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Space Sector's Commercial Transformation: Procurement Opportunities and Financial Transparency (6)

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NAVIGATING RISKS AND REWARDS IN THE EVOLUTION OF GOVERNMENT AGENCY SPACE
PROGRAMME ACQUISITION STRATEGIES

Abstract

The last 18 years have seen a particularly major shift in NASA's Acquisition Strategy with an estimated 16 percent of the Agency's portfolio in 2022 executed with commercially oriented contracting mechanisms. From the roll out of NASA's cargo resupply programme in 2006, to date, NASA has established 4 major commercial space programmes. Two of such programmes are operational capabilities (crew and cargo delivery to the International Space Station) and the latter two are under development, a human landing system (for the Moon) and the first element of its lunar Gateway, the Power and Propulsion Element. In addition, the commercial development of spacesuits, cargo to the Moon and Lower Earth Orbit destinations are also ongoing. A characterisation of the criteria which favour commercial approaches is outlined to better categorise what defines a commercial procurement method versus a traditional one, both up-front- whilst the product/service is under development - and once it's operational . A historical assessment of the above-mentioned programmes, as well as selected precursors (e.g. NASA Launch Services Program) enables a better understanding of cost and technical risk shift from public players to commercial ones. This inevitably generates a new dynamic with the potential for greater alignment of private-public incentives. This paper examines, by analysing concrete examples, how such an evolution can give the commercial space sector a boost, whilst enhancing governmental space agencies' purchasing power through cost savings Furthermore, the upward trend in funding, scale and complexity of commercial programmes is highlighted and put in perspective, recognising that success or failure of commercial programmes should be considered and evaluated in the context of a longer-term view: In a future where the ISS has been decommissioned in favour of the ushering of a commercial space stations era, for example, the maturity of private sector markets will be tested, particularly the commercial cargo and crew resupply markets, due to the reduction of government demand. Finally, this work invites a reflection on inherent risk and uncertainties, short and long-term, technical and financial, as the space sector continues to move towards results-driven procurement models, such as payment against milestones.