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SUSTAINABLE DEVELOPMENT OF AN EMERGING SPACE NATION'S ECONOMY

Abstract

Emerging space nations are often encouraged to invest in space technology with no realistic pathway to generate returns. In addition, nations often prioritize space projects that promote national pride or prestige, but at the expense of addressing sovereign needs and economic development. The benefits of space activity are clear, as established spacefaring nations have demonstrated by harnessing space to power substantial swaths of their economies. Their ability to leverage space capabilities for communication, Earth observation, and positioning, navigation, and timing is critical for sustaining their citizens' quality of life. This paper describes a project conducted in an emerging space nation that was designed to invert the usual approach to space technology and economic development. The typical space industry approach is to provide tools, either for free (as often happens with Earth observation data) or for a fee (e.g., satellite communications) and let the emerging space nation determine how to generate economic benefits that justify its continued use of those tools. This is frequently an unsustainable approach, as it relies on the emerging space nation rapidly acquiring the skills to both use the technology and integrate it into the economy. The method described here is to first analyze and understand the economy of the emerging space nation, identify key economic sectors that would benefit from integrating space capabilities, and assess potential avenues for financing the integration of space in a way that is economically sustainable for the long term. This paper outlines both the framework for conducting the economic assessment and the anticipated opportunities for the emerging space nation for entrepreneurship, economic growth, partnerships with established spacefaring nations, workforce development, and expanding its space industry ecosystem in a sustainable manner.