

IAF HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Commercial Human Spaceflight Programmes (2)Author: Dr. Dmitry Payson
Russian FederationPUBLIC GOOD VS.PRIVATE GOOD: HOW SHOULD THE SPACE ECONOMICS DEAL WITH THE
COMMERCIAL HUMANS SPACEFLIGHT OF TODAY AND TOMORROW?**Abstract**

The paper discusses the actual issues of the spaceflight economics when it comes to the categorization of the commercial human spaceflight. For the time being the human spaceflight along with the basic space research are considered a public good, which is a specific economics' category for the good that is both non-excludable and non-rivalrous, that means that the individuals cannot be excluded from use or could benefit from without paying for it, and where use by one individual does not reduce availability to others. Simply posing, the results of the human spaceflight and the robotic exploration were considered as a humankind's common heritage, with the corresponded fundamental understanding in the economical theory. On the opposite, the commercial tourist spaceflight is a clear example of so named private, excludable and rivalrous good that is easily sold to people proposing the market cost. That makes the space tourism an analog of most satellite applications (except for the basic free of charge satellite navigation services, weather monitoring and freely available Earth remote sensing data distribution), which are produced and sold as the more or less regular market good. However, as the plans are becoming growingly popular of SpaceX and some less renowned commercial space explorers that announce their will and intention to start the commercial human exploration of Mars (and probably the Moon en route), the economists feel a need of rethinking the public good nature of the human spaceflight and building the framework that allows treating the large-scale exploration projects within the private investment and venture business paradigm. We discuss the different approaches to measuring the outputs of the future large scale space exploration enterprises in terms of the return on the public and private investment and make an effort of deriving the 'equation of existence' that would support the analysis of the particular program feasibility in the commercial non-government as well as mixed environment.