

Elon Musk's Satellite Internet Advances

Written by Nick Graves
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As we reported in November, Elon Musk's SpaceX company is working on a project to deliver internet services via a fleet of low-orbit satellites. The project has now moved one step closer to fruition, with the company seeking permission from the Federal Communications Commission (FCC) to begin to testing high-speed internet transmission from such a satellite.

SpaceX joins the race with Google and Facebook to assemble a viable internet service from the skies, ostensibly to reach poorly-served regions in the world. However it is clear that should such a system be established, and the services levels be comparable, it would represent a clear challenge to the incumbent telco providers.



Of all the contenders, SpaceX would seem to most promising. Facebook has focused on a drone-based solution, which would have some cost and serviceability benefits, but operating at

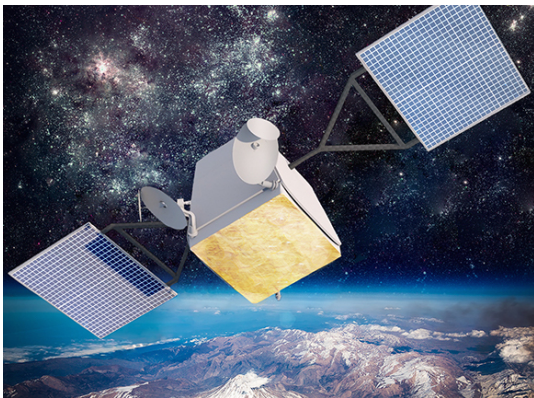
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a height of around 2-3 kilometres, would require a vast fleet in order to cover the globe. Google has dabbled with its balloon-based system - Project Loon - but has also bought a satellite company - Skybox Imaging, whose main focus has been high-resolution photography. Its one existing satellite operates at around 160 kilometres, and Google would still require several thousand in place to bring blanket coverage to the world. As an investor in SpaceX, it seems more likely that Google will retain Skybox's focus on photography, and look to Musk to deliver satellite internet coverage.

Of course neither of these players own a rocket company, which brings Musk a huge advantage. He also brings a proven track record - when he sets his sights on a goal he has tended to achieve it. It would be wrong to bet against another success for the South African-born entrepreneur.

The SpaceX system would also operate in a low-earth orbit, probably similar to the Skybox height, in order to minimise the transmission lag experienced with geostationary systems, at 36,000 kilometres. It will also therefore need thousands of mini-satellites in order to span the globe: Musk talks of around 4,000 - a figure within his reach as the owner of a rocket company. The satellites would be small, and no doubt launched in payload batches.



Musk has one other competitor, which is OneWeb, headed by fellow entrepreneur Greg Wyler, and backed by Richard Branson's Virgin Group, owner of Virgin Galactic. This fellow space company has the potential for even lower cost launches, but is rather further behind in the game after the tragic loss of a test craft in 2014.

With competition hotting up this will be a fascinating battle over the coming years - we can expect to have to wait for at least five years before any of these services are widely operational. Success from any of these players will represent a dramatic and welcome challenge to the incumbent telcos and their fragmented and patchy services.

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