

GRAND INNOVATIONS



Inside The Success of Tesla's
Model S and Failure of the
DeLorean DMC-12

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NOTE

This piece of writing was originally a part of an assignment for a course called Technology and Innovation Marketing. So, to give you a better context for your read ahead, the course is concerned with the strategies for bringing a high-tech product into the mainstream market. Why is this so important? Because high-tech products, naturally, carry a lot of uncertainty. The majority of consumers are skeptical about whether the product is safe, if it's worth its high price, if it solves any important needs, or if it could actually deliver a good performance as promised. Not only that, for the inventors, there's no telling when that technology is going to be obsolete, or the threat of competition that they might have to deal with.

Some strategies for a high-tech product to be adopted in the mainstream market are focusing on a specific target market, delivering a "whole" product experience, and appropriate pricing, which we will uncover in deeper detail.

Anyway, I hope you'll find this writing insightful.

TESLA



Company Background

“The only thing that makes sense to do is strive for greater collective enlightenment,” said Elon Musk, the current CEO of Tesla.

Tesla is the leading brand as well as the pioneer of fully-electric cars, based in Palo Alto, California. They have built a solid reputation over the years for envisioning and executing highly-innovative vehicles that are expected to revolutionize the future of automation, as they are grounded in the concept of renewable energy.

Bearing their name in homage to the inventor of the electric motor, Nikola Tesla, Musk remarked in 2013 that “Our goal when we created Tesla a decade ago was the same as it is today : To accelerate the advent of sustainable transport by bringing compelling mass market electric cars to market as soon as possible.” Paving the way towards an exciting future, Tesla's mission is “to accelerate the world’s transition to sustainable energy.”

Perhaps the most distinctive trait that makes Tesla stand out so valiantly in the automotive industry is a meaningful worldview. There is hardly another company that is as ambitious as Tesla in disrupting the current technology, in favor of a greener and more advanced one.

Ashlee Vance encapsulates Tesla's mindset well in his biography of Elon Musk. Reflecting on one of Tesla's key engineers and then-CEO, Martin Eberhard, Vance wrote, "Eberhard had a picture of his young daughter projected onto the wall of the main workshop. He asked the Tesla engineers why he had put that picture up. One of them guessed that it was people like his daughter who would drive the car. To which Eberhard replied, 'No. We are building this car because by the time she is old enough to drive she will know a car as something completely different to how we know it today, just like you don't think of a phone as a thing on the wall with a cord on it. It's this future that depends on you.'

Tesla's Model S



The Model S is considered to be Tesla's flagship product, as it was their first commercially successful car. Other than being fully-electric, there are several features that make the Model S

luxury sedan amazingly innovative as compared to the conventional cars that we are used to seeing today.

From a safety perspective, the Model S is designed in such a way that the bulk of its mass is located very near to its center of gravity. This results in a very low risk of the car rolling over if a road accident happens. As its engine is located in its rear rather than its front, the car is made to minimize as much impact as possible. This is further fortified by its side design, which features a strong central pillar and energy-absorbing sills.

In terms of speed, the Model S can reach up to 262 km/h, and it prides on having the world's fastest acceleration time, as it can drive from 0 to 96 km/h in a matter of 2.3 seconds. This is made possible with its low center of gravity, and its "dual motor all-wheel drive" feature which provides good traction in all weather conditions.

In terms of its energy, the Model S can drive up to 629 km on a single charge. It takes about 45 minutes for it to be fully charged, and most importantly, it can be charged for free at any Tesla Supercharger location. As of now, there are more than 16,000 Superchargers placed throughout the United States.

Another highly-innovative facet of the Model S is its autopilot feature, which eases the most burdensome aspects of driving. As with all Tesla cars, the driver can relax as the Model S can be fully self-driving. If the driver still opts to drive though, it automatically assists in lane-centering, lane-changing, and it performs parallel-parking with just a single touch. Also, with this feature, the driver does not need to walk up to the car, as the autopilot feature allows it to be summoned and automatically retrieved.

The Model S provides maximum comfort for the driver, offering personalized drive settings, allowing phones to be wirelessly charged and providing larger storage space than in most SUVs. The car's activities can be controlled from its central 17-inch touchscreen, as well as another smaller screen behind the steering wheel.

Product Background

Before the Model S, there was Tesla's pilot project, the Roadster, which was launched in 2008. The Roadster was a two-seater electric sports car made in collaboration with Lotus, from which the car's chassis architecture was borrowed from. It was quite an inauspicious start for Tesla, though, as the car cost \$140 million to make -- Far ahead of the estimated \$25 million in their 2004 business plan.

The Roadster was praised for its environment-friendliness and to some extent, its performance. However, it was criticized for being too expensive, selling at its base price of \$98,950. Customers were primarily unsatisfied with its lengthy charging time of 8 hours, to which the car can withstand a range of 354 km on the road. Also, there were problems in the car's manual steering, as it felt rather awkward and stiff. Especially early on, there were even complaints that the car would always break down. This was possibly due to the fact that its battery pack was air-cooled, rather than water-cooled, which was not adequate for cooling down heated batteries, especially when they are discharged to power an electric car.

Despite all of the Roadster's flaws, it still represented a bold shift in the automotive industry. Pioneering their lithium ion battery technology, it showed the world its future where fully-electric cars would be the new norm. Nevertheless, to turn this into reality, Tesla went back to work.

In 2012, Tesla unveiled the Model S, their four-seater luxury sedan. Having learned the tough lessons from the Roadster, Tesla showed that they were ready to take on the mainstream market. While the Model S targeted high-income consumers, it was also more commercially viable as the luxury sedan market is larger than that of the two-seater sports car.

Also, instead of depending on Lotus, Tesla decided to make the Model S from the ground up. Conflating safety, efficiency, and performance, the Model S set the new benchmark for 21st century cars, with the longest range achieved by any electric vehicle, over-the-air updates that continuously make it better, and an impressive acceleration time. Drastically improving on all

areas that the Roadster was criticized on, the Model S went on to be one of the most highly innovative feats, not only in the electric car market, but in the automotive industry.

Results

Selling at its base price of \$69,000, the Model S garnered critical acclaim from the press and the automotive industry. For instance, Car & Driver magazine awarded the car 5 stars, stating that it is “a good car, not just a good electric.” Consumer Reports honored the car with a near-perfect score of 99/100, naming it as “the best car ever tested.”

In the United States, the Model S has cemented its place as one of the nation’s best-selling luxury sedans. On top of that, it was also awarded the 2013 World Green Car of the Year, 2013 Motor Trend Car of the Year, and Time magazine’s Best 25 Inventions of the Year for 2012, among others.

Perhaps the most important legacy that the Model S has left is that it proved that consumers do not have to compromise to drive electric, that electric cars can be better and more fun in almost every way than gasoline cars. While the world is yet to fully embrace electric cars, the Model S has given the assurance that is not a matter of if, but when.

Reasons for Success

One of the contributors to Tesla’s success of Model S and as a company is their implementation of a direct distribution channel. Rather than sell their cars through franchised dealerships as most car manufacturers would do, Tesla practices direct sales. By owning the sales channel through company-owned showrooms and their online store, Tesla ensures a much better customer experience and also obtains an advantage in their product development. Since customers only

interact with Tesla-employed staff, there would not be a conflict of interest and customers can also provide immediate feedback.

Moreover, Tesla's Supercharger network is also a major reason for Model S's success, as well as for its successors. Tesla has developed a network of Superchargers, where people can recharge their electric vehicles for free, in well-travelled routes in the United States. As Tesla's prominence grows, they are in the works of setting up the same networks in Europe and Asia. A well-planned network of Superchargers is essential for Tesla to speed up the adoption rate of electric cars. This is due to the fact that without the ability to recharge, similar to the idea of stopping at a gas station, there would be a huge obstacle in the mass adoption of electric vehicles.

Furthermore, a factor in Model S's success is Tesla's convenient customer service. Tesla has combined their sales centers with service centers, as they believe it would increase customer demand. Consumers are more likely to adopt a new technology if they are provided with reliable support and service to solve any problems they might experience with that technology. At the service centers, customers can charge or service their vehicles. Even more conveniently, Tesla also employs "Tesla Rangers", who are mobile technicians that can service vehicles at customers' homes. Depending on the particular problems, an onsite technician might not even be needed. As such, the Model S can wirelessly upload data to service centers so that technicians can fix certain problems online, without having to be physically present with the car.

Recommendations for Continuous Improvements

Firstly, it is recommended that Tesla gradually improves the time needed to fully recharge the Model S and their subsequent vehicles. As of now, it takes around 15 to 30 minutes for a full recharge. On the contrary, it takes only a few minutes to refill a gasoline car at the gas station. Henceforth, it is imperative for Tesla to work on shortening the recharge time even further in

order for electric cars to be adopted in the mass market. For electric cars to appeal to mainstream consumers, they must prove to be less of a hassle as compared to gasoline cars.

Secondly, Tesla should open up more forums or programs to cultivate co-creation with their customers. As of now, there are not many active and official platforms for customers to provide their creative input or suggestions. This is important to ensure that their innovations are in tune with market needs, and to make the Model S and other existing vehicles even better. For example, Tesla could host a program for customers to send in their own car designs, thereby helping them to explore fresh and new ideas.

Thirdly, it could be valuable for Tesla to constantly research ways to enhance the Model S's digital technology. As Tesla's Model S has Wi-fi, Bluetooth, and voice control capabilities, they should strive towards increasing the quality of those features, and even adding in new ones. This is important for them to deliver the smoothest and most comfortable driving experience for their customers. For instance, Tesla should be sensitive on how they can prevent connectivity errors or crackles in the Model S's Wi-fi or Bluetooth connection.

Summary on How This Applies in Marketing

My research on Tesla's Model S has given me valuable realizations on how it applies to real-life business situations. Firstly, I gained a better understanding of what it means for a highly-innovative product to "cross the chasm" or to be adopted into the mainstream market. As we learn, one of the best ways to cross the chasm is to deliver a whole product experience. This means thinking out and easing every possible scenario that a customer would encounter in using the product, from providing maintenance services to offering additional features. Tesla delivers a whole product experience for the Model S by making their service centers active and available, and also by setting up Supercharger networks in places that are easily accessible for their customers.

I also learned about the importance of having a product champion in creating highly-innovative products : A person who believes in a product's value, and travels great lengths to create, sell, and promote it. It is clear that Tesla's CEO, Elon Musk plays that pivotal role. Under Musk's leadership, he encourages his employees to be highly imaginative, instilling that "no" and "can't" are not part of their culture. Musk also has a knack of keeping the market interested in Tesla's products. In the biographer Ashlee Vance's words, "What Musk had done that the rival automakers missed or didn't have the means to combat was turn Tesla into a lifestyle. It did not just sell someone a car. It sold them an image, a feeling they were tapping into the future, a relationship."

Furthermore, as part of their competitive strategy, I can see that Tesla embraces their role as a Product Leader. This is evident in their ambition of disrupting the gasoline cars market in favor of that of electric cars. They also boldly implement futuristic features such as autopilot-driving in their cars. On top of all that, they are audacious in their dream of making electric cars the new norm of the future. As Elon Musk suggested, "If you buy a car that does not have the hardware for full self-driving, it is like buying a horse. And the only car that has the hardware for full self-driving is a Tesla."

I also think that to a certain extent, Tesla embraces the Operational Excellence strategy, as their systems are designed around the ability to be efficient. For instance, in 2019 Tesla deliberately decided to close down most of their physical stores, only limiting them to a small number of showrooms and service centers in high-traffic locations. They now focus on their online store, in which they sell their cars and offer their services. This is for the purpose of saving operation cost, of which they can better utilize for their R&D pursuits.

THE DELOREAN MOTOR COMPANY



Company Background

For most people, what immediately comes to mind when they see a DeLorean DMC-12 is the movie *Back to the Future*, where the car is used as a time machine. While the car has achieved its status as a cultural icon because of its appearance in the movie, its history in fact shows that the car is rather a sobering tale for young innovators today, who envision themselves creating bold and highly innovative products.

The DMC-12 was the only car put into production by the DeLorean Motor Company. The company did not live to embody its motto, “Living the Dream”, but instead had its rude awakening of a tragic rise-and-fall tale, one that was pinwheeled between the forces of poor planning and bad leadership.

The DeLorean Motor Company was founded in 1975 by its namesake, John DeLorean, a maverick engineer who insisted on his ideals, who had a penchant for self-promotion and cultivated a rockstar-rebel image around his own life. For a while, this image worked well for him. After all, prior to founding DMC, DeLorean was an indispensable engineer in General

Motors. He was responsible for the Pontiac GTO, a supremely-built muscle car that was essentially the company's renaissance.

“DeLorean was convinced that the culture of order and discipline at GM had held brilliant creatives like himself down,” wrote Ryan Holiday, who profiled deLorean in his book *Ego is the Enemy*. So, DeLorean left, and started his own company with the aim of building an “ethical” sportscar, one that was safe and built to last. DMC can be thought of as the Tesla of those days, as they intended to challenge the status quo. It all seemed so promising that they even managed to attract major investors.

Reality then started to sink in through frequent production delays, exposing the company's mismanagement from top to bottom. Due to a multitude of reasons, the company and car failed and they eventually filed for bankruptcy in 1982. To add salt to their wounds, DeLorean was convicted for smuggling cocaine in an attempt to save the company. With that, DMC's short-lived legacy ended, going down as an important lesson in today's history books. DeLorean, still, would carry his rockstar image well until he passed away in 2005. As the final sentence of his New York Times obituary depicted, “In his casket he wore a black motorcycle jacket, blue jeans and a denim shirt. A pair of shades was tucked into the zipper.”

The DeLorean DMC-12



The DeLorean DMC-12 promised innovation in the form of speed, safety, as well as a sleek, futuristic design. In terms of its body, the car is famous for its gull-wing doors, which open upwards, rather than sideways. The car, made from stainless steel, is unpainted. Therefore, when the car is driven on the road, its body is made to reflect its surroundings. However, the stainless steel exterior proved to be a frustrating experience for customers as it would easily show every fingerprint that is laid on the car.

In terms of its interiors, the car is two-seated. This feature alone was a huge obstacle for the car to be commercialized and adopted in the mass market. Two-seaters only appeal to a small niche of consumers, as most would prefer a family-friendly car that could carry at least four people.

The car's power is delivered by its 2.85 litre V6 Peugeot-Renault-Volvo engine which rates at 130hp. With only 100kW and weighing 1230 kg, the car could only manage a 0-100km/h sprint in a sluggish 8.8 seconds. This makes the car slow, and it is considered a lackluster performance, as compared to their competitors' cars within the same price range.

The number 12 in the car's name denotes the fact that it was originally going to be sold at \$12,000. Due to a myriad of overruns and production challenges, the car was sold at a whopping base price of \$25,000, which is about \$66,869 today.

Product Background

John DeLorean initially dreamed up a “safety car” that would be the new ideal in car reliability and fuel-efficiency, in line with a timely government safety initiative. In fact, DeLorean’s early name for the DMC-12 was the “DeLorean Safety Vehicle”. As documentary filmmaker Jordan Livingston remarked, “He envisioned a car that would be the best of everything. He wanted the best style, he wanted the (least) environmental impact, he wanted the best value for the customer, and he also wanted the best safety.” Unfortunately, these visions never truly materialized, as their intended value and objectives for the car were unclear and fickle.

The DMC-12 first came into the works as a collaborative effort between DMC and Allstate Auto Insurance, which chipped in half a million dollars towards the car design. Allstate eventually backed out of the project, leaving DMC to continue developing their car. DeLorean incorporated safety-enhancing features such as energy-absorbing structures and crumple zones for the car, which proved to not be good enough, according to a crash test conducted by the National Highway Traffic Safety Administration. Those features, however, were never improved on.

Nevertheless, DeLorean proceeded to work on gaining financial support, especially by proposing to government organizations to build DMC’s manufacturing facility in a location where unemployment was high. DMC was sponsored by the British government to build their factory in Belfast, Ireland. In a nutshell, DMC racked a total of \$100 million in British government loans, and tens of millions from their private investors. It definitely seemed like a great start for the company, except that due to recklessly poor financial decisions, that money would be gone fast and soon.

As Barrie Willis, who was the company’s purchasing and supply director described, “The biggest problem we had was that the first business plan that was developed once the project had come to Northern Ireland made it quite clear we’re going to run out of money the day we produced the first car. We always knew that. And that’s why we were constantly under pressure to try and persuade the British government to give us just a bit more money. But that wasn’t

forthcoming.” Several months after production began, Margaret Thatcher and the Conservative Party took the reins in Britain, and they were not in favor of investing in a private company.

It was too late for DMC to turn the tide.

Results

The DMC-12 was eventually launched in 1981. While the car initially had its list of excited customers and fans, it would prove itself to be a disappointment for most. The car garnered praise for its sleek look, but was heavily criticized for being underpowered, having unimpressive handling, and was nowhere near being safe and fuel-efficient as DeLorean had so insistently promised. According to a review by Road and Track magazine, the car was “Not a barn burner...(With) a 0-60 mph time of 10.5 seconds. Frankly, that's not quick for a sports/GT car in this price category.”

This was compounded by the 1980 US recession, from which the new car market suffered significantly. It was untimely for the DMC-12, as its production delays led to its launch during such economically-challenging times, nearly a decade after the company was founded. Consumers felt that the DMC-12 was not worth its high price, as there were other sports coupes that offered greater horsepower and better-performing engines for lower price tags. For example, DMC-12's competition, the Chevrolet Corvette achieved record-breaking sales during the 1980-1981 period, in spite of the occurring recession.

DMC projected that their break-even point would be between 10,000 and 12,000 units of their cars. Their production ended in 1980, having made only about 7,000 units. By 1982, more than half of those 7,000 units were unsold, and they were in about \$175 million in debt. That same year, DMC filed for bankruptcy, resulting in over 2,000 employees to lose their jobs, and around \$10 million worth of investments to be gone with the wind.

In many ways, the demise of the DMC-12 is a warning for innovative companies, to not flout conventional business practices or to compromise market needs, in favor of doing things “their own way”.

Reasons for Failure

As discussed, a major reason for the DMC-12’s failure is its lackluster performance. The car certainly did not live up to the bold promises that were made by the company, and did not offer good value for its high price. It was not as safe and fuel-efficient as promoted, and a weak engine coupled by the car’s large mass resulted in a disappointingly slow and sluggish performance. To add to the unpleasant driving experience, the car’s iconic gull-wing doors were rather impractical as they were too heavy and would often get stuck. Drivers also often complained that the dye from the floor mats would rub onto their shoes, and the car’s distinct unpainted stainless steel exterior was nearly impossible to keep clean. Not surprisingly, customers flocked to other car companies that offered better value for cheaper prices.

Furthermore, it can be argued that the failure of the DMC-12, as well as the company, was due to poor leadership. As the saying goes, “A fish stinks from the head”. If the leader does not exhibit responsible traits for others to follow, chaos would surely ensue in the company and in their products. While DeLorean could have played his role as the product champion of the DMC-12, he instead used the company as merely a platform for self-promotion, for showing off his ingenuity as a renowned engineer. Under his leadership, part of their financial disaster was due to executives being given the freedom to work on extracurricular projects on the company’s dime, as long as it helped to promote his name. Also, as one of his executives remarked, DeLorean “had the ability to recognize a good opportunity but he didn’t know how to make it happen”, and that his leadership style was like “chasing colored balloons”. Unlike Elon Musk who is laser-focused on achieving specific goals, DeLorean was constantly distracted and always abandoned one task for another. This can be seen in how he was obsessed with the idea of safety

and environment-friendliness, only to lose interest as he did not perform the necessary tweaks and improvements to achieve those goals.

It can also be argued that the DMC-12's failure was due to a lack of proficiency among the employees. While DeLorean did have the noble intention of helping the unemployed people of Belfast, Ireland to work in the DMC factory, an overwhelming majority of them did not have any previous experience, skills, or expertise in working in an automotive company. As a result, the working environment, especially in the assembly line was largely undisciplined and laden with confusion among the employees. This could explain the DMC-12's frequent production delays as well as its various quality control issues.

Recommendations to Avoid the Same Failure in the Future

Firstly, to avoid making the same mistakes as DMC, businesses must hold firm to the tenets of honesty and integrity. Especially in a high-tech environment where short-term failure is inevitable, it can be tempting to cut corners or to not own up to mistakes and flaws in their work. It is equally tempting to think that customers would lose respect for the business if they were to be transparent with them. Sometimes that does happen, but not often. Most customers would appreciate the honesty that a business exhibits, as it shows that they truly care for them. DeLorean was always terrified of tarnishing the well-crafted image he made for himself and his company, and this led him to habitually bend the truth to investors and the press, until their first cars were launched in the market. As DeLorean himself lamented, "I ended up living a lifestyle I couldn't believe. The tragic thing is, you start to believe your own press...I fully confess to becoming egomaniacal. You believe you are omnipotent, and you are surrounded by people who tell you what you want to hear rather than the truth."

Secondly, always be in tune with market needs. As the writer Frederick Beuchner famously proffered, "A vocation is the place where the world's greatest need and a person's greatest joy meet". A common mistake that businesses make is creating an entirely finished product based on

an idea that they feel is great. As is often the case, what “feels” like a great idea is not necessarily great or useful in the consumers’ perspective. This can be avoided by surveying what customers want or need, or by preparing a prototype to gain customer feedback. In the case of the DMC-12, stainless steel exteriors might seem brilliant at first glance, but not in practical applications.

Thirdly, always value the importance of assembling a highly-skilled team. To relate with the success of Tesla, which was previously discussed, a mantra that they believed was that “One great engineer will replace three medium ones”. The skills and expertise of the employees directly impact the quality of a company’s products. Unlike DMC, businesses must carefully assess the employees that they should hire. If it is their case to be more liberal in hiring employees, perhaps it would help if the company at least provides necessary training and close monitoring for those employees, and see if they would make a good fit for the business.

Summary on How This Applies in Marketing

In researching and writing about DMC, it made me think about just how important it is to plan and strategize. The simple act of asking oneself, “Who are your customers?”, “What value do you want to give to your customers?”, and “How are you going to deliver that value?” really goes a long way. As I have realized, DMC failed as a company and as a car, because instead of asking themselves these simple questions, they fully and carelessly embarked on their own grandiose vision. Because they did not know who their customers were, they did not have any market needs to fulfill, hence no clear value to deliver. Long before they were making sudden reengineering of their original ideas or abandoning them altogether, they were already planning their own demise by not constructing a strong marketing strategy.

That being said, I was also reminded of the imperative act of conducting market research. Other than building a marketing strategy, a concrete way for companies to understand the needs of the

market is by putting in time and effort into market research. This way, they can have direct interaction with their target consumers and gain clear and detailed information on what they want or need. Some methods of market research include interviews, surveys, focus groups and prototypes. In the case of DMC, launching a prototype prior to the car's launch would have been beneficial as they could get instantaneous feedback on its errors and weaknesses, as well as its strengths.

Other than that, I learned that high-tech companies should embrace the concept of co-creation for their products to have a much better chance of being adopted into the mainstream market. Getting the customers involved in the business activities, and practicing personalization and customization can provide the company with new ideas that are aligned with market needs. It also builds customer loyalty and it keeps them personally invested in the company brand. A consequence of not embracing co-creation can be seen in the DMC-12's failure. For example, DMC hardly gave any room for customer personalization, as they dictated that the car would only come in its paintless stainless steel design. This was incredibly frustrating for customers, as fingerprints could easily be seen on the car, and the stainless steel surface was difficult for customers to paint over on their own.

Lastly, I think the story of DMC-12 can be viewed in light of the supply chain management concept. Based on my understanding of the company's problems such as production delays and quality control errors, they can be traced back to the hectic and disorganized environment at the production level. The majority of DMC's production employees were hired as part of their intention to eradicate unemployment. A downside to this was that most of the employees were inexperienced and unskilled, leading to the problems mentioned. Therefore, it is essential that companies recruit competent employees to ensure a smooth supply chain. Necessary training and education could also be given to the employees so that they can make continuous improvements, thereby increasing the company's effectiveness.