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Contribution of Space Activities to Solving Global Societal Issues (2)

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GLOBAL TRENDS IN SPACE

Abstract

In the past decades, the space sector has grown to include more countries and diversified to integrate technologies and innovations from other sectors. Changes are occurring along many vectors, not fully captured by the numbers story. The implications of some of these emergent and dynamic changes in the sector are still not well understood. Currently, no intellectually and analytically rigorous comprehensive global space landscape product is publicly available. In this paper, we present global trends in space for the next 20-30 years, and assess their implications.

Technological advances and other external drivers are reducing barriers to entry as an increasing number of actors is bringing a diversity of approaches to space development. As a result of the many non-traditional pathways new entrants are taking, innovation in the space sector will become more widely distributed across the world and especially in the private sector. Because of the larger number of participants, the pace of innovation will also accelerate.

There will likely be several structural changes in many of the sub-sectors of space leading to mainstreaming of previously protected sub-sectors. Sectors like Earth Observation for example, currently managed within civilian governments will begin to bifurcate. After some churn, the higher end “inherently governmental” functions relating to societal well-being (e.g., weather modeling) will remain with the government, but more consumer driven functions will migrate to the private sector. These markets will then behave as traditional free markets as has happened in other sectors that have had origins in the government.

The expanding role of the private sector will have other implications as well. COTS hardware, software, and the satellite manufacturing industries are developing globally. This will make it more difficult for most governments to manage the space sector.

With more countries operating in space, and participating in international space organizations, and with the private sector seeking to take on additional roles, the global governance landscape is becoming more complex. Not only will traditional space-faring countries having waning asymmetric control of global decisions related to space activities, there will likely be pressure on them to accommodate the needs of the private sector and emerging space countries.