



Tesla's Model S: Technology Outruns the Business Model

In our recent blog post on HBR blogging network we discussed the Tesla Model S, which is arguably the most promising all-electric contender for a slice of the luxury sedan market, but was panned recently by New York Times reporter John Broder, who finished his test-drive on the back of a flatbed truck. Elon Musk, co-founder of Tesla Motors, was quick to respond with accusations that the test was not performed under fair conditions. Whatever the rights and wrongs of the dispute, though, one thing is clear: Tesla has some way to go before it can get motorists to buy into its vision of an all-electric no-compromises luxury sedan.

There's little doubt that the Model S is an excellent car. It has received numerous automobile awards, and it integrates many of the latest technological advances in electric powertrains and charging technologies. To support the new car, Tesla also plans to install a network of quick charging stations (which charge the battery to 50% capacity in about 30 minutes). The costs of the investments explain the vehicle's high price tag, well above that comparable gasoline powered cars.

But look closely and you'll see an interesting disconnect. The innovativeness of Tesla's technology is not matched by the innovativeness of its business model. In fact, there is no change to the business model at all. Tesla is simply proposing to replace the standard gasoline car and gas station business model with the model S and a supercharge station network.

The electric car market will never take off unless this disconnect is fixed. What the model S needs is not a network of charging stations but a different business model.

Better Place offers a candidate. This start-up's founders have focused as much on innovating the business model as on bringing new technology. Instead of a network of charging stations, Better Place proposes a network of battery swap stations at which electric vehicle owners can swap their depleted batteries with fully charged ones in just a few minutes. The vision is to have enough of these stations so that getting a new battery would be no different from filling up a tank of gas. Further, the company owns all batteries (including those in vehicles), taking full responsibility to supply charged batteries at these stations — the customers only pay for the miles driven.

This effective "leasing" of the battery brings the

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initial purchase price of the vehicle down to that of a gasoline vehicle and even though per-mile costs are a bit higher than those of an electric vehicle with battery ownership, they are still much lower than for a gasoline vehicle. To be sure, Better Place has had its troubles recently but it is running successfully in Israel and is refining its model as it goes along.

The best organizations innovate their technology and business models at the same time. Think of Apple. Apple designed products with widely praised user experiences long before the breakthrough success of the iPod. What Apple created with the iPod was not just another well designed product but a product accompanied with a new business model for content provision, the iPod/iTunes ecosystem, a perfect marriage of product, technology and business model — something the Electric Vehicle industry is still waiting for...

Will Better Place or Tesla be the iPod/iTunes of electric vehicles? The jury is still out on that, and perhaps it will be neither. In any event, though, the bigger question is: will electric cars help reduce emissions? In our recent (rather academic) paper we show that the answer is far from straightforward: electricity in most countries is produced using fossil fuels, which means that electric vehicles are not necessarily that much greener.

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