ELON MUSK OUTLINES PLAN FOR MISSION TO MARS

By ANDY PASZTOR

ENTREPRENUER SEEKS PUBLIC - PRIVATE PARTNERSHIP TO SEND HUMANS TO MARS IN 10 YEARS
ENTREPRENEUR ELON MUSK unveiled his contrarian vision for sending humans to Mars in roughly the next decade, and ultimately setting up colonies there, relying on bold moves by private enterprise, instead of more-gradual steps previously proposed by Washington.

Mr. Musk—who in 14 years transformed his closely held rocket company, Space Exploration Technologies Corp., into a global presence—envisions hosts of giant, reusable rockets standing more than 300 feet tall eventually launching fleets of carbon-fiber spacecraft into orbit.

The boosters would return to Earth, blast off again into the heavens with “tanker” spaceships capable of refueling the initial vehicles, and then send those serviced spacecraft on their way to the Red Planet. The rockets would be twice as powerful as the Saturn 5 boosters that sent U.S. astronauts to the Moon. Each fully developed spacecraft likely would carry between 100 and 200 passengers, Mr. Musk said.

His long-anticipated announcement and video simulation came during an international space conference in Mexico, with highlights transmitted across the globe by video feeds and social media.

The grand plan laid out by Mr. Musk lacked specific funding projections, operational spe-
specifics or signoff by government officials, emboldening critics who already have called it a science-fiction dream.

His speech Tuesday was aptly titled: “Making Humans a Multiplanetary Species.”

The long-term goal, Mr. Musk said, is “actually building a city” on Mars; he didn’t mention a timetable.

He predicted there could be hundreds of thousands of inhabitants on Mars, who would be served by airline-like flights to and from Earth that lasted six or so months. “If things go superwell,” Mr. Musk said, initial manned landings “may be in the 10-year time frame,” adding that there was “a good chance we don’t succeed” that quickly.

Before getting into some engineering issues, Mr. Musk said he hopes market forces will drive humans to flock to Mars to set up a “self-sustaining civilization.” That goal, he said, will be attainable only if transportation and operating costs plummet to the point that a seat on the proposed “Interplanetary Transport System” will be “roughly equivalent to a median house price in the U.S.,” or about $200,000.

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To carry passengers to Mars, SpaceX, as Mr. Musk’s company is known, would rely on a dramatically beefed-up version of its current Falcon 9 booster powered by 42 individual methane-fueled engines. The rocket could lose a number of engines on ascent and still successfully complete the mission, according to Mr. Musk. If everything goes as intended, the rockets would be designed to land vertically back on a launchpad.

Mr. Musk, whose former startup is now valued by some analysts at more than $10 billion, rolled out a concept that presents a drastic departure from the simpler building-blocks approach favored by the National Aeronautics and Space Administration. But Mr. Musk said, “We’re trying to make as much progress as we can with the resources we have.” He projected it would take a $10 billion investment to develop, test and deploy the preliminary hardware.
Mr. Musk’s speech portends a space policy debate unlike any that has played out across the U.S.—or for that matter, in the capitals of other space-faring nations. The focus is shifting to whether such entrepreneurial initiatives, or a combination of private-public funding, are best suited to further deep space exploration.

In the end, the project likely “is going to be a huge public-private partnership,” Mr. Musk said.

During months of buildup to the speech—as Mr. Musk stoked interest by throwing out titillating hints—some industry officials viewed the announcement partly as an effort to round up financial backing.

But Mr. Musk's message also contained an implicit warning for NASA. His strategy and priorities imply that SpaceX believes it can devise short-term and long-term plans to reach Mars that will be faster, cheaper and better than those being developed by NASA or its counterparts in other countries.

For all the ambitious talk, SpaceX hasn’t yet launched a single manned mission. Its current timetable for taking astronauts to orbit by 2018 is six years late. On a per-seat basis, the projected cost is about to end up four times what SpaceX initially forecast the cost would be for flights that were to start in 2012.

After years of uncertainty about its direction, NASA is now relying on a go-slower approach to the red planet, focusing first on testing technology around the moon and then using an unmanned spacecraft to grab an asteroid, extract a sample and pull it into the moon’s orbit. The agency envisions that it will send the first astronauts to Mars around 2035. Costs are estimated to begin in the range of several hundred billions of dollars, depending on what assumptions are used and who is running the calculations.

Under all scenarios, NASA chief Charles Bolden and industry officials have said international cooperation will be essential from a financing as well as a technical perspective.

Mr. Musk’s strategy, which aims to beat NASA’s timetable by at least several years, carries considerable risks for SpaceX, because NASA is, and likely will remain, the company’s biggest customer. In addition, SpaceX management is wrestling with a still-unexplained explosion of a Falcon 9 rocket during routine ground tests some four weeks ago.

Long before Mr. Musk jumped into the rocket-making business, he dreamed about colonizing the solar system. A sometimes brash leader and self-taught rocket engineer, the chairman of SpaceX sometimes reminds reporters he also is the company’s chief designer.

Even among veteran space experts tied to traditional programs, Mr. Musk’s approach to reach Mars has garnered support. “It will never happen as long as NASA is in charge of it,” Mark Albrecht, a former senior industry and government space official, said during a conference in Pasadena in January.