Paper ID: 54266
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30th IAA SYMPOSIUM ON SPACE AND SOCIETY (E5)
Is Space R&D Truly Fostering A Better World For Our Future? (2)

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THE NEW GLOBAL GOVERNANCE IN THE AEROSPACE INDUSTRY: NEW TECHNOLOGICAL CAPABILITIES IN BRAZIL, CHINA AND CANADA

Abstract

According to National Aeronautics and Space Administration (NASA), the aerospace sector has two industrial subsectors: Aeronautics and Space. The leading countries in this global value chain (GVC) present a holistic perception of this indissoluble binomial. However, there are other "learners" countries which have been integrated in an unprecedented way into Aeronautics. Therefore, this paradigm break is the reason why this investigation was conducted. The "technological capability" concept builds an architecture that fully supports the relation between technological and governance development in Politics, Commerce and Society.

Therefore, on this research, a theoretical approach of Science and Technology in the field of Social Sciences and International Relations was developed with the purpose of generating an adequate analysis framework based on the Governance Theory, Open Innovation and Technological Capabilities literature. This framework served to analyze three case studies, such as Brazil, Canada and China. As intermediate industrial leaders in the manufacture of regional aircraft, despite having a different technological trajectory, their technical capabilities impacted on the GVC, thus generating a new governance in local institutions and international organizations. In these three cases, not only favorable conditions have emerged, but also, they faced a poor management regarding public policies.

As a result, it was found that this atmosphere is called as a National Innovation System (NIS) and it is a methodological turning point to analyze the technological transfer, adoption and assimilation in developing countries, which could lead to finished products for the space sector. In the three case studies, the main interest was a military, political and industrial integration.

However, considering the Industry 4.0 and a global technological convergence, it is concluded that the aerospace industry has become a multicausal and multisectoral phenomenon when integrating new advanced functionalities such as Blockchain, Big Data, Internet of Things, Artificial Intelligence, Machine Learning and Analytics. This technological enablement has led to industry good practices in Aeronautics regarding discrete manufacturing and B2B2C services; as for the space sector concerning Remote Sensing for disaster management, public health, communications and climate change studies. All the previous based on an open innovation economy, which is nourished not only by an inter-business dynamic, but also by external data sources.

Now the challenges of this reformulation will revolve around integration, global standards, systems interoperability and data security (GDPR). The NIS will then have to be able to manage these factors to achieve both commercial competitiveness and the guarantee of a social benefit.