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EVALUATION OF BUSINESS OPPORTUNITIES GENERATED BY DEPLOYMENT OF LEO MEGA-CONSTELLATIONS

Abstract

Abstract: Current plans of significant and well-funded players announcing development and deployment of constellations with hundreds/thousands of LEO satellites seem close to becoming a reality. Assuming realization of at least some of these projects, we are going to evaluate technological and architectural challenges in supporting of these constellations and in creation of business opportunities for component suppliers, services, and for potential aerospace niche-players that intend to enter this marketplace.

Current business models of the projects in-work assume getting business values from results of operations of these constellations. Their maintenance and support, as well as continuous routine upgrades, are just operational costs that should be minimized via diversified, low-cost production of modular-designed components for subsequent satellite assembly, testing, and launch. The global infrastructure that is to be created, should provide high quality access to info-data and to an abundance of computational resources. It should also generate numerous business opportunities not only in the extensive use and exchange of information but also in the development of products and services that are inherent to mobile applications, such as guidance and control of mobile units, tool-kits and media for solutions of image recognition challenges, decision support systems and applications of artificial intelligence tools and methodologies requiring just-in-time significant data processing and prescriptive analytics. These capabilities should motivate the development of innovative business models integrating technologies with diversified customer base and creating new markets for products and services. In the report, we will discuss potential business opportunities that may result from the availability of the projected infrastructural capabilities based on historical and anticipated services and informational/data processing/analytical products from other business areas, such as the development of cloud access to data and analytics, emergence of the necessary production entities, creation of products and services supporting just-in-time activities, and so on. We are going to structure these projected activities, outline critical evaluation and success factors, and to suggest quantitative guidelines for subsequent estimates of the appropriate markets.