

Ready for take off?

Dotcom start-ups defied gravity. Now space start-ups hope to do so for real

Fifty years ago this year, the Soviet Union launched Sputnik 1. The unmanned satellite was only the size of a basketball, but its successful 98-minute journey around the planet marked the start of the space age. Back then, and for nearly all of the five decades that followed, space was the exclusive domain of governments and professional astronauts. Happily the doors of space are now about to be thrown open to the ordinary punter. That, in any case, was the starry-eyed argument made by a throng of aerospace entrepreneurs who gathered this week in New York at a space-investment summit.

Private-sector giants such as Boeing and Lockheed Martin have been involved in aerospace for decades, but that has mostly been through "command-and-control, cost-plus contracts", in the words of one panel chairman. John Carmack, head of Armadillo Aerospace—who made his fortune developing "Doom" and "Quake", two hugely successful video-game franchises—argues that government domination of space has made the industry's established firms too risk-averse, with little appetite for innovation. In contrast, today's space pioneers are highly experimental, suspicious of government agencies and eager to persuade Wall Street that there is gold in those heavenly hills.

They got support from a surprising corner: Thomas Pickens, the son of T. Boone Pickens, a corporate raider. The younger Mr Pickens, who now runs Spacehab, a supplier of pressurised aluminium modules and other space kit to America's space agency, insisted that his father had taught him never to invest in industries "just because they are sexy", but instead to stick with strict tests of financial returns. In his judgment, he declared to enthusiastic applause, "it's time for space".

He will doubtless look to the flurry of recent announcements for evidence. Virgin Galactic, a firm controlled by Britain's Sir Richard Branson, struck an agreement in March with New Mexico's state government for the construction of a "spaceport" costing around \$200m from which it will launch tourist trips into sub-orbital space within a couple of years. (Tickets cost about \$200,000, but the firm says 200 have been sold.) Last month also saw the partially successful launch of a rocket by SpaceX, a private firm controlled by Elon Musk, another software millionaire.

Earlier this month Robert Bigelow, who made his money from budget hotels, announced ambitious plans to send a series of inflatable, relatively inexpensive space stations into orbit (a prototype has already been launched). So far he has spent \$95m of his own cash, and stands ready to spend as much again. By 2012, Mr Bigelow says, governments and firms will be able to lease space on his orbiting stations. He is also planning space hotels for tourists.

Those who cannot wait that long can queue up for a ride with Space Adventures, which sent Charles Simonyi, yet another software millionaire, to the International Space Station earlier this month as the fifth "private space explorer". Or they can rush to Zero Gravity Corporation, which for a mere \$3,500 flies Boeing 727s in parabolic dives to give a taste of weightlessness. Peter Diamandis, the man behind both these American firms and the founder of the X Prize Foundation—a charity that financed a competition that led in 2004 to the first manned private-sector flight into space—sees entertainment and tourism as "profitable stepping stones" to the commercialisation of space.

Is the private space industry therefore set for take off? Plenty of snags remain. Both Mr Musk and Mr Carmack emphasise that rocket science is difficult and risky; both have endured launch failures. Peter Wilson of RAND, an American think-tank, says demand for space launches will grow only slowly in the next 15 years and thinks there might even be a glut of supply. Erich Fischer of Booz Allen Hamilton, a consultancy, is sure the demand will come if costs fall dramatically—but remains sceptical because "that is a very big if".

Perhaps the biggest snag is government itself. Government space agencies worldwide may yet subsidise launches or unfairly block newcomers from launch markets. That is why tapping

sources of capital broader and deeper than just the pockets of a single enthusiastic founder could prove essential if the brash new breed of private space firms is to prosper. "You can't have Buck Rogers without the buck," says Mr Carmack.

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