



Challenging Times in the Automotive Supply Chain: Lessons From Tesla



Introduction

Within the last couple of years, it has been almost impossible to have a conversation with an automotive executive without the topic of Supply Chain featuring heavily.

Automotive manufacturers (OEMs) and their suppliers have been challenged in two main ways:

- They have been unable to source the correct type or sufficient volume of the multiple semiconductor chips and other components that are needed for their vehicles and underlying systems; and
- The shifts in manufacturing priorities and planning that result from these problems (e.g., the allocation of limited supplies of key components to the most profitable vehicles in an OEM's model line-up) have played 'knock-on' havoc with the suppliers' own priorities and planning – and thus their cashflows.

Disruptions arising from Covid, and now the war in Ukraine, have also added to the industry's woes, particularly in terms of supply cost, and these are likely to continue.

It is probably fair to say that although Supply Chain has been a tremendous headache for Automotive OEMs and their suppliers, many players were to some extent 'the architects of their own demise'. Automotive OEMs and their suppliers have sometimes behaved unreasonably as buyers, thinking tactically about short-term challenges rather than concentrating strategically on long-term supply sustainability.

However, one exception to this general 'rule' may have been Tesla.





Tesla's Supply Chain Approach In 2020

In 2020, as the pandemic and lockdown measures first started to impact demand, many automakers cut their chip orders. At the same time, many semiconductor manufacturers switched their priorities towards their less 'challenging' and more profitable customers.

Meanwhile, Tesla anticipated continuing demand over time, and as a result, never reduced its production forecasts with suppliers. This left Tesla in a position where it was much more able to weather the same chip shortage that quickly became such an incredible 'pain' for most other OEMs. Tesla was also smart in how it approached potential Supply Chain bottlenecks from a tactical perspective. Examples of Tesla's pragmatic thinking included:

- Telling some customers that they could take delivery of vehicles with certain parts missing, such as Bluetooth chips and USB ports;
- Removing certain features from its vehicles, such as radar sensors and lumbar support for front passenger seats, which made the car less complicated to build; and
- Increasing vehicle prices to address higher costs, including 'expedite costs' for parts. US consumers must now wait for seven months if they order a Model Y version, the price of which went up by 18% last year.

Of course, by virtue of its brand and reputation, Tesla probably has more 'market permission' than many other players to act in this way.

However, there is a clear indication that this non-traditional company simply has a different way of thinking and is, therefore, less bound by industry norms and constrained thinking that sometimes exists amongst other players.

There is a strong case that different thinking only comes from different (and differential) people.

Potential 'Take-Aways' for the Automotive Industry

Philosophically, Tesla takes a different approach to Supply Chain management, compared to the more traditional OEMs:



Most of Tesla's rivals rely on automotive suppliers for support, but Tesla designs a lot more of its own hardware and writes more of its own software than its competitors.



Tesla can quickly modify circuit boards to accommodate alternative chips, because the company designs its own circuit boards.



Tesla has a team of in-house engineers who design the majority of the software in its vehicles.

Perhaps it is time for other OEMs to consider bringing more 'mission critical' activities in-house?



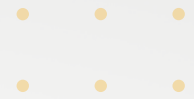
Other lessons for OEMs might also be drawn from Tesla's approach:

- Sustainable battery supply will likely be a key determinant of success in an electrical future. From the outset, Tesla set out to take control of its battery supply chain by building its own Gigafactory in Nevada;
- Tesla built in-house capability to write the software code that runs its cars, whereas its competitors have relied on external suppliers for this expertise. This decision gave Tesla the ability to rewrite its code in order to accommodate whatever semiconductors the Company was able to procure;
- Tesla's control over its own software has given it the flexibility to change suppliers and semiconductors as needed;
- Tesla's ownership of onboard computer design and software has allowed it to standardise chips, so each car has fewer chip SKUs to procure; and
- Tesla has fewer finished product SKUs. There are only four models of Tesla vehicle, compared to over 40 passenger vehicle models for large manufacturers such as Toyota.



"We're designing and building so much more of the car than other OEMs who will largely go to the traditional supply base and like I call it, do 'catalog engineering; ... which is not very adventurous."

Elon Musk, 'Technoking' - TESLA



Tesla is providing valuable pointers to the Automotive Supply Chain on the power of building in flexibility, seeking design standardisation where possible, and reducing the costs of complexity that large SKU portfolios can bring.

Do you have the same ability to create your own leading Supply Chain approach, based on a solid vision and strong execution?

Driving the Right Outcomes

Of course, many factors influence Tesla's success – but it is hard to dispute that the company's approach is both purposeful and impactful. We would argue that innovative Supply Chain thinking has been a critical success factor for Tesla:

- In 2021, Tesla made a record US\$5.5 billion profit;
- Tesla had an 87% jump in auto deliveries last year, despite the global semiconductor shortage;
- Tesla's Q1 2022 delivery and production results hit a new all-time delivery record – a year-over-year increase in production of 69%, and
- The Company reported a 71% rise in revenues to \$53.8 billion for the year in 2021.

Thus, the potential rewards for putting the right Supply Chain systems, processes, technology and PEOPLE in place are considerable.

Critical Supply Chain Questions to Ask

At Pedersen & Partners, we believe that there are several questions you can pose as you consider your position relative to today's Supply Chain challenges:

- What are the main Supply Chain bottlenecks that you are currently facing?
- How do you plan to mitigate this risk in the future?
- Do you have full visibility across your Supply Chain, or do you still need to develop solutions to manage this better?
- Do you have plans to relocate any of your manufacturing or logistics operations?
- Are you ready to understand and fully address the people and processes driving your Supply Chain before considering any kind of transformation?

Most importantly, do you have the right leadership and team(s) to drive success? If not, Pedersen & Partners will be happy to facilitate a discussion with you to determine the critical competencies that your organisation needs – not only to perform better today, but to transform for tomorrow.





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Andrew Thomson is a Client Partner and a member of the Industrial Practice Group at Pedersen & Partners. His 25-year extensive international career has covered Consulting, Human Capital management advisory, and Executive Search, and he brings significant cross-border and cultural expertise gained in both developed and high growth/emerging markets. He leads our Firm's Global Automotive & e-Mobility initiatives. He is now based in the UK, but spent 17 years working in China and Hong Kong, and also previously lived in Russia, Singapore, and Bangkok. He is an Accredited Board Recruiter and Certified Advisory Board Chair and has held several not-for-profit Advisory Board positions.

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