



Tale of a supercharged start-up

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Published: April 12 2007 03:00 | Last updated: April 12 2007 03:00

A fascination with the possibility of life on Mars is the interplanetary connection that brought three entrepreneurs together to design and produce a futuristic sports car.

It sounds like a *Twilight Zone* tale of entrepreneurship, but in this case the fiction is close to becoming fact: the car is now being road-tested, its first production run of 350 has sold out and buyers include Hollywood actor George Clooney and Google founders Larry Page and Sergey Brin.

Martin Eberhard and Marc Tarpenning approached Elon Musk about backing their idea for a 130mph electric sports car with a range of 250 miles after a close encounter at a Mars Society meeting in Silicon Valley.

The society, whose goal is to help mankind settle on the red planet, hosted a talk in 2001 by Mr Musk, a serial entrepreneur, on his funding of research into how humans might cope with Mars' gravity.

The two founders of Tesla Motors cornered him afterwards for a chat about space and then tracked him down three years later when they sought funding for their car.

By that time, he had founded Space Exploration Technologies, or SpaceX, to further his ambitions to see man one day reach Mars (see below), but he was also showing an interest in saving planet Earth from global warming.

"He gave me half an hour to make a presentation, which turned into two hours and, by the end, we had a handshake deal that he would invest in the company," says Martin Eberhard, Tesla chief executive. "This is exactly the way I would do it."

None of the founders had any experience of designing or making cars, yet they started out with a strong track record of profitable investments.

Mr Eberhard, a car enthusiast, had been toying with the idea of making an all-electric one. He was galvanised into action by his anger at the auto industry successfully pressuring California in 2003 to drop a requirement for the production of battery-powered electric cars.

The Tesla chief was an electrical engineer who started out designing computer terminals for Wyse Technology. There he had learned a valuable lesson about producing reliable products in high volumes: in his first project, several thousand terminals were returned after a design fault was discovered.

He went on to co-found another terminal maker, Network Computing Devices, and then, with Marc Tarpenning, he formed NuvoMedia, which created a market for electronic books with its Rocket eBook. He sold the company in 2000 for \$187m.

This was another sector he approached with almost total ignorance. "I didn't know anything about publishing. I didn't understand territorial rights or the adversarial relationship between publishers and authors."

Yet he regards this as an advantage. "One of the key ingredients to being a successful entrepreneur is to have a certain naivety when you go into a project - if you know exactly how hard it is, you won't do it."

To compensate for its lack of technical know-how, NuvoMedia recruited experienced staff from the publishing industry.

The experience was applied to Tesla. Marc Tarpenning, as engineering vice-president, had himself developed key technologies for the drive train, the electric motor and use of the lithium-ion battery in their car, but knew Tesla would need expert help from the auto industry to make the rest of the vehicle.

"In Silicon Valley, a new product is fairly uncontrolled, it somehow all comes together. But you can't do it with cars because of the safety issues, so we learned the formalised system of New Product Introduction, or NPI."

Help came from Lotus, the British sports car maker and engineering consultancy, after the duo met a Lotus executive at a Los Angeles motor show in 2004. The company assisted with project management of this well-defined process and offered its expertise in the contract manufacturing of mid-engine sports cars that met US safety standards.

Tesla Motors, named after Nikola Tesla, the inventor of the AC induction motor, is fitting out the first pre-production models itself at its headquarters in San Carlos. It is a Silicon Valley garage start-up in the truest sense, where the Tesla Roadster is laid out in all its phases of development, from the shell of a Lotus Elise, to a wind-tunnel model and then one with modifications designed by the company founders.

On the road, the prototype produced plenty of rattles to be fixed but had impressive acceleration - Tesla claims it can do 0 to 60mph in "about four seconds" - to the unfamiliar fan-like sound of an electric motor.

Mr Eberhard says other electric-car entrepreneurs have gone about development the wrong way - trying to produce affordable everyman cars from the start.

"In what other market do you enter at the low end? Flat-panel TVs, cellphones, even refrigerators were all originally pitched at the high end. That drives the technology, creates a brand and builds desirability in the larger market," he says.

"That seemed even more important to us with electric cars, because they had been given such a black eye in the marketplace. People thought about them as dork-mobiles, just ugly golf cart things."

The Roadster is therefore a top-performance sports car costing \$100,000. Tesla is currently planning a cheaper four-door sedan that will cost about \$50,000. It is being designed by a team it has hired in the Detroit area and this time will be built by Tesla itself in a factory in New Mexico. A third model, costing \$30,000-\$35,000, would follow, addressing an even bigger market.

The aim is to become a mass-market car producer putting 10,000-15,000 cars on the road a year by 2010.

"We've got to break our dependence on oil, so I can't do that being a boutique car maker," says Mr Eberhard. "We're on a mission, but we're also realists: we have to be a successful business and I don't think our tinted glasses are too rose-coloured."

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