

Tesla's epiphany of innovation

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Tesla has been at the forefront of innovations in cars, solar panels, and batteries, built huge factories, received impressive amounts of awards, have made plans to enter the ridesharing market, and made huge leaps in energy conservation technology, all in slightly more than a decade. Led by the visionary CEO Elon Musk, Tesla has become one of the largest electric car manufacturers in the world. Their research into less energy consumption has surpassed any expectations, and changed the world while doing it.

As Tesla entered the marketplace, they were not enshrouded in fame, as they are now. They were merely a technology company, started in 2003, and didn't put out a finished product until 2008. They were plagued by delays, changing CEOs, and manufacturing problems. However, they have been able to bounce back and become one of the most successful startups in the world. Their innovations in STEM have helped to shape the future of electric cars. Their colossal amounts of research to build their cars has paid off, and they have created some of the highest performance cars in the world. While they used to only focus on electric cars, and later batteries, they have recently moved onto manufacturing solar panels as well.

Tesla has completely redefined the market for electric cars. While electric cars used to be repulsive in their looks, Tesla has made a car that looks, and drives, like a sports car. By making electric look good, Tesla will now be able to conserve huge amounts of resources with their electric cars people will actually buy. The concept of an electric car is fairly straightforward. It uses electricity in a rechargeable battery to turn the motor, instead of burning gasoline. This significantly decreases the amount of earth's resources being used, because making electricity from burning gasoline, and

using it in a car, gives you more miles than simply using gas in a car. This will be very valuable in the future as we try to prevent climate change and conserve earth's natural resources. By using science and engineering, we can create new ways to lessen depleting the earth's assets.

By using the same formula in their electric cars as their solar panels, Tesla has been able to create a product that is elegant, yet still just as energy efficient as its less graceful counterparts. By using a type of glass that turns opaque as you look at it from a lower viewpoint they have been able to make the solar panels virtually impossible to see from the street. Tesla also designed and will soon be sending out Powerwall 2.0, a battery that can store all of the energy created by the solar panels, with a peak draw large enough to power a four bedroom house for a day. This will cost \$5,500 but will make up much more of that money in energy savings (As long as it is paired with the solar panels). "The new roof and battery are part of Musk's master plan to save the world through sustainable energy." (Wired).

Tesla has taken on the world in many areas of business, but soon will enter the market of ridesharing. While UBER may have a hold on it now, Tesla has plans to enter into the market with its Tesla network. "using a self-driving Tesla for car sharing and ride hailing..." ([electrek.co](http://electrek.co)) Tesla network will allow users to simply push a button to put their tesla into the shared fleet to generate revenue while they are at work or on vacation. This will significantly offset, and even exceed, the cost of the car. This work of genius by Tesla may make Tesla the largest car manufacturer in the world, if all works according to plan.

Tesla has also been working on, and manufacturing the new Model SD, an upgrade to popular Model S. The car's main feature will be the full autopilot system. This will be able to completely drive without any driver assistance. "Tesla's autopilot is a way to relieve drivers of the most boring and potentially dangerous parts of road travel." ([dezeen.com](http://dezeen.com)). The feature uses a vast array of sensors to create a cocoon of safety around the car, effectively allowing it to "see" all around it. Another main feature of the Model SD is the dual motors, that allow it to accelerate as fast as a McLaren F1, 0 to 60 mph in just 3.2 seconds, making it the third fastest accelerating factory car in the world. This is unprecedented for a mere startup car company.

Their efforts in energy consumption reduction have been recognized and applauded by several high profile conventions. One of these, VIND, awarded tesla the 2012 renewable energy award. Tesla was awarded this for their work on transitioning the world to renewable energy by their lineup of energy efficient electric cars. They are a pioneer in this technology, and have been very successful so far in creating energy efficient vehicles. Their very technical and complicated machinery created by days of research and testing are some of the highest quality and energy efficient engines in the world. This supports the idea that tesla has used all the components of STEM to construct their high performance cars.

Tesla has been in the works to construct a new factory for building cars and batteries. It was been called the "Gigafactory". It has several interesting and surprising features such as, at 10 million square feet it will be the largest building on the planet. This monstrous structure will allow Tesla to reach its goal of producing 500,000 cars per year by 2020. Keeping along with Tesla's renewable energy theme, the factory will

consume no fossil fuels, and use windmills, geothermal energy, and solar panels to power the factory. It is built to be resistant to earthquakes, so if one happens the plant will not be damaged, and chemicals inside will not leak to damage the environment. It will conserve many of earth's resources with a state of the art recycling center on-site. This will recycle batteries to get resources to build more. Finally, it has AGVs (automated guided vehicles) to assist the workers.

STEM is the future of America. In the future STEM jobs like working at Tesla will be needed to create a wonderful America in the future. To be able to create all the new products people want, engineers will need to be able to come up with solutions and machines that can build and fix them. Scientists will be needed to create better medicine to protect against diseases. Technology will run the internet, governments, nuclear missiles, and even spaceships. Math will be needed in architecture and building new skyscrapers. Without STEM, the world would collapse, as there would be no gas, airplanes, boats, packages, cars, TVs, ect.

Tesla may be one of the most successful startup companies of all time. In its mere decade of existence it has been able to do what many car manufacturers haven't been able to do in much longer amounts of time. Its innovations are unprecedentedly futuristic and genius, and create a business that has repeatedly been called one of the most innovative companies in the world. Tesla, the future of solar panels, cars, and batteries as we know it.

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