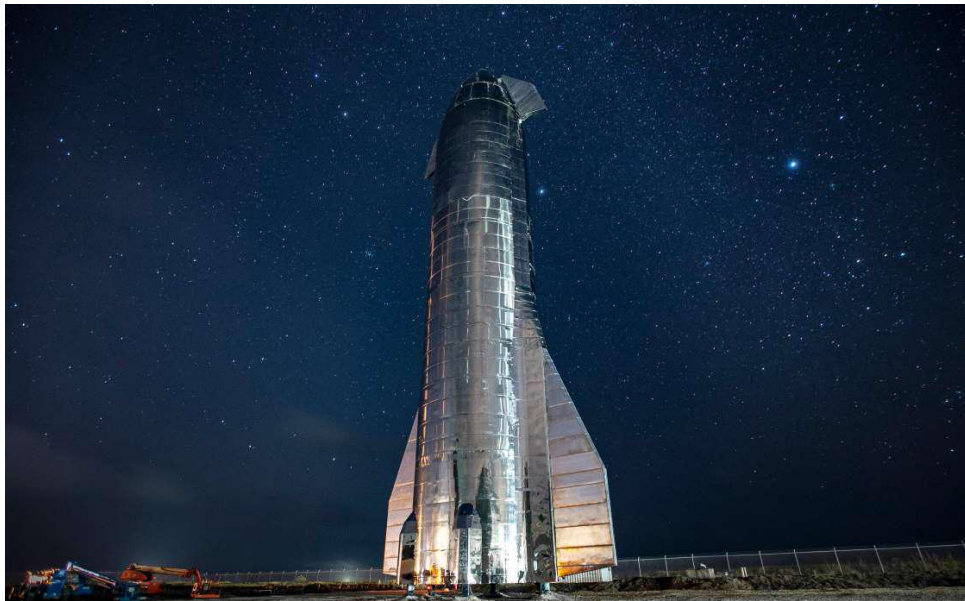




SpaceX's Starship Just Exploded -- But That's Still Good News

Rich Smith



Provided by The Motley Fool SpaceX's Starship Just Exploded -- But That's Still Good News

SpaceX CEO Elon Musk is a man who regularly "makes history." He didn't quite do that this week -- but at least he made the evening news.

In recent years, SpaceX has put the first privately built and operated spacecraft in orbit around Earth. It was first to send a privately built, orbital-class rocket to space, and then land its booster back on Earth (and later on a ship at sea). Its Falcon Heavy rocket, which debuted way back in 2018, remains the biggest, most powerful operational rocket on the planet.

But now SpaceX and Musk want to fly something even bigger -- and it could change the economics of the space industry forever.

To the moon, Alice (or in that general direction)

That's why on Wednesday, Dec. 9, SpaceX conducted the first-ever high-altitude test flight of its Starship interplanetary rocket ship -- the vessel Musk hopes will soon carry U.S. astronauts to the moon, and a few years later to Mars.

窗体底端

In a demonstration that lasted just 6 minutes, 42 seconds start to finish, Starship "SN8" lifted off vertically, climbed to an estimated altitude of 41,000 feet (just under eight miles), then turned off its engines and executed a "belly flop" maneuver -- flipping horizontally to increase wind resistance and surface area (slowing the craft down and dissipating heat) as it plunged back to Earth.

Just 11 seconds before impact, SN8 reignited its engines to swing itself back to vertical, and kept firing as it attempted to slow down and land on its tail.

It failed.

Impacting just a degree or two off-perpendicular, and moving a few meters per second too fast for safety, the rocket hit its landing site and exploded in a ball of fire.

Baby steps toward success

But that's OK. Remember that this was SpaceX's first high-altitude test flight after multiple shorter "hops" with previous iterations of the Starship, several of which blew up before they even left the ground. In contrast, on this test flight, it looked like 99.9% of what needed to go right did.

In tweets after the event, Elon Musk described the rocket's "ascent, switch over to header tanks & precise flap control" as all "successful." Indeed, SpaceX implied the spacecraft might have survived its landing but for the fact that "low pressure in the fuel header tank during the landing burn" prevented it from slowing down enough before landing.

In any event, Elon said: "We got all the data we needed."

I don't know about you, but that sounds to me a lot like a promise that SpaceX will sharpen its pencils, figure out the final details it needs to get right, and be running another test flight pretty darn soon.

And if it gets that one 100% right? What happens next?

Changing the economics of spaceflight

I'll tell you what happens: Space gets cheaper. A whole lot cheaper.

Think about it this way: Currently, the largest non-SpaceX rocket in operation is the United Launch Alliance Delta IV Heavy, which can lift about 24 metric tons of cargo into Low Earth Orbit for a cost of about \$150 million.

SpaceX's Falcon Heavy rocket, meanwhile, can carry more than twice the payload (64 tons) for much less money (\$99 million in one recent contract). But even early-model Starship are estimated to have an LEO payload capacity in excess of 100 metric tons.

So even if SpaceX charges as much for a Starship launch as ULA already charges for a Delta IV Heavy, the payload Starship can launch for that price will be four times as much. And this means that with Starship, SpaceX will be able to both charge lower prices for space launch and preserve a higher profit margin, if it so desires.

More than that, because Starship is designed as a reusable spacecraft (as opposed to Delta IV Heavy, which is expended after each launch), the marginal cost to SpaceX of launching Starship could drop rapidly to approach the cost of the fuel to launch it -- something on the order of \$1 million or \$2 million, according to Musk -- which should make SpaceX vastly more profitable than any other space company on Earth. I've said it before and now I'll say it again: If SpaceX gets Starship built, and proves it can fly, this is going to change space launch forever.

Rich Smith



Elon Musk is leaving Silicon Valley for Texas. These millionaires and companies are joining him

Clare Duffy

Silicon Valley has been the epicenter of the tech industry for decades, starting in 1938 when Bill Hewlett and David Packard started tinkering in a Palo Alto garage.



Maja Hitij/Getty Images

FUERSTENWALDE, GERMANY - SEPTEMBER 03: Tesla head Elon Musk arrives to have a look at the construction site of the new Tesla Gigafactory near Berlin on September 03, 2020 near Gruenheide, Germany.

Musk is currently in Germany where he met with vaccine maker CureVac on Tuesday, with which Tesla has a cooperation to build devices for producing RNA vaccines, as well as German Economy Minister Peter Altmaier yesterday.

But that may be changing. Perhaps the most striking evidence of that: A descendant of the company they founded, Hewlett Packard Enterprise, will [move its headquarters](#) to Texas.

On Friday, another longtime Silicon Valley stalwart, Oracle, announced plans to join them, saying it will [relocate its headquarters](#) to Austin.

A string of high profile tech investors and executives are leaving San Francisco, too: Last week, Elon Musk said he [has moved to Texas](#) after selling his Bel Air homes earlier this year.

Such moves are to be expected during the pandemic, when people are working from home anyway. Several tech firms have said they'll give employees the option to [permanently work from home](#) even after the pandemic ends.

But the relocation of corporate headquarters, company founders and big-name VC investors points to a corporate diaspora of the tech industry — and what some have called a "tech exodus" from the Bay Area.

Some who have already left San Francisco complained of mismanagement of the city and state. Though it's not clear what exactly they're referring to, California has implemented Covid-19 related restrictions that some in tech — particularly Musk — were critical of (though others in the industry took the opposite tack).

Florida and Texas, by comparison, have applied somewhat less stringent restrictions.

Silicon Valley also has notoriously high real estate prices. And California has a high personal income tax rate, while Florida and Texas have none.

Where are they going?

A tech company decamping to Texas, and especially to Austin, is hardly groundbreaking. The tech hub, nicknamed "Silicon Hills," is already home to industry leaders including Advanced Micro Devices, Dell and others.

As of November, 39 companies -- in tech and other industries had relocated to Austin so far this year, according to data from the Austin Chamber of Commerce.

Among those are 8VC, the venture capital firm run by Palantir co-founder Joe Londonsdale. Tesla is also building a 4 million square foot facility just outside Austin that's expected to create 5,000 jobs, the Chamber's records show.

And though it's not a tech firm, e-cigarette maker Juul Labs moved its corporate office from the Bay Area to Austin last year.

"We talk about ourselves as the Human Capital," said Laura Huffman, president and CEO of the Austin Chamber, citing the diverse and highly educated population of the region as one reason companies seek to relocate there.

She noted that 47% of the city's working population has a bachelor's degree, thanks to the 25 colleges and universities in the area.

"I also would not underestimate the importance of quality of life," Huffman said.

"There are a lot of things about this community — it's got a great local flavor, a great music scene, it's an outdoors city. That's where people want to be. I think 2020 has taught us all that we have more choice when it comes to where we live."

Miami Mayor Francis Suarez has also jumped on the opportunity to attract more leading firms to the area.

When Delian Asparouhov, a principal at Peter Thiel's Founders Fund and co-founder at Varda Space Industries, [tweeted](#) earlier this month: "OK guys hear me out, what if we move Silicon Valley to Miami[?]," Suarez quickly [responded](#): "How can I help?"

On Monday, Suarez is hosting a virtual round-table discussion on how to foster the city's growing tech scene.

"If you are interested in growing Miami's reputation as an international tech/startup hub and making Miami the city of the future, we want to hear from you," Suarez [said on Twitter](#). "Let's work together to enhance innovation and catalyze entrepreneurship."

At least one tech leader was way ahead of the curve on ditching Silicon Valley for the opposite coast — Reddit Co-founder Alexis Ohanian [tweeted earlier this month](#) that he moved from San Francisco to Florida several years ago. (Serena Williams, then his fiancée and now his wife, had lived there for years).

"People [were] shocked," Ohanian said.

"But how will you do business from South Florida?' Three years later, my business life [is] doing pretty well ... and [now there are] headlines every time another Silicon Valley exec leaves for Miami."

Goldman Sachs, based in New York, is also reportedly looking at moving some operations to Miami.

Who is leaving?

Here is a rundown of some of the big names in tech who have announced plans to leave the Bay Area for Texas just this year:

- Hewlett Packard Enterprises: The company announced plans to relocate its headquarters from San Jose to Texas earlier this month. Houston is already its largest employment hub, and the company is constructing a new campus in the city.*
- Oracle: Oracle is moving its headquarters from Redwood City, California, to Austin, though it plans to maintain a presence in California. "We believe these moves best position Oracle for growth and provide our personnel with more flexibility about where and how they work," spokesperson Deborah Hellinger told CNN Business.*
- Elon Musk: The Tesla CEO revealed his move from California to Texas during The Wall Street Journal's CEO Council annual summit last week. He previously suggested on Twitter that he would move Tesla's headquarters to Texas — that hasn't happened yet, but the company is developing a large facility outside Austin.*
- 8VC: Londonsdale's VC firm is moving its headquarters from Silicon Valley to Austin. "It's just become really obvious that there are a lot of places to build around the country, not just Silicon Valley, due to cost of living, talent and all sorts of other things, culture and what not," Lonsdale told the Austin American Statesman last month.*
- Drew Houston: The Dropbox CEO has purchased a home in Austin and plans to make it his permanent residence, according to a report from The Information last month.*
- FileTrail: The formerly San Jose-based firm, which makes records management software for law firms, moved to Austin in April.*

- *DZS Inc.:* The telecommunications equipment firm said in March it would move its headquarters from Oakland, California, to Plano, Texas, and create a new "engineering center of excellence" in the city.
- *QuestionPro:* This online survey software firm announced its move from the Bay Area to Austin in January.

And here are a few who have recently moved to Florida:

- *David Blumberg:* The founder and managing partner of early-stage venture capital firm Blumberg Capital left the Bay Area for Miami, the San Francisco Business Times reported earlier this month.

"We certainly hope and pray that California will take action to remedy the disastrous self-inflicted political situation and restore its former luster and quality of life, but for now we are voting with our feet," Blumberg said on Facebook, according to the Business Times.

- *Keith Rabois:* Rabois, a general partner at Founders Fund and former executive at PayPal and LinkedIn, told [a Fortune reporter](#) last month that he is leaving the Bay Area for Miami.
- *Joe Oringer:* The founder and executive chairman of Shutterstock and a former New York resident bought a \$42 million mansion in Miami Beach in October, according to the South Florida Business Journal. Oringer has since formed Pareto Holdings, a firm aimed at incubating and investing in start-ups in the Miami tech scene.

Clare Duffy