



Beyond the Stars

The Middle East's Space Ecosystem on the Move



Shifting Global Landscape, New Regional Opportunities

A new space ecosystem is born

The world's space industry is experiencing deep transformations that touch every aspect of its ecosystem. Market, technological, and geopolitical shifts are substantial, creating opportunities while also presenting new risk scenarios for both governmental and commercial stakeholders.

After a decade of unprecedented growth and change, which contributed to a massive diversification of the space industry's landscape, the window of opportunity is gradually closing, as the space sector enters a phase of consolidation, which creates new challenges for commercial players who seek to strengthen their competitiveness in a moving market environment.

For their part, governments are seeking to optimize their space investments with a double objective to ensure the growth and sustainability of their national space sector, while securing sovereign solutions to increasingly pressing geopolitical, environmental and societal challenges.

Generating remarkable economic potential

The global space economy has experienced remarkable growth in recent years, driven by the economic transformation induced by Newspace and democratized access to more cost-effective space technologies and services. Estimated at \$509 billion in 2023 (+34% in 5 years), it is expected to reach a record value of \$759 billion by 2030, with growth mainly driven by advances in downstream applications and services.

This rapid economic expansion of the space sector is attracting growing interest from a wide range of public and private players keen to exploit its commercial and strategic opportunities. The high returns expected from the commercial space market have attracted a new wave of entrepreneurs and investors, also supported by governments, leading to a rapid expansion in fundraising (\$10.5 billion in 2022 following a record \$17.7 billion in 2021).

THE GLOBAL SPACE ECONOMY IN A NUTSHELL

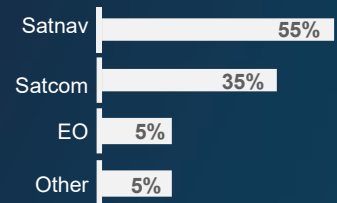


Total Value in 2023
\$509B



Annual Growth by 2030
5.9%

World Space Market in 2023



TOTAL : \$464B

The Middle East: a new hotspot for space activities

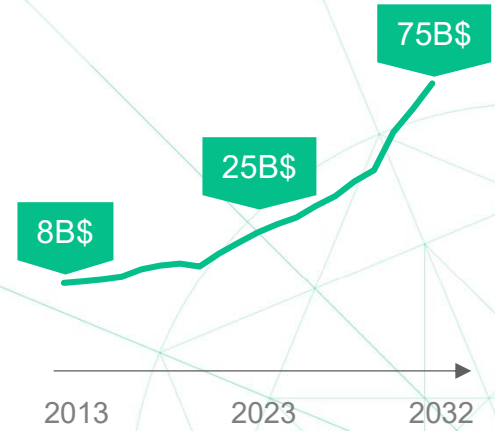
The Middle East* is becoming a global hotspot for space activities, as nations rethink their space strategies to seize the opportunities offered by the expanding space economy. The region is attracting a wide range of cutting-edge space companies to support programs and projects, strengthen its local space players, enhance the capabilities of its workforce and develop its scientific and technical knowledge base, positioning itself as one of the world's most active regions for space.

This new momentum is reflected in the Middle East's booming space economy, which has tripled over the past decade to an estimated value of \$25 billion in 2023, and set to continue growing over the next decade to reach \$75 billion by 2032, thanks to the sustained growth of government investment and the dynamics of downstream space applications and services.

The rise of the Middle East's space sector is reflected in the significant increase in the region's share in the global space economy (4.9% in 2023 versus 3% in 2015, and 8.5% expected at the start of the next decade), and in the growth of space in the region's GDP (0.6% in 2023, i.e. +0.4% than in 2015). The weight of the space sector in the regional economy is gradually catching up as states make progress in structuring their space ecosystems.

* Understood in this White Paper to include Middle East and North Africa

GROWTH OF THE MIDDLE EAST'S SPACE ECONOMY



4.9%

Share of the region in the world space economy in 2023.

0.6%

Share of the space sector in the region's GDP in 2023



As nations with a rich history of pioneers, explorers and astronomers, Arab countries have a deep-rooted link with space, and have everything to gain from the new horizons offered by the opening up of the space sector. For decades, they have nurtured this heritage in space science by participating in missions in collaboration with other leading spacefaring nations.

The region's strategic location has not only fostered maritime activity throughout history, but today facilitates global connectivity between continents. Arab culture, imbued with customs, traditions and values of humanity, spirituality and tolerance, makes the Arab nations unique partners in fostering open international dialogue on space.

The region is currently undergoing an unprecedented transformation of its economy and society, with space considered a key enabler to achieve economic diversification. The significant transformations taking place in the global space sector offer Middle Eastern nations huge opportunities to leverage their national strengths and effectively address national, regional and global challenges. However, as the window of opportunity gradually closes with the advent of a new, post-new space sector cycle, players in the region need to act quickly to seize the opportunities that lie ahead



Towards a New Space Journey: Updated Strategies for Greater Ambitions

From space users to space makers

For decades, Middle Eastern countries have been essentially end-users of satellite solutions, using third-party space assets or purchasing national satellite systems from foreign suppliers to meet their most compelling sovereign needs. Countries in the region are now rethinking their relationship with space, with the ambition of localizing space technologies and building an advanced national space ecosystem capable of meeting national needs on the one hand, and seizing regional and global business opportunities on the other. This new approach to space materializes with the consecutive adoption of a series of new space policies and strategies in the region whereby government affirm their new ambitions.



Since 2015

7 Middle Eastern countries have unveiled a new national space policy or strategy

Increased and diversified space ambitions

The space sector responds to a multitude of challenges in the region. Governments seek to diversify their economies beyond hydrocarbons, identifying promising sectors like space as vital for economic growth. To attain this goal and diminish reliance on foreign stakeholders, local authorities have progressively emphasized the development of indigenous assets and capacity building. This trend is also clear on the defense front. With space now acknowledged as a distinct operational domain in a contested geopolitical environment, governments in the region are actively advancing the development of space-based security assets to safeguard their interests. Last but certainly not least, ambitious space programs, such as by cutting-edge space exploration projects, are considered pivotal assets for Middle East's nations to bolster their soft power and expand their presence both at the regional and international levels.



“The Space Agencies Leaders’ Summit represents a milestone that underscores the vital role of the space sector in confronting climate challenges and finding innovative solutions to support sustainability”
H.E. Salem Butti Al Qubaisi,
Director of the UAE Space Agency at COP 28, Dubai.

Key drivers fueling growth in the Middle East space sector



Defense & Security
Respond to domestic security issues with sovereign space solutions



Capacity Building
Develop the necessary expertise and infrastructure to conduct projects locally



Economic growth
Diversify national economy and capture commercial business opportunities



Pride & Diplomacy
Ambitious space projects to increase soft power and representation

MILESTONES OF THE LAST DECADE IN THE MIDDLE EAST



Leeway for increased public investments

The assertion of new national space ambitions has been accompanied in recent years by a considerable increase in public investment in the region's space programs. From \$696 million in 2010, government space expenditures have doubled reaching about \$1.4 billion in 2023. The growth of public investments is expected to accelerate in the coming years to finance increasingly ambitious programs approaching the standards of historical space countries. By 2032, we estimate that the region's public space expenditures will reach \$2.7 billion, accounting for 2% of global expenditures.

Key role of sovereign wealth funds

In recent years, sovereign wealth funds have emerged as pivotal drivers in the diversification of economies across the Middle East, increasingly investing in technology-driven sectors such as space. Prominent funds like the UAE-based Mubadala Investment Company, the Saudi Public Investment Fund (PIF), and the Oman Investment Authority (OIA) have allocated substantial resources to finance local, regional and international space projects and companies. Prominent recent instances include the collaboration between Saudi Telecom Company and PIF to establish IoT Squared, a technology firm specializing in the Internet of Things (IoT), and OIA's acquisition of an equity stake in SpaceX. These investments contribute to the country's benefits, as illustrated by partnerships formed by Mubadala Investment Company and Airbus to offer internship opportunities to senior Emirati university students in engineering.



GOVERNMENTS' SPACE EXPENDITURES IN THE MIDDLE EAST



Space expenditures in the Middle East are expected to grow by **92%** in the coming 10 years

Diversifying areas of expenditures

Historically, governments of the Middle East have focused their space related investments for the acquisition of satellite systems in the fields of Telecommunications and Earth observation. However, as their space ecosystem is gaining in maturity, noteworthy changes are occurring in expenditures diversity. More countries are dedicating financial resources to advanced technologies and missions, usually reserved to historical space nations, such as Science, Space Exploration or Access to Space. These evolutions show the growing maturity of the regional space ecosystem and the ambition of many players in the region to establish themselves amongst leading space nations. In addition, the procurement of domestic satellite assets for national defense and security purposes resulting from the increasingly complex geopolitical environment leads to the localization of more advanced space-based assets with state-of-the-art performances.



63% of the region's space expenditures were spent in civil activities

PRIORITY DOMAINS OF SPACE INVESTMENTS IN THE MIDDLE EAST



Restructuring space governance

In parallel with the redefinition of their strategic objectives and the increase in their investments, many Middle Eastern countries have rethought the governance of their space activities in order to upgrade their decision-making and organizational structure and thereby optimize the efficiency of their programs.

Countries planning to expand and diversify their space activities have opted for the creation of a space agency, such as the United Arab Emirates, Turkey, Egypt and Saudi Arabia. Although there is no single space agency model in the region, this formalization of space management through a one-stop operational entity generally improves program implementation, stakeholder coordination and international partnerships. On the other hand, countries with more modest ambitions may choose to continue managing their space activities through a ministerial office responsible for policy definition and implementation.

SPACE AGENCIES' CREATION IN THE MIDDLE EAST



2002 ASAL



2004 ISA



2014 NSSA



2014 UAESA



2018 TUA



2019 EgSA



2023 SSA

Attracting new businesses

To boost the local space ecosystem and maximize benefits from the space economy, nations in the region are implementing reforms to foster the establishment and expansion of space businesses. Alongside the formation of space agencies, these countries established dedicated R&D centers, incubators, and funding opportunities, exemplified by initiatives like the UAE's Arab Space Pioneers Programme. Simultaneously, regulatory efforts are underway to promote innovation through business-friendly regulations.

With 14 members, the **Arab Space Cooperation Group** was initiated by the UAE to enhance space cooperation across the Arab World

Rethinking international cooperation models

International collaboration with foreign governments and private companies is a key lever for achieving new strategic objectives in the space domain. In addition to acquiring cutting-edge technologies, long-term alliances are essential for building space capabilities. Middle Eastern countries are gradually redefining their approach to international space relations, while promoting a diversity of alliances with the aim of guaranteeing a certain form of non-dependence. The fact that several countries in the region have recently signed the Artemis agreements with the United States, while joining programs with China or Russia, is a sign of these new times.

Space prosperity in the Middle East can only be ensured by strengthening regional collaboration. Whether developing cutting-edge technologies, scientific missions or commercial projects, partnerships will be essential for the development of the regional space sector and a formidable catalyst for political cooperation. The Arab Space Cooperation Group is an initiative that illustrates the desire to strengthen regional collaboration.

A Vibrant, Maturing, Space Sector

A \$25B market, in a fast growth trajectory

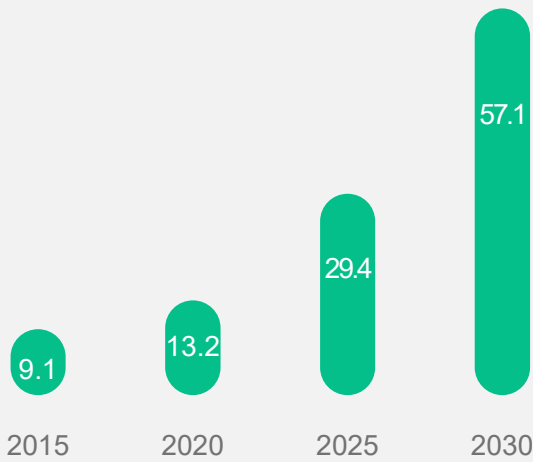
The space sector's market landscape in the Middle East is swiftly transitioning from a nascent stage to potentially the most vibrant globally. The dedication of regional governments towards nurturing their domestic space infrastructures, coupled with the expanding utilization of space-based solutions across an increasingly diverse array of applications within the value chain, is fostering the creation of a virtuous cycle of economic, financial, and industrial growth.

Estimated to be worth \$24.5 billion in 2023, the Middle East space market, while still relatively small and making up just 5.3% of the global market, is on a fast growth trajectory. This growth is fueled by an unprecedented momentum that is anticipated to propel its expansion, with a market size expected to more than double, hitting the \$57 billion mark by 2030.



The Middle East's share in the global space market will grow from **3.5%** (2015) to **7.5%** in 2030.

SIZE OF THE MIDDLE EAST' SPACE MARKET (\$B)



RANKING OF REGIONAL MARKET DRIVERS

- 1 Sovereignty
- 2 Security
- 3 Pride & Leadership
- 4 Science & Technology
- 5 Economic Growth
- 6 Capability Building
- 7 Global Challenges

Source: Stakeholders' Survey, December 2023.

Still largely depending on political drivers

Unsurprisingly, the market continues to be driven by governments, reflecting 1) the weight of public authorities in shaping market trends, and 2) national commitments to the development of independent space capabilities. This view is largely confirmed by local industry players, who see political considerations continuing to dominate the market in the years ahead. Indeed, the weight of governments on the "core" upstream space market (manufacturing, launch and ground segment) is set to increase over the next decade, representing 71% versus 64% over the last decade.

Rising commercial partnerships

National commitments to the development of always more independent and sophisticated space capabilities are attracting the interest of a multitude of commercial space players from North America, Europe and Asia, all keen to secure a share of the expanding Middle East market.

In recent years, this has led to proliferating commercial partnerships and other forms of agreements between regional players and international companies. In 2023 alone, the EO sector saw over 20 major MoUs and other agreements signed in the region between local players and international companies seeking to support the development of advanced solutions and applications for a range of civil and security purposes.

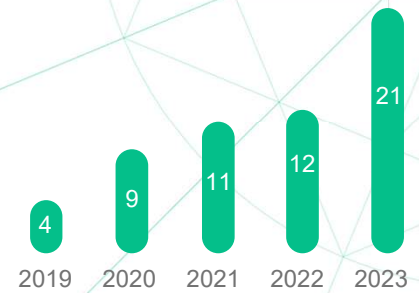
Agreements are increasingly complex, involving sometimes massive investments, such as China's recent announcement to invest some \$250 million in the development of satellite manufacturing plant in Saudi Arabia. These agreements are also increasingly diversified, covering all segments of the space industry, showing the determination of Middle Eastern countries to develop full range of capabilities.

Perhaps even more interestingly, the growing maturity of the regional space sector is reflected in a growing number of local partnerships in which local companies support the development of national objectives. Recent agreements signed by the UAE Space Agency with Edge, as a strategic partner for the implementation of the Sirb program, and between MBRSC and Yahsat in the field of EO commercial and R&D activities, testify to the growing importance of local partnerships as national champions establish cutting-edge competences.



“Proliferating commercial partnerships and other forms of agreements [...] showing the determination of Middle Eastern countries to develop full range of space capabilities”

FUNDRAISING FOR SPACE STARTUPS WORLDWIDE INVOLVING M-E INVESTORS (# OF DEALS)



Fundraising in the Middle East

The expansion of the Middle East's space ecosystem should gradually stimulate the financing needs of local market players. Until now, needs have been relatively limited due to the lack of domestic start-ups, preventing an active fund-raising environment in the region. Only two major transactions have taken place recently, with the IPOs of Yahsat and Bayanat, which raised \$171 million and \$730 million respectively.

However, the region is very active in financing the international newspace community as a provider of capital. Over the past five years, Middle East's investors have participated in no fewer than 57 roundtables with a total value of over \$31 billion for space companies worldwide. Their participation has risen sharply recently, reflecting a growing appetite for investment in space.



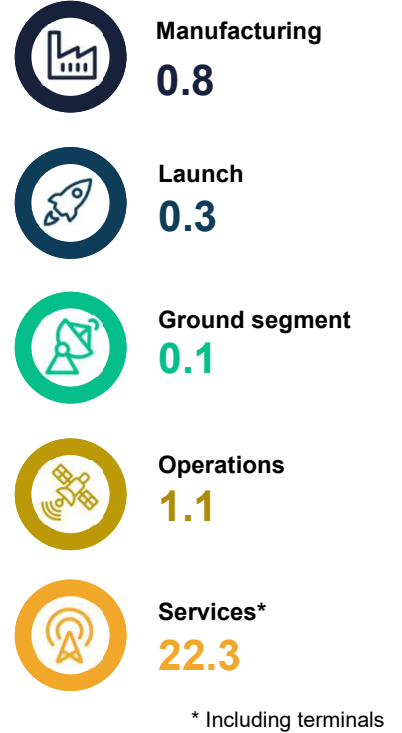
The Middle East Space Market, Upstream

While the region has historically seen relatively limited activity in the procurement and launch of space systems (upstream), it has been an extensive user and developer of satellite-based solutions (downstream). The result is a market mainly characterized by strong downstream revenues, contributing 91% to the total value of the region's space market. This percentage is higher than the global average of 85%.

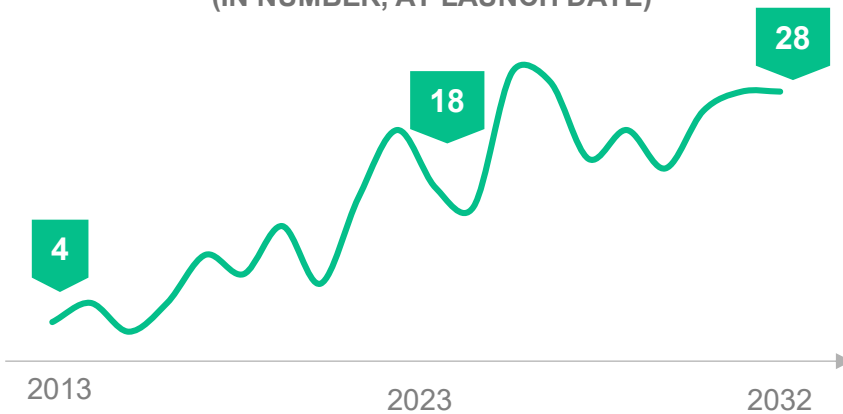
With a marked increase in satellite ownership, mainly due to the deployment of national missions for considerations of sovereignty and commercial opportunities, the region is experiencing a sharp rise in satellite procurement programs, from a low base of 8 satellites launched on average per year over the last decade to 23 planned for the current decade. This development is naturally attracting considerable attention from satellite manufacturers and launch service providers, who see the Middle East as one of the world's most dynamic regions.

It should be noted that players in the region also have the distinction of having growing requirements regarding the performance of the satellite systems they acquire, leading to the purchase of more sophisticated and therefore more expensive equipment. As such, while the global market is experiencing serious price pressures, this is less likely to be the case in the region, contributing significantly to its attractiveness.

SNAPSHOT ON THE MIDDLE EAST SPACE MARKET VALUE (2023, \$B)



SATELLITE PROCUREMENT IN THE MIDDLE EAST (IN NUMBER, AT LAUNCH DATE)



Another peculiarity of the region is the low local retention of the market value created upstream. Due to the limited industrial capacities in the region for the manufacture of space, launch and ground systems, the majority of activities are entrusted to international suppliers. Regional suppliers only capture 25% of the market value created upstream in the region. Although this ratio is improving (it was 13% ten years ago), space agencies and governments clearly aim to increase the participation of their local industry in national programs.

“Regional suppliers only capture 25% of the market value created upstream in the region.”

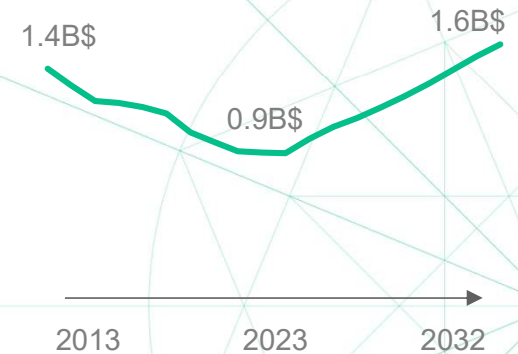
The Middle East Space Market, Downstream

Downstream activities (satellite operations, services and end-users' terminals) generate the bulk of the sector's revenues with an estimated value of \$23.4 billion in the region in 2023 and growing at a fast rate of 9.7% CAGR driven by satellite communications and navigation that benefit from large Business-To-Consumers services (such as satellite television, consumer broadband, personal navigation services etc.).

Satellite operators' revenues remain modest compared to services but constitute an essential component of the service delivery chain. Market players in this segment experience deep transformations brought about, among others, by mega constellations and technology shifts. Following a period of strong pressure, satellite operators shall resume growth driven by innovations and new drivers around mobile and broadband connectivity.

The service industry includes a broad range of businesses and applications that are powered by space assets. This sector is highly diverse, with numerous market players often operating in areas closely related to other sectors such as electronics, telecommunications, and geospatial technologies, rather than being focused on the space industry. The strong market potential of the satellite applications sector makes it an attractive target for both local established players and start-ups, helping to boost capacity in the region. Regional capabilities have primarily concentrated on satellite communications, leveraging the high demand from governments and enterprises in the region. In the meantime, the increasing demand for EO data and services, projected to reach a market value of \$300 million in the next decade, is turning EO into one of the most dynamic regional satellite businesses.

SATCOM OPERATORS' REVENUES IN THE MIDDLE EAST



SATCOM MARKET TRENDS

\$5.5B

2023 Market Value

(operations, services & terminals)

+39%

\$7.6B

Projected 2032 Market value



EO MARKET TRENDS

\$227m

2023 Market Value

(data & services)

+35%

\$307m

Projected 2032 Market value

- **Vertical integration:** a trend visible among global, regional and vertically-integrated operators alike.
- **Managed services:** better manage bandwidth to remain competitive.
- **Strategic partnerships:** combine forces to advance new strategies.
- **New HTS and NGSOs:** leading to improved economics enabled by lower capacity pricing.
- **Data segments:** data-rich applications driving demand (UBA, mobility, miltatcom...)
- **D2D connectivity:** potential to bring about a revolutionary change

- **Government Initiatives :** growing geospatial infrastructure enabling emergence of regional commercial players.
- **Geopolitical context:** increasing security concerns driving defense requirements for geospatial intelligent solutions.
- **Maritime applications:** Pushing demand for oil pollution monitoring and traffic security
- **Energy:** supporting exploration, exploitation and transitioning toward sustainable energies
- **Climate change:** Better monitoring and natural resources management needed, data to prevent and respond to natural disasters.
- **Rapid infrastructure development:** needs EO information to support urban planning



Conclusions:

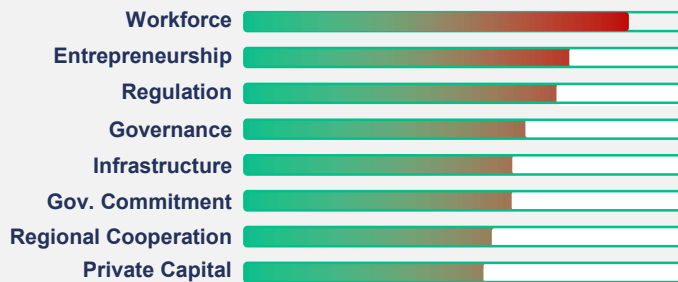
Key Challenges for Sector's Growth

The expansion of the space sector in the Middle East requires the resolution of a number of specific challenges.

Workforce

Most stakeholders in the region agree that the location of skilled labor is a key, if not the key, issue for the growth of the Middle East's space sector. These skills are currently limited. Training programs developed in cooperation between industry and government are needed to upgrade the skills of the existing workforce and train students and young professionals. In addition, more targeted degrees are needed at local universities.

MAIN CHALLENGES FORESEEN BY STAKEHOLDERS IN THE REGION



Source: Stakeholders' consultation

Entrepreneurship

In line with the previous point, the perceived lack of entrepreneurial culture is viewed as a significant obstacle to the growth of the regional commercial industry. This issue isn't specific to the space sector, as the region is often thought to be hindered by a deficit in entrepreneurial thinking. The relatively few space startups in the region may validate this concern but the situation is quickly evolving, with numerous programs fostering entrepreneurial spirit through educational institutions, businesses, and events. Governments need to continue encouraging investment and cultivate a favorable environment for the growth of startups and, more broadly, commercial initiatives.

Governance and regulation

Space sector's governance should be straight forwarded and made clear when necessary to ensure a transparent and effective decision-making structure. The introduction of national regulations, specifically tailored or at least suited to space, is indispensable for any country aiming to build a mature industry. Both governance and regulations, which are beneficial for the sector's growth, should comply with the best existing standards. Many countries are indeed making progress in this direction with numerous ongoing national reforms.

Infrastructures

The establishment of space infrastructures necessary for the implementation of national space ambitions is also perceived as a major challenge. The industry may be reluctant to set up complex and costly infrastructures due to market uncertainties, but also simply because regional industry players remain few and often in an emerging phase of development. In fact, governments, and in particular national space agencies, have a key role in setting up space infrastructures and capabilities, often through cooperation with established international industry players via technology transfer mechanisms, capacity building or even incentives regarding Foreign Direct Investment.

Government commitment

Whilst government commitment is not seen as primary issue in a region where the expansion of the space sector is very much driven by government initiatives and funding, the risk of over-dependence of the industry to government programs is real. In addition, as national space strategies are being reshaped, it is always important to secure a mutual understanding with decision-makers that space is a long-term journey requiring governments to implement stable and consistent, visions, programs and funding. In addition, the industry needs visibility on concrete tangible opportunities they can bid into, which is not always guaranteed.

Regional cooperation

Finally, space is not a solitary endeavor, especially for smaller countries like those in the Middle East. It is crucial to cultivate a culture of partnership among nations and between commercial and public entities. Companies, governments, and other organizations should work towards a shared vision for the region's space sector, for example mirroring the approach taken by European countries. This alignment would certainly help developing a successful sector, realized its full potential and maximize its benefits for the region's economy and society.

Euroconsult

The Euroconsult Group is the leading global strategy consulting and market intelligence firm specialized in the space sector and satellite enabled verticals. Privately owned and fully independent, we have forty years of experience providing first-class strategic consulting, developing comprehensive market intelligence programs, organizing executive-level annual summits and training programs for the satellite industry. We accompany private companies and government entities in strategic decision making, providing end-to-end consulting services, from project strategy definition to implementation, bringing data-led perspectives on the most critical issues. We help our clients understand their business environment and provide them with the tools they need to make informed decisions and develop their business.

More information

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