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WHAT ARE THE DRIVING FORCES BEHIND SPACE TECHNOLOGY CLUSTERS?

Abstract

The space industry has historically been an extension of the defence sector, verging slightly later into civil and scientific directions. This has meant that a number of the global hubs for space activity have emerged from government facilities, such as the launch sites of Baikonur, Russia and Cape Canaveral, USA, both of which were products of the cold war space race. There are also clusters of space activity around civil space agencies, such as Toulouse, France and Cologne, Germany. This model for the space industry remained largely unchanged, with the inclusion of a few "prime" spacecraft builders whose main business centred on government contracts, such as Airbus Defence and Space, with one of their main manufacturing facilities located down the road from the French Space Agency (CNES) in Toulouse. However, this ecosystem has been changing with the advent of New Space and the rapid increase in privately owned and financed companies. Several of these companies are focused on delivering services and applications to the general public, continually iterating their satellite hardware, products and services based on fast-moving consumer habits (e.g. streaming services like Netflix and Amazon Prime overtaking satellite and cable TV), emerging markets (e.g. Internet of Things) and the latest commercial off-the-shelf technologies. In the same way the business models for space are changing, so are the priorities of where to locate. Some of these New Space companies are clustering close to high risk high reward investors and technology hubs in adjacent sectors offering specialised suppliers and distributors, such as those in Silicon Valley, California and Denver, Colorado. Meanwhile, others seek more of a balance with government support and facilities, such as the Harwell Space Cluster in the UK. There are also space clusters forming around universities with world leading research in space technology, such as TU Delft in the Netherlands, offering companies access to a highly skilled and motivated workforce. This paper will review international examples of space clusters, and assess the government and private incentives that encourage space companies and start-ups to cluster around specific locations, as well as assessing how this activity is likely to evolve in the future as priorities continue to shift.