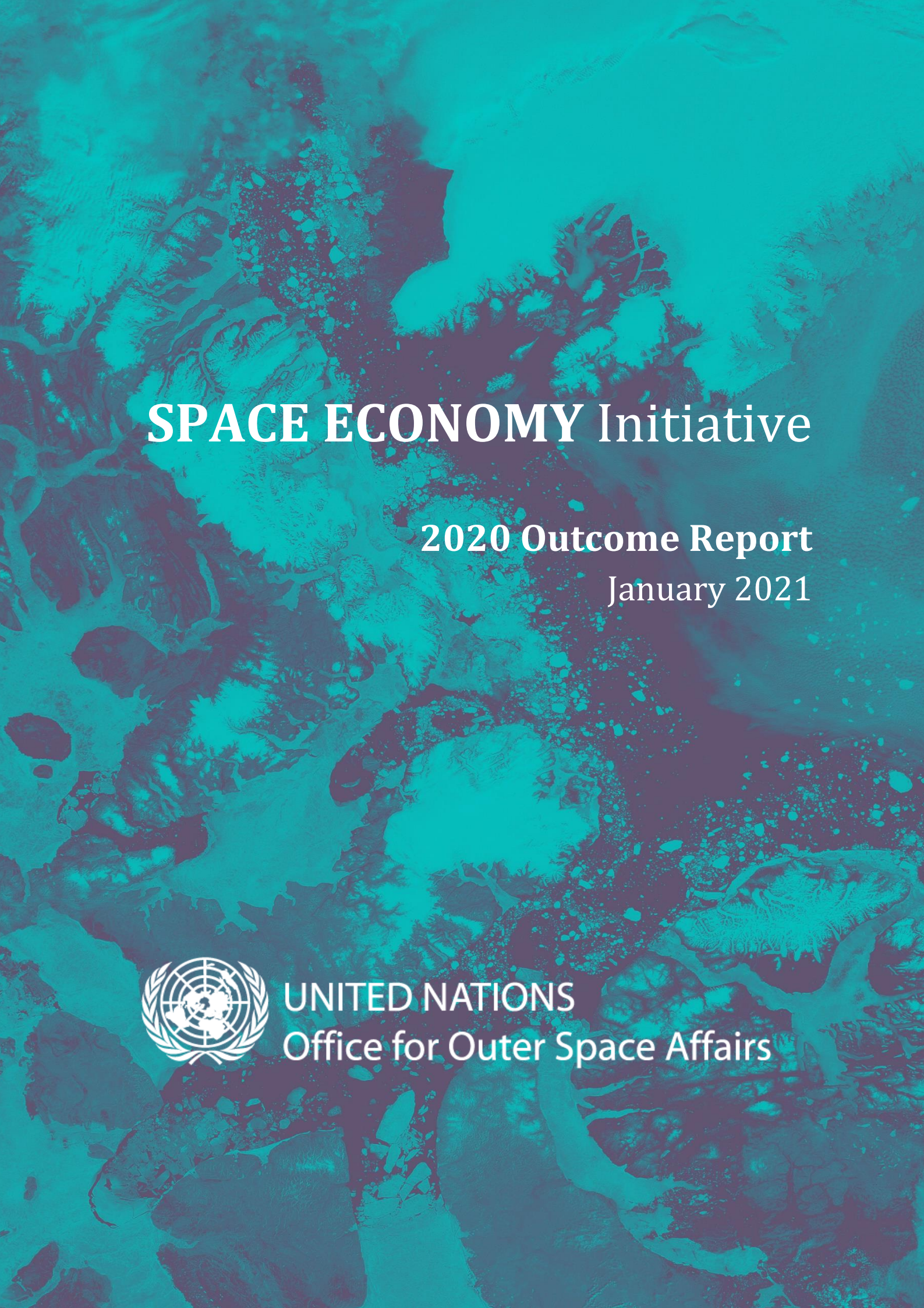

SPACE ECONOMY Initiative

2020 Outcome Report

January 2021

UNITED NATIONS
Office for Outer Space Affairs

CONTENTS

INTRODUCTION

2020 saw the launch of the **Space Economy Initiative, a new UN platform** under the United Nations Office of Outer Space Affairs (UNOOSA) tasked to bring emerging and non-space faring countries together to strengthen their space economies. The Initiative leverages in-house expertise and peer-to-peer exchange with established space-faring nations to share insights, case studies, and good practices on how to grow strong, dynamic, and sustainable space economies.

As a capacity-building service, the Space Economy Initiative is tailored to support public and private space sector stakeholders. By providing a global platform for practitioners from established and emerging space economies at the UN level, the Space Economy Initiative is the first of its kind.

The **key objectives** of the Initiative are:

1. Increase global awareness and understanding of how the space sector growth can reinforce socio-economic development, in line with the 2030 Agenda for Sustainable Development
2. Support countries scale up this growth to deliver strong, responsible and sustainable national space economies
3. Enhance cooperation across the global space sector, including public and private stakeholders, to foster inclusive and sustainable growth of the global space economy

As the Space Economy Initiative continues to expand, the focus is shifting to three core services: awareness-raising public events, capacity-building for Member States, and e-learning services.

From June to September 2020, UNOOSA started the first space economy awareness-raising activities by organizing a series of seven virtual events. These have been fundamental to bringing established and emerging space economy practitioners together in an equal and inclusive setting. Through the series, the subject of 'space economy' was broken down into core elements: building public support for space activities; how to scale up; accessing finance; international cooperation; the nexus between government, industry, academia; and space economy in the COVID-19 context.

The present report provides an overview of all Space Economy 2020 virtual events, based around the key outcomes of this opening series of activities, which respectively focused on:

- **Introducing the Space Economy**, 15 June 2020
- **Making the Case for Space:** Baselines for building support for space economic growth, 6 June 2020
- **How to Scale-Up:** From startup to established, 24 July 2020
- **Access to Finance:** Building a sustainable financial system for space economies, 5 August 2020
- **International Cooperation:** International normative frameworks in domestic contexts, responsible and sustainable growth, 24 August 2020
- **Innovation and Growth:** Government, Industry and Academia working together to grow your space economy, 9 September 2020
- **Building Back Better:** How a healthy space economy can support post-COVID 19 recoveries, 23 September 2020

All recordings and follow-up Space Economy Insight Reports are available on ooosa.org.

EXPERTS

Across the 2020 activities, UNOOSA had the pleasure of engaging with a wide variety of national space economy experts. It was an honour to have the opportunity to engage and share insights from such a comprehensive representation of the global space sector.

The contributions of these distinguished speakers and space economy experts are recognized below:

Space Agencies

- *Eduina Teodoro,* ***Angolan National Space Programme Management Office***
- *Abbas L. Mammadov,* ***Azercosmos***
- *Damrongrit Niammuad,* ***Geo-Informatics and Space Technology Development Agency of Thailand***
- *Rokhis Khomarudin,* ***Indonesian National Institute of Aeronautics and Space***
- *Patrick Besha,* ***National Aeronautics and Space Administration***
- *Naser Al Rashedi,* ***United Arab Emirates Space Agency***

Governments and Institutions

- *Gavin McCosker,* ***Australian Financial Security Authority***
- *Jolanda van Eijndthoven,* ***European Commission***
- *Shiva Dustdar,* ***European Investment Bank***
- *Kai-Uwe Schrogl,* ***German Federal Ministry for Economic Affairs and Energy***
- *Ana Maricela Avila Becerril,* ***Ministry of Foreign Affairs of Costa Rica***
- *Nathalie Ricard,* ***UNOOSA***
- *Tina Highfill,* ***U.S. Bureau of Economic Analysis***

Private Sector

- *Chris Blackerby,* ***Astroscale***
- *Carissa Christensen,* ***Bryce Space and Technology***
- *Ana Cristina Rosa Galhego,* ***Dipteron***
- *Sylvia Makario,* ***Hepta Analytics***
- *Michel Pouchet,* ***Lift Me Off***
- *Victor Stephanopoli,* ***MzansiSat***
- *Luigi Scatteia,* ***PricewaterhouseCoopers***
- *Emeline Paat-Dahlstrom & Eric Dahlstrom,* ***SpaceBase***
- *Temidayo Oniosun,* ***Space in Africa***
- *Kasia Clatworthy,* ***Surrey Satellite Technology***

Academia and Civil Society

- *Michael Wang,* ***China Space Foundation***
- *Andrea Sommariva & Mattia Pianorsi,* ***SDA Bocconi School of Management***
- *Gaetan Petit,* ***Space for Impact Initiative***

INTRODUCING SPACE ECONOMY

In the first Space Economy virtual event, experts from the UAE and Thai space agencies, SDA Bocconi School of Management, PricewaterhouseCoopers, UNOOSA, and Astroscale explored the space economy from different perspectives and provided examples of what this concept means.

Space Economy was defined as the full range of activities and the use of resources that create value and benefits to human beings in the course of exploring, researching, understanding, managing, and utilising space (OECD, 2014). TV and communications, satellite and launch manufacturing, Earth Observation, ground equipment are some core elements of the space sector, but the space economy goes beyond that. "Space economy" does not only cover this sector, but it is a broader umbrella term that includes all industries linked to it. For instance, it also includes services and products in other fields connected to satellite technology and services such as agriculture, environmental protection, natural resources management, and transportation.

The Space Foundation (2019) reported global space activity to be $414.8 billion in 2018[1], while the Satellite Industry Association report produced by Bryce Space and Technology (2020) estimated a value of $366 billion in 2019[2]. There is not yet a single approach to measure the value of the space economy, but the magnitude of this sector has clearly increased considerably over the past ten years.

Satellite telecommunications was one of the first markets of the space economy. While in the 1990s, the satellite industry aimed to provide internet access, efforts were not successful until the global demand for such a service emerged almost worldwide, creating the need for satellite constellations.

Over time, barriers to enter space have decreased. Public-private partnerships and the entry of private actors into the space sector were instrumental. By having access to new funding, companies boosted innovation and developed new technology. Satellites have become smaller and launch costs have reduced substantially. These elements were crucial for the sector growth.

Lower costs have thus allowed more countries to enter space and develop their space economies. Globally, more than 80 countries have launched a satellite into orbit, compared to only 15 in the early 1980s. National space economies are different, building on each country's diverse strengths and priorities, with a value that depends on the development level of the sector and the degree of investments in the countries.

For instance, research conducted by Thailand shows that the economic and societal impact of space on the country would be around $1B (USD). The Thai space industry is more oriented towards the downstream space economy than an upstream or manufacturing-based economy. To grow the space economy, the Thai government has focused efforts on policy and standards-setting, R&D, and international collaborations. Such a strategy has been complemented by a private-sector emphasis that tends to cover aerospace manufacturing, aerospace applications such as EO and GNSS, and development processes such as training and standardization. The public and private sector of the space economy are collaborating to drive forward a dynamic and healthy space economy.

The United Arab Emirates (UAE) has also stepped up its efforts to become one of the most advanced countries in the field of space. In 2019, they launched the National Space Strategy 2030,

[1] Space Foundation Annual Report, 2019
[2] State of the Satellite Industry Report, Satellite Industry Association, Bryce Space and Technology, 2020

a space strategy that includes key components such as the UAE Space Agency, an astronaut program, three universities providing space education and specialized research centres, and 52 entities working on the space economy. One of their goals is to inspire exploration missions and, in 2020, the UAE launched its first historic mission to Mars.

Many other countries are focusing on growing their space economies and investing more in the space sector. PwC has identified some common elements for creating a prosperous space economy. First, a well-established national space strategy and a clear road-map to support its implementation over the long-term. Secondly, a governance framework of policies, regulations, and legislation that is fit for purpose to support growth. This is usually reinforced by a strong and open relationship between government and industry. Next, awareness-raising and outreach on the space economy and the value represented by a healthy space sector. Finally, enhancing the capacity to engage in space economic activities through capacity building and involving stakeholders is crucial.

All these building blocks are fundamental to creating fully functioning space economies. The societal and economic impacts of space are vast and far-reaching for many space fields. Countries need to carefully consider and invest resources in sustainable space activities to ensure that they can fully enjoy the benefits space brings to the wider socio-economic domain.

Key takeaways and observations

- The space economy goes beyond an exclusive focus on technology and science
- A clear space strategy and implementation plan, adequate legislation and policies, partnerships between public and private sector, awareness-raising and capacity building are key for a strong space economy

MAKING THE CASE FOR SPACE

BASELINES FOR BUILDING SUPPORT FOR SPACE ECONOMIC GROWTH

It is important to show the potential of space and to understand its value. Representatives from the U.S. Bureau of Economic Analysis, Azercosmos, and Space in Africa focused on these matters.

To measure the value of a space economy, it is essential to identifying solid economic baselines. Defining where the impact of space economic growth starts and stops is not an easy task. Examples of economic-led initiatives demonstrated the importance of engaging with stakeholders both within and beyond the space sector. Such engagement is a crucial part of building the economic baselines required to understand in quantitative terms the role space is playing in a national economy. Which commodities are included? What non-space activities need to be considered? While one can imagine that many commodities and non-space activities should be included in measuring the space economy, there is no clear answer. For many countries, this is simply a new era of economic analysis, and the U.S. Bureau of Economic Analysis is one of the active actors in the area. In this context, methodologies take time to define, design, and implement. Nevertheless, this work is a required element for evidence-based policymaking on space economy matters over the long-term.

While efforts to measure the space economy continue, public support for the space sector remains key. To illustrate the power of space technology, the role of education and public engagement, especially with younger generations, is considered essential. For instance, space-themed competitions, festivals, and hackathons are being used by Azercosmos to engage with young audiences. Likewise, the role space has in a country's socio-economic development is an important narrative that can help build support from the general public. Sustaining the narrative about the importance of space is necessary for securing the political interest and investment to take space economies to the next level and develop them quickly, with many economic and civic positive spillovers from space activities.

These elements are applicable worldwide. Measuring and creating support for the space economy is important everywhere alike. Still, an increasing interest in this sector comes from the African continent, as indicated by Space in Africa. An in-depth look at this geographic area shows that its space sector has been growing substantially. Many African space economies have a legacy of focusing on downstream applications, particularly satellite communications and television (around 75% of current space economy revenue). However, there are signs that this landscape is changing, with further investment in downstream activities, including GNSS and earth observation. This is true not just for African countries with well-established space economies but also for countries looking to scale up their sectors; estimates point to nearly 20 African countries operating satellites by 2024 as part of a rapidly expanding economic sector. While growing space economies across the continent are becoming more important, steps are required to secure public support and investment to maximize gains across the space economy and beyond into other sectors.

Key takeaways and observations

- Build economic baselines to understand the quantitative value in an economy
- Public support and engagement are key to grow space economies
- Space economies are rapidly expanding in African countries

HOW TO SCALE UP

FROM STARTUP TO ESTABLISHED

An increasing number of startups are entering the space sector. Yet, many difficulties exist in becoming a successful space company. How can space startups grow, and what opportunities are available for them? Representatives from startups Dipteron and MzansiSat, the European Commission, and the Space4Impact Initiative dived deep into this topic.

The experience of the two startups shows various elements that require consideration when establishing a space company. What are the key basic entry points to setting up a space company? Assess market opportunities; study legal challenges; develop an idea, build a team, prepare a business model, and plan are crucial starting elements. Having a clear vision about what the company wants to offer is a pre-condition for each startup. It is important to find a niche and focus on the application of the space technology, not just on the space technology itself, but to ensure that potential customers fully understand what the company is offering them and the value of the product. Marketing is key. Providing visibility to the company, setting up partnerships, and creating a network are all very useful elements to help startups take off. Lastly, secure funding is necessary to run a company, and such an element often represents the greatest challenge that space entities face.

Many opportunities to scale up exist. Entrepreneurship initiatives, incubation programmes, grants, startup loans, mentorships are just a few possibilities. As we go ahead to build sustainable space economies, more programmes are designed and implemented to foster entrepreneurship in the space sector. For example, one of the EU programmes for space entities is CASSINI, the European Commission's new Space Entrepreneurship Initiative. This programme aims to expand the number of space startups and increase their chances to succeed and scale-up. Space4Impact is another initiative that seeks to support space startups that work in line with the SDGs and connect them with space stakeholders that can invest in them. Incubation programmes are also valuable as they facilitate connecting with similar stakeholders and activities, and enable product promotion. Space agencies and governmental entities, academia, and the private sector offer plenty of such programmes. Coaching and getting support and advice from established companies is another important element for a startup to grow, see what exists, and observe best practices in other countries.

All these elements are fundamental for companies to grow. However, success will only happen in a space ecosystem that gathers customers, entrepreneurs, investors and bankers, policymakers and other stakeholders from the space sector and beyond. All this needs to be reinforced by adequate policy developments.

Key takeaways and observations

- Vision, solid business case, visibility and funding are crucial for a successful startup
- Space entrepreneurship initiatives, incubation programmes and coaching are helpful
- Policy must foster a fully functioning space ecosystem involving all stakeholders

ACCESS TO FINANCE

BUILDING A SUSTAINABLE FINANCIAL SYSTEM FOR SPACE ECONOMIES

One challenge to building space economies is access to finance, where several crucial issues need to be addressed. Representatives of Bryce Space and Technology, the European Investment Bank, and the Australian Financial Security Authority focused on such matters.

One of the key changes over the last few years has been the infusion of venture capital funding for space companies. Bryce Space and Technology data shows that since 2015 there has been a dramatic increase in funding for space startups. In 2019, total investment in space companies was almost $6 billion, mostly through venture capital, with investments in at least 135 companies. The geography of investments has also changed. In the beginning, investors and companies were mostly focused on the U.S. Today, most investments still flow into the US, but there are more investors outside the U.S. and more space companies are being established in the rest of the world.

Venture capital is becoming more global, and many actors invest in space startups, but some elements make financing space companies difficult. A study from the European Investment Bank highlights a general lack of understanding of the space sector and its risks, which discourages potential investors. Aside from early stage-financing difficulties, raising late-stage finance remains a challenge given the lack of growth capital and institutional money in the late-stage investment segment. Also, the role of the public sector is sometimes too little and public institutions should be able to connect pools of capital and pull in additional private capital allowing for more flexibility and commercial orientation.

From the Australian Financial Security Authority's perspective, debt financing represents another way to collect resources necessary to run a space company. More specifically, collateralized debt financing and moveable asset-based lending can be relevant instruments for space companies to acquire financing in the startup phase. Moveable asset-based lending is an important instrument for businesses to gain access to financing by using their assets – rather than land and buildings, which they may not have – as collateral for loans. Movable assets include tangible items such as inventory, equipment, components, and robotics relevant to the space industry where companies may not have extensive land/ buildings as traditional collateral. The goal of modern regimes and frameworks for moveable asset-based lending is to allow the borrower to retain and use the asset.

In this context, with the increasingly transnational nature of investments, other important elements are international and national legal frameworks and international cooperation. For the sector to grow and attract investments, the industry needs to guarantee benefits, both at the social and economic level. It is only with these premises that sustainable growth of the space sector and space economy becomes possible.

Key takeaways and observations

- Potential investors need to fully understand the space sector, its risks and returns
- Venture capital, debt financing, early and late-stage financing, flexible institutional funding support need to be available

INTERNATIONAL COOPERATION

INTERNATIONAL NORMATIVE FRAMEWORKS IN DOMESTIC CONTEXTS, RESPONSIBLE AND SUSTAINABLE GROWTH

International cooperation remains an essential element to building sustainable and responsible space economies. Experts from the German Federal Ministry for Economic Affairs and Energy, Ministry of Foreign Affairs of Costa Rica, and Angolan National Space Programme Management Office shared insights on their activities in the context of global collaboration and sustainability.

Looking at the international economy in the space sector, it is important to highlight its global nature. Space is for all countries, not only well-established space-faring nations. Within the EU context, the initiative of the German Presidency of the Council 'Establishing key principles for the global space economy' aimed to establish a level playing field with global rules to foster the space economy. Common rules, joint approach on space traffic management, financing space activities, intellectual property rights, standardization and cybersecurity are the main elements of the German Initiative. Emerging space-faring nations are entering the global space economy, and a level playing field is desirable to enable them to develop their space capabilities. Efforts in this direction aim to contribute to fair international cooperation and the responsible use of outer space.

The examples showcased by Angola and Costa Rica clearly illustrates the increase of international and regional cooperation for emerging space-faring nations. Partnerships with companies, universities and space agencies help develop the workforce, network, and technical capabilities needed to succeed in the sector. Working with other countries is crucial to learn and grow. Both countries highlighted that working with well-developed space-faring nations as well as emerging ones is equally important. Learning from peers has been identified as very useful because countries going through the same experience and facing similar challenges can be very effective in helping each other.

As space activities intensify, countries aim to establish their national space legal and policy framework. For instance, the Congress of Costa Rica passed legislation to develop a National Space Registry. The country is working to improve the Registry by aligning with international regulations. Also, discussions started on the creation of a national space agency to centralize Costa Rica's efforts. At the same time, one of the Angolan government's priorities is to ratify the Outer Space Treaty and the Registration Convention. Their priority aligns with one of the pillars of their national strategy, which is to position themselves at the international level and become a member of COPUOS where they can participate in the global space arena. Through international and regional cooperation, both Costa Rica and Angola demonstrate great progress towards establishing healthy and responsible space economies.

Key takeaways and observations

- Global rules to establish a level-playing field are necessary to allow all countries to enter the space economy and develop space capabilities
- Emerging space-faring nations should also work with and learn from peers
- As space activities intensify, countries establish space legal and policy frameworks

INNOVATION AND GROWTH

GOVERNMENT, INDUSTRY AND ACADEMIA WORKING TOGETHER TO GROW YOUR SPACE ECONOMY

Speakers from the Indonesian Institute of Aeronautics and Space (LAPAN), Surrey Satellite Technology (SSTL), the China Space Foundation, and SDA Bocconi School of Management delivered perspectives on the current cooperative landscape between academia, governments, and the commercial space sector. Additionally, they shared views on what is needed to advance joint efforts in building a thriving space economy.

A variety of actors are involved in the creation and diffusion of knowledge in the field. Funding for initial projects and ideas mainly comes from governmental subsidies and programmes, which is crucial for innovation. Governments also establish regulatory frameworks for space economies to grow. Academia prepares the necessary workforce to develop ideas and concepts, but it also represents an excellent platform for cooperation among universities, often resulting in many innovations. The industry plays a significant role in space programmes by developing rockets and spacecraft, manufacturing satellites, and offering many other space-related products and services. For these reasons, it is necessary to ensure that governments, industry, and academia work with one another and create partnerships that spur innovation and use their respective strengths to enhance their national space sector collectively.

Many examples of such collaboration exist. For instance, LAPAN worked with a private company on crop insurance to help farmers dealing with the consequences of natural hazards. Another example includes SSTL, who worked with Algeria to improve the capabilities of the Algerian Space Agency and create a new generation of national engineers. SSTL also cooperated with the Thai space agency (GISTDA) to build a small high-resolution satellite and, with local industry involvement, developed knowledge and skills in the country. Commercial operations such as Long-March 11 in China is the result of both government and commercial investment.

In this context, academia plays a critical role by educating technically skilled individuals who bring up innovation. Education is considered from a very practical point of view. Skilled workers can avoid surprises from the market, long technological development cycles, the need to re-design products in the later stage of development, and the high cost of recognizing the customer only after the product is already at the end of the process.

Cooperation among these three stakeholders is crucial and space programmes need this tripartite model for sustainability in the long-term. Once again, partnerships are key to developing further innovation and to grow, fostering the global space economy and ensuring that all countries can benefit from it.

Key takeaways and observations

- Governments provide subsidies, programmes and regulatory frameworks
- Academia prepares technically educated individuals and the workforce
- Industry manufactures develops space-related products and services
- Cooperation among them is key for innovation, sustainability and growth

BUILDING BACK BETTER

HOW A HEALTHY SPACE ECONOMY CAN SUPPORT POST-COVID 19 RECOVERIES

The COVID-19 pandemic affected millions of people and had devastating effects on the economy. This global health crisis confirmed how space technologies have become indispensable in our daily life. Representatives of companies Lift Me Off, Hepta Analytics, SpaceBase, and NASA shared their experience in the COVID-19 context.

The role of space technology has been increasingly recognized around the world. The COVID-19 pandemic strongly showed how much citizens are dependent on space technologies. Space infrastructure for communication has been crucial. While some companies had to stop, others ensured business continuity thanks to space technologies that allowed uninterrupted connection. Learning from and adapting to the new environment has been crucial for all companies to continue delivering their mandates. Lift Me Off, Hepta Analytics, and SpaceBase were able to do so. Connectivity and related issues were less recognizable before the pandemic. Still, the disadvantage of being offline has become so apparent that governments in every segment of the world have increased investments to grow their space economies and more stakeholders have started engaging in this sector.

If it is true that new opportunities arose, many also disappeared, and companies suffered the negative consequences of the COVID-19 crisis. According to NASA, companies, and partners experienced a range of setbacks resulting from the pandemic. Over 90% of companies with R&D as their primary business are small enterprises. They have faced considerable problems, including limited access to new contracts, loans, or other financial lifelines. Larger companies generally fared slightly better thanks to stable, long-term government contracts with revenues being more certain. However, the space sector is a complex ecosystem with a vast network of suppliers and supply chains that span multiple companies and countries. This high level of inter-dependency means that a single problem in one chain component can be troublesome for the rest.

Nevertheless, the negative effects of the pandemic have given an enhanced chance to space entities to draw the attention of decision-makers and investors to the enormous potential of space technologies. Above all, transparent, accessible business models that remain true to their core added value and remain crucial in sustainably strengthening the space economy, both during and after the COVID-19 pandemic. Investments in space make sense and they are significant from an economic standpoint. Governments have understood that investments in space applications directly benefit society and contribute to a country's overall economy. However, while more resources are dedicated to space activities, sustainability remains key to growing space safely.

Key takeaways and observations

- Space technologies have supported societies addressing the pandemic consequences
- Governments have increased investments in space infrastructure
- Companies that adapted to and learnt from the new situation scored better

CONCLUSION

The space economy goes beyond an exclusive focus on technology and science. The global space sector, with its myriad of positive spillovers, is boosting economic growth and accelerating sustainable development. Space activities drive innovation. They create new markets and industrial capabilities, provide job opportunities, and rely heavily on academic research and development.

The UNOOSA Space Economy series of virtual events went deep into some of the most crucial aspects of healthy space economies. Public outreach, access to finance, space sustainability, partnerships, and socio-economic development emerged as some of the most fundamental ingredients for a thriving space economy.

Ensuring that citizens are well informed on how space affects and improves their everyday lives is necessary in the foundation of a strong space economy. Thus, engaging in **public outreach** is necessary to ensure support to continue developing space activities, both public and commercial. Understanding how to present the social and economic impact of space growth, both for the immediate space sector and wider non-space sectors, is pivotal.

Space growth is also driven by the increasing number of space companies. The development and application of technology, a clear vision, a solid business case, visibility, and connections to domestic and international policies are necessary elements for creating a successful space company. In this context, **access to finance** is an essential step. Creative and diverse approaches are needed to access finance through sponsorships, grants, loans, debt financing, and other methods. While all these aspects will guide space entrepreneurs towards success, it is imperative to develop an adequate policy and legal framework that will allow companies to flourish.

Simultaneously, given the increment of activities in outer space, **space sustainability** has gained major importance. Human beings should be able to continue conducting space activities, ensuring equitable access to the benefits of exploring and using outer space for peaceful purposes. While the use of outer space should satisfy the needs of present generations, its preservation for future generations is key. Space sustainability is not only important, but a precondition for space economies to thrive. It is in the best interests of all players to preserve a safe, secure and sustainable space environment.

Partnerships are also a crucial element in developing the space economy. Space exploration and research, the use of space-derived data, and other space-related assets have strongly benefited from partnerships between governments, industry, and academia both at the national and international level. The International Space Station represents one of the most successful examples of global cooperation. Collaboration, communication, exchange of information and data drive innovation and create value. Learning within or among organizations, countries and other stakeholders remains a key factor for well-functioning space economies.

To conclude, a healthy dynamic space economy needs to deliver wider **socio-economic development** over the long term. Progress in the space sector provides huge potential for social and economic development. Every effort in the expansion of space activities must bear this in mind to ensure that everybody across the world can benefit from space.

FINAL REMARKS & THE WAY AHEAD 2021

The United Nations Office for Outer Space Affairs would like to thank all Experts who shared their insightful experiences and all Participants who attended the virtual events and followed this initial journey. This is just the start of the Space Economy Initiative.

As the ecosystem of actors using space multiplies, so does the need for policy and legal services. Financial, policy, and legal expertise are all growing elements in a healthy, dynamic and prosperous space economy.

The Space Economy Initiative responds to this need and unpacks this complex topic, providing a roadmap for building a strong space economy that delivers tangible socio-economic benefits.

The Initiative runs over an initial three-year timeframe. During this period, activities will be tailored around three main activities; space economy capacity-building for requesting the Member States; awareness-raising public events; and online e-learning services.

The **capacity-building services** support emerging space-faring nations, including least developed countries, by analysing their baseline space economies, and identifying priority areas for policy interventions. UNOOSA develops tailored capacity-building training courses and workshops with relevant domestic and international stakeholders. With additional funding secured, UNOOSA plans to expand the Space Economy **awareness-raising events** through a new series of events to provide a crucial, free-to-access opportunity to exchange expertise and insights with public and private-sector experts from across the global space sector. The future will focus on unpacking more detailed insights and case studies across the key elements already identified. Further, UNOOSA plans to expand ongoing collaboration with partners towards developing a **space economy e-learning platform**. The development of such e-learning courses will continue over the three-year timeframe of the Space Economy Initiative, adding to an increasingly comprehensive online resources of materials tailored to stakeholders from new and emerging space-faring nations.

It is your chance to support a strong and sustainable global space sector. Your support will help establish these activities as a sustainable and multi-year addition to UNOOSA's programmatic activities. As a multi-donor project, UNOOSA is seeking new partnerships with Member States, non-governmental entities, and the private sector to join this unique UN initiative and expand the delivery of 2021 Space Economy activities so we can offer more services through the initiative to emerging and non-space faring nations.

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