**Notes on Ditchley conference agenda, Jan 11**

The conference’s Terms of Reference make a number of statements which are not necessarily supported by commercial realities, notably that there is a “race for space power and profit” and that we are witnessing the birth of a “new space industry.” These appear to be founded on the underlying assumption that there will be a “convergence of space and other technologies” so that “LEO satellite constellations will bring ubiquitous connectivity for moving objects and will enable new forms of data collection.” However, it is particularly uncertain as to whether there will be an “integration of connectivity” between satellite and terrestrial networks: this has been the underlying vision behind mobile satellite systems like Iridium and Globalstar since the 1990s,[[1]](#footnote-1) but has never been realized in practice. In fact those two operators now don’t even offer dual mode satellite-cellular phones because of a lack of demand.

Fundamentally, most of the recent developments in satellite technology have been developed (during a period of almost unlimited access to venture capital) either as a result of direct government demand (for example launches to the International Space Station as a replacement for the Space Shuttle) or with a “build it and they will come” mentality, just like the satellite projects of the 1990s. Some of those 1990s projects were a great success (notably satellite TV), but many others (both mobile and broadband satellite systems) were a commercial failure, despite stimulating tremendous technological innovation, and most of their capabilities have been rapidly outpaced by terrestrial alternatives in all but the most remote areas of the globe. Solutions such as crewed launches or even Moon exploration that are reliant on government demand may now be using different funding methods compared to the 1960s (e.g. fixed price government contracts, with more risk born by private investors), but this is less of an innovation than many assume (fixed price contracts were used to rescue DigitalGlobe and GeoEye in the early 2000s, and underwrote Iridium’s exit from bankruptcy in 2001).

While some satellite technologies (such as GPS and climate monitoring) clearly represent “public goods” and should be funded by government, it is far from clear that most of the new “commercial” projects (both in remote sensing and satellite communications) will ever be able to stand on their own two feet, without continued government backing: even today more than 60% of DigitalGlobe’s revenues and over 25% of Inmarsat and Iridium’s revenues comes from government contracts. In reality, the key question for most new LEO constellations will be whether they look more like DigitalGlobe (where defence users have first call on all the resources of the system) or whether they are sustainable in an Iridium-like model (where defence users utilize adapted commercial solutions) with a more modest level of government revenues. When the tide goes out, and unlimited capital is no longer available for speculative projects, which companies will be deemed to be so important to national security that governments ensure they survive (as was the case for DigitalGlobe, GeoEye and Iridium in the early 2000s)? And if only “national champions” remain in the remote sensing and satellite communications business, what will happen to the vastly oversupplied launch market, which has already seen a major decline in its core geostationary launch business, with commercial revenues now lower than they were a decade ago, and little sign of the promised demand elasticity that was supposed to result from lower launch prices?

1. See for example <https://ntrs.nasa.gov/api/citations/19950016402/downloads/19950016402.pdf> and <http://epubs.surrey.ac.uk/1850/1/fulltext.pdf> [↑](#footnote-ref-1)