

Space Entrepreneurship and Sustainability

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Is space entrepreneurship sustainable? (AI generated illustration)
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An exponential creation of space start-ups

Space and ICTs

The New Space - or the recent rise of space entrepreneurship- is strongly correlated with of cultural and economic challenges promoted by Silicon Valley entrepreneurs in the field of Information and Communication Technologies (ICTs), opening up new entrepreneurial opportunities in the space sector. Plus, the emergence of innovative technological solutions, as 3D printing, reusable rockets and smaller satellites called “cubesats” has make space technologies much more cheaper.

New entrants

This socio-technological transformations enabled private companies to enter the sector and to foster a change entrepreneurial culture towards end-user needs, rather than sole strategic and scientific objectives. The NASA and the European Space Agency (ESA) have launched a series of entrepreneurial support incentives to encourage space entrepreneurship, such as challenges and incubation programs to enhance space entrepreneurship and to open the sector to new entrants.

...raising major socio-environmental issues:

Addressing SDGs

To better understand how these socio-technological changes happened, we interviewed 45 actors involved in space entrepreneurial support incentives in Europe. Then, we analyzed their explanations to understand how they work together to promote space entrepreneurship. Our results show that the New Space must also take account of its consequences in the light of the Sustainable

Development Goals set by the United Nations in 2015.

Socio-environmental issues

The increasing number of objects launched into orbit generates worrying socio-environmental issues, as space debris which are problematic. More precisely, they can cause collisions with satellites, and thus, harming or destroying them, by generating even more space debris. In addition to these environmental issues, the social issues related to the New Space also need to be taken into account, as earth observation monitoring and personal data protection among other challenges.

Are entrepreneurship and sustainability compatible?

An emerging space law...

We found that the current space law regulating space entrepreneurship regarding socio-environmental issues strongly impact start-ups competitiveness. While policy makers are attempting to set various selection criteria in public calls for proposals, their effectiveness in fostering space entrepreneurship remains unclear. For example, the French space law requires satellite operators to plan satellites end-of-life within 25 years of the end of their mission to limit space debris.

...impacting start-ups competitiveness

However, there are no common socio-environmental criteria at the international level, which means French space start-ups have additional technological and economic constrains. Nowadays, these criteria differ too widely from one country to another, which leads to a phenomenon known as “forum shopping”: meaning that companies will try to take advantage of the jurisdiction most likely to serve their own interests.

Towards a socio-environmental support for entrepreneurs:

Multiple socio-environmental criteria

The flexible space law in other countries makes very competitive the international space market and the multiple socio-environmental criteria are not a relevant solution to address the socio-environmental issues raised by the New Space. This does not imply that such criteria should be absent from the current space law, however, we believe that it is more appropriate to adapt them according to the maturity of companies, which are not all capable of responding to the same constraints.

Entrepreneurial support needed

Our research also shows that there is a gap between policy makers' expectations and resources available to support them in addressing socio-environmental issues. Indeed, current entrepreneurial support incentives remain marginal, and do not sufficiently prepare start-ups to abide by the current space law. Strengthening this support would make it possible to develop more competitive and sustainable space activities, without reducing the attractiveness of the regions and organizations orchestrating these activities.

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