

John Branch

## General Motors' Chevrolet Volt: How to Avoid Failure with Future Plug-In Hybrid Electric Vehicles

*"We can confidently expect more of the world's auto producers to move to the Volt-type solution, as neither the optimized internal combustion engine nor a battery-only vehicle lineup will, over the next decade or two, adequately fulfill the conflicting requirements of 'range' versus 'no CO2 emissions.' The skeptics, the pundits, the GM haters, and those who detest lithium-ion as a chemistry will all be dragged, however unwillingly, to the same conclusion: Volt paved the way, Volt was the first with the extended-range EV concept, Volt demonstrated the will and technological capacity of General Motors." – Bob Lutz, 2011<sup>1</sup>*

It did not work out, however. Despite a highly rational concept, the Chevrolet Volt did not set the mark for electric cars ... or for General Motors (GM). What happened exactly? And how could GM prevent it from happening again?

### A New CEO and a New Industry Concept

In 2001, GM appointed seasoned automotive executive Bob Lutz as its new CEO. His mandate was clear: restructure the company and return GM to its "rightful place" as the leader of the automotive industry. Lutz wanted to change public opinion about the company from a manufacturer of mediocre trucks and SUVs to a leader in mobility. He was convinced that electric vehicles, using lithium-ion battery technology, were the future of GM and of the automotive sector more broadly. He therefore planned to disrupt the automotive industry by launching a GM-badged electric vehicle (see **Exhibit 1**).

At the 2007 Detroit Auto Show, GM unveiled its concept for the Chevrolet Volt, dubbing it the first "electric vehicle with extended range." The primary concern among automobile buyers at the time (and onward) was that electric vehicles (EVs) were impractical because of their limited range. The Chevrolet Volt, like the Toyota Prius and other hybrid electric vehicles (HEVs), employed both an electric motor and a gasoline engine to extend its range. But while a traditional HEV relied on a gasoline engine as the primary source of power and used the electric motor for low speeds or short bursts, the Volt was powered

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