

Show me the money: ISPCS examines private funding for aerospace development

Jason Gibbs, Las Cruces Sun-News

Published 4:36 p.m. MT Oct. 11, 2017 | Updated 9:08 a.m. MT Oct. 12, 2017

Aerospace industry leaders and financial backers arrived Wednesday during the opening sessions of the International Symposium for Personal and Commercial Spaceflight at the New Mexico Farm & Ranch Heritage Museum. Wochit



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69

LAS CRUCES – The race to commercialize spaceflight calls for innovation and an entrepreneurial spirit. More to the point, it needs steady funding.

Aerospace industry leaders and financial backers heard that call Wednesday during the opening sessions of the International Symposium for Personal and Commercial Spaceflight at the New Mexico Farm & Ranch Heritage Museum. While the industry has grown significantly during the 13 years that the conference has been held, technological advances have outpaced funding, experts said.

Funding can be difficult to secure because many projects are intended to support larger NASA missions which, although they are long-term projects, are funded through federal appropriations on an annual basis. Investors, the gathered experts said, are leery to invest in a project that could be stopped before it gets off the ground — at the whim of a changing administration in Washington, D.C.

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“We need investors. We need capital in big gobs,” said ISPCS Curator Pat Hynes. “We need people who are investors who are wise enough to understand what we are doing.”

Hynes noted that the aerospace industry has attracted \$16.6 billion in private investment since 2000. Private funding is only drawn from investors who have “confidence in the heritage of achievement” of those in whom they are investing, she said.

But private investment, especially in low-Earth-orbit development, is critical to support larger missions such as the International Space Station and plans to develop facilities in lunar orbit in an effort to reach farther into the solar system.



Thomas Siems, with the Federal Reserve Bank, speaking to aerospace industry leaders at the International Symposium for Personal and Commercial Spaceflight, Wednesday October 11, 2017, held at the New Mexico Farm and Ranch Heritage Museum. (Photo: Josh Bachman/Sun-News)

NASA's changing role

Bill Gerstenmaier, associate administrator of NASA's Human Exploration and Operations Directorate, said there is no anticipated increase in NASA's budget for the foreseeable future. Any growth in the industry supporting future development will rely heavily on private funding, he said.

But the government will still play a role by enforcing contract law, patents, property rights and copyrights to protect the private market as it develops, said Thomas Siems, assistant vice president and senior economist with the Federal Reserve Bank in Dallas.

“There are a lot of investors out there and they want to be involved. They want to be committed and see the fruits of your labor and your outcomes. So, opportunity exists.”

Thomas Siems, assistant vice president and senior economist with the Federal Reserve Bank in Dallas

“People, ideas and things are the resources,” Siems said. “They go into this economy but you can see it sits on this foundation of rule of law and protection of people, ideas and things. Now is the time, this is the place.”

“There are a lot of investors out there and they want to be involved,” Siems added. “They want to be committed and see the fruits of your labor and your outcomes. So, opportunity exists.”

Among his other duties, Gerstenmaier has worked with the private sector to make private investment available. NASA is actively promoting low-Earth orbit commercialization and expanding partnerships with the commercial space industry, he said, adding that NASA should set policy on standards and safety and let the private sector build to those specifications, effectively creating a market by stepping out and letting commercial industry step in.

“The government won’t fully fund anything, but we can create opportunities,” Gerstenmaier said.



Greg Kennedy, founder and managing partner at Advection Growth Capital LLC, speaking to a group of aerospace industry leaders during the International Symposium for Personal and Commercial Spaceflight at the New Mexico Farm and Ranch Heritage Museum, Wednesday October 11, 2017. (Photo: Josh Bachman/Sun-News)

Private funding

Private groups are paying attention to spaceflight as an investment opportunity, said Greg Kennedy, founder and managing partner of Advection Growth Capital, a merchant banking model where Advection invests in a venture- or growth-stage company and follows up with advice and guidance as the company grows.

“We’re at a really exciting time for financing of the space industry,” Kennedy said. “Obviously we started with NASA as a single market, one buyer doing everything — that was Apollo. Over the years, the big defense contracting companies grew up and started building space units. And then, for the truly cutting-edge technology, you started getting a lot of billionaires in the game.”

That list includes the familiar names of Richard Branson of Virgin Galactic; Paul Allen who co-founded Microsoft and has designed the Stratolauncher; Jeff Bezos of Amazon and Blue Origin fame; and Elon Musk, CEO of Tesla and SpaceX.

More: [Spaceport officials to seek more funding](#)

Musk was one of the first to pioneer getting private funding and investment capital into the space industry, Kennedy said. For smaller companies trying to fit into the low-Earth-orbit industry, either ferrying people and supplies to orbiting stations, taking scientific payloads to low orbit or launching small or micro satellites, the key is to show a business plan that will guarantee a return on the investment, he said.

Private equity firms in the Palo Alto and Menlo Park areas of California, commonly referred to as the Sand Hill Road investors due to the fact several have offices along Sand Hill Road, are among the venture capital firms expressing an interest in backing spaceflight. Their interest lies, in part, on the value of data that is gathered during launch and orbits.

“Those firms see space as a very important data play,” Kennedy said. “The amount of data you can collect in space allows you to almost start having predictive capabilities

for things that are about to happen on Earth, whether that be weather or oil drilling or mineral rights or whatever. That data is extremely valuable. That is what is really bringing in the Sand Hill Road crowd into the game because Silicon Valley knows about the value of data.”



Leaders in the aerospace industry network between presentations at the International Symposium for Personal and Commercial Spaceflight on Wednesday October 11, 2017 held at the New Mexico Farm and Ranch Heritage Museum. (Photo: Josh Bachman/Sun-News)

Potential trillion-dollar industry

Kennedy said aerospace could be a “trillion-dollar industry” if the right enabling technologies, such as launch capability, reusable rocket stages and small satellite launches, are in place.

“The holy grail would be some type of fast-turnaround and cost-efficient vehicle to space,” he said. “We’ve got Elon Musk sending the semi trucks and freight containers up. We have the really small guys sending the small satellites up. We don’t really have something in the middle that has frequent, low-cost reuse.

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“What we really need is the taxi to space,” he added, quoting Robert Bigelow, founder of Bigelow Aerospace.

Kennedy agreed that for private space ventures to succeed, and for private investment to back those ventures, NASA must have long-term funding instead of annual appropriations to ensure venture capitalists would back programs that serve NASA goals.

“The idea is NASA should get out of the business of building its own space systems when those can be done by the

“NASA will have decades-long, multi-year programs and they have to fund annually,” Kennedy said.

“That’s very inefficient and it leads to a lot of uncertainty about what the policy is. If you’re a private company trying to build enabling technology around a government policy, it’s very difficult when there’s no ability to predict the future. If those (future conditions) are hard to predict, it’s hard to invest.”

The National Space Council, a body within the executive office of the president, was created in 1989

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Advection Growth Capital

and could provide a more clear sense of policy,
leading to long-term vision in Washington as well as
long-term appropriations to ensure continuity
between administrations, he said. The council met
for the first time in years, he said, after being
reinvigorated in the early days of the current
administration.

“The idea is NASA should get out of the business of
building its own space systems when those can be
done by the private market,” Kennedy said. “But
NASA has an important role to play in enabling the
private space companies.”

For up-and-coming aerospace businesses, the future holds promise as NASA moves
to awarding contracts for low-Earth-orbit missions. Private funding will remain key as
well, for even the larger aerospace companies to succeed.

Seims said persistence is key to securing private funding.

More: [DACC & Virgin Galactic team up to explore virtual reality](#)

“Vision and purpose are your most powerful driving forces,” Seims said. “If you can
inspire people and challenge them and be strategic about what you are doing, you will
get followers. You will get people to come on board with you.

“You inspire others as you continue to ramp up your visions and work to meet them,”
he added. “Take your game to the next level. There’s going to be mistakes but you can
learn from them. Create your own funding sources.”

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news.com](mailto:jgibbs@lcsun-news.com) or [@fjgwriter](https://twitter.com/fjgwriter) on Twitter.

TRUTH OR CONSEQUENCES - Virgin Galactic's carrier plane, the WhiteKnightTwo, sailed the skies
of southern New Mexico on Wednesday, part of its first visit to Spaceport America since the summer
of 2014. Diana Alba Soular