NEWSPACE CAPITAL

Space Industry Review

Q2 2023

In the first half of 2023 the swift action of the central banks managed to pull the world away from the potential downward spiral of bank failures. That gives a hope for soft landing despite the slowing economy, sticky inflation and higher interest rate environment in the coming years. For these hopes to come true, we should change the investment paradigm prevailing in the era of 'cheap money' since 2008 financial crises, focusing on productive investment, rather than creation of 'paper wealth'.

In Q1 report we explored the connection between lack of productive investment, declining productivity, rising inflation and lukewarm growth. In May, McKinsey study *The Future of Wealth and Growth* highlighted how high inflation and economic downturn are underpinned by slowdown in the productivity. In the same month *Down to Earth Guide to Investing in Space* published by PWC showed that up to 18% of the UK economy is enabled by the space technology and its growth across multiple sectors depends on it.

History has shown that new technologies have the potential to reshape societies. Space has already changed the way we live and work - for example, it can optimize the route of our car in the morning traffic, and geolocate our pictures on social media. Mostly, however, space has remained behind the scenes, optimizing business processes and informing decision-making. We address this topic in our In Focus section.

Space has permeated our lives incrementally, through everything from the tech powering our smartphones to the applications that help us to order our food, watch the news and trade stocks. The demand for the space-enabled products and services across all industry sectors, from transportation, energy and communication, to agriculture and finance, drives the growth of the space economy. It is expected to expand at an annual rate of 11% to 2030, greatly outpacing the wider economy. Space impact on productivity could add trillions of dollars in value to the global economy though sustainable growth at a moment when the global economy grapples with the expenses associated with adapting to and mitigating climate change.

At NewSpace Capital we hope that this report can contributed to enhancing the understanding of the space industry and its capacity to add value to company operations, fuel economic growth and prosperity, as well as positively transform the livelihoods of people around the globe while protecting the nature around us. In Portfolio Review section we share how our portfolio companies are doing exactly that already.

Enjoy the read!

Bogdan Gogulan
CEO & Managing Partner

Highlights

Q2 investment in private space companies declined by 15% versus exceptionally strong previous quarter, the overall drop in H1 2023 versus previous year is 39% for the space sector and 50% for the wider market.

SPACE INDUSTRY SIZE
€400+ BILLION IN 2022

SPACE INDUSTRY GROWTH
14% CAGR SINCE 2019

SPACE INDUSTRY INVESTMENT GROWTH
-14% Q2 2023 VS. Q1 2023

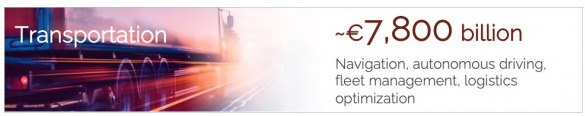
Space holds the key to solving the productivity problem – as well as creating a more sustainable world, and offering attractive investor returns on the way.

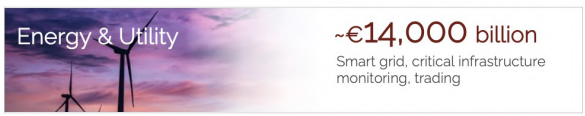
LAUNCH COST REDUCTION
>90% SINCE 2000

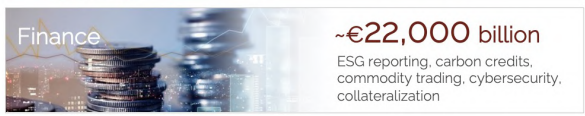
GROWTH OF LAUNCHED OBJECTS
>20X SINCE 2000

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.







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)

In Focus: Key to the World's Productivity Problem

Space industry demonstrates its catalyzing role to the productivity and, as a result, shows the potential for attractive investor returns.

Headlines centered on the space sector have historically focused on rockets, exploration and space tourism. However newsworthy, these distracted the general public and the investor community from the momentous transformation enabled by space in agriculture, transportation, mining, energy, communication and finance. As the impact of digital transformation on the efficiency of the global economy winds down, space provides an opportunity of returning to higher productivity growth. The last few quarters of data confirm that we are at the beginning of a space technology supercycle, which means a long-term growth trend in the industry and increased prominence.

The only way of boosting long-term growth, driving job creation, normalizing the global balance sheet, while mitigating the climate crisis is through higher investment in acceleration of productivity.

The productivity conundrum

For the decade following the 2008 financial crisis, the world was 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.

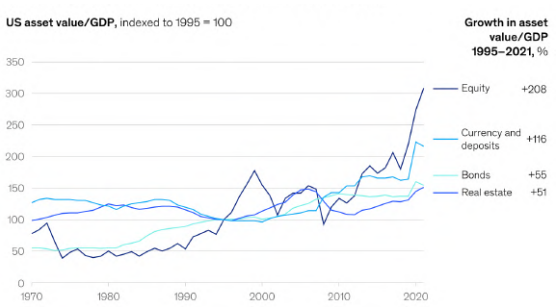
However, excess liquidity turns into inflation if the additional money supply does not turn into extra investments to increase productivity. And there has been too little productive investment. As McKinsey's recent study, Future of Wealth, shows, net investment in advanced economies has been declining as a share of GDP. In the 2010s, this ratio was roughly 50% lower than before the 2008 financial crisis in Europe, and 40% in the United States. Growth in capital stock per worker dropped to the lowest rate in the post-World War II period. The world went down the path of substituting productive investments with a search for quick speculative returns.

This lack of productive investment resulted in shortage of new efficiency-enhancing technologies just as the marginal productivity gains from digital transformation of the 1990's wound down. As a result, 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%, and among G7 countries it fell from 1.8% per year in 1980-2000 to 0.8% in 2000-2018. In the UK and some EU countries (for example, Spain and Italy) the TFP is now negative.

Deceleration of productivity translated into slower real GDP growth. For example, European and UK economies – with their poor productivity record – that at $16.2 trillion in 2008 were marginally larger than the US at $14.7 trillion are now almost one-third smaller than the US. Take the UK out of that equation and the EU is now 50% smaller, putting European hopes of 'strategic autonomy' some way off.

As all the extra liquidity failed to generate productive investment and translate into accelerated productivity and real growth, the global balance sheet (debt and asset prices) expanded much faster than GDP. As McKinsey points out, by 2021, asset price inflation created about $160 trillion in "paper wealth." Valuations of assets like equity and real estate grew faster than real economic output. And each $1 in net investment generated $1.90 in net new debt. In aggregate, the global balance sheet grew 1.3 times faster than GDP, quadrupling since 2000 to $1.6 quintillion in assets.

Graph 1: US Asset Value / GDP (1970 – 2021)



Source: McKinsey & Company

It was just a matter of time and a trigger for the world to fall into a bearhug of inflation. 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. The global economy now faces a real challenge of boosting long-term growth, driving job creation, normalizing the global balance sheet, while mitigating the climate crisis. McKinsey concludes that the only way of solving this is through higher investment in acceleration of productivity.

Efficiency of space infrastructure

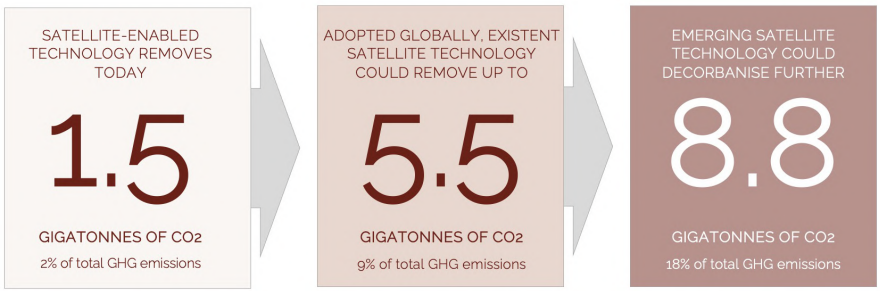
Though its name might suggest otherwise, the space sector is bound up with life on Earth. Some of its innovations are visible – wireless headphones, cushioned sneakers, and smartphone cameras began life in the space sector. Most of them are not. Space remains a largely unseen force – one that drives progress in an increasing number of ways. For this reason, investment and innovation in the space sector translates to progress in all the sectors it touches. Space has a catalyzing effect.

It can 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. In fact, in the UK, the space sector alone underpins ~18% of the economic activity.

We have the space sector in general, and satellites in particular, to thank for accurate location tracking – taken for granted as a basic part of modern navigation – which supports logistics, autonomous vehicles, 5G, and more.

We have space to thank for precision farming, which improves yields, irrigation management, and sustainable farming in the agricultural sector. (Some 40% of the world's population – three billion people – work in that sector, and the world's exploding population will become increasingly hard to feed.)

Space gives us the high-quality imagery essential for tracking climate events such as wildfires, floods and leaks of noxious greenhouse gas emissions, empowering companies and governments to take action to reduce global warming and improve the resilience of infrastructure. And the space ecosystem is why we have unjammable, undetectable, undisruptable laser telecommunications capable of transmitting massive amounts of data, enhancing global connectivity. Innovation in space also has positive implications in medicine, computing, the miniaturization of consumer goods, materials, and many more essential sectors.



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. Unlike terrestrial infrastructure, space tech does not require wired infrastructure, which has a large carbon footprint, requires land, and is costly to install, update and maintain. And in what Antonio Guterres has called 'the era of global boiling', productivity has to be looked at in the light of the climate challenge.

Smart grids and upgrades to infrastructure, which will be necessary to incorporate new forms of renewable energy, are underpinned by space tech. ESG reporting and carbon credits are made more reliable by space tech. Measuring the environmental impact of heavy industry, such as mining, and assessing the quantity of emissions put out by complex supply chains are made possible by space tech. It is not too bold to say that countries' net-zero ambitions and the fulfilment of the Methane Pledge depend on the continued growth of the space sector. Already, sluggish growth is posing a threat to the ability of countries to keep to their climate commitments. Space can help us solve the productivity problem now and well into the future.

A 2022 Globant study estimates that satellite-enabled technologies from three sectors alone (agriculture, transportation and energy) remove 1.5bn gigatonnes of CO2 – the annual equivalent to all activities in the UK, France and Germany combined. This could be ~6x more today if the technology was more widely adopted. If satellite technologies are fully deployed across agriculture, transportation and energy sectors before 2030 and emerging satellite technologies are fully adopted before 2040, we could reach Net Zero as early as 2040 – 10 years early.

The impact of the space industry, then, is not limited to one technology or sector. It has many 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 impact of space explains why, for example, in the UK, 64% of corporate investment into the space sector comes from non-aerospace and defense companies.

Growth in the space sector

The good news is that the space ecosystem is experiencing rapid growth even in the current slowdown. This can be seen in just one standard of measurement: the year-on-year increase in the speed of communications and connectivity between ground and space. With every passing year, the data gathered by satellites and made usable on Earth gets closer to real time. This year the bandwidth reached 48 terabytes per second; in 2021, it was 2.7 terabytes. That's an increase of 1677.78%. It isn't surprising that Morgan Stanley predicts that the roughly $450 billion global space industry could hit $1 trillion by 2040.

Owing to the growing recognition of the importance of space for productivity, both private and public funding is now starting to flow liberally into the sector, freeing its thinkers and doers to undertake research and development, 'fail fast', and scale. These investments are not concentrated in the US. In fact, Europe overtook the US this year in investment for the first time ever, in what signals a clear intention on the part of European governments and investors to give the sector a boost. And though the US will surely move back in front of Europe in the years to come, it is indisputable now that Europe is a major player in the new space race. After India's successful lunar landing, as well as Japan's launch of its own Moon mission, worldwide interest in the space sector will continue to grow, which will have positive effects for productivity everywhere.

In the UK, the space sector alone underpins ~18% of the economic activity.

The world's new back office

A key takeaway from this is that space is establishing itself as the new 'back office' of the global economy – in effect, making every company a space company. And that means that we all have good reason for wanting the sector to flourish. For that to happen, however, it needs investment. It is investment that will allow existing and emerging space technologies to make themselves felt.

From telecommunications to transportation, from agriculture to energy, from mining to finance, space can have – as it is already having – a major impact. Space holds the key to solving the productivity problem – as well as creating a more sustainable world, and offering attractive investor returns on the way.

Economic Review

In Q2 the global economy demonstrated a lukewarm growth. Industrial output declined as in the face of higher interest rates consumers switch from goods usually bought on credit to services. Monetary tightening also affected investments as stickier than expected inflation, falling exports and geopolitical concerns affect companies' longer-term plans. In May, on the backdrop of challenging economic environment, PWC and UK Space Agency published report Expanding Frontiers. The Down to Earth Guide to Investing in Space that projects future growth of the space industry of up to 11% per annum. This is broadly in line with the European Space Policy Institute growth numbers of 14% CAGR since 2019 for the European space industry. Both confirm that space industry is growing well-above wider economy, as commercial companies and governments are turning to the space-enabled products and services to address the efficiency of their core activities, from national security and energy transition, to agriculture and transportation.

PWC forecasts global space industry growth rate of up to 11% per annum, despite the challenging economic environment and well above the wider market growth rates.

	GLOBAL	USA	EU	UK
GROWTH	Economic activity moderated in the second quarter of 2023. Global growth is estimated to have slowed from 1% in Q1 to 0.5% in Q2. Growth was driven mainly by economic activity in India (6.1%), China (5.2%) and other developing economies (4%), as well as positive change in the US.	The output increased by 0.5% both in Q1 and Q2 on the back of robust consumption and positive investment, spurred by subsidies under the CHIPS and Science Act and the Inflation Reduction Act.	Activity in the EU was subdued in the H1 2023 with continued weakness in industry and fading momentum in services. Despite declining energy prices and rising wages, high inflation, weak demand and higher interest rates put a lid on growth. Q2 seasonally adjusted growth was 0.3% QoQ and 1.1% YoY.	GDP grew by 0.1% in Q1 and 0.2% in Q2. Britain's economy has fared better than expected, defying forecasts of a recession, but it is the slowest of G7 nations to recover from coronavirus downturn. It is also affected by falling exports as EU clients switch to local suppliers to avoid post-Brexit trade complications.
INFLATION	The strong action by authorities to contain turbulence in US and Swiss banking reduced the risks of financial sector turmoil. In the face of stickier inflation Central Banks around the world continued to raise rates more than anticipated. The IMF now predicts that global inflation is expected to fall from 8.7% in 2022 to 6.8% in 2023 and 5.2% in 2024, if lower commodity prices and softening global goods demand persist.	The Fed has delivered 500 basis points worth of rate hikes since March 2022, when it embarked on its fastest policy tightening cycle in more than 40 years. The Q1 upbeat data suggested that Federal Reserve will likely have to continue raising interest rates to slow demand, so additional rate hikes were warranted this year, following 0.25% rate hike in May.	The euro area annual inflation rate was 5.5% in June 2023, down from 6.1% in May and 7% in April. ECB says, the rate of inflation, despite its recent decline, will "stay above target for an extended period". Energy prices have dropped sharply in recent months. But prices for food and services are still rising strongly. In light of the ongoing inflation pressures, the ECB decided to raise the three key interest rates both in May and June.	In Q2 inflation averaged 8.4%. In June it was 7.9% higher than a year ago. Inflation is expected to continue to fall, to an average of 6.9% in 2023 Q3 and 4.9% in Q4. The Bank of England raised rates by 0.25% in May and 0.5% in June, to the aggregate 5%. It expects inflation to meet the 2% target by early 2025.
INDUSTRIAL OUTPUT	Sluggish global demand deepened the decline in manufacturing activity across Europe and the United States and remained a major challenge for many of Asia's big exporters.	Manufacturing, which accounts for 11.1% of the US economy, has been hit by higher interest rates. Spending is shifting to services - away from goods, which are typically bought on credit. Production decreased 0.3% on a year-on-year basis in June. However, it rebounded at a 1.5% annualized rate in the Q2 after shrinking at a 0.2% pace in Q1.	Manufacturing firms still have a large number of orders to work off, but the outlook is worsening for them. Purchasing managers' indexes (PMIs) for the euro zone moved further below breakeven despite factories cutting prices for the first time since September 2020.	Output contracted for the fourth successive month in June, albeit at a slower pace. Decrease in new order intakes for the third successive month, with the rate of contraction accelerating to its fastest since January. The UK PMI fell to a six-month low of 46.5 in June. The PMI has signaled contraction in each of the past 11 months.
EMPLOYMENT		The the world's largest economy has proved surprisingly resilient in the face of higher borrowing costs. Employers are adding a strong 278,000 jobs a month so far this year. With unemployment rate in June at 3.6%, still near the trough of 3.4%, and continued employment growth, the labor market remains tight.	In the EU and the euro area, the unemployment rate remained at record lows of 5.9% and 6.4%, respectively, leading to continued growth in wages.	The unemployment rate in the UK increased to 4.2% in the three months to June 2023, the highest since late-2021 and 4% above the previous period. At the same time wages rose 8.5% above the inflation.

Investment Review

In the face of a continued growth in cost of capital, tightening liquidity and lukewarm economic prospects, the funding to the VC and growth capital-backed enterprises almost halved since Q2 last year. This makes fundraising for both funds and companies much harder, longer and costlier, as many capital allocators hold back their fire power, reduce private equity allocation and shift money to fixed income products.

However, it is not the amount that matters. Focus and disciplined execution can go a long way even in the resource-strapped times. The scarcity of liquidity forces to prioritize most promising investments and rewards companies with leaner operations. While the "fat years" gave a way to the slew of non-productive investment, the growing investment in AI in the current environment indicates that investors might be finally turning to investments in technologies that can boost productivity.

Similarly, in the space market, investors shift from the speculative projects with long-term horizons, limited addressable markets and marginal added value, towards applications that deliver value to the industries across global economy. NewSpace Capital portfolio companies demonstrate, space investments can significantly increase the impact of financial capital by providing cheaper, more flexible and efficient infrastructure with a catalytic effect across multitude of industries.

The fact that the role of space as a new "back office" of the global economy goes far beyond the usual defense and aerospace applications can be demonstrated by the fact that in the UK (according to the UK Space Agency) up to 64% of corporate investment into the space sector comes from non-aerospace and defense companies – with increasing interest across technology, telecommunications, media, financial and automotive sectors among others.

As companies look to boost the productivity of their core activities and, increasingly turn to space for that, both demand for space-enabled products and investment in the space ecosystem continue to outperform wider market. While in Q2 investment in private space companies declined by 15% versus exceptionally strong previous quarter, the overall drop in H1 2023 versus previous year is 39% for the space sector and 50% for the wider market.

In the UK up to 64% of corporate investment into the space sector comes from non-aerospace and defense companies – with interests from technology, telecommunications, media, financial and automotive sectors

Global

In Q2 2023 global funding declined 15% quarter over quarter to the total of $68.4 billion.

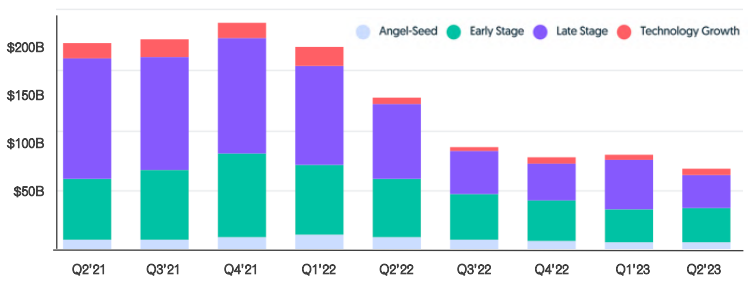
Year over year funding dived 46%. This continues the downward trend over the last five quarters. However, the negative growth in Q2 was slightly slower than in Q1 of the current year.

This decline has been led by the later stage venture rounds, while growth stage investment grew 26% quarter over quarter, and 9% year over year.

High volume of growth stage funding on the one hand indicates that companies are looking to raise more capital as the IPO market shut-down continues. On the other hand it demonstrates that in the current environment investors feel more comfortable with more established companies that can demonstrate revenue growth, EBIT improvement and prospects of faster exit.

The sectors that remained attractive to the investors are AI, climate and sustainability technologies.

Graph 6: Global funding volume (Q2'21 – Q2'23), $ billion



Source: Crunchbase

North America

The North American companies attracted $31.8 billion of funding in the Q2 of this year. This is not only 50% decline year on year, but also 31% decline on the first quarter that previously seemed to have paused the downward rally.

The funding fell across all stages from seed to growth capital rounds. As a result, Q2 is the lowest quarterly total in more than three years.

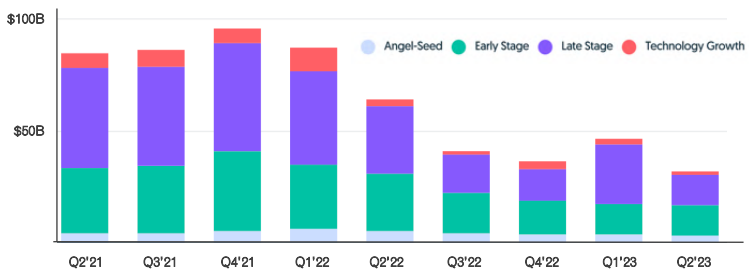
There is also decline in the share of North American companies in global funding from 50% a year ago to 46% currently.

In addition to putting less money to work, investors completed the lowest number of deals in two years.

The funding has been spread across number of industries, from drones to health care technologies, with AI companies responsible for some of the larger rounds.

In summary, the total funding in Q2 is only about one-third of what it was at the peak in Q4 of 2021 and market has paused in the face of tighter money and closed IPO market.

Graph 9: N America funding volume (Q2'21 – Q2'23), $ billion



Source: Crunchbase

Europe & UK

Companies in Europe and the UK raised a total of $12.4 billion in Q2 of this year. Similarly to the North America, it represents a 50% decline from the previous year.

Quarter on quarter, the numbers are flat. However, this is not due to slower downturn trend in Europe as Q2 numbers in isolation might suggest. Deeper dive in the North America is explained by the strong Q1 funding on the back of mega raises by Stripe and OpenAI.

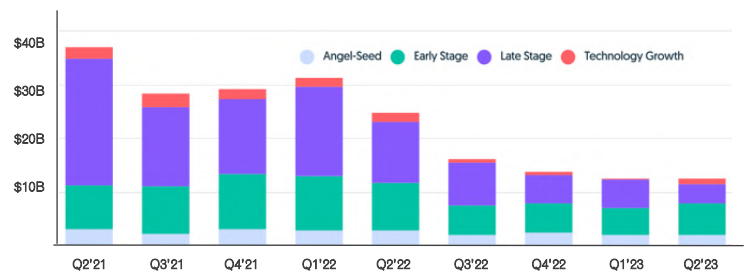
The overall trend on both sides of Atlantic is similar – companies now raise half of what they were raising a year ago.

Europe received 18% of global funding, which is 1% less than previous year. And as private investors slowdown their allocations, government-backed entities like Bpifrance and European Innovation Council maintained their top dealmaker status.

The UK maintained its first spot with the largest share of funding, with Germany and France following in that order.

Over 12% of investment, or a total of $1.5 billion went to AI companies, highlighting developed world focus on productivity applications.

Graph 9: Europe funding volume (Q2'21 – Q2'23), $ billion



Source: Crunchbase

Space industry

Investment in space companies globally totaled €1.2 billion in Q2. This represents an estimated 14% decline quarter on quarter and 44% decline year on year. Therefore, after stronger funding than the general market in 2022 and much stronger Q1 of this year, the space industry funding turned south, mirroring the overall numbers of -15% QoQ and -46% YoY in the second quarter. However, as Q2 investment in private space companies declined by 15% versus exceptionally strong previous quarter, the overall drop in H1 2023 versus previous year is 39% for the space sector and 50% for the wider market.

The declining availability of capital brought a number of positive changes. Firstly, the focus of investments moved from the overinvested and overpriced launch and infrastructure deals, towards supply chain and, increasingly, applications. Investors are attracted to less capital-intensive technologies that can deliver value across the industries immediately.

Secondly, the valuations have gone down dramatically, reflecting higher cost of capital, but also a reset in the expectations of the companies away from the heydays of 2021. The average deal size dropped by over 50%, with the US deals traditionally twice the size of the European ones.

As expected, US returned to the top spot in terms of raised capital across all stages, after Europe taking the lead in Q1 on the back of larger infrastructure investments made to ensure that the continent keeps up with the pace of the global space race.

Focus on bottom line performance led a number of companies to reduce their staff levels, address their business models and product mix. The companies that took these steps timely are likely to emerge in a stronger competitive position when the economy picks up.

As the space industry continues to grow well above the wider economy and companies focus on fundamentals, investors face an interesting opportunity to invest at lower valuations in more disciplined and focused businesses.

As Q2 investment in private space companies declined by 15% versus exceptionally strong previous quarter, the overall drop in H1 2023 versus previous year is 39% for the space sector and 50% for the wider market.

Portfolio Review

ICEYE

The Finnish Earth Observation company operates the world's largest constellation of high-resolution Synthetic Aperture Radar (SAR) satellites. ICEYE's technology provides high-resolution, low-latency images of the Earth surface even at night and through the clouds. Company's data solves a fundamental challenge of accessing reliable and consistent data globally. ICEYE puts a sensitive, but relatively small SAR sensor on a satellite platform that could operate from the LEO orbit, 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 technology costs. Company's product portfolio includes data, analytics and missions. It serves the needs of sovereign and commercial clients across insurance, maritime, critical infrastructure, national security, disaster recovery, agriculture and finance industries. NewSpace Capital participated in the company's C round.

Q2 was a strong and a busy one for ICEYE. The company introduced its new, Gen3, generation of satellites, as well as a new product, Spot Fine. The Gen3 includes an advanced radar that enables major improvements in image quality, faster downlink speeds to better support agile imagery collections and better integration with ICEYE's global network of ground stations. ICEYE has now deployed 27 satellites since 2018, including both commercially available and dedicated customer missions. The company plans to launch four additional SAR satellites in 2023.

Spot Fine mode represents a significant step forward for SAR imagery. With Spot Fine mode, ICEYE satellites can now detect smaller features on the ground, which provides analysts with higher confidence in conclusions drawn from SAR imagery. With Spot Fine, the shape, structure, and even changes in these objects and features can be more easily identified and characterized.

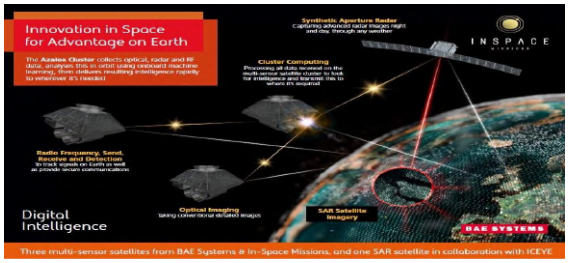
ICEYE also announced in Q2 its collaboration with BAE Systems on the British company's first multi-sensor satellite cluster known as Azalea™ - to be launched into low Earth orbit in 2024 to deliver high-quality information and intelligence in real time from space to military customers. What's more, combining SAR with other satellite imaging technologies has the potential to provide even more advanced, actionable intelligence that is essential for rapidly evolving defense operations. ICEYE's collaboration with BAE Systems is a prime example of next-level space-based intelligence.

ICEYE's Four New Generation 3 Satellites Launch with SpaceX's Transporter-8, Introducing High-Resolution Spot Fine Image Product

ICEYE has launched its new Generation 3 ("Gen3") satellites with a ground range resolution of 50 cm and introduced a new data product called Spot Fine. These advancements in technology will enhance ICEYE's SAR data quality, enabling rapid monitoring of small changes on land and at sea, strengthening their leadership in SAR remote sensing.

BAE Systems announces low earth orbit cluster for secure digital military intelligence

BAE Systems is collaborating with ICEYE to integrate their expertise in sensor and SAR technology, offering high-resolution imagery for persistent monitoring of Earth's surface to instant physical changes and ensure national security, including identifying hostile movements and aiding during natural disasters. The programme supports the UK Government's Defence Space Strategy, helping protect and defend UK interests.



Bayanat, Yahsat and ICEYE Announce an Ambitious Program to Broaden Commercial Opportunities across the UAE Space-Ecosystem.

The program represents a foundational step in expanding the UAE's space ecosystem, encompassing the growth of domestic satellite manufacturing capabilities. Its impact extends to bolstering national capabilities for space exploration, enabling sovereign SAR data acquisition for enhanced data privacy.

CAILABS

Cailabs is a French company that provides photonics solutions for space and terrestrial applications. Company's technology of "shaping light" with certain predefined qualities commands multiple patent families and has found numerous applications across medical devices, industrial applications, terrestrial (fiber networks) and space communication. In space, Cailabs is solving a fundamental challenge for the €30 billion satellite communication industry, where the growth of ground-to-space communication is outpacing the growth of terrestrial data exchange, while the bandwidth capacity is limited by the finite physical limits of available radio frequencies. Cailabs solved the problem of atmospheric disturbance, enabling the use of light for data transfer between Earth and space. Ground stations produced by the company allow transfer of data to the satellites and back at a higher data rate and bandwidth, while providing higher security and stability of connection. NewSpace Capital participated in the C round and joined the Board of the company.

The second quarter was historical for Cailabs as the company in collaboration with the DLR (German Aerospace Center) achieved groundbreaking 10 Gbps ground-to-ground link over 10 km continuous wave link. Building upon this technological breakthrough, Cailabs has successfully commercialized advanced optical ground stations tailored for space-to-ground laser communications.

There has been an explosive demand for ultra-high throughput, as well as a critical need for secure, unjammable, and stealthy communications for certain applications. In this context, free-space laser communications have emerged as a reliable solution capable of fulfilling these growing requirements. With bandwidth surpassing 10 Gbps, laser communications overcome the limitations of conventional systems, which typically operate in the range of a few Gbps. Moreover, their narrow and difficult-to-detect beam enables more secure communications, offering enhanced stealth and resistance to jamming.

The successful test paves the way to the space-to-ground communication mission in 2024 that Cailabs announced in partnership with Astrolight. Considering the magnitude of the impact that company is creating, it is no surprise that Cailabs was included in the FrenchTech2030 program.

Astrolight and Cailabs to demonstrate Space-to-Earth optical communications

Cailabs and Astrolight collaborate on a satellite mission, deploying Astrolight's ATLAS-1 laser communication terminal to establish high-speed laser communication between space and Earth, aiming to advance technology readiness and enable future commercialization of their respective products, paving the way for enhanced data downlink solutions.

Cailabs, winner of the first edition of the FrenchTech2030 program!

Cailabs is selected for the French Tech 2030 program which supports emerging players in disruptive innovation across various economic objectives and critical technologies for French sovereignty. Cailabs is one of the 8% of start-ups for new frontiers, particularly with our solutions for deploying free-space optical communications.

The Rise Of Space-To-Ground Optical Comms — Accelerating Adoption

Cailabs achieved groundbreaking milestones in laser communication, including a 10 Gbps ground-to-ground link over 1 km and a 10 km continuous wave link in collaboration with the DLR (German Aerospace Center), leading to the successful commercialization of advanced optical ground stations for space-to-ground laser communications, mitigating atmospheric turbulence and propelling the optical communications market to enhance data transfer between space and ground.

Kayrros

Kayrros is a Paris based company which integrates satellite imagery, unconventional data and market information on its leading global asset observation platform. Kayrros' delivers decision-making solutions while empowering stakeholders to reduce greenhouse gas emissions and navigate climate and energy-transition risks. Kayrros is a global leader in providing analysis with a unique level of accuracy and insight by combining data from different satellite constellations that can greatly vary in format, temporal and spatial resolution. Kayrros' proprietary database of industrial assets across the globe ensures there is a link between space data and specific market players, both companies and countries. The company enables an unprecedented level of transparency and accountability. In 2023, Kayrros was named Time100 world' most influential companies. It was also included in FrenchTech 2030 program and Fortune "Change the World" list. Kayrros clients include United Nations and IEA. NewSpace Capital participated in the company's C round.

In Q2 the impact that Kayrros creates across the world and at the global level, was recognized by the Time magazine, that named the company as one of Time100 Most Influential Companies in 2023. Kayrros was also included in the FrenchTech2030 program

In March, the European Space Agency (ESA) launched WORLD EMISSION project that aims to provide an enhanced global emission monitoring service by developing top down emissions estimates based on satellite data. These estimates will be compared with bottom-up inventories to define the real state of affairs on greenhouse gas emissions. Kayrros, together with a number of scientific partners is a key contributor to this critical project.

During Q1 Kayrros released a study on the world's super-emitters, with UK, Russia and Turkmenistan responsible for the largest number from fossil fuel facilities. The study revealed over more than 1,000 "super-emitter" sites and 55 "methane bombs" - fossil fuel extraction sites where gas leaks alone release levels of methane equivalent to 30 years of all US greenhouse gas emissions. The findings of the Kayrros study led to the resignation of the oil minister in Turkmenistan and inter-governmental consultations between the US and Turkmenistan to curb the country's methane leakages (just one of which was pumping out methane at the hourly rate equivalent of 67m cars, or the hourly national emissions of France).

The Greenhouse Gas And Atmospheric Pollutants Emission Inventory Platform Demonstrator 'World Emission' Is Now Available

Kayrros collaborates with esteemed research institutes and the European Space Agency to contribute to the development of a state-of-the-art satellite-based inventory service called the "World Emission" project initiated by the European Space Agency.

Time100 Most Influential Companies 2023

Kayrros is recognized TIME100 Companies for its near real-time Earth-monitoring and analysis tools, helping governments and businesses get serious about climate changes.

Bird's Eye View

Kayrros, a global platform utilizing satellite imagery and advanced analysis, provides precise measurements of deforestation, methane emissions, and natural resource movements. Co-founder and CEO Antoine Rostand emphasizes the transformative potential of this technology in enhancing transparency regarding climate change and its interconnections with energy and geopolitics, aiming to guide decision-makers towards a more informed energy transition.

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