

Small Satellites (13)

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FEASIBILITY STUDIES ON EMERGING COUNTRIES TO EMBRACE SMALL SATELLITE
REVOLUTION**Abstract**

The development of small satellites represents a shift in the traditional space industry model. Compared to conventional large satellites, small satellites are manufactured at a lower cost and within a shorter time period whilst providing comparable services. A propaganda of how emerging nations should embrace smallsat revolution for their socio-economic benefits is in the progress. Yet, no studies have been conducted to prove the feasibility that emerging nations can leverage such revolution for their own sake. In order to justify how feasible emerging nations can truly be benefited from such revolution should they choose to embrace, three business models were proposed to cater for different groups of nations based on their economic status and space capacity. Depending on whether it would lead the smallsat development on its own, cooperate with other nations, or purely purchase services from nations with mature technology, six case studies were conducted and examined, two for each business model. The results of the case studies, in terms of liaison with national development, projected financial return, and dependence of core technology will then demonstrate the feasibility. Based on one nation's space capacity, development and economic status, and other associated factors, a matrix of feasibility evaluation was produced to demonstrate how emerging nations can best fit in a position to cope with smallsat revolution propaganda. In terms of space capacity, and national development, it is feasible for some emerging nations to embrace smallsat revolution, which merely is a shift of satellite technology development and its applications, small satellites natural characteristics can further the advancement of the technology as well as its spin-offs. At the meantime, it is also not feasible for some nations to embrace such revolution at this stage, simply because it is not the priority for them, and ruthlessly to introduce such technological revolution with full foreign capital and technology will only result in the devastation of domestic industry and far-reach from the core technology. Not feasible to embrace smallsat revolution right now does not imply those nations should not accept such revolution at all. Based on the Matrix of Feasibility, nations can determine how and when is the most suitable time to embrace smallsat revolution. Through the feasibility studies, it is recognised that though smallsat revolution can bring benefits to emerging nations, those nations should choose different approaches to adopt such technology depending on their national development stage and space capacity.