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MITIGATION OF ANTI-COMPETITIVE BEHAVIOUR IN TELECOMMUNICATION SATELLITES AND MANAGEMENT OF NATURAL MONOPOLIES.

Abstract

ABSTRACT: Previous activities in developing satellite networks for telecommunications such as the TelStar, Relay and Syncom satellite networks of the early 1960s through to the Iridium, Globalstar and ORBCOMM constellations of the 1990s were reserved to geostationary orbits and low-earth orbits with less than 100 satellites comprising their network. These satellite networks distinguished themselves by being business-to-government and business-to-business facing by contracting with government and domestic carriage and media providers in the supply of services. Customers for these services did not constitute either small to medium sized businesses, or an ordinary class of persons that constituted the general public.

However, with the advent of what has been dubbed 'NewSpace', new entrants into the market are developing constellation satellite networks that operate in Low Earth Orbit (LEO). Unlike the legacy satellite telecommunication networks of the 1960s-1990s, these constellation satellite networks are focused on, inter alia, Internet of Things (IOT) devices, asset management and tracking, Wi-Fi hot-spotting, backhaul networking and contracting with small business and the general public.

Regional examples of these new telecommunication heavyweights include Fleet - an Australian company undertaking to launch 100 satellites into LEO, Space and Sky Global (SAS) - a Australian-British-Israeli consortium that intends to provide a constellation of 200 small satellites, OneWeb's planned fleet of 650 satellites that may be expanded to 2 000 satellites, and, SpaceX's planned StarLink network of 12 000 satellites. In addition to these planned telecommunication constellation networks, companies such as Spire and PlanetLabs intend to provide geospatial information through their own constellation networks to government and educational institutions alongside the private sector.

Although propertisation of space and celestial bodies is prohibited pursuant to the Outer Space Treaty 1967 (UN), orbits within space still remain rivalrous and commercially lucrative. By operating in a LEO environment, these satellite constellation networks automatically exclude competing services. For example, where one constellation network has an orbital plane or orbital shell, another constellation may not have the same orbital plane or orbital shell.

Presently, the literature to date focuses on the allocation of spectrum bandwidth, and space traffic management with a focus on orbital debris mitigation. This paper addresses these concerns and further considers, and offers recommendations on how the risk of 'natural' monopolies forming amongst low earth orbit for specific constellation satellite networks may be mitigated under a variety of instruments available to both UNOOSA and the WTO.