eMobility: The Long Road to a Billion-Dollar Business

What’s driving the electric vehicle market?

A quick survey of today’s highways makes one thing clear: Less than 1 percent of all vehicles are electric. Yet environmental factors such as pollution and the scarcity of fossil fuels mean that before long electronic mobility—or eMobility—will be a strategic necessity. In fact, the first series-produced vehicles are bringing the concept of eMobility home to drivers, while underlying political conditions are quickly being established. Against this backdrop, the question for new entrants is: Which eMobility business model is the most profitable?

The eMobility ecosystem consists of four interactive segments—vehicles, infrastructure, providers, and regulations and subsidies—each contributing to the overall system and possessing its own opportunities and risks (see figure 1 on the following page). The pivotal success factor is for all segments to have profitable business models and the right players. If even a single component is missing, development of the overall ecosystem will come to a standstill.

Provision of e-Vehicles
The provision of electric vehicles is defined as the production of new components and the marketing of innovative financing models along with value-added services. Based on manufacturers’ launch plans and expected penetration rates, the market potential for electric vehicles will be in the neighborhood of $340 billion by 2020, which is equivalent to 10 to 15 percent of the global automotive market that year (see figure 2 on the following page). But because of the higher investment requirements and uncertainty around profitability, this segment is a very risky proposition from a producer’s point of view.

Findings in our recent study of the eMobility market reveal that a successful business model for electric vehicles is dependent on three factors:

Press ahead, but not alone. The considerable amount of investment required will only pay off if other segments of the ecosystem develop satisfactorily. Should manufacturers get involved in segments such as infrastructure and power generation? The answer is yes for some companies, with several companies already taking steps in this direction. However, in many cases, building strategic alliances with infrastructure providers and electricity producers is sufficient.

Use new platform and module concepts. Original equipment manufacturers (OEMs) use common platforms...
and modules within a family of models. However, electric vehicles necessitate the use of a modular kit in addition to the forms of propulsion and the vehicle segments. Certain car makers, for example, are opting for a modular platform that integrates conventional drive systems, electric vehicles, range extenders, and fuel cells. Offer intelligent financing concepts. In this segment, innovative vehicle- and battery-leasing concepts and pay-per-use strategies must be part of the package to help lower the high price of entry, which is often a stumbling block for buyers.

**Provision of Infrastructure**

The provision of the infrastructure segment is a new, complex construct involving different industries. It includes the classic charging station business and green power generation while encompassing completely new elements, such as innovative service

![FIGURE 1: The eMobility ecosystem](image)

![FIGURE 2: eMobility is expected to be a $390 billion global market in 2020](image)
offerings and billing systems. Based on the number of vehicles anticipated in 2020, this segment offers a market potential of $29 billion—but it requires massive investment. The millions of dollars being spent to develop infrastructure in pilot regions such as Berlin, Germany, are a clear indication that a full-coverage charging infrastructure with power generation from regenerative sources will be expensive. Our study findings suggest the following success factors in this sector:

Collaborate strategically. Building cooperative ventures with automotive manufacturers, power utilities, and large customers is key to ensuring satisfactory sales and therefore to securing necessary investments. POD Point, a U.K.-based firm specializing in electric vehicle chargers, relies heavily on collaborative ventures. The company struck one deal with Nissan to offer every LEAF buyer a home charging station, and another deal with British Gas for energy and use of its installation and maintenance services. POD Point has also formed partnerships with large customers, including Tesco, Sainsbury’s, and Best Buy.

Use programs sponsored by the government or local authorities. Participating in government-sponsored regional pilot projects offers good opportunities to reduce uncertainty and protect against potential risks. In addition, exclusive agreements are a good way to safeguard long-term access to local authorities.

Offer comprehensive services. Offering services such as charging stations, reservations, and standardized billing systems is a good investment for infrastructure developers. The broader the service offering, the greater the potential sales revenues—not to mention energy sales.

**eMobility Providers**

The business model for eMobility providers is not that different from standard vehicle business models. For example, capitalizing on short-term demand by providing e-vehicles to car-rental and car-sharing fleets is a standard strategy that works for both segments. By 2020, the market potential for this segment of the ecosystem will have reached approximately $23 billion, assuming that by then 10 percent of all e-vehicles are supplied by eMobility providers.

The main challenges are the high sticker prices, variations in battery performance, and the amount of time and effort required to instruct the customer. Our study points to three success factors for this segment:

Work with existing car-sharing and rental businesses. This helps establish the eMobility business as companies draw on existing infrastructure, customer usage behavior, and brand awareness—eMobility is not a viable proposition as a stand-alone offering.

Integrate mobility offerings. Car-sharing locations, such as railway stations, allow a smooth changeover to public transport; this can be facilitated further by means of combined tariff packages.

Establish strategic partnerships. Partnerships with vehicle and battery manufacturers, infrastructure providers, and public transport companies are mandatory. A good example of this is the Swiss-based firm Mobility Carsharing: The vehicles come from a cooperative project with M-Way Solutions and are based at Swiss railway stations, among other places; for the charging infrastructure, a cooperative agreement with Siemens has been reached.

**Regulations and Subsidies**

Regulations and subsidies play a decisive role in ensuring the economic attractiveness of eMobility. This is the case not only for drivers but also for industry. In 2020, roughly $30 billion to $40 billion will be raised in subsidies worldwide, with direct and indirect buyers’ premiums accounting for around 85 percent of this and industry subsidies accounting for the remainder.

As one example: Oslo, Norway, reserves certain traffic lanes for e-vehicles, enabling commuters to save up to one hour of travel time every day. In addition, e-vehicles can park free of charge at numerous points in the city for up to 16 hours and are....
exempt from downtown tolls and from the country’s motor vehicle tax.

Networking is a Must

Overall, the opportunities and risks in the various ecosystem segments appear to be unevenly distributed. Vehicle manufacturers have to shoulder a huge amount of risk and, in order to use the market potential, are forced to move the other segments of the ecosystem forward as well. As far as the development of infrastructure is concerned, companies are still holding back—and this is probably the critical point in the whole system. For those companies that make skillful use of strategic cooperative projects, the market prospects are bright indeed. From the mobility providers’ standpoint, eMobility is an attractive additional business offering with excellent potential and only limited risks. Government and local regulations should play a part in developing the ecosystem—based on the principle of helping people to help themselves.

1+1=2

The success of eMobility is based on two common denominators: innovative networking and strategic alliances. Success in this market will not require one or the other, but both—to create the basis for an overall system that functions smoothly and effectively.

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