

IAF BUSINESSES AND INNOVATION SYMPOSIUM (E6)
Strategic Risk Management for Successful Space & Defence Programmes (4)

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TOWARDS RESILIENCE AND SUSTAINABILITY OF SPACE SECTOR: MANAGING THE RISKS
OF VULNERABLE VALUE CHAINS

Abstract

The space ecosystem and economy are undergoing continuous changes each year, marked by the rapid expansion of technology and the implementation of novel approaches to enhance quality and safety. As these advances unfold, established technical and management standards are either being revised or adapted, reviewed or tailored to meet the specific needs of missions. They also need to address new challenges such as the sustainability of the space exploration. Notably, parameters traditionally associated only with the commercial sector (New Space), such as time-to-market, are beginning to play a crucial role in the evolving overall space landscape (both New Space and institutional ventures). Observable trends indicate an imminent explosion of growth in the near future. However, recent years have demonstrated that unforeseen challenges, such as pandemics or global conflicts, can significantly affect the stability of the space ecosystem. In light of these developments, the authors have posed a pivotal question: how vulnerable is the value chain of the New Space economy, in contrast to the more institutionalized old space economy? It is imperative to identify the factors that determine the stability of these two segments of the space economy. It is also essential to draw lessons from the bankruptcy cases of New Space companies. The authors aim to provide a comprehensive analysis of the above in order to assess the sensitivity of both the institutional and New Space markets. They will delve into understanding the impact of the social, geopolitical and regulatory factors on the continuity and resilience of these space segments, using case studies as a basis for their research. By examining the intricate dynamics between technology, standards, and unforeseen disruptions, the study aims to provide insights into navigating the evolving space ecosystem and economy. This in-depth investigation aims not only to contribute to an understanding of the current state but also to help formulate strategies to ensure the resilience and adaptability of space-related ventures in the face of future uncertainties.