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Space is the place... for capitalism

A hundred years ago, John D. Rockefeller and Andrew Carnegie wrestled their way to become the two richest people in the known universe by harnessing new technologies in oil drilling and steel manufacturing. Now, Jeff Bezos and Elon Musk are part of a new generation of capitalists racing to invest their already huge wealth in rocket launch and satellite technology to propel themselves and their investors to further interstellar fame and fortune.

While many of the companies leading the way in the new space race are privately owned, there are many listed companies that are heavily involved in the wider industry and the repercussions for the existing satellite and communications industry is likely to be significant.

So far in 2019, two rockets have launched that have potentially inflicted the first of a thousand mortal wounds for the current satellite industry - and that's even before you include plans from Bezos's Amazon.com Inc (NASDAQ:AMZN).

Best known of the new generation of space explorers is Musk's SpaceX and its Starlink project, which aims to create a 'constellation' of satellites in a low orbit around the Earth designed to provide low-latency, high-bandwidth broadband services around the world — and make enough money for Musk to complete his real dream of sending humans to live on Mars.

Via its Falcon 9 rocket, SpaceX launched the first 60 Starlink satellites and said it has the funding in place to build and launch enough satellites to begin using a network that it eventually foresees will number 11,943 satellites.

Technology and manufacturing innovation
This is just one small step for the new breed of space racers as part of a giant technological leap that has not only excited public attention but also allowed them to get the jump on their old-school rivals - the simple concept of lowering costs.

By standing on the shoulders of giants to make the most of the technology and expertise developed over several decades by state-funded research at NASA, the European Space Agency and Russia's Roscosmos, SpaceX and others have also harnessed new manufacturing ideas and a modern recycling ethic.

For example, the expense of thrusting a satellite weighing anything from six tonnes up to 11 tonnes into space are vast, so the ability of rocket companies such as SpaceX and Bezos' Blue Origin to reuse their rockets again and again means they can reduce costs considerably. SpaceX was offering a launch discount of 40% compared to incumbents.

The design of satellites themselves has also slimmed down costs.

Low-earth orbit (LEO) microsatellites - such as the 10cm square CubeSats developed by NASA - are allowing the creation of low-earth orbit 'mega-constellations' to provide wide coverage above the planet.

Built on assembly lines using mass-produced parts, these LEO satellites have a shorter lifespan but are a thousandth of

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the weight of a traditional satellite. Not only does their size mean many more can be launched at once, their cost at around US$1mln is a fraction of the US$220-$250mln Inmarsat paid for just one of its GlobalXpress satellites.

Starlink's flat-panel design, for example, ensured each satellite weighed approximately 227kg, allowing SpaceX to take full advantage of its rocket's capacity.

Bezos, Musk …and Wyler?
Although currently playing catch-up with Musk's SpaceX, Bezos' has two irons in the space fire and the funds to make them reality.

As well as his private Blue Origin side project, regulatory filings recently revealed Amazon's Project Kuiper plans, named after the Kuiper Belt that spins around our solar system.

Amazon's Kuiper plan for a 3,236-strong LEO satellite network is designed to serve around 95% of the world's population and make the retailer a global internet service provider.

"There are billions of people around the world who lack access to broadband internet. Our vision is to provide low-latency, high-speed broadband connectivity to many of these unserved and underserved communities around the world," Amazon said.

However, this is a long-term project and is expected to take many years.

Challenging this high-profile, low-orbit pair is US- and UK-based OneWeb, a start-up that in February launched the first of 600 LEO satellites that will begin providing high-speed internet access by 2021.

That same month OneWeb, which was founded by industry veteran Greg Wyler, raised $1.25bn from investors including WeWork backer SoftBank to take its total funding close to $3.5bn.

Fuelled by this cash injection and a manufacturing joint venture with Airbus SE (EPA:AIR), OneWeb targets the launch of 30 satellites per rocket by the end of this year.

This trio are far from lost in space, as more than 600 companies have drummed up around almost US$18bn in investment in eight years, according to data from Northern Sky, of which US$7bn of that was raised in the past two years.

Earth-bound rivals?
In the medium term, this mushrooming of new industry entrants has weighed on sentiment around the incumbent satellite industry players, most of which are less fleet of foot than these newcomers.

The cheap bulk supply of capacity, for example, has rendered legacy satellites increasingly obsolete, with the decline in satellite capacity prices having accelerated over the past year, with a global average decline of 18%, Northern Sky recently revealed.

Amid such issues, the likes of London-listed Inmarsat Plc (LON:ISAT) and France's Eutelsat Communications SA (EPA:ETL) have struggled.

Inmarsat is being taken private after a frustrating ups-and-downs in recent years, with a similar ride for Luxembourg-headquartered SES SA (EPA:SESG) and Eutelsat, though smaller UK rival Avanti Communications Group plc (LON:AVN) has seen its share price fall to earth like one of Musk's reusable rockets under the heavy load of its debts.

Others have weathered the shifting sands to rally in the past year or so, with US-based Intelsat SA (NYSE:I) and Iridium Communications Inc (NASDAQ:IRDM).

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