

Tesla in the 2020s: moment of truth for the “Master Plan” (Update 2024)

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We are between two major growth waves. The first one began with the global expansion of Model 3 and Y [...] We’re focused on making sure that our next growth wave driven by next-gen vehicle, energy storage, full self-driving, and other projects is executed as well as possible.¹

Tesla CEO and Chief Architect Elon Musk was addressing the expectant audience during the company’s Q4 2023 earnings call. The numbers, once again, were nothing short of impressive. Tesla posted record revenue of \$96 billion and a net profit of \$15 billion, with nearly 1.8 million cars sold globally. A couple of months prior, in December of 2023, the company had finally begun deliveries of the long-awaited Cybertruck electric pickup vehicle.

However, the electric vehicle (EV) market was in flux. Tesla found itself locked in a price war in the Chinese market, the most important for the company outside of the United States. Tesla and other European and Japanese automakers were finding it more difficult to compete with Chinese EV makers, which had taken over the domestic market—and were expanding internationally—with their compact and inexpensive EVs. In the last quarter of 2023, for Chinese automaker BYD sold more vehicles than Tesla,² the first brand to do so since Tesla spearheaded the modern EV market in the 2010s.

It was expected that sometime in the near future, the company would reveal its “Next Gen” vehicle, which would feature a completely innovative manufacturing process and integrate an array of new technologies, such as the long-awaited full self-driving (FSD) capability. The new vehicle was expected to be an affordable offering that would enable Tesla to compete with Chinese EV makers. However, it was not expected to be widely available until 2026.³ Until then, Tesla would continue to rely primarily on the Model Y and Model 3 for the majority of its sales.

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It was, in the end, all part of the plan. Indeed, earlier in 2023, Tesla had released Part 3 of the “Master Plan,” the ambitious strategy intended to make it one of the driving forces behind sustainable mobility and energy generation. Parts 1 and 2 of the plan had been successful overall, turning Tesla into one of the most impressive industrial stories of the 2010s and 2020s. However, one question persisted: Would the new “Master Plan” work?

The automotive industry

The industry in the 2020s

In 2023, the automotive industry bounced back from difficult years characterized by supply bottlenecks and skyrocketing commodity prices, manufacturing nearly 76 million cars worldwide (+10% vs 2022). This increase in production was relatively uniform across all the major automotive markets (see **Table 1**). Nonetheless, production had not yet fully recovered from the impact of the COVID-19 pandemic.

Table 1
Motor vehicle production (2022–2023)

| Region | 2023 | | 2022 |
|--------------------|-------------------|-------|-------------------|
| Europe | 14,988,243 | | 13,316,033 |
| | | 12.6% | |
| America | 13,824,103 | | 12,535,642 |
| | | 9.3% | |
| Asia-Pacific | 44,971,379 | | 40,923,334 |
| | | 9.9% | |
| Middle East/Africa | 1,831,725 | | 1,823,048 |
| | | 0.5% | |
| Total | 75,615,450 | | 68,598,057 |
| | | 10.2% | |

Source: Prepared by the authors based on information by the International Organization of Motor Vehicle Manufacturers (OICA). “Overview,” accessed April 19, 2024. <https://www.oica.net/production-statistics/>.

China was both the largest producer and consumer of automobiles by a significant margin. In fact, it accounted for 33% of the 75 million cars manufactured worldwide. Chinese exports were also growing rapidly, nearly overtaking Japan in 2023 as the largest car exporter in the world (5.97 vs. 5.22 million cars).⁴ Chinese exports to Europe had also grown 40% year on year, between 2022 and 2023.

The players

The main players of the automotive industry were original equipment manufacturers (OEMs), which manufactured and sold motor vehicles under their own brands. Since the 2008–2009 recession, which put several historic manufacturers (e.g., the US “Big Three”: Ford, GM, and Chrysler) on the verge of bankruptcy, the industry had been trending toward concentration. Stellantis, for example, was created in 2021 as the culmination of a merger of Fiat, Chrysler, and the French giant PSA.⁵ In 2023, the Japanese manufacturer Toyota was the world’s top OEM per units sold, a position it had held since 2020 (see **Exhibits 1, 2, and 3** for a list of the world’s largest OEMs at the end of 2023).



Automobile manufacturing was a complex activity, requiring large capital investments. Building a large modern automotive factory could cost around \$1–1.5 billion.⁶ Over the years, automobiles had become increasingly sophisticated, adding new features in safety (e.g., ABS brakes and airbags), comfort (e.g., onboard entertainment systems and ADAS), and performance (e.g., electronic fuel injection systems). Thus, a modern automobile could comprise 30,000 parts.⁷ Accordingly, in addition to capital, manufacturers required access to highly specialized know-how and substantial logistics and organizational capabilities.

Historically, manufacturers would progressively contract out the manufacturing of various parts of the automobile, creating complex supply chains. Generally, the OEM only retained the general design of the vehicle, its final assembly, and the manufacturing of some key components, such as the engine. Meanwhile, the remaining parts were supplied by external manufacturers, who could be Tier 1 (which provided finished parts to the OEM), Tier 2 (which provided Tier 1s with parts and sub-assemblies), or Tier 3 (which supplied processed raw materials). Automotive suppliers were not just expected to manufacture parts but were also responsible for designing and servicing them. Throughout the 2020s, the growing demand for digital features resulted in added pressure on both OEMs and suppliers to acquire new capabilities in the field. This also brought lead players of the digital era, such as Google and Microsoft, into the car industry.

Given the large capital investments required, scale was of utmost importance, with the industry becoming global since the 1980s. For example, it was estimated that an automotive factory built in China (a low-cost country) had to produce 200,000 vehicles/year to be profitable.⁸ Thus, automobiles with short production runs were very unlikely to be profitable. Even luxury brands commanding higher margins had often been acquired by large automotive groups. Car models were now being designed around “platforms” manufactured at the global level. Thus, players operating within a narrow geographic scope—either OEMs or suppliers—were in danger of being displaced by their global competitors.

Automobiles had traditionally been sold through specialized dealers, which often had exclusive contracts with a single OEM. Furthermore, these dealers often provided after-sales service, and other customer services, such as loans to finance purchases.

After-sales service and repair were performed either by the OEMs and their partners or third parties—the latter often at a lower cost. The maintenance and repair of motor vehicles usually attracted higher margins than manufacturing.

Another important player were the various public administrations. Their regulatory role had a very important impact in the industry, and the economic weight of the automotive industry (which some estimated to be at around 3% of global GDP),⁹ made it a major part of the economic and trade policy of national and supra-national governments.

Lastly, the insurance sector played a key role in the automotive industry. Thus, in 2023, the automotive insurance business was estimated at \$805.91 billion globally.¹⁰

The electric car

In 2023, global EV sales hovered around 14 million worldwide, making up a total of 18% of total car sales (vs. 14% in 2022 and 9% in 2021).¹¹ One of the main drivers of this growth was China, with a concentration of 60% of total EV sales. The second largest market was Europe (25% of total EV sales), followed by the United States (10%).