Power Play

Tesla, Elon Musk, and the Bet of the Century

By Tim Higgins

12-minute read

Synopsis

Power Play (2021) tells the story of Tesla's rise from overambitious start-up to one of the most valuable players in the global auto industry. It charts the company's rapid rise, its operational and financial struggles, and the leadership of its volatile CEO, Elon Musk.

Who is it for?

- People interested in tech start-up history
- Auto industry and car aficionados
- Entrepreneurs interested in tech innovation

About the author

Tim Higgins is a reporter for the *Wall Street Journal*, where he covers Apple, Tesla, and other tech companies. He also regularly appears on CNBC as an on-air contributor to the tech and auto industries. *Power Play* is his first book.

What's in it for me? Discover how the start-up Tesla changed the world's perspective on electric cars.

In the early 2000s, electric cars still seemed hopelessly futuristic. For more than a century, the biggest names in the automotive industry had failed to introduce commercially viable electric alternatives to their gas-guzzling sports models, despite their best efforts. But in Silicon Valley, a small group of engineers was ready to take on the challenge.

This group of young engineers and entrepreneurs founded Tesla Motors with a singular vision: they would produce a car that was electric, but also fast, sexy, and cost-effective. In the following blinks, we'll look at how their seemingly idealistic start-up became the most valuable player in the global auto industry within just fifteen years.

In these blinks, you'll learn

- how Tesla's decision to use laptop batteries transformed the electric car game;
- how a tech start-up became the only US car company aside from Ford not to go bankrupt; and
- how Elon Musk almost single-handedly saved Tesla from financial ruin.

Tesla Motors was founded in 2003 by Martin Eberhard and Marc Tarpenning.

In 2002, global warming was just beginning to enter mainstream conversation, but one Silicon Valley engineer named Martin Eberhard was paying attention. As a sports car aficionado, he recognized that his favorite rides were sucking up huge amounts of gasoline and contributing to global climate change.

He wondered whether he could design an electric car that would match the design and technology of beloved models like the Porsche 911. To make his dream a reality, he founded AC Propulsion to create an electric car known as the *tzero,* and invited another engineer, named Marc Tarpenning, to further its development.

Shortly after, in 2004, a budding investor named Elon Musk entered the picture.

Here's the key message: Tesla Motors was founded in 2003 by Martin Eberhard and Marc Tarpenning.

Musk was the young millionaire founder of Internet start-up PayPal, who had recently been ousted as CEO of that company. A devoted futurist, he had also recently founded the space transportation company SpaceX, and was chairman of the solar company SolarX. Critically, Musk had what Eberhard and Tarpenning needed: a daring vision that aligned with theirs – and a lot more money to back it.

Eberhart and Tarpenning pitched to Musk a company called Tesla Motors. Their pitch went like this: Tesla would make an entirely electric sports car with a two-speed transmission and slick interior – in other words, an electric car that could compete with the best sports cars in the world. They called it the Roadster.

Eberhard and Tarpenning planned to start by raising about $7 million, money they'd use to hire more engineers and fund the production of a handmade prototype. Over the next four years, they would seek more millions in investment to produce the car. In that time, they would build 565 Roadsters, selling each for $79,900. Not only would they make a tidy profit, they would also change the world.

Although Musk was skeptical about the overly simplistic calculations, he agreed that the Roadster could be the start of something monumental. He was so convinced, in fact, that he decided to gamble everything he had, ultimately providing $6.35 million of the $6.5 million initial investment. Eberhard and other small investors contributed the rest.

In exchange for this stake, Musk would become chairman. Eberhard became CEO, and Tarpenning president. But as it turned out, it was the principal funder who would lead the company forward.

Tesla was plagued by money problems, but Musk managed to steer the company away from ruin.

The idea of the electric car is as old as the car itself. Automakers have been attempting to create battery-run vehicles since the mid-1800s. Although this was technically possible, producing batteries powerful enough to keep a lightweight, high-speed electric car on the road for long periods of time consistently proved too difficult.

But with the Roadster, Tesla managed to achieve what no other company ever had. Led by a man named J. B. Straubel, Tesla's engineers produced a fully electric sports car using lithium-ion batteries – the same lightweight batteries that were used to charge laptops. This groundbreaking technology would set the Roadster apart from any other electric vehicle.

But before the prototype was even built, Tesla was already way over budget.

This is the key message: Tesla was plagued by money problems, but Musk managed to steer the company away from ruin.

In 2006, Eberhard and Tarpenning revealed the Roadster prototype. Although the car was the first of its kind, with a slick design and state-of-the art batteries innovated by Tesla, production suffered from extreme

supply-chain shortages. There was no doubt that before the Roadster could go into substantial production, Tesla would need to raise more money.

Despite these issues, Musk was already talking about what would come next. As groundbreaking as the Roadster was, it was not yet commercially viable, and Musk had long wanted to release an electric car for the masses. So while the Roadster was still in development, he pushed Tesla's engineers to develop a separate line of luxury sedans known as the Model S. Priced at a fraction of the Roadster, the Model S would be Tesla's first foray into the mainstream auto market.

To keep up with all of this, the company kept raising cash – and spending just as quickly. Tesla skirted bankruptcy for the first time in 2008, leading Musk to take out personal loans that he poured back into the company. In fact, the company overcame its financial hurdles almost entirely thanks to Musk's personal investments, in addition to his massive fundraising efforts, which brought in millions from other investors.

In the same way that Musk was sold on Eberhard and Tarpenning's idea based on their existing tzero prototype, the proof of a Roadster prototype allowed Musk to convince other investors to back the firm. Meanwhile, the company went public as new revenue forecasts focused exclusively on the Model S.

Musk's fundraising strategy worked: by 2011, the company's total revenue had swelled to almost $1 billion.

As Musk raised more funds for Tesla, he increased his control over the firm.

At the end of 2006, Eberhard sat in his office with his head in his hands. He had received a call from Musk who, after a weekend of test-driving the Roadster prototype, had a host of complaints and requests for changes. His long list of woes included everything from uncomfortable seats to lack of mechanical buttons for the doors, all of which would cost the firm millions more to address.

This was an increasingly familiar pattern at Tesla. Musk was pushing all of his ideas. It wouldn't be long before he would take over Eberhard's role as CEO.

The key message here is this: As Musk raised more funds for Tesla, he increased his control over the firm.

By 2007, Musk had gone from an external investor to micromanaging every detail of the company's engineering, design, and marketing. According to the author, Musk used some aggressive boardroom tactics to push Eberhard out as CEO of Tesla. On his way out, Eberhard hit Musk with a lawsuit that included libel, breach of contract, and more. Meanwhile, Musk continued to consolidate more power at Tesla, and made himself CEO by 2008. As his control increased, so did his rifts with the others.

By the time the Model S was being produced, Musk's increasingly short temper and stubborn personality became hallmarks from Tesla's offices to the factory floor. He became prone to firing individuals for simple mistakes like typos, regardless of their rank. The author describes one incident in which Musk had a physical tussle with a senior sales manager who quit because he was fed up with Musk's leadership style. But as Musk himself became more and more of a celebrity, the public also bore witness to his bouts of rage.

On Twitter, for example, Musk accused a diver who had helped rescue some schoolboys from a flooded cave in Thailand of being a pedophile just because the man had said that the submarine Musk sent to help with the rescue effort was of no use. In another incident, Musk nearly wiped out the company after suggesting on Twitter that he was taking Tesla private, leading the Securities and Exchange Commission to open an investigation.

But despite these shortcomings, Musk was also Tesla's greatest marketer. He sold to investors, and the world, a more ambitious vision for the company's future – one that went beyond the ideas that had originally been pitched to him. His strategy went like this: Build that stylish, high-speed electric car, cash in on the hype, and grow exponentially.

Tesla encountered serious operational problems during its rise, and overlooked customer experience.

For even the most experienced automaker, setting up a new factory is an enormous challenge. But institutional experience does make the process a lot easier, as lessons get passed down through generations and integrated into a playbook of processes. Toyota, for example, established a long-running method for solving maintenance problems, in which any worker is encouraged to stop the line of production until the problem is solved.

But Musk was not interested in learning from other carmakers. Unlike Toyota, he preferred to keep Tesla's assembly line running even as issues were being resolved. This translated into chaos on the factory floor. Under Musk's leadership, everyone raced to beat the clock.

The key message here is: Tesla encountered serious operational problems during its rise, and overlooked customer experience.

From the start, Tesla's operations were overwhelmed with problems that sent the company to the edge of collapse more than once. As cash reserves dried up, manufacturing delays increased. Meanwhile, Musk had

publicly announced that the Model S vehicles would start shipping to customers by the summer of 2012. Now, the company had to figure out how to keep that promise, setting up production in a disused factory – provided to them by Toyota, ironically enough.

Unlike most carmakers, Tesla had little time for the usual testing procedures. German automakers, for instance, usually ran a car 6 million miles over the course of two winters to detect potential engineering problems. But since Tesla was so strapped for time, Musk approved testing for a mere one million miles over six months – and that time was to be used not just spotting potential problems, but also fixing them.

On top of cutting the test run short, Musk demanded that testing procedures not affect the production schedule, since the company was already behind on all of its goals. That meant problems discovered during testing would only become known after production had started. This resulted in even more costs to cover last-minute fixes. Even worse, in 2015, Tesla recorded 8.8 injuries per 100 workers – far higher than the industry average of 6.7.

All of these issues also meant that previously sold cars needed to be frequently recalled to be fixed. The negative PR suggested that buying a Tesla was a gamble from the average consumer's point of view. And yet, despite its many defects and reports of consumer dissatisfaction, the Model S would prove to be a turning point for Tesla.

The Model 3 marked Tesla's first real foray into the mainstream auto industry.

The auto industry is notoriously hard on start-ups. Of all the carmakers selling today in the US, for instance, the last automaker to emerge that was still producing cars was Chrysler, founded way back in 1925.

At the core of Tesla's vision was the central question of whether the start-up could really make it in one of the most entrenched businesses around. Even Musk questioned whether his company would be able to join the ranks of GM, Ford, Toyota, and BMW – iconic global brands that sold tens of millions of vehicles every year. But even though the odds were stacked against Tesla, Musk was set on the quest.

Here's the key message: The Model 3 marked Tesla's first real foray into the mainstream auto industry.

Despite all of its production problems, as 2013 came to a close Tesla was on its way to selling almost 23,000 Model S sedans in the US, outselling even the high-end Mercedes-Benz S-Class. The Model S had an exterior and interior design and build that could be compared to some of the best cars on the market. What's more, Tesla's battery range was almost equivalent to a Chevy Volt with gasoline.

The Model S was redefining what luxury was for a certain type of eco- and style-conscious consumer, who was becoming a major demographic among the California elite. In this way, Tesla was forging a new market segment. As Musk's vision crystallized into reality, Wall Street executives began to consider that traditional automakers would have to step it up in order to compete with Silicon Valley. Pretty soon, it seemed that all the major auto companies were spending billions to transition to electric vehicles.

As much as the success of the Model S shook up the auto industry, that wasn't enough to make Musk's long-term vision a reality. He still wanted to scale the company up and turn what had begun as a tech start-up into a real car company. After the Model S, Tesla would spend the next few years focused on launching a Model 3. Just like the Model S, the Model 3 promised to be a real game-changer – bringing a fully electric car to the public at a much lower starting price of $35,000.

Just like the Model S, creating the Model 3 entailed a long stint of production hell. To keep up with timeline goals, much of the assembly line was built in a makeshift tent in the parking lot of Tesla's California factory. But the model's introduction would also help the company to raise billions more in funding. While the rest of the world recovered from a financial crisis, Musk had avoided what other US automakers had struggled with throughout history: bankruptcy.

At a valuation of over $700 billion, Tesla is currently the world's most valuable automaker.

On a cold day in January 2019, Elon Musk stood in a field on the outskirts of Shanghai with the city's mayor, Ying Yong, smiling for a photograph. The occasion was a ceremonial ribbon-cutting to celebrate Tesla's first attempt to manufacture cars outside of the US. The duo posed in front of the company's brick-and-mortar factory, six thousand miles away from the assembly line tent back in California. Photos of the smiling duo immediately landed on news screens around the world.

The key message here? At a valuation of over $700 billion, Tesla is currently the world's most valuable automaker.

Tesla wasn't the same brand it had been back in 2013, when the Model S represented a challenging sell to buyers who were skeptical about a start-up carmaker using new technology. Now, the company had put the Model 3 on the road; it was no longer just an overambitious fantasy being peddled by idealistic Silicon Valley dreamers.

But in order to make the Model 3 truly viable for the market, Tesla still needed to scale up production and drive down costs. In order to achieve this, Tesla would need a lot of money – and China was willing to provide it. The country was eager to spark an electric vehicle market, and decided to invite Tesla to motivate rivals. Tesla received a loan of $1.26 billion from Chinese banks that were connected to the state, giving the company the opportunity to build a factory with the country's own money.

Tesla intended to replicate the assembly line they had built in the US. As with most of the company's ventures, the process of international expansion was a little messy – but by autumn 2019, it was clear that Tesla's overall plan for growth was working. More importantly, it had done what Musk had promised that January: Tesla was actually ready to begin production of the Model 3 in China.

It was an incredible feat – but then, every step since Martin Eberhard and Marc Tarpenning had made their original Tesla pitch to Musk was hard to believe. Just a little over a decade before launching in China, Musk had nearly lost Tesla, and had still bet his personal fortune on the vision for the Roadster and Model S. With every success, he gained the confidence to take the company farther. Now that the Model 3 was a real consumer car, Musk was ready to turn the company's attention to even riskier territory: self-driving cars.

Meanwhile, as shares continued to climb, he could finally celebrate the company's success. By summer of 2020, Tesla was the most valuable automaker in the world on paper and, with a valuation of $700 billion, it was now worth more than Toyota and Volkswagen combined.

Final summary

The key message in these blinks is that:

When Tesla was founded in the early 2000s, the company ushered in a new dawn for electric cars. It was funded largely by investor and entrepreneur Elon Musk, who would go on to take control of the company and lead it through a tumultuous fifteen years of financial hardship and operational chaos as he strove to bring Tesla's audacious vision to life. By 2020, he had successfully led Tesla to become the most valuable car company in the world.