have significant financial backing and latest technologies, could become formidable competitors to local firms. Smaller firms could come under pressure and struggle to remain competitive. Local players might need to focus on collaborating with international giants and finding niche markets to address.

OPPORTUNITIES, CHALLENGES AND ENABLERS IN KSA SPACE SECTOR

Key Enablers

The following enablers could help KSA in effectively combating the challenges and unlocking the full potential of various opportunities in the space sector.

Government-sponsored academic programmes

To tackle the lack of readily available local skilled talent in KSA, sponsored educational and training programmes focusing on specific verticals in the satellite upstream and downstream market could train talent. In addition, incubators which could nurture upcoming satellite companies (e.g. SARsat won TAQADAM organised by KAUST) would be very helpful in promoting local talent in the space sector.

Ease of financing

Owing to the capital-intensive nature of the space industry, funding can be a major roadblock for entrepreneurs and established companies. To facilitate space-related funding, key stakeholders in KSA could develop a dedicated fund.

Well-defined regulations & spectrum allocation

Objective regulations, which make it easy for players to provide services in the market, are a key enabler for smooth functioning in the satellite market. For example, favourably allocating spectrum resources among satellite players, establishing clear guidelines to allow for open source of EO data, laying down the entry route for foreign players, etc. would go a long way in enabling the growth of the space sector.

For general inquiries regarding the report and the space market size in Saudi Arabia: **MarketStat@CST.gov.sa**

For commercial and investment inquiries: **Spaceecosystem@CST.gov.sa**

هيئة الاتصالات والفضاء والتقنية
Communications, Space & Technology Commission

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