

Understanding the Space Economy: A Study for NASA

Key Judgments

Space makes the global economy what it is: universal, dynamic and productive. Remove the space dimension, and the world would lose much of the growth that it has experienced in the last 50 years. Looking forward, in the absence of continuing investment in space technology and space-based services, the prospects for maintaining economic growth over the next half century -- even the prospects of holding on to the current standard of living in the developed world -- would be bleak. In addition, and perhaps more importantly, efforts to raise the living conditions of more than half the world's population to a viable level would be severely hampered without the contribution of the space economy and the services that it enables.

Without the space industry and the services it provides, the modern globalised world economy would not function as it does.

1. The space sector is a "hybrid economy". Experience shows that only governments can afford to develop the tools and let the contracts that will kick-start the private sector, as in the case of the early days of space-based telecommunications and now remote sensing. Experience also shows that the rewards for doing so are not just better delivery of the benefits from the space economy to consumers but also the creation of new jobs, new businesses and new skills. In addition, the links between space and the wider economy mean that a country that plays a central role in space is well positioned on the high ground of global competitiveness.
2. In recent years, opportunities have grown for channelling public sector investment through private sector enterprises. This has strengthened rather than weakened the reasons why the government's role is so crucial. Nurturing these new enterprises, which at present are focused on delivering better services to the downstream consumers in the space economy, will be the foundation of leadership not only in the space sector but also in the wider global economy over the coming decades. This is why taking the space economy into the next phase of its evolution will demand another surge of public commitment.

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For further information on this study, please contact Keith Hayward thru Giles Alston (galston@oxford-analytica.com) or in Washington, D.C. please contact Ron Marks (rmarks@oxford-analytica.com).

3. Within 15 years the global space industry is expected by some specialists to be worth over one trillion dollars.* Winning a large share of this business will generate direct returns to a national economy. But the benefits of developing space technology, the first application of new services and the creation of whole new businesses based on space, cascade throughout the whole society.
4. Many of the things we take for granted – global telecommunications, instant worldwide TV coverage, accurate weather forecasts, and precision navigation systems – would be impossible without access to space and orbital satellites. Space makes a massive contribution to national security and the physical well being of billions of people.
5. Getting to space and staying there is not cheap. Public funding has been essential since the dawn of the space age. While the private sector plays an increasing role in expanding the space economy, many areas will still require public funding and market testing by public sector players such as national and regional space agencies.
6. Space is a strategic arena. It is not just because of the national security dimension, but because many states want to claim a leading role in exploiting space. They do so for economic and wider social benefits such as improved terrestrial transport, national resource management and the catalytic effects of developing space technology.
7. While the US is presently the leading space player, others, notably Russia, China, Japan and India, as well as Europe, are determined to expand their presence. Space offers each one the potential to aggregate political and economic power – both hard and soft – at the domestic, regional and global level. But serious government investment is essential to optimize development of the space economy.

Adopting this expanded view of the scope of commercial space activity is to grasp the point that holding a central role in the space economy is to command the high ground of global competitiveness. Its breadth of impact ranges from telecommunications, navigation and broadcasting to weather forecasting, earth observation and security. To ensure a place at the heart of this activity rather than on its periphery -- to ensure the ability to influence and shape events -- is at the crux of 21st century economic power.

* "The Case for Space: The Impact of Space Derived Services and Data - Final Report", Oxford Economic Forecasting, November 2006.

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