

Introducing Space Economy

United Nation Office for Outer Space Affairs Webinar

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Credit: NASA



PwC and Strategy& have a dedicated Space Practice, serving the commercial and institutional markets



Learn more

pwc.fr/space

The PwC/Strategy& Space Practice in 5 points

- 1 The PwC Space Practice with a global reach, and a **dedicated strategy and policy team based in Paris**, is unique among large professional services firms, and has heritage dating back to Booz and Company and Booz Allen Hamilton
- 2 Our team is involved in assignments for public and private entities from the space sector **in Europe and in the world**, serving as hub for the PwC Network worldwide, and coordinating a network of contact and satellite teams in other territories
- 3 Our team notably has been **supporting the European Commission, the GSA, the European Space Agency during the last 15 years** in economics, policy, strategy and regulation
- 4 With the PwC Data Lab – an entity from PwC France specialised in the development of innovative applications – **we provide services (PwC Insights from Space) using space data to decision-makers from the public and private sector** (often non-familiar with the space-based data derived capabilities).

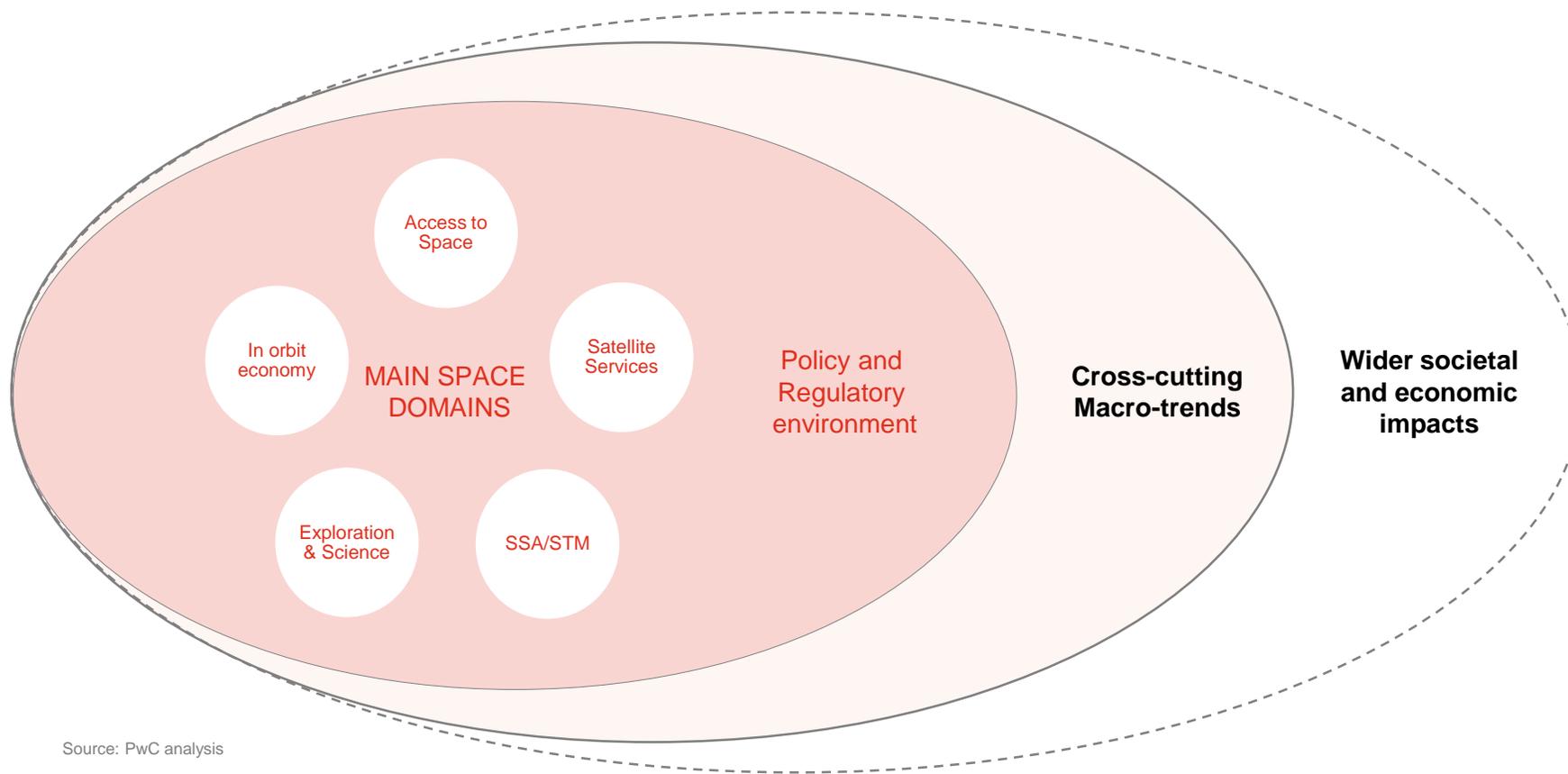
Customers (examples)



Recent publications

	<p>Overview of emerging space nations Thought Leadership on the Space Sector January 2020</p>	<p>Overview of emerging space nations Role of emerging space nations in supporting sustainable development and economic growth</p>
	<p>Main trends and challenges in the space sector June 2019</p>	<p>Main trends and challenges in the space sector On the occasion of the Paris Air Show 2019, PwC published the views of the PwC Space Practice on the current trends and challenges in the space sector.</p>
	<p>Extracting Value from Earth Observation Data Thought Leadership on the Space Sector May 2019</p>	<p>Extracting Value from EO data The Earth observation market is growing. Terabytes of data are being collected everyday from hundreds of remote sensing satellites in orbit. How do we derive benefits from all this data?</p>

The space sector is diverse, has a vast reach, and it is driven by complex dynamics that go beyond market forces



A diverse sector with multiple specificities

- Multiple domains with different trends and specificities
- An ever evolving regulatory and policy environment
- A significant reach and implications into other industrial sector, with subsequent dependency on general macro-trends
- Considerable wider societal and economic impacts, justifying the still prevalent government spending in the sector

While several definitions do exist for 'Space Economy', we can say that it generally encompasses both core space activities, and the enabled economic and societal impacts

The societal and economic impacts of space are vast and far reaching for all space domains, hence the importance of developing a healthy space economy

Transactional impacts of spending into assets

PwC observed a trend of 1.4-2.0 GDP multipliers over many recent European Space Programme studies

PwC observed a trend of 1.2-2.4 employment multipliers over many recent studies on European Space Programmes .

Government (Tax) Revenues a sizeable percent of the original investment for all programmes (generally well >35%)

Enabled and catalytic impacts

Sales multipliers of 4-8

Spillover factors of 1.8 to 3.2

Sizeable societal impacts

Environmental impacts for many programmes assessed

Domains assessed by PwC



Copernicus, EO Programmes



GovSatcom



Galileo and EGNOS



Ariane, Vega, Microlaunchers



Space Situational Awareness



ISS, Science, Exploration, In Orbit Economy

Assessed space programmes have instrumentally contributed to European soft power, strategic independence and competitive advantage

Stimulation of European space industry

Establishment of Europe as a space leader

European data independence

Increased innovation

Improved relations with non MS nations & entities

Increased European influence & soft power

Source: PwC analysis

Recent trends in space have made the lowered the barriers to entry for new countries to develop a space economy

A general trend towards a “democratization” of space

Governance



From competitive government owned and led sector towards commercialization and collaboration

- Growth in the private sector involvement. Growth in private initiatives and shared leadership with the public sector
- Commercialization of the space sector & emergence of space start-ups and SMEs
- International partnerships, bilateral cooperation and national collaboration (with institutions, public-private partnership etc.)

Upstream



From prolonged project development, specific to countries with space heritage towards facilitated access to space for all

- Development of small satellites
- Cost reduction in manufacturing and launching satellites
- Increased demand for constellations
- Development in disruptive technologies (miniaturization, etc.)
- Development of micro-launchers

Downstream



Democratization of access to space data

- Availability of Big Data
- Growing cloud services availability (cloud storage and computing)
- Development in data analytics (ML, AI, data fusion etc.)
- The platform paradigm and growth in vertical integration of private companies

The key items to create a space economy

Space strategy and long term roadmap

A governance that is fit for purpose

Awareness and outreach

Capacity building and skill creation

Strong links between government and industry

For more, please check our reports here:

www.pwc.fr/space

Thank you!



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