Tesla goes mainstream

By: Ed Richardson

Tesla Motors is going mainstream with the launch of the Model S four-door saloon, along with the opening of what the company calls “stores” rather than dealerships.

Automotive Industries (AI) asked JB Straubel, chief technical officer and part of the Tesla Motors founding team what the company’s view is of the market for electric and hybrid vehicles over the next 10 years.

Straubel: It is Tesla’s goal to help eliminate the world’s dependence on oil. Hybrid cars are an interim step with which traditional manufacturers have been more comfortable. We at Tesla believe the future is in fully electric vehicles. To entice people to go electric and give up their gasoline-powered cars, you must build a car that people want to drive. For example, the Tesla Roadster is a fantastic sports car, accelerating from 0 to 60 mph or 0 to 97 km/h in 3.7 seconds; a top speed of 125 mph or 201 km/h, with 400 Newton meters of torque. It also delivers a range of over 200 miles. The Roadster has been praised by some of the world’s leading car critics. Along with zero emissions, performance and safety, aesthetics are extremely important to automotive consumers, and extremely important at Tesla. With the Model S, we intend to build not only the best electric sedan, but the best sedan of any type - regardless of whether it is fueled by petrol or batteries.

AI: You say you are “reinventing the way people buy cars”. How does that impact on the manufacturing and logistics processes?

Straubel: Our retail strategy is to place Tesla stores in premium, high foot-fall retail shopping areas. It allows us to educate many, many people about our innovative technology and products. We have sold out the first years’ production of the Model S, and continue to take reservations. Therefore, we will be building cars to customers’ orders – not to “stock.” In other words, we know exactly how many cars we are building, and to what specifications. This long visibility allows Tesla to be

It costs pennies on the dollar to drive an electric car – about three cents a mile in electricity cost. An electric car, with thousands fewer moving parts than a combustion car, requires very little maintenance – no oil changes, no exhaust system, no spark plugs - to name a few.

Second, one of Tesla’s main goals is to relentlessly drive down the cost of critical electric vehicle components. We are continuously improving our fundamental designs, particularly in the battery system, and also investing large amounts of time in manufacturing technology and vertical integration around the manufacturing of key enabling components such as the battery pack, electric motor and power electronics. Our success in this effort can be seen in the Model S with a base price starting at less than half of the Roadster’s. We also sell our powertrain components to other automakers to enable even lower-priced vehicles such as Daimler’s electric smart car and the upcoming electric Toyota RAV4.

Our strategy all along has been to apply the technology and lessons from a low-volume premium supercar (the Roadster) to a medium volume mid-priced saloon (or sedan) (the Model S), and then eventually to a lower-priced high-volume car.

AI: How are you reducing the cost of owning and driving electric vehicles?

Straubel: First, it’s important to remember that maintaining an electric car is much more affordable than a combustion vehicle.
Our design and vehicle engineering teams work across the table from our manufacturing engineers throughout the entire process.

efficient when ordering materials. We also have taken a fresh approach to manufacturing operations. We build everything - from our powertrains to the panoramic roof - in the Tesla factory in California. We have retooled some presses and machinery that we bought from traditional car makers, while investing heavily in some of the latest robotics. Our design and vehicle engineering teams work across the table from our manufacturing engineers throughout the entire process.

AI: How should Tier 1 and Tier 2 suppliers adapt?

Straubel: It may be surprising, but there are no particular changes that are needed from suppliers to work with Tesla. The “reinvention” referred to in the preceding question is happening in the process between vehicle manufacturing and the vehicle’s end-customer.

AI: What percentage of your suppliers are traditional auto industry companies?

Straubel: Tesla’s integrated approach to sales, manufacturing, delivery and service makes Tesla unique. We design and build our own batteries and inverters, motors, transmissions. But a lot more goes into building a car. A majority of our supplier partners also supply traditional OEMs. Tesla is driven to innovate and achieve excellence in every aspect of what we do – and this approach of course requires a high level of quality that permeates everything from our buildings and factories themselves, to the materials we purchase from suppliers to the people we employ. Suppliers have direct input into enabling what we do and how we do it. Suppliers therefore must be driven to deliver excellence – in quality, timeliness, innovation, responsiveness – so that they’re not a “weak link” in the effort.

AI: How do they adopt your “Silicon Valley approach” to design and development?

Straubel: There will be an increasing focus on excellence and quality in electronics and software as vehicles continue to “electrify” in various ways. These are areas of expertise that suppliers should be sharpening, focused on, and investing in. The Silicon Valley approach does not manifest very differently from how more typical automotive companies relate to their supply base. In fact, Tesla has learned a great deal from partners such as Toyota about how best to build and maintain strong and productive relationships with suppliers.

AI: Are you sharing/licensing your technology to OEMs? How are you managing potential conflict of interest in that you will be selling vehicles in the same markets?

Straubel: Tesla has agreements to supply two of the most respected automotive companies in the world - Daimler and Toyota - with electric powertrains and powertrain components to help build their EVs. We’re very happy to work with traditional carmakers to help electrify their fleets. Our mission is to accelerate the electrification of cars around the world in every way possible. We certainly won’t do that alone. As our CEO (Elon Musk) has stated on many occasions, until every car on the road is electric, Tesla will not stop. At this point, Tesla’s cars don’t directly compete with other electric vehicle offerings in the market. The Tesla Roadster and Nissan Leaf are both electric, but they are certainly not competing for the same consumer. 

“"Our design and vehicle engineering teams work across the table from our manufacturing engineers throughout the entire process.""