

# SpaceX has big plans for launches

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SpaceX, the upstart company that shot a capsule to the International Space Station and back last week, won't have much time to savor its first major success.

It now must ready its Dragon spacecraft with life-support systems to ferry astronauts as well as cargo. And some analysts are skeptical that it can be a government contractor while maintaining its [Silicon Valley](#) style of doing business.

The Hawthorne, Calif., company, officially Space Exploration Technologies Corp., won international attention for being the first privately owned company to visit the space station, deliver cargo and return safely. Now that the U.S. has retired its fleet of space shuttles, the company wants to begin running regular cargo supply missions this year and eventually deliver astronauts there.

But that's just the beginning of the company's list of [ambitious plans](#).

[SpaceX](#) is building a new [launch pad](#) at Vandenberg Air Force Base, northwest of Santa Barbara, Calif., and has plans to blast off a massive new 23-story rocket, the largest since a mighty Saturn V rocket took man to the moon. It's trying to persuade the Pentagon to allow it to launch billion-dollar national security satellites into orbit. The company also says it is working on the first-ever fully reusable rocket - the Holy Grail in rocketry - that would fly back to Earth after a trip into space.

"There's a lot going on," Elon Musk, SpaceX's billionaire founder and

chief executive, said in a Thursday news briefing from company headquarters.

The space industry is notoriously difficult to enter and an even tougher place to prosper. Musk's objectives would be a tall order for the giants of the [aerospace industry](#), let alone SpaceX - a company with just five successful rocket launches under its belt.

SpaceX also faces a flurry of competition and the challenges of staying small and nimble while thinking big.

A handful of other young private firms are hungry for NASA business and eager to prove themselves in an industry that has been dominated by global superpowers and giant, entrenched aerospace firms for decades.

Newcomers Sierra Nevada Corp. and Blue Origin, a startup headed by Amazon.com founder Jeff Bezos, are trying to win NASA contracts. So are experienced firms like Orbital Sciences Corp. and Boeing Co., which has built nearly every manned spacecraft in U.S. history.

Work is already under way at SpaceX on upgrading its Dragon spacecraft so astronauts can ride inside. The Dragon craft that visited the space station was unmanned and built for cargo only. Dealing with human lives ups the ante for SpaceX. Engineers are designing an abort system for the capsule that would enable astronauts to escape injury if a launch goes wrong. The company is also adding oxygen systems, temperature controls and other life-sustaining instruments.

With about 1,800 employees, SpaceX is a fraction of the size of a competitor like Boeing, with 170,000 people across the U.S. and in 70 countries. But some analysts see that as a strength. SpaceX doesn't have layers of bureaucracy, and it manufactures nearly all its parts in-house, mostly in a Hawthorne complex where fuselages for Boeing's 747 jumbo

jet were once assembled.

"What fundamentally makes SpaceX different from other aerospace companies is that they approach things from a Silicon Valley mind-set," said Jay Gullish, a space and telecommunications analyst at Futron Corp., a Bethesda, Md., firm that tracks the industry.

Musk, 40, first made millions when he co-founded online payment business PayPal Inc. and sold it to EBay Inc. in 2002 for \$1.5 billion. Armed with his personal fortune and a Rolodex full of Silicon Valley venture capitalist contacts, Musk started SpaceX and co-founded electric car company Tesla Motors Inc. in Palo Alto, Calif.

He's tried to take the startup mind-set into the aerospace business, but Gullish said that could be hard to maintain.

"As they follow the money - and large government contracts - they run the risk of becoming part of the industry they want to disrupt," said Gullish.

If SpaceX wants to launch people into orbit and continuing doing business with the government, the company is going to have abide by tighter regulations, which means added cost, said Loren Thompson, SpaceX critic and aerospace policy analyst for the Lexington Institute in Arlington, Va.

"Washington is a graveyard for lean entrepreneurial enterprises," he said. "The only path to success in Washington is having a ton of lobbyists, a ton of resources and doing business on the government's terms. There is no other model."

SpaceX is already tossing around cash to play the political game in Washington. Since its founding in 2002, SpaceX has ramped up its

lobbying effort every year. In all, the company has spent about \$3.5 million on lobbyists, according to data filed by the Center for Responsive Politics.

It will probably have to spend a lot more than that as it seeks a slice of the lucrative business of launching national security satellites for the Pentagon. United Launch Alliance, a joint venture of aerospace behemoths Lockheed Martin Corp. and Boeing, is the Pentagon's sole launch provider for such missions.

In October, the U.S. government took the first steps toward opening up that business to competition.

There is no guarantee that SpaceX will win those Air Force contracts. Still, it's in the process of building a massive new rocket, called Falcon Heavy, capable of lifting the bulky satellites. And it's building a \$30 million launch pad for the rocket at Vandenberg Air Force Base.

Situated along the Pacific Ocean, Vandenberg has been used primarily for launching spy satellites since the beginning of the Cold War because its location is considered ideal for putting satellites into a north-south orbit.

"We're looking forward to serving the needs of the Defense Department in terms of launching satellites," Musk said. "Hopefully the third success of Falcon 9 in a row will give them the confidence they need to open up the defense contract to competition."

Still, SpaceX is not entirely reliant on the U.S. government for business. It has dozens of commercial contracts worth more than \$4 billion to launch satellites aboard its rockets for various countries and telecommunications companies.

Daniel Longfield, an analyst with the research firm Frost & Sullivan, said that isn't what makes SpaceX innovative.

"If SpaceX just launched telecommunications satellites, there isn't much that separates them from any other launch provider," he said. "They would be just as boring as the rest of them. It's the company's aspirations to more difficult tasks that make them exciting."

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