

Elon Musk make new-fashioned cars. He talked about the forthcoming launch of the Model X, which is starting to move up on Tesla's priority level. The "Falcon-wing" SUV based on the Model S is due to arrive in late 2014. There was also discussion of the "third-generation", high volume model that's due out in a few years. Musk says that Tesla is intent on delivering an all-electric sedan that's sized around a BMW 3 Series, has a range of 200 miles, and costs \$35,000 — not including any federal or state rebates. Ambitious.

Finally, on the upcoming Hyperloop announcement on Monday, Musk had this to say, "I think I shot myself in the foot by ever mentioning the Hyperloop."

However, he re-confirmed his commitment to publishing detailed designs of the yet-to-be-seen high-speed people mover next week, but is content to sit on the sidelines and let others work out the dirty bits.

"[The Hyperloop] can just be out there as an open source design that people can keep improving," Musk said. "I don't have any time to focus on it as I have to focus on Space X and Tesla."

Elon Musk made a personal fortune by selling two Internet businesses in the late 1990s and early 2000s. He founded the first company, Zip2, in 1995 when he was 24, right after dropping out of Stanford University's physics graduate program because he thought the Internet held more promise than physics. He pocketed about 7 percent of the \$307 million Compaq Computer paid in 1999 for Zip2, which developed software for online content publishing.

In 1999, when he was 27, he co-founded X.com, which would become PayPal, and he owned about a tenth of the Internet-based paymentsettlement service when it was sold to eBay in 2002 in a stock swap valued at \$1.5 billion.

In recent years, Musk has invested most of his time and money in high-tech transportation ventures. Since 2003, he has bankrolled and managed the development of electric car manufacturer Tesla Motors, which this year began production of a battery-powered model that accelerates from zero to 60 mph in less than four seconds. He founded Space Exploration Technologies in 2002, and since then SpaceX has become a serious contender to provide replacement spacecraft for the U.S. government's fleet of space shuttles, which are scheduled for retirement in about two years. In addition, Musk guides the growth of a solar-panel installation service he started called SolarCity.

While the sales of PayPal and Zip2 may have left him with the image of a serial entrepreneur, Musk says his commitments to his spacecraft, electric car and solar panel businesses are long term and deeply felt. "I never expect to sort of sell them off and do something else. I expect to be with those companies as far into the future as I can imagine." His motive is more than just making money. He says he is involved in SolarCity and Tesla Motors "because I'm concerned about the environment," while "SpaceX is about trying to help us work toward extending life beyond Earth on a permanent basis and becoming a multiplanetary species." At Tesla, production began in March of 2009 the first electric car, the Tesla Roadster, which has a base sticker price of \$109,000. By midyear, Tesla had opened its first retail sales and service centers in two California markets, Los Angeles and Menlo Park, and was well into its development of a new four-door electric sedan debuted with a base sticker price around \$60,000. Musk said, "It's a great time to have an electric car company," he says. It may be a great time to have a spacecraft company, too. Musk worries about the mountain of capital spending that's required to compete. SpaceX burns through plenty of cash to test and refine its booster rockets and other spacecraft systems. But

while doing R&D, SpaceX also has been lining up orders from government agencies and private companies that need shuttle services in outer space, such as satellite deployment.

"Certainly, the rocket business is a tough one," Musk says. "The capital cost of the whole thing is a very tough problem. But we're doing pretty well." SpaceX has won a major contract from NASA, providing \$278 million in funding to the company to demonstrate its Falcon 9 rocket, which would serve as the booster for new spacecraft to replace NASA's space shuttles.

An unmanned Falcon 9 test flight was expected to be conducted for NASA in mid-2009. "This is just for demonstration. For another \$300 million, we would basically develop the incremental stuff that's needed for manned flight and demonstrate its capability," Musk says. "NASA has not yet exercised the manned carriage option." Despite the complexities of rocket science, the business model of SpaceX is fairly straightforward: sell spacecraft and launch operation services at a tenth of the going rate. SpaceX "has been designed from the get-go for efficient operation," Musk says. For example, by recruiting former executives of established aerospace companies, SpaceX has been able to do much of its research and development work in-house rather than farming out the work to industry powerhouses with higher cost structures. Undercutting competitors' prices is nothing new for Musk. That kind of thinking guided his management of PayPal. The company succeeded largely by convincing millions of Internet shoppers to make online purchases with electronic checks, or transfers between users' accounts, instead of credit cards. "It allowed us to undercut every other payment system on the Internet," Musk says, including systems developed by such major financial institutions as Bank One and Citibank. While credit card issuers must cover costs including interest and fraud write-offs that amount to 3.5 percent per online transaction, the comparable cost is "near zero for electronic

checks and internal transfers within the PayPal system," he says. Starting a business has its ups and downs, of course, and Musk has managed his way through several serious setbacks in his business career. In 2006, for instance, SpaceX conducted a rocket test flight on a remote Pacific island that ended prematurely when an engine fire downed the rocket shortly after it was launched. "That was definitely a difficult blow. The important thing is that none of our customers left SpaceX. They all sort of held the faith," he says. "We actually worked closely with our customers, gave them full disclosure.

They knew everything we knew as far as the nature of the problem. They knew we weren't trying to give them a snow job or hide anything. I think that was really important." His general approach to a business setback is to rally employees and investors without creating false hope. "You've got to communicate, particularly within the company, the true state of the company," he says. "When people really understand it's do or die but if we work hard and pull through, there's going to be a great outcome, people will give it everything they've got." Asked if he relies more on information or instinct in making key decisions, Musk says he makes no bright-line distinction between the two. "Data informs the instinct," he says. "Generally, I wait until the data and my instincts are in alignment. And if either the data or my instincts are out of alignment, then I sort of keep working the issue until they are in alignment, either positive or negative."