****

9B19M033

TESLA INC.: STRATEGIC PARTNERSHIPS FOR GROWTH[[1]](#endnote-1)

Ken Mark wrote this case under the supervision of Professor Cara Maurer solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

This publication may not be transmitted, photocopied, digitized, or otherwise reproduced in any form or by any means without the permission of the copyright holder. Reproduction of this material is not covered under authorization by any reproduction rights organization. To order copies or request permission to reproduce materials, contact Ivey Publishing, Ivey Business School, Western University, London, Ontario, Canada, N6G 0N1; (t) 519.661.3208; (e) cases@ivey.ca; www.iveycases.com. Our goal is to publish materials of the highest quality; submit any errata to publishcases@ivey.ca. i1v2e5y5pubs

Copyright © 2019, Ivey Business School Foundation Version: 2019-05-03

In January 2018, Tesla Inc. (Tesla) was a key player in the global luxury automobile industry. The company had once been seen as a niche player in a small industry segment, but those days were in the past. It was now beginning to deliver its mass-market Model 3 sedan, and this milestone marked its move from a niche producer of eclectic and expensive electric cars to a major American automobile manufacturer.[[2]](#endnote-2) Tesla had grown through a combination of managerial talent, led by chief executive officer (CEO) Elon Musk and his team; capital from the public and private markets; and key partnerships that provided complementary technology.[[3]](#endnote-3)

In the past, the company had partnered with future rivals such as Daimler AG and Toyota Motor Corporation (Toyota) and with multinational firms such as Panasonic Corporation (Panasonic). Tesla had pursued partnerships, even though the record showed that Musk preferred to maintain complete control of his companies’ destinies, avoiding outside collaboration and mergers. Musk himself was on record as saying he did not like partnerships in general because they were complicated and they seldom worked.[[4]](#endnote-4)

The stakes were high as Tesla moved into regular production of its Model 3. Worldwide demand for electric vehicles was set to soar after reaching the 2 million milestone in 2017—up 60 per cent from 2016. The International Energy Agency estimated that there would be 140 million electric cars globally by 2030.[[5]](#endnote-5) The challenge for Musk was to define Tesla’s future partnership strategy and to determine what would become of its tie-ups with its global partners.

The Global Vehicle Industry

Since its adaptation for the automotive market in 1879 by Karl Benz,[[6]](#endnote-6) the internal combustion engine (ICE) had been the dominant technology in the global vehicle industry. The ICE generated power by igniting a mixture of petroleum or oil and air inside chambers and using the hot gases to power pistons. In turn, pistons and gears transferred this energy into forward motion. The ICE was inefficient at converting fuel into usable energy, achieving only about 20 per cent *thermal efficiency*—the measure by which the industry calculated the percentage of the total energy in fuel that was actually converted into motive power.[[7]](#endnote-7)

The search for a more efficient engine began with the oil crisis in 1973, when members of the Organization of the Petroleum Exporting Countries (OPEC) imposed an oil embargo against the United States. The first electric-powered car was the EV1, launched in 1996 by the General Motors Company (GM). Unfortunately, the EV1’s short range and long recharging time earned it a spot on *Time*’s 2008 list of the “50 Worst Cars of All Time.”[[8]](#endnote-8) The next year, 1997, Toyota launched the Prius, which would become the first successful energy-efficient vehicle. The Prius was a petrol–electric hybrid car that combined an ICE with a high-torque electric drive motor, a separate generator, and a nickel-metal hydride battery pack.[[9]](#endnote-9)

The race to develop a commercially viable battery electric vehicle (BEV) began in the early 2000s as battery technology improved. BEVs worked by using electricity stored in powerful batteries to power electric motors. As there was no ICE, a BEV was significantly less complicated than a hybrid car, and it produced no exhaust. A BEV incorporated additional technology to minimize energy waste. For example, the car would be switched off when it was stopped, and regenerative braking technology allowed energy to be recovered during the braking process.[[10]](#endnote-10)

Worldwide, 79.5 million passenger cars were sold in 2017:[[11]](#endnote-11) 6.3 million cars were sold in the United States[[12]](#endnote-12) and 24.7 million cars were sold in China.[[13]](#endnote-13) When including the other types of passenger vehicles available—light-duty trucks, sport utility vehicles, and cross-over vehicles—the market for passenger vehicles in the United States totalled 24.4 million vehicles in 2017.[[14]](#endnote-14) Global sales of BEVs were expected to break the 1 million unit mark for the first time in 2017.[[15]](#endnote-15)

The Growing Demand for Electric Vehicles

Electric vehicles were becoming more viable and more popular due to advances in technology. Starting in 2009, battery costs declined by a factor of four and battery energy density increased six times. In addition, an estimated 2.3 million charging stations were available globally in 2016. These charging points allowed owners of electric vehicles to recharge their cars during visits to shopping malls or doctors’ offices, for example.[[16]](#endnote-16)

Approximately 200,000 electric cars were sold in the United States in 2017.[[17]](#endnote-17) China was the world’s biggest market for electric cars, with 600,000 units sold in 2017, up 71 per cent in one year.[[18]](#endnote-18) The Chinese market was dominated by local brands including the BAIC EC-Series, the market leader with 78,079 units sold, and the Zhidou D2 EV, with 42,342 units sold.[[19]](#endnote-19)

In September 2017, China indicated that as part of a change in industrial policy, it would require foreign automakers with manufacturing locations in China to build electric vehicles by 2019. Large automakers set their targets high: GM planned to offer 10 models of electric vehicles in China by 2020; Volkswagen Group stated a target of selling 1.5 million electric cars in China alone by 2025; and Ford Motor Company and the Renault-Nissan-Mitsubishi Alliance announced Chinese joint ventures to build electric cars.[[20]](#endnote-20) In 2016, China accounted for one-third of global car sales—about 28 million units—an increase of 13.7 per cent over the previous year.[[21]](#endnote-21) In the first half of 2017, the best-selling electric cars in China sold between about 6,000 and 18,000 units each (see Exhibit 1).

China’s goal was for 11 per cent of all cars sold, or about 3 million vehicles per year, to be electric models by 2020.[[22]](#endnote-22) The country was also building out the infrastructure necessary to support the growth of electric vehicles. In March 2017, China had 156,000 charging points across the country, compared with 43,000 in the United States. By 2020, China intended to have 4.8 million charging points.[[23]](#endnote-23)

In a sign that Chinese firms were looking beyond local automotive players, Tencent Holdings Limited (Tencent), a large Chinese technology firm, acquired a 5 per cent stake in Tesla on March 28, 2017. Tencent’s investment served to reinforce the importance of strategic partnerships in Tesla’s founding and emergence as only the fourth major American automaker in the last century. With Chinese interest in electric cars on the rise, Tencent’s investment seemed timely.[[24]](#endnote-24)

Tesla’s History of Partnerships

Tesla was founded by Martin Eberhard, Marc Tarpenning, J. B. Straubel, and Ian Wright. Tarpenning observed that, by the early 2000s, car makers had outsourced the majority of their parts development and sourcing, keeping just three technologies in-house: “internal combustion research, sales and marketing and final assembly.”[[25]](#endnote-25)

In January 2004, the co-founders looked to raise a round of capital in support of their plan to build a powerful electric car around licensed drivetrain technology from AC Propulsion. AC Propulsion had created a prototype car called the tzero but had decided to focus instead on another electric car project based on a Toyota model, the Scion xB.[[26]](#endnote-26) Musk, who had been excited by the prospects for electric cars ever since building models as a child,[[27]](#endnote-27) became both the start-up’s largest investor by contributing $6.35 million[[28]](#endnote-28) and the firm’s chairperson.[[29]](#endnote-29) In 2006, Eberhard explained the partnership with Lotus Engineering Inc. (Lotus):

For those of you who don’t know, the Lotus Elise’s chassis is a work of genius. . . . Some have suggested that the Tesla Roadster is built on a Lotus chassis. This is not true. Tesla licensed the Elise chassis technology, but Tesla’s UK-based chassis engineering team designed the Roadster’s chassis using that technology. . . .

Tesla has built a strong, friendly relationship with the team at Lotus, focused primarily on bringing a great new sports car to the market quickly and efficiently. . . .

* Tesla has licensed key technology from Lotus, principally related to structure and safety
* Tesla has contracted Lotus Engineering for various engineering and styling jobs
* Lotus Cars is the contract manufacturer for the Tesla Roadster, with Tesla as a key supplier to the factory in Hethel [England][[30]](#endnote-30)

However, Eberhard’s goals for Tesla—to be selling Roadsters by 2006 and to be profitable by 2008—were overly optimistic. Eberhard’s original plan was to drop Tesla-designed drivetrain components into a stock Lotus Elise “glider,” or chassis, and then finish the car with customized technology and body panels. Tesla itself was to have been responsible for just five subassemblies in the Roadster, with Lotus providing the rest of the parts and installation. But attempts to improve the Roadster—by adding customized headlights and a carbon-fibre body, for example—meant that Tesla took responsibility for hundreds of subassemblies, introducing complex processes—such as reworking engineering, sourcing materials, and retooling so that new parts could be made—which a start-up could not handle.[[31]](#endnote-31)

By August 2007, Musk realized his venture was at stake, ousted Eberhard, and appointed himself as president of technology. He took steps to assert his authority over Tesla, even working to recast his role as a key contributor at the firm, even though he had been the chairperson:[[32]](#endnote-32)

The way that my role has been portrayed to date, where I am referred to merely as “an early investor” is outrageous. That would be like Martin [Eberhard] being called an “early employee.” Apart from me leading the Series A & B and co-leading the Series C, my influence on the car itself runs from the headlights to the styling to the door sill to the trunk, and my strong interest in electric transport predates Tesla by a decade. Martin should certainly be the front and center guy, but the portrayal of my role to date has been incredibly insulting. I’m not blaming you or others at Tesla—the media is difficult to control. However, we need to make a serious effort to correct this perception.[[33]](#endnote-33)

A new CEO, Michael Marks, was installed in the summer of 2007. Marks had been CEO of Flextronics International Ltd. (Flextronics), a contract electronics manufacturer. He had experience growing firms, having taken Flextronics from $93 million in revenues to $16 billion. In addition, Marks invested $2.5 million in Tesla in 2007.[[34]](#endnote-34) Marks set out a list of priorities for Tesla’s operations team, focusing on the battery pack, the battery cooling system, and the transmission. He narrowed Tesla’s scope, eliminating a side unit that was producing batteries for other companies, and delayed the opening of Tesla’s factory in New Mexico.[[35]](#endnote-35)

In November 2007 Marks was replaced by a new CEO, Ze’ev Driori. Driori had experience building and selling both a semiconductor firm (sold to Applied Micro Devices) and an electronic auto security firm (sold to Allstate Insurance Company). While no public reason was provided for Marks’s departure, Musk stated that he wanted someone with experience taking a firm through the initial public offering process and someone with Silicon Valley experience.[[36]](#endnote-36) Tesla released its first vehicle, the Tesla Roadster, in February 2008.

Preparing to Launch the Model S

Musk, who was guiding Tesla’s development, earmarked $130 million to create, engineer, launch, and put into production the company’s Model S, with a target of 10,000 vehicles a year. This estimate was a significant cost reduction; a typical automaker would spend $1 billion and commit thousands of employees for a new model, designed from scratch. Musk aimed to achieve this goal by keeping as much of the work as possible in-house, making up for the company’s “lack of R&D money by hiring smart people who could outwork and outthink the third parties relied on by the rest of the automakers.”[[37]](#endnote-37)

Musk replaced Driori, appointing himself CEO in December 2008. He referred to the unfolding economic malaise—later dubbed the Great Financial Crisis—as his reason for ousting Driori and naming himself CEO.[[38]](#endnote-38) Facing a working capital shortage the same month, which threatened to bankrupt his firm, Musk personally invested $20 million to keep Tesla going. For Musk, it was an all-or-nothing bet on Tesla’s future.[[39]](#endnote-39)

Relying on Key Partnerships to Provide Funding and Infrastructure

Tesla was not a typical car manufacturer that had gone it alone, developing a new product internally based on its own technology. A large part of its success was because it had been able to secure partnerships along the way and had managed and maintained the partnerships so as to generate value for both sides. Tesla had deals with more than 10 major entities, harnessing expertise, infrastructure, and capital.

In January 2009, a few weeks after the financing closed, Musk seized an opportunity for a discounted spot at the North American International Auto Show in Detroit, showing up at a time when other automakers were declining to attend. Displaying the Roadster and its electric powertrain helped Tesla attract the attention of Daimler, and the two firms partnered to create an electric version of a Daimler smart car. Daimler also gained a 10 per cent stake in Tesla by investing $50 million.[[40]](#endnote-40)

The validation by one of the industry’s largest automakers seemed to help persuade the U.S. Department of Energy to provide a $465 million loan to Tesla in January 2010. A third piece of good news arrived in April 2010, when Tesla acquired GM and Toyota’s New United Motor Manufacturing Inc. (NUMMI) factory in Fremont, California. GM and Toyota had spent $1 billion to develop NUMMI but closed the plant in 2009 as a result of the recession and GM’s bankruptcy. Toyota, in late 2009, was preparing to make all of its workforce at NUMMI redundant when Tesla stepped in and bought the plant for $42 million. As part of the deal, Toyota invested $50 million for 2.5 per cent of Tesla and agreed to work with the firm to produce an electric sport utility vehicle (SUV) based on Toyota’s RAV4 platform.[[41]](#endnote-41)

To add to its cash reserves, Musk took Tesla public on June 29, 2010, raising $226 million. The company, with no near-term cash issues, focused on bringing the Model S to production.[[42]](#endnote-42)

Panasonic Provides the “Heart” of the Car

Tesla deepened its partnership with Panasonic in October 2011, securing a supply of automotive-grade lithium-ion battery cells to build up to 80,000 Model S cars in the following four years. Tesla’s collaboration with Panasonic began in 2009 with a supply agreement for battery cells for 6,000 cars, and Panasonic had built upon that agreement with a $30 million investment in Tesla stock in 2010. Importantly, the October 2011 agreement meant that Tesla would be able to deliver on its cost and margin targets for the Model S.[[43]](#endnote-43) In remarks made to the Japanese press in September 2014, Musk emphasized the significance of Panasonic’s involvement in Tesla’s cars: “An important point that I should emphasize about the Model S is that the batteries are all made in Japan. . . . Because the battery is the ‘heart’ of an electric car, . . . the heart of Model S is Japanese. I think that’s a pretty cool thing.”[[44]](#endnote-44)

Musk Reaches Out to Google

The first Model S sedans were delivered in June 2012, to much fanfare. The base 85-kilowatt hour model retailed for $77,400 and had an estimated range of 350 miles (563 kilometres).[[45]](#endnote-45) However, instead of selling 10,000 cars[[46]](#endnote-46) as Musk had forecast, the company delivered only 3,000 by the end of 2012.[[47]](#endnote-47) By February 2013, Tesla was facing another working capital deficit. Due to negative publicity from the first Model S deliveries—mostly due to complaints about workmanship and battery issues—Tesla was having trouble converting $5,000 Model S reservations into sales. The situation became so tenuous that Musk entered into a handshake deal with Larry Page, the co-founder of Google, to sell Tesla to Google for what was thought to be $6 billion, with the understanding that Google would provide an additional $5 billion in capital to fund the firm and would guarantee that Musk could continue to be involved. He had agreed to sell Tesla because the company was running short of cash. Meanwhile, Musk rallied his employees, temporarily reassigning them the job of closing sales. He was desperate: “I don’t care what job you were doing. Your new job is delivering cars.”[[48]](#endnote-48) The last-chance appeal was a success, and the 500 reassigned employees helped drive Tesla to its first quarterly profit, $11 million, on May 8, 2013. Tesla’s shares rose from $30 to $130 by July 2013. The deal with Google was scrapped.[[49]](#endnote-49)

Broadening Tesla’s Reach

By June 2014, Tesla shares broke through the $200 mark. Taking advantage of this momentum, Musk delivered a surprising announcement: Tesla’s patents would be open-sourced. In a blog post entitled “All Our Patent Are Belong to You,”[[50]](#endnote-50) Musk stated that he used to believe in creating and holding patents as a way to erect barriers to entry. At Tesla, he changed his mind, believing that the firm’s ability to attract talent would differentiate it from the rest:

Technology leadership is not defined by patents, which history has repeatedly shown to be small protection indeed against a determined competitor, but rather by the ability of a company to attract and motivate the world’s most talented engineers. We believe that applying the open source philosophy to our patents will strengthen rather than diminish Tesla’s position in this regard.[[51]](#endnote-51)

Tesla aimed to build a manufacturing cluster by attracting automotive suppliers to Silicon Valley and Fremont. This location was far from traditional automotive clusters such as Detroit, and therefore represented a commitment by these suppliers to Tesla’s business model.[[52]](#endnote-52) These automotive parts manufacturers and technology firms included Cypress Semiconductor Corporation, SolarCity Corporation (SolarCity), Methode Electronics Inc., Kennerly-Spratling Inc., AGC Automotive, South Bay Solutions Inc., Tentex, A&P Solutions, AMAX Information Technologies Inc., Dimensional Control Systems Inc., and Autodesk Inc. (see Exhibit 2). Even electric car competitors Faraday&Future Inc. and Atieva decided to locate their offices in the vicinity.

Tesla’s success attracted new partners, some of whom were not even in the electric car industry. In 2015, the utility company Southern California Edison teamed up with Tesla to build a 20-megawatt lithium-ion battery storage facility to store and deliver electricity. The contract’s value was purported to be around $45 million.[[53]](#endnote-53) In November 2016, Tesla expanded its scope by acquiring SolarCity, an installer of rooftop solar panels run by Musk’s cousin Lyndon Rive. After the transaction, Musk personally owned 22 per cent of SolarCity as well as 21 per cent of Tesla’s shares. More than 85 per cent of Tesla shareholders voted in favour of the acquisition.[[54]](#endnote-54) While the offer valued SolarCity at $2.1 billion,[[55]](#endnote-55) Tesla’s market value declined by $4.8 billion in the time between the acquisition announcement and SolarCity’s acceptance of the deal.[[56]](#endnote-56) Musk explained the rationale behind the acquisition: “We’re trying to make an integrated product. So you have an integrated solar roof with a Powerwall[[57]](#endnote-57) and an electric car, and you just go into a Tesla store, just say yes, it just happens. It all works, it’s seamless and you love it.”[[58]](#endnote-58)

With the objective of developing innovative dies to shape aluminum—which was difficult to work with—Tesla partnered with Fuji Technica & Miyazu Inc., a Japanese supplier of dies, to design the tools to make the Model S possible. Tesla required a partner that could produce aluminum panels that retained an aesthetically pleasing, smooth curve. The choice of aluminum was deliberate: it was a lightweight metal, helping Tesla deliver longer range for its vehicles.[[59]](#endnote-59)

Tesla Sells Direct to Consumers

Tesla’s founders had always wanted to sell directly to consumers because of the value the company could gain from customer feedback—information it would not be able to rely upon if its cars were sold through dealerships.[[60]](#endnote-60) Musk realized that traditional dealers would be interested in protecting existing sales, and that it would be difficult for them to tout the benefits of an electric car without undermining their business of selling cars driven by internal combustion engines. He also noted that, before stepping into a car dealership, most car consumers had either conducted research or had an idea of the type of car they wanted to buy. The only issue left to resolve was the price at which they could buy the car from the dealer. Musk concluded that selling through dealerships would offer little opportunity, given the interests and incentives on both sides, to educate consumers on the benefits of a Tesla.[[61]](#endnote-61) He offered an alternative: to sell Teslas through company-owned stores:

That is why we are deliberately positioning our store and gallery locations in high foot traffic, high visibility retail venues, like malls and shopping streets that people regularly visit in a relatively open-minded buying mood. This allows us to interact with potential customers and have them learn about our cars from Tesla Product Specialists before they have decided which new car to buy. The Product Specialists are also trained to answer questions about electric vehicles in general, not just ours. They are not on commission and they will never pressure you to buy a car.[[62]](#endnote-62)

At the start of 2012, Tesla had 10 stores, one gallery, and nine service centres in the United States. By the end of that year, this collection had grown to 19 stores, 3 galleries, and 26 service centres.[[63]](#endnote-63) In June 2016, Tesla partnered with Nordstrom Inc., a high-end retailer, to offer an electric car boutique in the men’s section at its store in The Grove in Los Angeles. This store-within-a-store concept was discussed in detail before it was approved by both firms. In November 2016, a second Tesla boutique opened in Nordstrom’s SouthPark store in Charlotte, North Carolina (see Exhibit 2).[[64]](#endnote-64) Here was Tesla’s official comment on the venture:

Tesla and Nordstrom share a relentless drive to engage and delight customers with new and innovative shopping experiences. . . . The Nordstrom shopper embodies a lifestyle that parallels that of many Tesla owners—people who are forward-thinking, savvy, and curious to explore the latest and best trends.[[65]](#endnote-65)

Yet as of late 2017, there were no further announcements about Nordstrom and Tesla’s partnership. In some states, such as Texas, it was illegal for Tesla to circumvent the automotive dealerships. Despite hiring 20 lobbyists and making $150,000 in campaign contributions, Musk was unable to gain permission to sell Tesla cars direct to consumers in Texas.[[66]](#endnote-66)

Connecticut Senate Majority Leader Bob Duff tabled a bill in February 2016—for the second year in a row—to allow the sale of electric vehicles directly to consumers, without going through the franchise dealership model.[[67]](#endnote-67) However, Duff’s efforts were blocked by GM and its local dealership association, which successfully lobbied legislators not to support the bill.[[68]](#endnote-68) Tesla had 265 sales and service locations globally at the end of 2016.[[69]](#endnote-69)

Tesla Prepares the Model 3 for the Mass Market

Tesla announced that it would launch its third-generation, mass-market vehicle, the Model 3, on March 31, 2016. The car’s starting price was $35,000, and it had a range of 215 miles (346 kilometres) on a full charge. Within an hour and a half of the announcement, 15,000 pre-orders had been placed by buyers who each put down $1,000 as a deposit. By the start of April 2016, Tesla had 130,000 pre-orders for the Model 3.[[70]](#endnote-70)

By May 2016, Tesla had 373,000 pre-orders, and by September 2016, it was holding nearly $690 million in cash from customers’ deposits. An automotive analyst, Sandy Munro, estimated that Tesla’s Model 3 had margins of over 30 per cent.[[71]](#endnote-71) Musk took the unusual step of “anti-selling” the Model 3: it would not offer test drives and would not advertise the model for six to nine months, beginning in May 2017. He intended to convince potential customers to select the Model S and hoped to dispel the notion that the Model 3 was an upgrade to the Model S: “Model S will be better than Model 3, as it should be because it’s a more expensive car.”[[72]](#endnote-72)

Tesla began delivering Model 3 cars on July 28, 2017. The Model 3 was touted as the car that would finally nudge Tesla into profitability—a significant milestone that would herald the company’s entry into the ranks of both global and independent automakers. Musk was not unaware of the challenges that still lay ahead for Tesla. Speaking to his employees on July 31, 2017, he said, “We’re going to go through at least six months of manufacturing hell. Welcome. Welcome to production hell.” But Musk was not afraid of falling short. He had once said, “Failure is an option here. If things are not failing, you are not innovating enough.”[[73]](#endnote-73)

Meanwhile, Tesla continued to expand its Supercharger network to support its growing number of cars. In 2015, Tesla had 584 Supercharger locations around the world and a total of 3,400 Supercharger stalls. It valued its Supercharger network at $339 million.[[74]](#endnote-74) By 2017, it aimed to have 7,200 Supercharger locations around the world. It cost Tesla about $197,000 to set up each new location, and the company spent $40.6 million to build Supercharger locations in 2016. For comparison, Tesla’s total capital expenditures in the same year were $1.3 billion.[[75]](#endnote-75) Operating costs for Supercharger locations were “immaterial,” according to Tesla, and the costs were allocated to its cost of goods sold and to selling, general, and administrative expenses.[[76]](#endnote-76) To encourage users to use its stations efficiently, Tesla introduced a $0.40 per minute “idle fee” that would be charged five minutes after the car was fully recharged.[[77]](#endnote-77)

Elon Musk

Musk, born in South Africa, had suffered through a tough childhood as the target of bullies and the son of a disciplinarian father. Later in life, he pointed to his difficult upbringing as a reason why he was able to work punishing hours leading three large companies: Tesla, SolarCity, and Space Exploration Technologies Corp. (SpaceX).[[78]](#endnote-78)

After leaving home, he enrolled at Queen’s University, then transferred to the University of Pennsylvania, where he completed a dual degree in physics and economics.[[79]](#endnote-79) While he was a student, he and a friend had cold-called a high-ranking executive at the Bank of Nova Scotia in Toronto and secured a summer internship reviewing the bank’s emerging market bond portfolio.[[80]](#endnote-80) Then in 1995, two days into his program, Musk abandoned a Stanford doctorate program in applied physics and materials sciences to co-found Zip2, an online city guide and mapping firm, with his brother. Key to Zip2’s growth was getting the code for navigation software—for free—from Navteq, a firm that developed Global Positioning System (GPS) products.[[81]](#endnote-81)

Musk invested about half of the $22 million gain he had realized from the sale of Zip2 into X.com, an online financial services company. As with Zip2, Musk knew next to nothing about the intricacies of the banking and financial industry. He just had a hunch he could do it better.[[82]](#endnote-82) X.com, which provided banking services, merged with its competitor, Confinity Inc., which had a new product called PayPal. However, as X.com gained traction in the market, it began losing even more money as a result of the increased transaction volume. In September 2000, the board ousted Musk from his position as CEO of the combined entity. Nevertheless, he continued to stay involved as an advisor and even increased his stake in the venture.[[83]](#endnote-83) When eBay Inc. paid $1.5 billion for PayPal in July 2002, Musk walked away with $250 million. He used that money to start SolarCity, SpaceX, and to become an investor in Tesla.[[84]](#endnote-84)

Musk was well known as a trailblazing entrepreneur. He had steered Tesla from a concept to its current position as a premier luxury electric car company. His SolarCity venture, run by his cousins, focused on leasing solar-power systems to homeowners.[[85]](#endnote-85) SpaceX had contracts with governments to launch payloads into space using its Falcon Heavy rocket technology. Musk insisted he would land a Tesla on Mars one day. This announcement had the added benefit of signalling to NASA that SpaceX was readying its rockets to make the trip to Mars, should the space agency require it.[[86]](#endnote-86)

Musk stated in a 2006 blog post, humorously entitled “The Secret Tesla Motors Master Plan (Just between You and Me),” that “the overarching purpose of Tesla Motors (and the reason I am funding the company) is to help expedite the move from a mine-and-burn hydrocarbon economy towards a solar electric economy, which I believe to be the primary, but not exclusive, sustainable solution.”[[87]](#endnote-87)

With his many innovative ventures and ambitious goals, it was remarkable that Musk seemed to manage his businesses directly. He did not insulate himself from the front line of the business, for example by surrounding himself with multiple layers of managers. As Musk’s biographer noted, “Most high-profile CEOs have handlers all around them. Musk mostly moves about Musk Land on his own.”[[88]](#endnote-88)

Tesla Looks to the Future

Tesla, a company that had raised its first, Series A round of funding in February 2004, was now seen as a legitimate challenger to the world’s premier car brands. Yet Tesla still had many hurdles to overcome. In the United States, the automotive dealer network continued to fight Tesla in several key states to prevent it from selling vehicles directly to consumers. Tesla had shouldered the burden of creating its own Supercharger network, recharging stations at which Tesla owners could refuel their cars. But while owners were initially offered use of the Supercharger network for free, Tesla took steps to introduce fees and penalties in an effort to defray the network’s operating costs, a move that concerned them.[[89]](#endnote-89)

Tesla’s Gigafactory was the first attempt to bring battery manufacturing in-house, albeit with support from Panasonic, the company’s long-term battery partner. The Gigafactory was focused on producing batteries for the upcoming Model 3. Tesla announced that the Gigafactory would be built with an estimated price tag of between $4 billion and $5 billion, the majority of it provided by Tesla. At the start of 2016, Panasonic announced that it would be investing up to $1.6 billion in the Gigafactory.[[90]](#endnote-90) Six months later, Panasonic raised its stake in the Gigafactory after it raised $3.86 billion by issuing corporate bonds and earmarked the majority of those funds to the Gigafactory.[[91]](#endnote-91) The relationship between Panasonic and Tesla would deepen, with the former proposing a supply agreement on self-driving sensors and a research pact on sensor development.[[92]](#endnote-92)

On October 23, 2017, Tesla announced that it would build a wholly owned plant in Shanghai’s free-trade zone. Tesla would continue to pay a 25 per cent import tariff on cars destined for the Chinese market from its Chinese factory. Tesla sold $1 billion worth of cars—11,000 units—in China in 2016, tripling its sales over the previous year. The demand for Tesla cars in China was high, even though import duties and shipping fees meant that a Tesla in China cost 50 per cent than the same car in the United States.[[93]](#endnote-93)

In March 2017, Musk announced a production target of 500,000 vehicles in 2018, six times the volume Tesla had achieved in 2016.[[94]](#endnote-94) But Musk’s ambitious goals for ramping up production of the Model 3 were tested in July 2017, when battery pack shortages delayed deliveries. Worse, in July 2017, customer demand for Tesla’s Model S and Model X had stalled, according to analysts from Goldman Sachs and KeyBanc Capital Markets.[[95]](#endnote-95) The pressure placed in August 2017 on Tesla’s production workers, who feared that the additional workload could lead to injuries, led some to call for a union at the automotive firm.[[96]](#endnote-96)

Tesla’s financial position continued to deteriorate as it invested in ramping up production. Tesla’s cash burn increased to $1.2 billion in the second quarter of 2017, up from $622 million the year before. Estimates were that its capital spend would be $2 billion in the second half of 2017. In June 2017, Tesla reported that it had $3.01 billion in cash and short-term investments. Tesla’s junk bonds—$1.8 billion of 5.3 per cent notes due in 2025—traded below par in August 2017, a decline that suggested investor confidence was waning in the firm’s ability to deliver on schedule.[[97]](#endnote-97)

Unfortunately for Musk and his team, Tesla’s momentum stalled in September 2017. On October 2, Tesla announced that it had produced only 260 Model 3 cars in September, far fewer than the 1,500 units it had stated as its goal.[[98]](#endnote-98) Tesla told investors that production bottlenecks were to blame, but provided no specifics.[[99]](#endnote-99) According to Oppenheimer & Co., a stock analyst firm, Tesla’s production problems stemmed from the inability of its suppliers to deliver parts on time. Major portions of the Model 3 continued to be built by hand, which was a painstaking process.[[100]](#endnote-100) By October 18, Tesla fired between 400 and 700 employees due to assembly issues. With only 1,500 vehicles anticipated to be produced in the third quarter, Tesla’s group of 450,000 Model 3 deposit holders would have a long wait before they could take delivery of their cars.[[101]](#endnote-101)

In contrast, rival BMW AG (BMW) noted that it had sold 10,000 electric and hybrid cars in the same month, and that its year-over-year sales were up 64 per cent.[[102]](#endnote-102) When Tesla announced dismal earnings, higher than expected cash burn, and production misses in November 2017, its stock fell to about $300, down from the high of $389 it had reached in September 2017.[[103]](#endnote-103) Tesla continued to be in cash conservation mode; it was losing $4,000 per car on its current production vehicle, the Model S. Skeptics pointed to Tesla’s quarterly cash burn of up to a billion dollars, which had been earmarked to bring its mass-market $35,000 Model 3 sedan to the market and to ramp up sales in general. Musk had publicly announced targets of $20 billion in revenues and $5 billion in gross profit in 2018.[[104]](#endnote-104) An analyst for investment bank UBS predicted that Tesla would run out of cash by the third quarter of 2018 due to its aggressive spending as it ramped up production.[[105]](#endnote-105) Tesla’s income statements and balance sheets (see Exhibits 3 and 4) provided details. The company’s unit sales appeared modest compared with those of competitors in the U.S. and global electric car market (see Exhibit 5).

The shift in sentiment seemed stark given that only a few months ago, on June 9, 2017, Tesla’s market capitalization had briefly surpassed BMW’s $61.3 billion value. This notable event had left analysts searching for rational explanations: why was a relatively new (in the automotive world) start-up, selling fewer than 80,000 cars and losing $725 million in 2016, worth more than one of the world’s premier luxury automakers, which sold 30 times more cars and had booked a net profit, in 2016, of $7.7 billion?

Worse, *Consumer Reports* magazine estimated that Tesla would be able to achieve only “average reliability” with its Model 3 sedan and ranked the company 21st of 27 brands for quality. The Model S had been awarded a very high rating in 2015, but that rating was revised two months later following reports of quality problems.[[106]](#endnote-106) One of Musk’s earlier comments suggested he was expecting to tweak his products as they evolved: “There are really two things that have to occur in order for a new technology to be affordable to the mass market. One is you need economies of scale. The other is you need to iterate on the design. You need to go through a few versions.”[[107]](#endnote-107)

By the end of 2017, Tesla was missing its production goals, producing 2,425 Model 3s in total in the fourth quarter of 2017 against an estimate of 5,000 cars per week.[[108]](#endnote-108) Musk was reportedly sleeping on the roof of the Gigafactory so that he could keep a closer eye on production.[[109]](#endnote-109)

A comparison of Tesla’s stock price against the S&P 500 and CARZ, an exchange-traded fund that tracks the shares of global automakers (see Exhibit 6), suggested that Tesla would continue to need a network of partners to realize its vision of selling luxury electric cars. The question was, what types of partnerships were needed, and with which entities? It was January 2018. Was it time for Tesla to go it alone, to chart its own path forward?

Exhibit 1: Top-selling Electric Cars in China, first Half of 2017

|  |  |  |  |
| --- | --- | --- | --- |
| **Brand** | **Range in Miles** | **Price (US$)** | **Units Sold** |
| Zhidou D2 | 117 | $6,954 | 18,693 |
| BAIC EC180 | 97 | $7,400 | 17,939 |
| BYD e5 | 224 | $19,302 | 10,826 |
| JAC iEV6E | 127 | $8,767 | 8,197 |
| Geely Emgrand EV300 | 224 | $17,949 | 7,982 |
| Chery eQ | 106 | $8,737 | 6,605 |

Note: 1 mile = 1.609 kilometres

Source: Adapted from “Electric Avenue: The Best-Selling Pure-Electric Cars in China in the First Half of 2017,” in Trefor Moss, “China, with Methodical Discipline, Conjures a Market for Electric Cars,” *Wall Street Journal*, October 2, 2017, accessed September 25, 2018, www.wsj.com/articles/china-with-methodical-discipline-takes-global-lead-in-electric-cars-1506954248.

Exhibit 2: Tesla’s Partnerships

* **July 2005:** Tesla licensed key technology, principally related to structure and safety, from Lotus Engineering Inc. (Lotus). Tesla signed a contract with Lotus for various engineering and styling jobs. Lotus was the contract manufacturer for the Tesla Roadster, and Tesla was a key supplier to the Lotus factory in Hethel, United Kingdom. After selling 1,650 units, Tesla stopped taking orders for the Tesla Roadster in mid-2011 and expected to sell down its inventory of Roadsters by the end of 2011. Tesla then prepared to sell its Model S.
* **January 2009:** Displaying the Roadster and its electric powertrain helped Tesla attract the attention of Daimler, and the two firms partnered to create an electric version of a Daimler smart car. Daimler also gained a 10 per cent stake in Tesla by investing $50 million. On October 22, 2014, Daimler sold its stake in Tesla for $780 million.
* **January 2010:** The U.S. Department of Energy provided a $465 million loan to Tesla. On May 22, 2013, Tesla repaid the loan nine years ahead of schedule.
* **April 2010:** Tesla bought GM and Toyota’s New United Motor Manufacturing Inc. (NUMMI) factory in Fremont, California, for $42 million. As part of the deal, Toyota invested $50 million for 2.5 per cent of Tesla and agreed to work with the firm to produce an electric SUV based on Toyota’s RAV4 platform. On December 22, 2011, test models of the Toyota RAV4 EV concept were seen on the road. Toyota paid Tesla $100 million to supply the battery, motor, gearbox, and power electronics for the e-RAV4. The components were built in California and then shipped to Toyota’s U.S. factory. Toyota sold its stake in Tesla in June 2017 as the two manufacturers become rivals. Toyota was thought to have received $478 million for its Tesla shares.
* **October 2011:** Panasonic entered into a supply agreement with Tesla to provide automotive-grade battery cells, batteries, and sensors for self-driving vehicles. Panasonic was a co-investor in Tesla’s battery factory the Gigafactory, investing $1.6 billion out of the $5 billion invested.
* **January 2014:** Tesla released its patents as open source. In a blog posting, Musk stated,

The unfortunate reality is the opposite: electric car programs (or programs for any vehicle that doesn’t burn hydrocarbons) at the major manufacturers are small to non-existent, constituting an average of far less than 1% of their total vehicle sales. . . .

Our true competition is not the small trickle of non-Tesla electric cars being produced, but rather the enormous flood of gasoline cars pouring out of the world’s factories every day.

We believe that Tesla, other companies making electric cars, and the world would all benefit from a common, rapidly-evolving technology platform.

Technology leadership is not defined by patents, which history has repeatedly shown to be small protection indeed against a determined competitor, but rather by the ability of a company to attract and motivate the world’s most talented engineers. We believe that applying the open source philosophy to our patents will strengthen rather than diminish Tesla’s position in this regard.

* **February 2016:** Connecticut Senate Majority Leader Bob Duff tabled a bill in February 2016 to allow the sale of electric vehicles directly to consumers, without going through the franchise dealerships model.
* **June 2016:** Tesla Motors partnered with Nordstrom to open a car showroom in Nordstrom’s store in in Los Angeles. It added a second store in Charlotte, North Carolina, in November 2016.
* **August 2016:** A high-tech manufacturing cluster started to form around Tesla’s production plant in Fremont. It included automotive part manufacturers and technology firms: Cypress Semiconductor Corporation, SolarCity Corporation, Methode Electronics Inc., Kennerly-Spratling Inc., AGC Automotive, South Bay Solutions Inc., Tentex, A&P Solutions, AMAX Information Technologies Inc., Dimensional Control Systems Inc., and Autodesk Inc.
* **September 2016**: Tesla entered into a joint venture with Southern California Edison, a utility firm based in Ontario, California. Tesla would build a 20-megawatt battery storage facility for South California Edison. The amount paid was undisclosed. For perspective, a 2-megawatt Tesla battery system cost about $2.9 million, according to Tesla.
* **September 2016:** Fuji Technica & Miyazu Inc., a Japanese supplier of dies (custom tools to shape materials), worked with Tesla beginning in the early stages of development to design the tools to make the Model 3 possible. The technology was able to shape aluminum sheets, a material which was difficult to work with.
* **March 2017:** Tencent Holdings Ltd., a Chinese technology firm, bought a 5 per cent stake in Tesla. In November 2017, Tencent revealed that it had developed its own autonomous driving system.

Source: “Supply Agreement [Amendment No. 1]—Lotus Cars Ltd. and Tesla Motors Inc.,” Onecle, August 4, 2009, accessed September 25, 2018, http://contracts.onecle.com/tesla-motors/lotus-supply-2009-08-04.shtml; Matthew Lynley, “Tesla Motors to Stop Taking Roadster Orders in Two Months,” Venture Beat, June 23, 2011, accessed September 25, 2018, https://venturebeat.com/2011/06/23/tesla-roadster-orders-stop/; Chuck Squatriglia, “Tesla Motors Joins Daimler on a Smart EV,” Wired, January 13, 2009, accessed September 25th, 2018, www.wired.com/2009/01/tesla-motors-jo/; Bloomberg News, “Daimler AG Sells Its Tesla Motors Inc Stake for US$780M as Model S Rises as Luxury Car Rival,” *Financial Pos*t, October 22, 2014, accessed September 25, 2018, http://business.financialpost.com/transportation/daimler-ag-sells-its-tesla-motors-inc-stake-for-us780m-as-model-s-rises-as-luxury-car-rival; U.S. Department of Energy, “Tesla,” Loans Programs Office, 2017, accessed September 25 2018, www.energy.gov/lpo/tesla; Adi Robertson, “Tesla Repays $465 Million Government Green Energy Loan Ahead of Schedule,” The Verge, May 22, 2013, accessed September 25, 2018, www.theverge.com/2013/5/22/4356860/tesla-repays-465-million-government-green-energy-loan; Camille Ricketts, “Tesla Paid $42M for NUMMI But Doesn’t Have Deal to Build Cars with Toyota,” Venture Beat, May 27, 2010, accessed September 25, 2018, https://venturebeat.com/2010/05/27/tesla-paid-42m-for-nummi-but-doesnt-have-deal-to-build-cars-with-toyota/; Tim Pollard, “Toyota Rav4 EV (2012)—Tesla/Toyota SUV Scooped,” *Car*, December 22, 2011, accessed September 25, 2018, www.carmagazine.co.uk/spy-shots/toyota/toyota-rav4-ev-2012---teslatoyota-suv-scooped/; Alec Macfarlane, “Toyota Dumps Stake in Tesla as Former Partners Become Rivals,” CNN Business, June 5, 2017, accessed September 25, 2018, http://money.cnn.com/2017/06/05/investing/toyota-sells-tesla-stake/index.html; Tim Pollard, “Toyota Has Sold All Its Shares in Tesla—Here’s Why,” Car, June 6, 2017, accessed September 25, 2018, www.carmagazine.co.uk/car-news/industry-news/tesla/toyota-has-sold-all-its-shares-in-tesla---heres-why/; “Panasonic Aims to Move Tesla Auto Partnership Beyond Batteries: CEO,” Reuters, January 19, 2017, accessed September 25, 2018, www.reuters.com/article/us-panasonic-tesla/panasonic-aims-to-move-tesla-auto-partnership-beyond-batteries-ceo-idUSKBN1530UC; Elon Musk, “All Our Patent Are Belong to You,” Tesla, June 12, 2014, accessed September 25, 2018, www.tesla.com/blog/all-our-patent-are-belong-you?redirect=no; Kyle Constable, “Auto Retailers, Makers Call on Tesla to Apply for Franchise”, *CT Mirror*, March 1, 2016, accessed September 25, 2018, https://ctmirror.org/2016/03/01/auto-retailers-makers-call-on-tesla-to-apply-for-franchise/; Matthew Stern, “Nordstrom Tries Tesla Showroom in Menswear—Does the Partnership Have Wheels?,” *Forbes* (blog), June 29, 2016, accessed September 25, 2018, www.forbes.com/sites/retailwire/2016/06/29/nordstrom-tries-a-tesla-showroom-in-menswear/#94b585b53a69; Fred Lambert, “Tesla Expands Partnership with Nordstrom, Adds Another Retail Location inside the Upscale Fashion Store,” Electrek, November 25, 2016, accessed September 25, 2018, https://electrek.co/2016/11/25/tesla-expands-nordstrom-north-carolina/; Patrick Hoge, “The Tesla Effect: How the Cutting Edge Company Became the Most Powerful Engine in Bay Area Manufacturing,” *San Francisco Business Times*, August 4, 2016, accessed September 25, 2018, www.bizjournals.com/sanfrancisco/news/2016/08/04/how-tesla-drives-manufacturing-bay-are-elon-musk.html; Garrett Reim, “Tesla Motors to Build 20MW Battery Storage Facility for SoCal Edison,” *Los Angeles Business Journal*, September 15, 2016, accessed September 25, 2018, http://labusinessjournal.com/news/2016/sep/15/tesla-motors-build-20mw-battery-storage-facility-s/; Matt Pressman, “Fuji Technica, A Japanese Tesla Supplier, Talks Tesla Model 3,” Clean Technica, September 15, 2016, accessed September 25, 2018, https://cleantechnica.com/2016/09/15/fuji-technica-japanese-tesla-supplier-talks-tesla-model-3/; Lulu Yilun Chen, “Tesla-Partner Tencent Plans Its Own Driverless Technology,” Bloomberg, November 6, 2017, accessed September 25, 2018, www.bloomberg.com/news/articles/2017-11-07/tesla-partner-tencent-is-said-to-plan-own-driverless-technology.

Exhibit 3: Tesla, Inc. Consolidated Statements of Operations, 2015–2017

(in US$ thousands, except per-share data)



Source: United States Securities and Exchange Commission, “Form 10-K: Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934, for the Fiscal Year Ended December 31, 2017: Tesla Inc.,” February 22, 2018, accessed September 25, 2018, [www.sec.gov/Archives/edgar/data/1318605/000156459018002956/tsla-10k\_20171231.htm#Item\_8](https://www.sec.gov/Archives/edgar/data/1318605/000156459018002956/tsla-10k_20171231.htm#Item_8).

Exhibit 4: Tesla, Inc. Consolidated Balance Sheets, 2016 and 2017

(in US$ thousands, except per-share data)



Source:United States Securities and Exchange Commission, “Form 10-K: Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934, for the Fiscal Year Ended December 31, 2017: Tesla Inc.,” February 22, 2018, accessed September 25, 2018, [www.sec.gov/Archives/edgar/data/1318605/000156459018002956/tsla-10k\_20171231.htm#Item\_8](https://www.sec.gov/Archives/edgar/data/1318605/000156459018002956/tsla-10k_20171231.htm#Item_8).

Exhibit 5: U.S. and Worldwide Electric Vehicle Sales, 2015–2017

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Carmaker and Model** | **2015** | **2016** | **2017** |
| 1 | Tesla Model S\* | 25,700 | 29,421 | 27,060 |
| 2 | Chevrolet Bolt EV | – | 579 | 23,297 |
| 3 | Tesla Model X\* | 214 | 18,223 | 21,315 |
| 4 | Toyota Prius Prime | – | 2,422 | 20,936 |
| 5 | Chevrolet Volt | 15,393 | 24,739 | 20,349 |
| 6 | Nissan LEAF | 17,269 | 14,006 | 11,230 |
| 7 | Ford Fusion Energi | 9,750 | 15,938 | 9,632 |
| 8 | Ford C-Max Energi | 7,591 | 7,957 | 8,140 |
| 9 | BMW i3 | 11,024 | 7,625 | 6,276 |
| 10 | Fiat 500e\*\* | – | 5,330 | 5,380 |
| 11 | BMW X5 xDrive40e | 892 | 5,995 | 5,349 |
| 12 | Chrysler Pacifica Hybrid\*\* | – | – | 4,597 |
| 13 | BMW 330e |  | 870 | 4,141 |
| 14 | BMW 530e | – | – | 3,772 |
| 15 | VW e-Golf | 4,232 | 3,937 | 3,534 |
| 16 | Audi A3 Sportback e-tron | 49 | 4,280 | 2,877 |
| 17 | Hyundai Sonata PHV\*\* | 160 | 3,095 | 2,535 |
| 18 | Volvo XC90 T8 PHEV | 86 | 2,015 | 2,196 |
| 19 | Kia Soul EV | 1,015 | 1,728 | 2,157 |
| 20 | Ford Focus Electric | 1,582 | 901 | 1,817 |
| 21 | Tesla Model 3\* | – | – | 1,772 |
| 22 | Porsche Cayenne S-E | 1,103 | 2,111 | 1,574 |
| 23 | Kia Optima PHV | – | – | 1,512 |
| 24 | Honda Clarity BEV | – | – | 1,121 |
| 25 | Honda Clarity PHEV | – | – | 903 |
| 26 | Mercedes C350e | – | 171 | 817 |
| 27 | Mercedes B250e | 1,906 | 632 | 744 |
| 28 | BMW 740e | – | 23 | 707 |
| 29 | Mercedes S550e | 118 | 550 | 666 |
| 30 | smart ED | 1,387 | 657 | 544 |
| 31 | Volvo XC60 PHEV | – | – | 531 |
| 32 | BMW i8 | 2,265 | 1,594 | 488 |
| 33 | Mini Countryman S E PHV | – | – | 475 |
| 34 | Mercedes GLE 550e | – | 231 | 463 |
| 35 | Hyundai IONIQ Electric | – | – | 432 |
| 36 | Cadillac CT6 PHV | – | – | 207 |
| 37 | Volvo S90 E8 PHEV | – | – | 117 |
| 38 | Mitsubishi Outlander PHEV | – | – | 99 |
| 39 | Chevrolet Spark EV | 2,629 | 3,035 | 23 |
| 40 | Porsche Panamera S-E | 407 | 231 | 18 |
| 41 | Cadillac ELR | 1,024 | 534 | 17 |
| 42 | Mitsubishi i-MiEV | 115 | 94 | 6 |
|  | Other\*\*\* | 10,686 | 215 |  |
|  | Total U.S. Sales | 105,911 | 158,924 | 199,826 |
|  | Worldwide\* | 550,297 | 644,437 | 1,227,117 |

Notes: \*Estimated Tesla sales numbers, reconciled on quarterly totals; \*\* Estimated, based on state/rebate data and other reports, BEV models in bold font (BMW i3 sales mixed with REx [PHEV] sales); \*\*\*Other = car models no longer sold in 2017; HybridCars.com assisted with Hyundai and some BMW data.

Source: Steven Loveday, “December 2017 Plug-In Electric Vehicle Sales Report Card,” Inside EVs, January 3, 2018, accessed September 25, 2018, https://insideevs.com/december-2017-plugin-electric-vehicle-sales-report-card/; Jay Cole, “December 2016 Plug-In Electric Vehicle Sales Report Card,” Inside EVs, January 4, 2017, accessed September 25, 2018, https://insideevs.com/december-2016-plug-electric-vehicle-sales-report-card/; Jay Cole, “December 2015 Plug-In Electric Vehicle Sales Report Card,” Inside EVs, January 5, 2016, accessed September 25, 2018, <https://insideevs.com/december-2015-plug-electric-vehicle-sales-report-card/>.

Exhibit 6: Tesla, CARZ, and the S&P 500 Total Returns, January 2014–January 2018, Indexed to January 2014 = 100

Source: Created by case author based on content from “Tesla, Inc. (TSLA),” Yahoo! Finance, accessed September 25, 2018, https://ca.finance.yahoo.com/quote/TSLA?p=TSLA; “First Trust NASDAQ Global Auto ETF (CARZ),” Yahoo! Finance, accessed September 25, 2018, https://ca.finance.yahoo.com/quote/CARZ?p=CARZ; “SPDR S&P 500 ETF (SPY),” Yahoo! Finance, accessed September 25, 2018, https://ca.finance.yahoo.com/quote/SPY?p=SPY.

ENDNOTES

1. This case has been written on the basis of published sources only. Consequently, the interpretation and perspectives presented in this case are not necessarily those of Tesla Inc. or any of its employees. [↑](#endnote-ref-1)
2. John Goreham, “Tesla Model 3 Deliveries Edge Up in Janaury [sic] 2018—A New EV Sales Leader?,” TorqueNews, February 1, 2018, accessed September 25, 2018, www.torquenews.com/1083/tesla-model-3-deliveries-edge-i-janaury-2018-new-ev-sales-leader. [↑](#endnote-ref-2)
3. “Elon Musk Biography,” Biography, accessed September 25, 2018, www.biography.com/people/elon-musk-20837159. [↑](#endnote-ref-3)
4. Steve Hanley, “Tesla-SolarCity Project in Connecticut Underlines Need for Merger,” Teslarati, November 7, 2016, accessed September 25, 2018, www.teslarati.com/tesla-solarcity-project-connecticut-underlines-need-merger/. [↑](#endnote-ref-4)
5. Adam Vaughan, “Electric Cars Accelerate Past 2m Mark Globally,” *Guardian*, June 7, 2017, accessed September 25, 2018, www.theguardian.com/environment/2017/jun/07/electric-cars-sales-2-million-worldwide-global-sales. [↑](#endnote-ref-5)
6. “Internal Combustion Engine,” New World Encyclopedia, March 4, 2018, accessed September 25, 2018, www.newworldencyclopedia.org/entry/Internal\_combustion\_engine. [↑](#endnote-ref-6)
7. Antony Ingram, “Toyota Gasoline Engine Achieves Thermal Efficiency of 38 Percent,” Green Car Reports, April 14, 2014, accessed September 25, 2018, www.greencarreports.com/news/1091436\_toyota-gasoline-engine-achieves-thermal-efficiency-of-38-percent. [↑](#endnote-ref-7)
8. Stephen Edelstein, “How Does GM’s Fabled EV1 Stack Up against the Current Crop of Electrics?,” February 28, 2013, Digital Trends, accessed September 25, 2018, www.digitaltrends.com/cars/how-does-gms-fabled-ev1-stack-up-against-the-current-crop-of-electrics/. [↑](#endnote-ref-8)
9. “History of the Toyota Prius,” Toyota—The Official Blog of Toyota GB, February 10, 2015, accessed September 25, 2018, http://blog.toyota.co.uk/history-toyota-prius. [↑](#endnote-ref-9)
10. “How Do Battery Electric Cars Work?,” Union of Concerned Scientists, March 12, 2018, accessed September 25, 2018, www.ucsusa.org/clean-vehicles/electric-vehicles/how-do-battery-electric-cars-work#.Wm9bjq6nFGo. [↑](#endnote-ref-10)
11. “Number of Cars Sold Worldwide from 1990 to 2018 (in Million Units),” Statista, accessed September 25, 2018, www.statista.com/statistics/200002/international-car-sales-since-1990/. [↑](#endnote-ref-11)
12. “U.S. Automotive Industry—Statistics & Facts,” Statista, accessed September 25, 2018, www.statista.com/topics/1721/us-automotive-industry/. [↑](#endnote-ref-12)
13. “Passenger and Commercial Vehicle Sales in China from 2008 to September 2018 (in Million Units),” Statista, accessed September 25, 2018, www.statista.com/statistics/233743/vehicle-sales-in-china/www.statista.com/topics/1721/us-automotive-industry/. [↑](#endnote-ref-13)
14. “Auto Sales—Overview Charts,” *Wall Street Journal*, April 3, 2018, accessed September 25, 2018, www.wsj.com/mdc/public/page/2\_3022-autosales.html. [↑](#endnote-ref-14)
15. Anna Hirtenstein, “Global Electric Car Sales Jump 63 Percent,” Bloomberg, November 21, 2017, accessed September 25, 2018, www.bloomberg.com/news/articles/2017-11-21/global-electric-car-sales-jump-63-percent-as-china-demand-surges. [↑](#endnote-ref-15)
16. Chris Lilly, “Worldwide EV Sales Hit 2 Million Mark,” Zap Map, June 8, 2017, accessed September 25, 2018, www.zap-map.com/worldwide-ev-sales-hit-2-million-mark/. [↑](#endnote-ref-16)
17. Jonathan M. Gitlin, “2017 Was the Best Year Ever for Electric Vehicle Sales in the US,” Ars Technica, January 4, 2018, accessed September 25, 2018, https://arstechnica.com/cars/2018/01/2017-was-the-best-year-ever-for-electric-vehicle-sales-in-the-us/. [↑](#endnote-ref-17)
18. Jose Pontes, “2017 China Electric Car Sales Blow World Out of the Water—BAIC EC-Series Is a Superstar,” Clean Technica, January 29, 2018, accessed September 25, 2018, https://cleantechnica.com/2018/01/29/2017-china-electric-car-sales-blow-world-water-baic-ec-series-superstar/. [↑](#endnote-ref-18)
19. Zach, “2017 Electric Car Sales—US, China, & Europe (Month by Month),” EVObsession, March 4, 2018, accessed September 25, 2018, https://evobsession.com/2017-electric-car-sales-us-china-europe-month-month/. [↑](#endnote-ref-19)
20. Trefor Moss, “China, with Methodical Discipline, Conjures a Market for Electric Cars,” *Wall Street Journal*, October 2, 2017, accessed September 25, 2018, www.wsj.com/articles/china-with-methodical-discipline-takes-global-lead-in-electric-cars-1506954248. [↑](#endnote-ref-20)
21. Phoenix Kwong, “China 2016 Car Sales Surge at Fastest Rate in Three Years,” *South China Morning Post*, January 12, 2017, accessed September 25, 2018, www.scmp.com/business/china-business/article/2061642/china-2016-car-sales-surge-fastest-rate-three-years. [↑](#endnote-ref-21)
22. Michael J. Coren, “China Is Selling More Electric Vehicles Than the US—And It’s Not Even Close,” Quartz, May 3, 2017, accessed September 25, 2018, https://qz.com/972897/china-is-selling-more-electric-vehicles-than-the-us-and-its-not-even-close/. [↑](#endnote-ref-22)
23. Ibid. [↑](#endnote-ref-23)
24. Jon Russell, “Chinese Internet Giant Tencent Buys 5% of Tesla,” Tech Crunch, March 28, 2017, accessed September 25, 2018, https://techcrunch.com/2017/03/28/tesla-tencent-investment/. [↑](#endnote-ref-24)
25. Ashlee Vance, *Elon Musk: Tesla, SpaceX, and the Quest for a Fantastic Future* (New York: Ecco, 2015), 153. [↑](#endnote-ref-25)
26. Matt Pressman, “From Tzero to Model S; How AC Propulsion Was a Catalyst for Tesla Motors,” Evannex, February 6, 2016, accessed September 25, 2018, https://evannex.com/blogs/news/75692101-from-tzero-to-model-s-how-ac-propulsion-was-a-catalyst-for-tesla-motors. [↑](#endnote-ref-26)
27. Danny Paez, “Elon Musk Reveals Building Models as a Kid Sparked His Electric Car Passion,” Inverse, June 22, 2018, accessed September 25, 2018, www.inverse.com/article/46314-elon-musk-childhood-hobbies. [↑](#endnote-ref-27)
28. All currency amounts are in US$ unless otherwise indicated. [↑](#endnote-ref-28)
29. Kah Seng Tay, “How Much Equity Did Elon Musk Get from Investing in Tesla’s Series A?,” Forbes/Quora (blog), December 29, 2014, accessed September 25, 2018, www.forbes.com/sites/quora/2014/12/29/how-much-equity-did-elon-musk-get-from-investing-in-teslas-series-a/#4f1c0a9d2a9f. [↑](#endnote-ref-29)
30. Martin Eberhard, “Lotus Position,” Tesla, July 25, 2006, accessed September 25, 2018, www.tesla.com/blog/lotus-position. [↑](#endnote-ref-30)
31. Drake Baer, “The Making of Tesla: Invention, Betrayal, and the Birth of the Roadster,” *Business Insider*, November 11, 2014, accessed September 25, 2018, www.businessinsider.com/tesla-the-origin-story-2014-10. [↑](#endnote-ref-31)
32. Matt Nauman, “2007: Tesla Ousts Co-Founder Martin Eberhard,” *Mercury News*, December 5, 2007, accessed September 25, 2018, www.mercurynews.com/2007/12/05/2007-tesla-ousts-co-founder-martin-eberhard/. [↑](#endnote-ref-32)
33. Drake Baer, “Elon Musk Sent These Angry Emails to Tesla When He Wasn’t Getting Enough Press Attention,” *Business Insider*, November 12, 2014, accessed September 25, 2018, https://finance.yahoo.com/news/elon-musk-sent-angry-emails-210500673.html. [↑](#endnote-ref-33)
34. Baer, “The Making of Tesla: Invention, Betrayal, and the Birth of the Roadster,” op. cit. [↑](#endnote-ref-34)
35. Katie Fehrebacher, “The Story of Tesla’s Founding Feud,” Gigaom, July 10, 2018, accessed September 25, 2018, https://gigaom.com/2008/07/10/the-story-of-teslas-founding-feud/. [↑](#endnote-ref-35)
36. Matt Nauman, “2007: Tesla Names Ze’ev Drori New CEO,” *Mercury News*, November 28, 2007, accessed September 25, 2018, www.mercurynews.com/2007/11/28/2007-tesla-names-zeev-drori-new-ceo/; [↑](#endnote-ref-36)
37. Vance, op. cit., 275. [↑](#endnote-ref-37)
38. Claire Cain Miller, “Tesla Motors Zaps Another C.E.O. and Lays Off Staff,” *New York Times*, October 15, 2008, accessed September 25, 2018, https://bits.blogs.nytimes.com/2008/10/15/tesla-motors-zaps-another-ceo-and-lays-off-staff/. [↑](#endnote-ref-38)
39. Vance, op. cit., 210. [↑](#endnote-ref-39)
40. Chuck Squatriglia, “Daimler Takes 10 Percent Stake in Tesla,” Wired, May 19, 2009, accessed October 22, 2018, www.wired.com/2009/05/daimler-tesla/. [↑](#endnote-ref-40)
41. Vance, op. cit., 289. [↑](#endnote-ref-41)
42. Chuck Squatriglia, “Tesla IPO Raises $226.1M, Stock Surges 41 Percent,” Wired, June 29, 2010, accessed September 25, 2018, www.wired.com/2010/06/tesla-ipo-raises-226-1-million/. [↑](#endnote-ref-42)
43. “Panasonic Enters into Supply Agreement with Tesla Motors to Supply Automotive-Grade Battery Cells,” Tesla, October 11, 2011, accessed September 25, 2018, www.tesla.com/blog/panasonic-enters-supply-agreement-tesla-motors-supply-automotivegrade-battery-c?redirect=no. [↑](#endnote-ref-43)
44. Takashi Mochizuki, “Tesla’s Musk, in Tokyo, Says ‘Heart’ of Model S Is Japanese,” *Wall Street Journal*, September 8, 2014, accessed September 25, 2018, https://blogs.wsj.com/japanrealtime/2014/09/08/teslas-musk-in-tokyo-says-heart-of-model-s-is-japanese/. [↑](#endnote-ref-44)
45. Dieter Bohn, “First Tesla Model S Deliveries Set for June 22nd,” The Verge, May 22, 2012, accessed September 25, 2018, www.theverge.com/2012/5/22/3037603/tesla-model-s-deliveries-june-22nd. [↑](#endnote-ref-45)
46. Ibid. [↑](#endnote-ref-46)
47. John Voelcker, “How Many Tesla Model S Electric Cars Were Built in 2012? How Many Sold?,” Green Car Reports, January 10, 2013, accessed September 25, 2018, www.greencarreports.com/news/1081565\_how-many-tesla-model-s-electric-cars-were-built-in-2012-how-many-sold. [↑](#endnote-ref-47)
48. Vance, op. cit., 205. [↑](#endnote-ref-48)
49. Ibid., 306. [↑](#endnote-ref-49)
50. The name of the blog post was a play on an Internet meme at the time called “All Your Base Are Belong to Us.” It was a mistranslation of a classic video game, Zero Wing by Sega Genesis. Don Caldwell, “All Your Base Are Belong to Us,” Know Your Meme, August 25, 2018, accessed September 25, 2018, http://knowyourmeme.com/memes/all-your-base-are-belong-to-us. [↑](#endnote-ref-50)
51. Elon Musk, “All Our Patent Are Belong to You,” Tesla, June 12, 2014, accessed September 25, 2018, www.tesla.com/blog/all-our-patent-are-belong-you?redirect=no. [↑](#endnote-ref-51)
52. Nathan Donato-Weinstein, “Tesla’s Orbit: Manufacturers Cluster in Bay Area,” *San Francisco Business Times*, September 15, 2014, accessed September 25t, 2018, www.bizjournals.com/sanfrancisco/blog/2014/09/teslas-manufacturers-cluster-in-bay-area.html. [↑](#endnote-ref-52)
53. Lucas Mearian, “Tesla to Build Its Largest Battery Storage Plant in Southern Calif.,” Computerworld, September 16, 2016, accessed September 25, 2018, www.computerworld.com/article/3120953/sustainable-it/tesla-to-build-its-largest-battery-storage-plant-in-southern-calif.html. [↑](#endnote-ref-53)
54. Dana Hull and Chris Martin, “Tesla Seals $2 Billion SolarCity Deal,” Bloomberg, November 17, 2016, accessed September 25, 2018, www.bloomberg.com/news/articles/2016-11-17/tesla-seals-2-billion-solarcity-deal-set-to-test-musk-s-vision. [↑](#endnote-ref-54)
55. Brian Deagon, “Tesla’s Risky SolarCity Acquisition Wins Shareholder Approval,” *Investor’s Business Daily*, November 17, 2016, accessed September 25, 2018, www.investors.com/news/technology/teslas-risky-acquisition-of-solarcity-gets-shareholder-approval/. [↑](#endnote-ref-55)
56. Ibid. [↑](#endnote-ref-56)
57. The Tesla Powerwall was a rechargeable lithium-ion battery intended for home energy storage. “Tesla Powerwall: The Complete Battery Review,” Energy Sage, October 12, 2018, accessed October 12, 2018, www.energysage.com/solar/solar-energy-storage/tesla-powerwall-home-battery/. [↑](#endnote-ref-57)
58. Hull and Martin, op. cit. [↑](#endnote-ref-58)
59. Matt Pressman, “Japanese Tesla Supplier, Fuji Technica, Talks about Work on the Tesla Model 3,” Evannex, September 13, 2016, accessed September 25, 2018, https://evannex.com/blogs/news/fuji-technica-japanese-tesla-supplier-talks-about-working-on-the-model-3. [↑](#endnote-ref-59)
60. Elon Musk, “The Tesla Approach to Distributing and Servicing Cars,” Tesla, October 22, 2012, accessed September 25, 2018, www.tesla.com/blog/tesla-approach-distributing-and-servicing-cars?redirect=no. [↑](#endnote-ref-60)
61. Ibid. [↑](#endnote-ref-61)
62. Ibid. [↑](#endnote-ref-62)
63. Ibid. [↑](#endnote-ref-63)
64. Fred Lambert, “Tesla Expands Partnership with Nordstrom, Adds Another Retail Location inside the Upscale Fashion Store,” Electrek, November 25, 2016, accessed September 25, 2018, https://electrek.co/2016/11/25/tesla-expands-nordstrom-north-carolina/. [↑](#endnote-ref-64)
65. Chris Woodyard, “You Can Now Buy a Tesla at Nordstrom,” *USA Today*, June 21, 2016, accessed September 25, 2018, www.usatoday.com/story/money/cars/2016/06/21/tesla-opens-mini-store-inside-nordstrom/86159268/. [↑](#endnote-ref-65)
66. Dante D’Orazio, “Tesla Loses Fight with Dealers to Sell Its Cars in Texas,” The Verge, May 31, 2015, accessed September 25th, 2018, www.theverge.com/2015/5/31/8694673/tesla-loses-fight-to-sell-cars-in-texas. [↑](#endnote-ref-66)
67. Fred Lambert, “Connecticut Senate Majority Leader Bob Duff Unveils Bill to Allow Tesla’s Direct Sales Model in the State,” Electrek, February 9, 2016, accessed September 25, 2018, https://electrek.co/2016/02/09/connecticut-bill-teslas-direct-sales/. [↑](#endnote-ref-67)
68. Fred Lambert, “GM Successfully Blocked Tesla’s Effort to Directly Sell Electric Vehicles in Connecticut,” Electrek, May 1, 2016, accessed September 25, 2018, https://electrek.co/2016/05/01/tesla-gm-direct-sales-connecticut/. [↑](#endnote-ref-68)
69. U.S. Securities and Exchange Commission, “Form 10-K, Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934, For the fiscal year ended December 31, 2016: Tesla, Inc.,” March 1, 2017, accessed September 25, 2018, www.sec.gov/Archives/edgar/data/1318605/000156459017003118/tsla-10k\_20161231.htm. [↑](#endnote-ref-69)
70. Jordan Golson, “Tesla Has Already Taken More than 115,000 Preorders for the Model 3,” The Verge, April 1, 2016, accessed September 25, 2018, www.theverge.com/2016/4/1/11343294/tesla-model-3-115000-preorders. [↑](#endnote-ref-70)
71. Simon Alvarez, “Tesla Model 3 Exceeds 30% Profit, Says Sandy Munro after Teardown Analysis,” Teslarati, July 16, 2018, accessed September 25, 2018, www.teslarati.com/tesla-model-3-solidly-profitable-sandy-munro/. [↑](#endnote-ref-71)
72. Dana Hull, “Musk Employs Unusual Marketing Plan for Model 3: ‘Anti-Selling,’” Bloomberg, May 3, 2017, accessed September 25, 2018, www.bloomberg.com/news/articles/2017-05-04/musk-employs-unusual-marketing-plan-for-model-3-anti-selling. [↑](#endnote-ref-72)
73. Success Staff, “11 Elon Musk Quotes That Will Inspire You to Dream Bigger,” Success, August 8, 2017, accessed September 25, 2018, www.success.com/article/11-elon-musk-quotes-that-will-inspire-you-to-dream-bigger. [↑](#endnote-ref-73)
74. Fred Lambert, “Tesla Tripled the Book Value of Its Supercharger Network in 2015 to Now $339 Million [Updated],” Electrek, March 3, 2016, accessed September 25, 2018, https://electrek.co/2016/03/03/tesla-book-value-supercharger-network/. [↑](#endnote-ref-74)
75. Daniel Sparks, “Supercharger Costs Are Still Relatively Small for Tesla Inc.,” The Motley Fool, March 24, 2017, accessed September 25, 2018, www.fool.com/investing/2017/03/24/supercharger-costs-are-still-relatively-small-for.aspx. [↑](#endnote-ref-75)
76. Ibid. [↑](#endnote-ref-76)
77. Fred Lambert, “Tesla Introduces $0.40/Minute Idle Fee for Superchargers to Incentivise Owners to Move When Charging Is Over,” Electrek, December 16, 2016, accessed September 25, 2018, https://electrek.co/2016/12/16/tesla-supercharger-idle-fees/. [↑](#endnote-ref-77)
78. Matt Weinberger and Katie Canales, “Elon Musk Turns 47 Today—Here’s the Incredible Story of How He Went from Getting Bullied in School to the Most Interesting Man in Tech,” Business Insider, June 28, 2018, accessed September 25, 2018, www.businessinsider.com/the-rise-of-elon-musk-2016-7. [↑](#endnote-ref-78)
79. Ibid. [↑](#endnote-ref-79)
80. Sergei Klebnikov, “8 Resourceful Ways Elon Musk Made Money before He Was a Billionaire,” Business Insider, August 9, 2017, accessed September 25, 2018, http://uk.businessinsider.com/8-resourceful-ways-elon-musk-made-money-before-he-was-a-billionaire-2017-8. [↑](#endnote-ref-80)
81. Mark Mann, “The Story of Elon Musk’s First Company,” SiteBuilderReport, June 3, 2016, accessed September 25, 2018, www.sitebuilderreport.com/blog/the-story-of-elon-musks-first-company. [↑](#endnote-ref-81)
82. Vance, op. cit., 81. [↑](#endnote-ref-82)
83. Julie Ankenbrandt, “How Was the Rivalry between Paypal and X.com Before and After the Merger?,” Forbes/Quora (blog), October 9, 2015, accessed September 25, 2018, www.forbes.com/sites/quora/2015/10/09/how-was-the-rivalry-between-paypal-and-x-com-before-and-after-the-merger/#3d3786136154. [↑](#endnote-ref-83)
84. Avani Bagga, “Personified: 9 Things to Know about Elon Musk,” Gadgets Now, June 28, 2017, accessed September 25, 2018, www.gadgetsnow.com/slideshows/personified-9-things-to-know-about-elon-musk/Was-thrown-out-of-PayPal-by-the-board/photolist/52946995.cms. [↑](#endnote-ref-84)
85. Claudia Assis, “Elon Musk Plans Crazy 2017 for Tesla, but Solarcity May Be the Biggest Headache,” MarketWatch, December 28, 2016, accessed September 25, 2018, www.marketwatch.com/story/elon-musk-plans-crazy-2017-for-tesla-but-solarcity-may-be-the-biggest-headache-2016-12-22. [↑](#endnote-ref-85)
86. Eric Berger, “SpaceX Will Attempt to Launch a Red Tesla to the Red Planet [Updated],” Ars Technica, December 1, 2017, accessed September 25, 2018, https://arstechnica.com/science/2017/12/with-bowie-playing-on-the-radio-elon-musk-plans-to-launch-his-tesla-to-mars/. [↑](#endnote-ref-86)
87. Elon Musk, “The Secret Tesla Motors Master Plan (Just between You and Me),” Tesla, August 2, 2006, accessed September 25, 2018, www.tesla.com/blog/secret-tesla-motors-master-plan-just-between-you-and-me. [↑](#endnote-ref-87)
88. Vance, op. cit., 9. [↑](#endnote-ref-88)
89. Fred Lambert, “Tesla Introduces New Supercharger Cost Estimator as It Transitions to Pay-per-Use Model,” electrek, July 15, 2017, accessed September 25, 2018, https://electrek.co/2017/07/15/tesla-supercharger-cost-estimator/. [↑](#endnote-ref-89)
90. Fred Lambert, “Panasonic Confirms It Plans to Invest $1.6 Billion in the Tesla Gigafactory,” Electrek, January 7, 2016, accessed September 25, 2018, https://electrek.co/2016/01/07/panasonic-confirms-invest-billion-tesla-gigfactory/. [↑](#endnote-ref-90)
91. Fred Lambert, “Tesla Gigafactory: Panasonic is Raising $3.9 Billion, Strategic Investment ‘Mostly’ for Battery Factory in Response to Model 3 Demand,” Electrek, July 29, 2016, accessed September 25, 2018, https://electrek.co/2016/07/29/tesla-gigafactory-panasonic-raising-3-9-billion-strategic-investment-model-3-demand/. [↑](#endnote-ref-91)
92. Darrell Etherington, “Panasonic Wants to Expand Tesla Partnership to Sensors for Self-Driving,” Tech Crunch, January 19, 2017, accessed September 25, 2018, https://techcrunch.com/2017/01/19/panasonic-wants-to-expand-tesla-partnership-to-sensors-for-self-driving/. [↑](#endnote-ref-92)
93. Deborah D’Souza, “Tesla Signs Deal to Build Wholly Owned Plant in Shanghai,” Investopedia, October 23, 2017, accessed September 25, 2018, www.investopedia.com/news/tesla-signs-deal-build-wholly-owned-plant-shanghai/?utm\_source=news-to-use&utm\_campaign=www.investopedia.com&utm\_term=11024302&utm\_content=10/23/2017&utm\_medium=email. [↑](#endnote-ref-93)
94. Reuters, “Elon Musk Warns of Model 3 ‘Manufacturing Hell,’” *New York Post*, July 31, 2017, accessed September 25, 2018, http://nypost.com/2017/07/31/elon-musk-warns-of-model-3-manufacturing-hell/. [↑](#endnote-ref-94)
95. Dana Hull, “Tesla Sales Fall Flat, Clouding Outlook for Musk’s Bold Targets,” Bloomberg, July 5, 2017, accessed September 25, 2018, www.bloomberg.com/news/articles/2017-07-05/tesla-drops-as-sales-plateau-ahead-of-still-mysterious-model-3. [↑](#endnote-ref-95)
96. Danielle Muoio, “Tesla’s Pro-Union Workers Say a Skipped Step with the Model 3 Could Lead to Injuries During ‘Production Hell,’” Business Insider, August 9, 2017, accessed September 25, 2018, www.businessinsider.com/tesla-union-problems-possible-model-3-delays-2017-8. [↑](#endnote-ref-96)
97. Sally Bakewell and Nabila Ahmed, “Tesla’s Priced-for-Perfection Bonds Fall within Week of Sale,” Bloomberg, August 18, 2017, accessed September 25, 2018, www.bloomberg.com/news/articles/2017-08-18/tesla-bonds-fall-within-a-week-of-sale-to-fund-model-3-rollout. [↑](#endnote-ref-97)
98. Matthew DeBord, “Silicon Valley Is Struggling to Understand Tesla’s Model 3 Production Problems—Here’s Why,” Business Insider, October 16, 2017, accessed September 25, 2018, www.businessinsider.com/silicon-valley-fails-to-understand-tesla-model-3-production-2017-10. [↑](#endnote-ref-98)
99. Russ Mitchell, “Tesla’s Model 3 Has a Very Bad September: Production Falls Far Short,” *Los Angeles Times*, October 2, 2017, accessed September 25, 2018, www.latimes.com/business/autos/la-fi-hy-model3-problems-20171002-story.html. [↑](#endnote-ref-99)
100. Donna Fuscaldo, “Tesla Model 3 Delays Due to Suppliers: Oppenheimer,” Investopedia, October 17, 2017, accessed September 25, 2018, www.investopedia.com/news/tesla-model-3-delays-due-suppliers-oppenheimer/. [↑](#endnote-ref-100)
101. “Tesla Fires Hundreds of Workers as Part of Annual Reviews,” CBS News, October 16, 2017, accessed September 25, 2018, www.cbsnews.com/news/tesla-fires-hundreds-of-workers-as-part-of-annual-reviews/. [↑](#endnote-ref-101)
102. Robert Ferris, “BMW and Mini Have Already Topped Global 2016 Hybrid and Electric Sales,” Yahoo! Finance, October 13, 2017, accessed September 25, 2018, https://ca.finance.yahoo.com/news/bmw-mini-already-topped-global-165500353.html. [↑](#endnote-ref-102)
103. “Tesla Inc.,” Google Finance, accessed September 25, 2018, https://finance.google.ca/finance?q=tsla&hl=en&gl=ca&ei=LqsAWoGLJsXo2AbZmpDIDw. [↑](#endnote-ref-103)
104. Bruce Brown, “Elon Musk Boldly Predicts Model 3 Revenue and Profits,” Digital Trends, July 27, 2016, accessed September 25, 2018, www.digitaltrends.com/cars/tesla-elon-musk-model-3-25-percent-profit/ www.digitaltrends.com/cars/tesla-elon-musk-model-3-25-percent-profit/. [↑](#endnote-ref-104)
105. Lucinda Shen, “This Analyst Says Tesla Could Be out of Cash in a Year,” *Fortune*, October 31, 2017, accessed September 25, 2018, http://fortune.com/2017/10/31/ubs-tesla-q3-earnings-cash-burn/. [↑](#endnote-ref-105)
106. Jamie Butters, “Tesla Model 3 Reliability Likely to Be Average, Consumer Reports Says,” Bloomberg, October 19, 2017, accessed September 25, 2018, www.bloomberg.com/news/articles/2017-10-19/model-3-reliability-likely-to-be-average-consumer-reports-says. [↑](#endnote-ref-106)
107. Larry Kim, “50 Innovation and Success Quotes from SpaceX Founder Elon Musk,” *Inc.*, March 8, 2016, accessed September 25, 2018, www.inc.com/larry-kim/50-innovation-amp;-success-quotes-from-spacex-founder-elon-musk.html. [↑](#endnote-ref-107)
108. Kirsten Korosec, “Why Tesla Model 3 Deliveries Missed the Mark,” *Fortune*, January 3, 2018, accessed September 25, 2018, http://fortune.com/2018/01/03/why-tesla-model-3-deliveries-missed-the-mark/. [↑](#endnote-ref-108)
109. Steven Loveday, “Workaholic Musk Camps out on Gigafactory Roof for the Sake of Model 3,” Inside EVs, October 27, 2017, accessed September 25, 2018, https://insideevs.com/workaholic-musk-camps-gigafactory-roof-model-3/. [↑](#endnote-ref-109)