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Author: Ms. Valentina Zancan
Politecnico di Milano, Italy

Mr. Alessandro Paravano
Politecnico di Milano, Italy
Prof. Giorgio Locatelli
Politecnico di Milano, Italy
Prof. Paolo Trucco
Politecnico di Milano, Italy

# UNFOLDING SPACE PROGRAM GOVERNANCE MODELS DRIVING THE TRANSITION TOWARDS THE NEW SPACE

**Abstract**

The space sector is transitioning from the "Traditional Space" to the "New Space". Along with the space sector, space program governance is transitioning as well. The co-existence of traditional and new stakeholders gives rise to collaborative forms of partnerships. The aforementioned transitions result in a spectrum of new governance models. Public-private partnerships (PPPs) are becoming a new golden rule, disclosing unprecedented achievements.

However, the existing body of knowledge lacks a framing of different models of space programs governance, covering both Traditional Space programs and New Space ones. Therefore, our paper aims to investigate how space program governance evolved over time.

We first performed a systematic literature review of space program governance. We explored the main governance characteristics and practices through inductive thematic analysis. Then, we performed a single-case study of the Artemis program to investigate the transition of space program governance and its actual state-of-the-art. We co-developed and validated three governance models for space programs through semi-structured interviews with six senior experts.

We found and discussed three program governance models corresponding to the evolutionary stages of the Artemis program. 1) The Traditional Space model, where the government owns space infrastructures to demonstrate technological supremacy. In parallel, space agencies commission space modules to prime contractors through Engineering, Production and Construction (EPC) contracts and detailed oversight-provision. 2) The Transitional model, where fixed-price contracts start to replace EPC ones. For the first time, risks and costs are shared with commercial actors. A stronger cooperation between space agencies emerges; these own space infrastructures and share resources to balance decreased institutional budgets. 3) The New Space model, with a further development in collaborative efforts. PPPs enable a better alignment between public and private expertise. Space agencies favor insight-provision and the private sector retains ownership of space assets. Finally, we discussed each model's main advantages and disadvantages, and the existing practices to take part in the current governance evolution.

The three models enable managers to visualize space programs from a governance perspective, where stakeholders' roles and responsibilities in PPPs are clearly identified. Moreover, managers can leverage

and innovate existing practices for transitioning across different models of governance in space programs.

We contribute to theory by introducing a transitional governance model that enables the smooth transition between the Traditional Space and the New Space paradigms. We provide justification for the concurrent adoption of multiple governance models within the same space program, as in the Artemis program case.