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IDENTIFYING MAJOR CHALLENGES FOR SPACE INDUSTRY SEGMENT RESEARCH: AN INTERNATIONAL OUTLOOK

Abstract

The "space industry," comprised of multiple industry segments, is in a dynamic state due to changes of institutional arrangements, proprietary functions, and resource allocations. The key processes stipulating the current changes include, to list some, widening the industrial base and more involvement of the 'new' private business in a process we briefly designate New Space (US definition) or Space 4.0 (ESA definition), lowering the threshold for entering the industry for new nations, communities and players, growing pressure for proving the space activities' efficiency of all kinds as part of the national resources and private investment allocation, space exploration general comprehending among the major humankind's projects. The industry segments that are being significantly affected (if existed before) or emerge from scratch include the following: Earth-to-orbit transportation (launch vehicles), human spaceflight, suborbital space transportation for people and payloads, space resources utilization, space debris removal, applied small satellite constellations, orbital traffic management, and spaceports. In addition to the scientific and engineering studies supporting these segments, the social science perspectives being applied to these different industry segments include the following academic areas: economics, strategic management, organizational theory, political science, and political economy. The studies in these fields are highlighted at national and international space conferences held on an annual basis in different countries throughout the world. However, the social studies being conducted are uncoordinated and miss the cross-cultural comparative element that would allow building the generally acceptable social science research framework, including set of definitions, taxonomy, common approach to the market segmentation et al. This paper identifies and discusses the current issues and topics of social studies research of the current space industry development trends from different national and academic perspectives based on the hands-on experience and bibliometric analysis. This effort would further result in building the common ground for the research and comprehensive coverage of research results as well as identifying the areas of future research that can help improve the areas and levels of research analyses for each industry segment.