

M.S. Krishnan

Tesla Software on Wheels: Digital Transformation of the Automotive Business Model

As the world-leading automaker for electric vehicles (EVs), Tesla Inc. had built a reputation as an innovator in the auto industry, often exceeding industry and market expectations alike, culminating with the Model Y as the best-selling vehicle globally in 2023, with 1.23 million units sold, dethroning the Toyota Corolla, which held the position for many years.¹

Tesla's approach of introducing a new business model, powered by software and digital technology, challenged the traditional assumptions behind competition, customer engagement, and valuation in the auto industry. However, the disruptive nature of Tesla's business model received mixed responses from the stock market. In January 2022, the market expected updates on Tesla's yet-to-come Cybertruck, semi-trucks, and a \$25,000 mini-car. But CEO Elon Musk announced that the company would not launch any new products in 2022 due to the industry's uncertainty related to the semiconductor chip shortage. Instead, he said, its focus in 2022 would be on developing software to improve autonomous driving capability because that would accelerate the company's overall profitability.² However, the stock market was not buying the argument.

The fundamental, "first-principles" rethinking of a vehicle led Tesla to design and manufacture the industry's first "software-defined" automobile.³ Even so, rapid permeation of software into every aspect of the auto industry, from design and manufacturing to customer engagement and driving experience, was transforming the business, creating a new competitive arena, and raising questions around the valuation of a software company competing in the automobile business. Facing Tesla leadership were the questions of potential new business models, given the company's focus on software as a core capability, and how Tesla would further engage current and new vehicle owners.

Automobile History and the Shift to EVs

It's hard to imagine a society without vehicles. When Henry Ford and the Ford Motor Company first released the Model T in 1908, he envisioned it to be an answer to a fundamental question faced by society—

Published by WDI Publishing, a division of the William Davidson Institute (WDI) at the University of Michigan.

©2024 M.S. Krishnan. This case was developed by Stephen McKenzie, Thimmaiah Honaganahalli, Yuning Ye, and Maria VanDieren under the supervision of M.S. Krishnan, Accenture Professor of Computer Information Systems at the University of Michigan's Ross School of Business. The case was prepared as the basis for class discussion rather than to illustrate either the effective or ineffective handling of a situation. The case should not be considered criticism or endorsement and should not be used as a source of primary data.