# IN NEWSPACE CAPITAL

Space Industry Review
Q1 2023





Dear Investors,

As Winston Churchill famously observed: "Never let a good crisis go to waste." The time of turmoil is an opportunity to assess conventional wisdom, stress test established models and find new ways...or come back to old ones!

The economic and investment crises that started last year and continue into 2023 show that the growth model of supercharging the economy with low interest rates and an exuberant amount of liquidity ran its course. The approach did not stand the test of time and we are coming back to a world where economics textbooks make sense again – where growth does not come from any innovation, but only innovation that leads to productivity gains. The space industry has a critical role to play in this world.

For a long time, news headlines related to the space industry focused on rockets, deep-space exploration and space tourism. Though each of the areas is indeed newsworthy, the combined market share of these segments is less than a few percent, and they have been distracting both the general public and the investor community from a truly historical transformation that the space industry enables in agriculture, transportation, mining, energy, communication and finance. If you don't believe me, check McKinsey's recent article "Space: The missing element of your strategy" or Deloitte's research paper "Riding the exponential growth in space" published in March.

As the impact of digital transformation on the efficiency of the global economy winds down, space offers an opportunity of returning to higher productivity growth rates. The last few quarters of data confirm that we are at the beginning of a space technology supercycle, which means long-term growth trend of the industry and its prominence. There is another important factor in the growth of the space industry: a very high added value and resource efficiency in comparison to the economic benefit it creates. Rather than "growth at all costs", the space industry helps to fuel more sustainable economic growth at a time when natural capital costs are moving from the realm of the policy debate into the companies' balance sheets.

To summarize, if you have not looked at investing in space – you should! As the economic and investment review in the following pages explains, the space industry offers diversification with limited correlation to a typical portfolio and exposure to an industry with non-cyclical long-term growth that is well above the wider economy. The 65-year-old and more than  $\epsilon$ 400-billion-strong industry offers an asymmetric risk-return profile – stability and predictability of a large industry, with emerging industry growth rates.

The NewSpace Capital portfolio review at the end of this report offers some additional evidence that sticking to old-fashioned fundamentals works.

Enjoy the read!

Bogdan Gogulan CEO & Managing Partner



## **Opening Comments**

The goal of the quarterly Space Industry Review is to share some key developments in the space industry and NewSpace Capital's portfolio, as well as to share a broader economic and investment context that explains their dynamics. Each quarter this year we are going to do a deeper dive into the specific commercial or technical aspects of the space business, with the first quarter review focused on the economic drivers of the long-term growth of the space industry in the setting of the Fourth Industrial Revolution (4IR) and enhanced productivity.

#### Highlights (page 5)

Summary of key statistics and findings.

## I. In Focus: Economic Review (page 6 - 9)

The first section explains how more efficient and affordable space infrastructure addresses productivity growth crises and creates demand for space-enabled products and services.

## II. Investment Review (page 10 - 12)

This section highlights diverging trends between space and general tech investments, which represents a portfolio diversification opportunity into a large - and high-growth, non-cyclical industry at an inflection point.

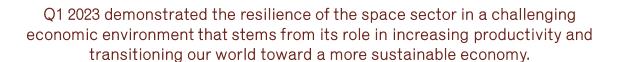
## III. Portfolio Review (page 13 - 15)

In the final section we share our team's rationale for investing in the leading growth-stage companies, the fundamental challenges they solve and how they help to deliver more sustainable and equitable economic growth.

#### Closing Comments (page 16)

Key take-aways.

# Highlights



SPACE INDUSTRY SIZE

€400+ BILLION IN 2022

SPACE INDUSTRY GROWTH

14% CAGR SINCE 2019

SPACE INDUSTRY
INVESTMENT GROWTH

75% Q1 2023 VS. Q4 2022

Space industry is one of only three sectors of the US economy that posted growth in 2022 and continued growth in Q1 of 2023.

LAUNCH COST REDUCTION

>90% SINCE

GROWTH OF LAUNCHED OBJECTS

>20x SINCE 2000

MARKET GROWTH

5X BY 2050

The space-based products and services allow to unlock new productivity gains and growth opportunities across multiple industries that are worth trillions of euros.

Telecommunication

-€1,700 billion

IoT, 5G backbone, laser communication, global internet, cybersecurity, network resilience

-€1,900 billion

Intelligent mining, environmental impact, supply chain management

-€12,500 billion

Precision farming & agriculture, digital agronomy, financing, irrigation management



Space is the next major domain. If space isn't part of your strategy, it should be - don't be left on the ground.

(McKinsey & Company, March 2023)

## I. In Focus: Economic Review

The first quarter of 2023 demonstrated the resilience of the space sector in a challenging economic environment. This resilience is due to its role in increasing productivity and transitioning our world toward an environmentally sustainable economy.

Against a backdrop of persistently sluggish growth, the global economy and markets continued to be roiled by crisis. Companies continued experiencing a slew of disruptions, including geopolitical tensions and supply chain challenges. Slowdown squeezed living standards and public finances. The global economy now faces the triple challenge of boosting growth and driving job creation, while mitigating the climate crisis. The space industry plays a critical role in tackling these challenges, which explains its continued robust performance through 2022 and into Q1 of 2023.

Space industry is one of only three sectors of the US economy that posted growth in 2022 and continued growth in Q1 of 2023.

## I.I. Space industry - a "bright spot" on the dark economic canvas

The first quarter data demonstrated a balancing act of the world economy between the possible beginnings of a recovery and the abyss of a full-blown recession.

Rising costs of energy, labor, transport, and raw materials have made it necessary for many companies to continue to increase prices. Persistent inflation caused both the Fed and ECB to raise interest rates at the highest pace in years, triggering the banking crises that resulted in the FDIC taking over four US banks with over \$500 billion in combined assets. This is over 2% of the country's GDP, edging the total level of failed banks by assets close to those of both the 2009 and 1987 crises.

At the same time, US consumers' level of optimism is even lower than it was at the beginning of the pandemic. One in five are expecting darker days ahead. As their views of the economy grow dimmer consumers are postponing vacations and forgoing plans to buy appliances, cars, and houses. Weak consumer sentiment coupled with high interest rate environment led to flagging industrial output and corporate earnings.

The Federal Reserve's Q4 report indicated factory output was decreasing at an annual rate of 3.1%. In Q1 2023 data suggests a slight recovery of 0.3%.

Corporate earnings that reached historic highs in 2022, have taken a hit in the beginning of the year. In the first three months of 2023, corporate profits for 500 of the biggest US companies dropped by 6.8% on average. This fall is likely to reinforce a historical trend of falling economic profits over the last two decades.

In the avalanche of negative economic news, the space industry stood out as a rare island of stability. It is one of only three sectors of the US economy that posted growth in 2022 and continued growth in Q1 of 2023.

To understand why this is the case, we should look at the root cause of the current crises and understand how the space industry helps to tackle it.



## I.2. The decade of lost productivity

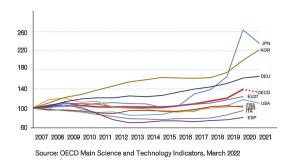
For the decade following the 2008 financial crises, the world has been awash with liquidity. The world's ten largest central banks nearly doubled money supply (M2) in their efforts to support financial markets, employment, consumer confidence and corporate investments. However, excess liquidity sooner or later turns into inflation if the additional money supply does not turn into extra investments that increase productivity.

While corporate investments in IT remained strong, the R&D spending across OECD countries for most of the 15 years following the financial crises remained unchanged, picking up only slightly since 2016. At the same time in the US, which accounts for the world's largest R&D budget, the investments in this area were shrinking from 2010 to 2018. The world went down the path of investing in apps, substituting productive investments with a search for quick speculative returns. Rather than creating a better world, unfortunately, we focused on making it more convenient.

Graph 1: Global liquidity (2012 - 2023), \$ trillion



Graph 2: R&D budget trends (2007 - 2021)



Rather than creating a better world, for the last decade, unfortunately, we focused on making it more convenient.

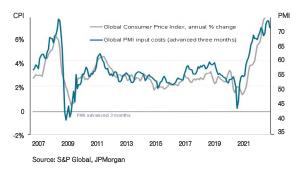
As the marginal productivity gains from digital transformation winded down and the world (captured in the "application mania") failed to develop enough new productivity-enhancing technologies, both labor and total factor productivity (TFP) started falling. The 2010s became the decade of lost productivity. In the US labor productivity fell from a long-term trend of 2.2% annual growth rate to an

average of 1.4%. In some EU countries (for example, Spain and Italy) the TFP is now negative. It was just a matter of time and a trigger for inflation to re-emerge on the economic stage. Covid-19 played a role in creating an external shock — disrupting supply chains — leading to spiraling inflation that we had not seen since the 1980s. The energy supply shock that followed made matters worse.

**Graph 3:** Detrended nonfarm business sector labor and TFP (% deviation from trend)



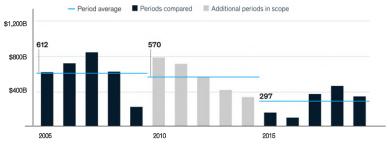
Graph 4: Global PMI input costs and CPI inflation



At the same time, in industries where higher demand fueled by cheaper credit did not translate into increased productivity, but translated into oversupply, the economic profit (spread between a company's ROIC and its cost of capital) declined in the face of growing competition and

tighter regulation. As McKinsey study conducted in April 2023 revealed, global economic profit halved from \$612 billion in 2005 to \$297 billion in 2019.

Graph 5: Global economic profit (2005 - 2019), \$ billion



Source: S&P Global; Corporate Performance Analytics by McKinsey

As a result, the global economy now is staring at a wall-monetary tightening, more stringent regulation and higher energy costs in the face of falling productivity and economic profits. Since we can not print more money due to the risk of hyperinflation and we can not increase public

spending due to the existent burden on public finances, countries and companies are turning (some intuitively, others purposefully) to the only long-term growth factor – productivity. And this is where the space industry plays a crucial role.

As countries and companies have a renewed focus on productivity, the space industry has a crucial role to play.

## I.3. The role of space industry in the Fourth Industrial Revolution (4IR)

In January 2016, in the article *The Fourth Industrial Revolution: what it means, how to respond*, Klaus Schwab, Founder of World Economic Forum wrote: "In the future, technological innovation will also lead to a supply-side miracle, with long-term gains in efficiency and productivity. Transportation and communication costs will drop, logistics and global supply chains will become more effective, and the cost of trade will diminish, all of which will open new markets and drive economic growth." As described above, six years later the promise is yet to materialize due to lack of investment in R&D and overallocation of financial capital in areas that don't yield enhanced productivity returns.

It is not that we do not advance at all, we do, but much slower than needed in order to resolve global challenges such as climate change, social and regional inequalities, poverty, hunger and skill gap. And this is where the space industry plays a critical role. It offers the possibility to significantly increase the impact of financial capital by providing cheaper, more flexible and efficient infrastructure for the global economy; accelerating the fusion of technologies and enhancing efficiency of traditional industries through new products and services.

#### a. More efficient infrastructure

The advancements in materials science, 3D printing, electronics and software applications have enabled the reusability of rockets and decreased launch costs by more than 90%. Miniaturization of electronics, improvements in processing power, data storage, sensor technology and solar array efficiency allowed introduction of software defined nanosatellite platforms for Low Earth Orbit. This led to 20x growth in the number of objects we launch to space.

Countries and companies of all sizes are already taking advantage of these advances. Small satellites make up about 94% of all spacecraft launches, growing from a total of 53 to 1,743 from 2017 to 2021.

The increase in small satellites has led to a huge growth in sensors, which is shepherding the entry of new companies that leverage remote sensors in space to be able to capture images and power technologies on Earth. These satellite constellations produce an enormous amount of data, which is leading to the huge growth in the demand for data storage and analysis, with companies using AI, especially machine learning and deep learning, to turn data into intelligence that powers a range of commercial uses including monitoring food supply, tracking greenhouse gas emissions, and monitoring energy supply chains.

Generation and distribution of this data on Earth would be in some cases impossible, while in others cost prohibitive. For example, high throughput communication capacity between Earth and satellite constellations in 2021 was 2.7 Tbps. The following year it increased to 21 Tbps and this year it is expected to reach 48 Tbps. This is 16x growth in just two years.

In comparison, the growth of undersea cable capacity was 39% in 2021. Although a single undersea cable, such as MAREA, can provide a capacity of up to 224 Tbps, which greatly exceeds total satellite-enabled capacity, the satellite capacity is more resource efficient, global in nature and brings the capacity to places where laying undersea cable would not be economically viable. Therefore, it can significantly augment terrestrial networks.

An even more telling story is that of Earth Observation. Obtaining high resolution images globally in a matter of hours would simply be impossible without satellite infrastructure.

## b. Accelerating fusion of technologies

As LEO satellites operate within the magnetic field of our planet, the satellites are better protected from space radiation. Currently, satellite manufacturers can use commercial-off-the-shelf (COTS) components, which leads to the convergence of space and non-space supply chains.

Integration of space-enabled products and services, as well as space and non-space supply chains accelerates the fusion of technologies that fuel much needed productivity growth across the industries.

## c. Enhancing efficiency of traditional industries

High-resolution imaging, faster communication, more precise positioning and real-time data access significantly enhance efficiency and sustainability across traditional industries. Their demand for space-enabled products and services drives the accelerating growth of the industry.

The unique role of the space industry drives demand for its services and associated growth even in the current economic slowdown.

We can conclude that the role of the space industry in the 4IR is not limited to an impact on specific technology or sector, it cuts across multiple applications, from enabling precision agriculture and autonomous vehicles, to more efficient supply chain management and advancements in material science. It generates new manufacturing techniques and propagates advancements through fusion of technologies. It provides more efficient infrastructure that makes existing products cheaper and better, while enabling new products that increase productivity across the economy. This unique role of the space industry drives demand for its services and associated growth even in the current slowdown.

## II. Investment Review

The last 18 months highlighted a fundamental paradigm shift for investments in the space industry, as its dynamic diverged from the prevailing wider industry investment trends.

Firstly, the funding of space enterprises declined last year slower and rebounded this year much faster than the overall investment. While year over year global funding in 2022 declined 35% according to Crunchbase, the European Space Policy Institute reported that decline in the space industry amounted to just 28%. In Q1 2023 the global venture funding recovered quarter over quarter slightly at the pace of 1,6%, at the same time in the space industry the rebound constituted impressive 75%.

Secondly, despite the year-on-year investment downturn, 2022 turned out to be second best on record and space maintained a healthy trend of 14% CAGR market growth since 2019 (as per European Space Policy Institute), demonstrating non-cyclical growth of the industry. This highlights that the growth of the space ecosystem is driven by demand, and that investments are following, rather than leading development of the industry.

Despite the year-on-year investment downturn, the industry maintained a healthy trend of 14% CAGR since 2019, demonstrating non-cyclical growth of the industry.

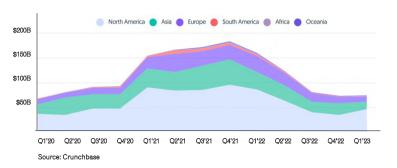
#### Global

- In Q1 2023 global funding stayed more or less flat, growing within a rounding error of 1,6% to \$76 billion.
- This represents year over year decline of 53% and continues the downward trend in funding that started in Q1 2022.
- The slight recovery in venture funding quarter over quarter is attributed entirely to the US, due to the OpenAI and Stripe mega deals.
- There is a decline in funding across all other regions.
- The fintech sector, the long-term darling of the investor community was overtaken by deep tech and climate tech companies.



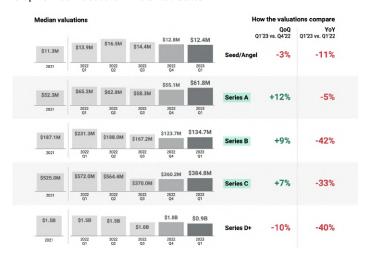


Graph 7: Global venture volume by region (Q1'20 - Q1'23), \$ billion



#### **United States**

- The US funding in the first quarter reached \$46.3 billion a decline of 46% from the same period last year. And without two large deals (OpenAl and Stripe), Q1 funding would have been down more than 60%.
- The largest decline is in Series D investment, which is down 92% from its peak and 86% from a year ago.
- Median valuations for Series A, B, and C tech companies recovered slightly from Q4 2022. These deal stages experienced quarter-over-quarter median valuation growth for the first time in a year. Meanwhile,
- late-stage companies had a tougher time with the median valuation for Series D+ rounds dipping.
- Year over year, valuations for seed/angel rounds were down 11% and Series A contracted 5%. Mid- and late-stage valuations declined between 33% and 42%.



Graph 8: Tech valuations in the United States

Source: Tech Valuations Report Q1'23, CB Insights

#### Europe

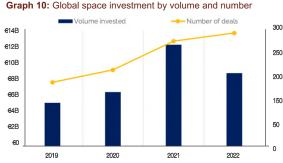
- European companies raised \$10.6 billion in funding in Q1 of this year.
- This is both quarter over quarter and year over year decline, 18% and 66% respectively.
- The overall funding raised was the lowest quarterly total since Q3 2020.
- The more dramatic decline in Europe than in the US is driven by the pull back of US investors from the continent. For example, in 2022 around 40% of funding in France was fueled by US capital and in Q1 2023 that number is estimated at a mere 5%.

Graph 9: Europe venture volume (Q1'21 - Q1'23), \$ billion



#### Space industry

- Global investment in space ventures in 2022 totaled €8.8 billion, which represents a 28% decline from the previous year's peak of €12.2 billion.
- However, it is important to note that 2021 was an exceptional year and should be seen as an outlier. The difference in volume between 2021 and 2022 can be almost entirely attributed to the lack of SPACs.
- Despite the year-on-year downturn, 2022 turned out to be the second best on record and the industry maintained a healthy growth rate of 14% CAGR since 2019.
- While Q1 2022 overall funding stayed pretty much flat quarter over quarter, in the space segment it significantly rebounded, with total investment reaching \$1.4 billion, up 75% from \$801 million in Q4 2022.



Source: Space Venture Europe 2022, European Space Policy Institute

# In Q1 2023 investment in the space industry rebounded 75% quarter over quarter – beating by a huge margin the 1.6% overall investment growth.

- Another diversion from overall funding trends, was the leading role of Europe and growth-stage rounds in the rebound.
- For the first time, European companies received more funding than their US counterparts, boosted by the Isar Aerospace \$165 million round, as Europe plays catch up in developing sovereign launch capabilities.
- Q1 2023 saw a 120% increase in growth deals compared to the previous quarter, as growth-stage companies returned to raise financing after delaying throughout
- European growth-stage companies thrived, securing half of the top ten deals.

As investments rebound, their structure changed - away from the speculative instruments, like SPACs, and opportunistic projects with long-term horizons, limited addressable markets and marginal added value to the global economy, towards companies and segments that offer solutions to the existent challenges, like food security, more accessible connectivity and affordable communication. This rebalancing demonstrates maturing of space as an investment theme and should help the space industry to fulfill its potential of boosting productivity and enabling sustainable economic growth.

## III. Portfolio Review

The progress of our portfolio companies in Q1 2023 brought good examples that prove the validity of NewSpace Capital's investment thesis.

NewSpace Capital has a well-defined investment thesis. We invest in a large industry that is at an inflection point and companies that solve fundamental challenges to the growth of that industry. These companies have significantly reduced technical risk, proved market-product fit, and forged a clear path to profitability. We help these companies to accelerate their journey along this path by bringing them additional commercial opportunities and more than 150 years of our team's collective industry experience.

We invest in Supply Chain companies that make space infrastructure possible and Applications' companies that make it useful to the customers on Earth.

#### **ICEYE**

Earth Observation is one of the fastest growing segments of the space ecosystem. However, for years this segment had a significant technical challenge that hampered the adoption of EO-enabled services by the market - the images produced with the help of optical lenses failed to deliver results at night and in cloudy weather. Imagine, how quickly the world would have adopted Henry Ford's automobile if it would only drive on a sunny day! The solution to this predicament lay in the technology developed in the Jet Propulsion Lab in the 1990s known as Synthetic Aperture Radar, or SAR. Rather than using light for the imaging of the Earth's surface, SAR uses radio waves, capturing their reflection to generate an image of our planet's surface. For more than 20 years, SAR was a tool available to a selected few of the most advanced space nations. The SAR satellite platform was both complex, bulky and expensive – extremely expensive. And while the technology solved the fundamental challenge of persistent monitoring, the resolution of SAR images was lagging far behind that of optical sensors. For example, you could have captured an aircraft carrier, however, it would have had to be there, which is unpredictable. This was till ICEYE's team made the impossible possible.

ICEYE put a sensitive, but relatively petite SAR sensor on a small satellite platform that could operate from a Low Earth Orbit (LEO), drastically cutting the cost of the technology and dramatically increasing its resolution and

accuracy. The SAR images now provide resolutions comparable to that of optical systems (up to 15 cm) at a fraction of older SAR costs. This is a revolution!

Nine years since its founding in 2014 and just five years since the launch of their first satellite, the ICEYE team made another revolution. In Q1 2023, the company signed a multimillion-dollar contract for five (5) satellites with Bayanat and Yahsat of the UAE. This contract creates, for the first time in history, a sovereign SAR capability outside of the "old school" aerospace nations. Another revolutionary aspect of it is the speed of execution – the first satellite is planned to start its operations in orbit already in Q1 2024. The project is a critical part of the UAE's ambitious space program that is, among other things, a continuation of successful manned space missions, deep-space exploration and the development of a vibrant commercial space sector.

Our team is proud to have played a role in building the bridge between ICEYE and the UAE entities, introducing them and facilitating cooperation over the last two and a half years. This is a great example of how our team accelerates revenue generation for our portfolio companies.

- Bayanat, Yahsat and ICEYE announced an ambitious program to broaden commercial opportunities across the UAE space ecosystem. The program aims to develop a constellation of five LEO SAR satellites built by ICEYE with the first satellite scheduled for launch in Q1 2024.
- ICEYE entered into a Data Agreement with Global Parametrics, experts in developing innovative solutions to climate
  and natural disaster risks, to provide flood data to support the development of innovative parametric risk transfer
  solutions.
- ICEYE signed a five-year Blanket Purchase Agreement with NASA, which will determine the suitability of the SAR data for advancing NASA's science and application goals.
- ICEYE received the Top Startup Partner award at the 2023 Esri Partner Conference held in Palm Springs. This award was presented to ICEYE for substantial opportunities for growth with Esri, the global leader in location intelligence.

#### **CAILABS**

Cailabs is solving a fundamental challenge for the €30 billion satellite communication industry, where the growth of ground-to-space-to-ground communication is outpacing the growth of terrestrial data exchange, while the bandwidth capacity is limited by the finite physical limits of available radio frequencies. The only solution is moving from radio to means of transporting information with a higher frequency and bandwidth: light. Photonics communication has been rapidly developing over the last 3 to 4 years and there are multiple platforms that are currently using lasers for in-space data transfer. However, bringing data from space to Earth and vice versa has not been possible, due to the problem of atmospheric disturbances. While in space, light travels through a hard vacuum and does not meet any obstacles on its way, when light gets into the atmosphere it meets with multiple particles that disperse the light reducing its data-caring properties. For some years now, the ability to solve the problem of atmospheric disturbance was considered the Holy Grail, which makes the Cailabs team that solved it, the Knights of Round Table.

Cailabs' technology comes from a quantum computing project that focused on using lasers to stabilize atoms. In the process the Cailabs team learned to "shape the light" – create light with certain predefined qualities. The technology that commands multiple patent families and is guarded by trade secrets found numerous applications across medical devices, industrial applications, terrestrial (fiber networks) and space communication.

When NewSpace Capital invested in Cailabs last year, our team took comfort in a wide array of non-space applications in the company's product portfolio. While the ultimate switch to photonics in the space industry was a certainty, it was difficult to predict how quickly the satellite operators would adopt the new technology. The last twelve months provided evidence that adoption is taking place at a faster rate than we expected. As a result, there is an explosive demand for Cailabs' technology, including a number of potential projects introduced by the NewSpace Capital team.

- In early 2023, Cailabs won particularly selective funding from the EIC Accelerator (European Innovation Council) which
  identified Cailabs' laser communication technologies as strategic and consequently validates the technical and
  economic interest of free-space optical networks.
- After SSC (Swedish Space Corporation) in H2'22, Cailabs signed the provision of its second optical ground station to the Korean company CONTEC for installation in 2024.
- Launch of AROONA-CONNECT passive adapter to increase the throughput (1-40 Gb/s) of fiber-optic local area networks in hospitals, factories, universities, etc. This new offer complements the 2000 units already approved by the market for short fiber links.
- Cailabs and Light Conversion have developed a partnership to demonstrate the quality and robustness of their solution using a Canunda-Pulse beam shaper and a Carbide laser, enabling to access new large-scale applications such as surface texturing.



Image of the Yas Island, Abu Dhabi, United Arab Emirates, showing the Yas Marina Circuit, where the Formula 1 Abu Dhabi Grand Prix takes place every year.

Credit: Iceye



Ground-to-space laser terminal

Credit: Cailabs

## Kayrros

Earth Observation is one of the fastest growing segments of the space ecosystem and its analytical element of it is outpacing the general growth trend. Kayrros' value proposition in this market is its ability to provide a unique level of accuracy and insight by combining data from different satellite constellations that can greatly vary in format, temporal and spatial resolution. However, seeing a flood, fire or methane leak at a certain location is just half of the task, you should be able then to link it to the source of the event or those impacted by it. Sometimes it is as easy as using Google Maps, but it does not always work. Kayrros' proprietary database of industrial assets across the globe ensures there is a link between space data on a certain location and an understanding of who this abstract factory, warehouse, forest or pipeline represents. This way Kavrros enables an unprecedented level of transparency on the activities of individual market players, both companies and countries, presenting precise data, where in the past we had to satisfy ourselves with rough estimates and mathematical models.

This data is very valuable to insurance companies, traders, industry bodies, national and supranational regulators. Kayrros clients include United Nations and IEA. And as we continue on the journey to a more sustainable economy the list is growing. There are, however, strong headwinds for the company to reckon with.

Kayrros is facing stiff competition from new market entrants. There are two prevailing themes in this domain – one from the "space side", and another from the "IT side".

The "space side" is the entry of satellite constellations into the analytics part of the value chain. There is growing competition in the optical EO market, where constantly lowering barriers for entry leads to growing supply and falling prices. In order to recover its profit margins, data providers leverage their access to proprietary data for creating analytical products that compete with Kayrros' offering.

The "IT side" are new analytical platforms that use estimation models, sometimes complimenting them with a space data source. Most of the "IT side" entrants focus on the usability of their interfaces and integrations with client platforms and heavily rely on the marketing of ESG impact.

We believe that Kayrros has significant advantages versus both types of competition. The company's use of multiple data sources provides richer and more accurate analytics. The analytics served by Kayrros is near-real time and based on accurate scientific measurement, which is important for customers who do not want just "tick an ESG hox".

- <u>Financial Times</u>: Tech Champions 2022 "By analysing satellite images of the earth, Kayrros helps to spot climate and environmental trends, and to track energy sector activity, including pipeline leaks."
- The Guardian: "Satellite data analysed by the company Kayrros has identified 1,005 super-emitter events in 2022, of which 559 were from oil and gas fields, 105 from coalmines, and 340 from waste sites, such as landfills"
- <u>Satellite Evolution Group</u>: "The United Nations Environment Programme will use data supplied by environmental intelligence company Kayrros for its International Methane Emissions Observatory initiative, designed to dramatically reduce the concentration of methane in the atmosphere."
- <u>Brunswick Review</u>: "Satellite-based tracking of CO2 and methane emissions represent the dawn of a new era for business transparency"



## Closing Comments

The space industry has been around for more than 65 years and has come to play a critical role in the global economy. As technical innovation drives down the cost of satellite constellations and improves their capabilities, space infrastructure provides an efficient backbone for future sustainable economic growth, just as humanity struggles with falling productivity and environmental challenges. This drives the evergrowing demand for space-enabled products and services across traditional industries, such as agriculture, transportation, mining, energy, communication, and finance. As a result, we see a large industry at an inflection point, which maintains its growth momentum even in the current economic slowdown.

From an investment perspective, the combination of stability and predictability of a large industry with emerging industry growth rates presents the space industry as a unique opportunity with an asymmetric risk-return profile. There is also a portfolio diversification opportunity, as trends between space and general tech investments diverge, especially for growth-stage companies.

The NewSpace Capital portfolio companies demonstrate the growing demand for space-enabled products and services, and the value of an industry-focused growth-stage investor that can accelerate the development of these companies by bringing them commercial opportunities at a critical stage of their development.

To summarize, we reference McKinsey's *Space: The missing element of your strategy*: "Space is the next major domain. If space isn't part of your strategy, it should be – don't be left on the ground."

## LEGAL DISCLAIMER







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