

Unveiling the Tesla Touch in Supply Chain Effectiveness

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Abstract: Companies in every sector recognize the vital role that Supply Chain Management plays in maximizing efficiency, staying competitive, and achieving overall success. Supply chain management is an integral part of any business's operating structure since it includes the entire product lifecycle, from planning and sourcing to production, delivery, and return. An efficient supply chain management approach optimizes inventory levels, reduces costs, and increases customer satisfaction by ensuring the smooth flow of goods and services. It helps businesses adapt quickly to shifting market conditions, reduce risk, and strengthen ties with key partners and suppliers. Understanding the complexities of Tesla's unusual techniques that have catapulted the business to the top of the automotive industry, including its approach to supply chain management. With a production-to-order strategy, Tesla keeps stock levels under control and reacts quickly to market demands with just-in-time manufacturing. A new era of localized production is dawning with the worldwide integration of Gigafactories, which will enable Tesla to maximize efficiency while cutting transportation costs. By putting an emphasis on supply chain agility and flexibility, Tesla ensures continual improvement and customer satisfaction through innovative approaches like as over-the-air updates and software changes. In this publication, the dynamics of Tesla's supply chain effectiveness are examined in depth, illuminating the company's remarkable achievement in reshaping industry standards and establishing new benchmarks for sustainable and efficient supply chain operations.

Keywords: SCM, SCM Effectiveness, Tesla

Introduction

As one of the most important methods to enhance the competitiveness of enterprises, supply chain model has always been concerned in the business world (Ellram, 1991). Companies in every sector recognize the vital role that Supply Chain Management plays in maximizing efficiency, staying competitive, and achieving overall success. Supply chain management is an integral part of any business's operating structure since it includes the entire product lifecycle, from planning and sourcing to production, delivery, and return. An efficient supply chain management approach optimizes inventory levels, reduces costs, and increases customer satisfaction by ensuring the smooth flow of goods and services. It helps businesses adapt quickly to shifting market conditions, reduce risk, and strengthen ties with key partners and suppliers. A well-coordinated supply chain management strategy is critical for firms to remain nimble, resilient, and competitive in today's fast-paced business world, where sustainability concerns, technological progress, and globalization are of the utmost importance. In 2018, Tesla aimed to produce 5,000 new Model 3 electric cars per week but fell short, managing only around 2,000. Elon Musk, when questioned about the shortfall, admitted that their initial reliance on heavy automation was a mistake. Emphasizing that "humans are underrated" in the production process, Musk acknowledged that "excessive automation was a mistake" and highlighted the crucial role of human involvement in manufacturing. The Tesla Roadster's release date has already been pushed back several times from 2021-2023. The company has faced production delays for the Roadster and several other models. "2021 has been the year of super crazy supply chain shortages, so it wouldn't matter if we had 17 new products, as none would ship," Musk tweeted in September 2021.



Figure 1. Tesla Stock Going Down

The past week has seen shares of Tesla (TSLA) - Get Free Report slide hard in the wake of an earnings call and report that left investors more than disappointed. The company's stock fell 16% last week, hitting a low that Tesla hasn't been anywhere near since June.

Investors were cautious heading into Tesla's third-quarter earnings over a few specific points. The most significant point of concern for most investors and analysts centered around the price cuts Tesla has been conducting and the company's gross margins that have been falling as a result. The other main point of concern centered around the Cybertruck, the brand-new Tesla model that has had investors and customers alike waiting years for production and deliveries to start.

The purpose of this article is to investigate the significant function that supply chain management plays inside a large organization, with a particular emphasis on Tesla. Acquiring a complete understanding of the ways in which supply chain management affects the operations of a large-scale organization and, more particularly, the ways in which Tesla strategically leverages supply chain management to meet difficulties that are peculiar to its industry is the goal of this study. The purpose of this article is to investigate the complex methods in which Tesla employs supply chain tactics in order to overcome challenges, adjust to the dynamics of the market, and maximize its operational efficiency. By delving into Tesla's methodology, the purpose of this paper is to reveal the particular strategies and approaches that the firm employs. The article also aims to throw light on how these strategies contribute to the company's success in navigating hurdles within the highly competitive automotive and renewable energy industries.

Literature Review

Understanding The Supply Chain

Supply Chain Management (SCM) is one of the most important fields of business today. It changes how companies plan, make, distribute, and run their services and goods. The basic ideas of SCM with a focus

on how it has changed companies and the world economy. In this chapter, the supply chain is described as a network of organizations that work together to make, send, and service goods (Meindl & Chopra, 2000).

Some of the main reasons why companies use SCM are trying to stay ahead of the competition, making customers happy, going global, making technology progress, and protecting the environment. SCM is seen as a strategy tool that helps businesses become more efficient, cut costs, and respond to changing market needs. Total Quality Management (TQM) and Just-in-Time (JIT) are seen as early examples of how SCM has changed over time, from focusing on individual functions to taking a more comprehensive, all-encompassing approach.

It is stressed that SCM plays a strategic role and shows how it affects competitiveness, profitability, and resilience. The parts of the supply chain that are linked together are explained, focusing on how they depend on each other. These parts include purchasing, production, distribution, and transportation. It is emphasized how important information and technology are for making coordination easier along the supply chain. This sets the stage for later parts.

Globalization is becoming an important part in SCM practices, causing problems with cultural differences, following rules, and the need for flexible systems. Environmental sustainability is becoming more important, and ideas like "reverse logistics" and "green supply chain practices" show how socially and environmentally responsible businesses are.

Decision Phases in a Supply Chain

Making choices about the structure of the supply chain involves making strategic decisions that affect how the network is designed and how it works as a whole. These choices will have a big impact on how the supply chain works and how its goals are met. Here's a description of the main points:

1. Supply chain strategy or design

Locations and Capacities of Facilities:

Businesses need to plan ahead to decide where to put facilities like factories, distribution centers, and storage buildings. Making sure that these sites' capacities match up with expected demand and market growth is very important.

Products to be Made or Stored at Various Location:

Choices are made about which goods will be made or kept at certain points in the supply chain. This means taking things like product demand, production capacity, and the efficiency of shipping into account.

Modes of Transportation:

Choose the best means of transportation to move goods from one part of the supply chain to another. Transport options may include air, sea, road, or train, depending on things like speed, cost, and the nature of the goods being shipped.

Systems for information: Set up strong computer systems that make it easier for people in the supply chain to talk to each other, work together, and share data. This includes technologies for predicting demand, keeping track of supplies, and tracking in real time.

2. Supply chain planning

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As part of supply chain planning, a thorough set of policies is developed to direct the short-term activities. A organised framework for managing immediate actions is provided by these policies, which are predetermined by the supply configuration that was implemented in the prior phase. In order to lay the groundwork for important decisions in many operational areas, the planning process begins with the expectation of demand for the next year. Among these decisions are those concerning the timing and scope of market promotions, the identification of subcontracting options and backup locations, the determination of which markets will be serviced from specific locations, and the formulation of effective policies for inventory management. (Meindl & Chopra, 2000).

Market allocation, inventory building, subcontracting techniques, backup location identification, inventory management rules, and market promotion planning are all important decisions within the area of Supply Chain Planning. The established time horizon, demand unpredictability, currency rate changes, and the competitive landscape are all critical considerations for making these selections. By considering these factors, businesses can improve the efficacy of their planning decisions, which in turn helps them optimise their supply chain operations to better respond to market needs. (Meindl & Chopra, 2000).

3. Supply chain operation

Decisions in the field of supply chain operations are based on specific client orders and the time horizon is short, usually weekly or daily. With an eye towards maximum efficiency, the operating procedures and supply chain structure have already been set up. Important tasks include deciding whether orders should be processed in production or inventory, setting due dates for orders, creating pick lists for warehouses, assigning orders to shipments, creating delivery plans, and starting replenishment orders. With a shorter time frame, there is less room for error in decision-making as compared to longer-term planning. This highlights the need of meeting operational demands in the supply chain with speed and precision.

Process View of a Supply Chain

According to the cycle view, the steps in a supply chain are organised into a number of cycles. Each cycle happens at the point where two stages of the chain meet. These cycles show how goods, data, and funds move from one part of the supply chain to another.

In the cycle view of a supply chain, the sequential progression of processes is delineated at the interfaces between consecutive stages. This cyclical framework includes essential cycles such as the customer order cycle (occurring between customers and retailers), replenishment cycle (between retailers and distributors), manufacturing cycle (connecting distributors and manufacturers), and procurement cycle (established between manufacturers and suppliers), as illustrated in Figure. Each cycle is distinctly defined, outlining the processes involved and designating the owners of each stage. This approach serves to clearly specify the roles and responsibilities of each supply chain member, elucidating the desired outcomes of individual processes within the broader supply chain context (Meindl & Chopra, 2000). The push/pull view classifies supply chain operations according to whether they are carried out in response to a customer's request (pull) or in advance of a customer's request (push).

Processes in the supply chain are classified as push or pull depending on how they relate to consumer demand over time. Pull processes are reactive approaches to demand fulfilment since they are started in reaction to individual consumer orders. Push procedures, on the other hand, are initiated proactively and speculatively to anticipate customer orders. Push operations, which start before client demand, and pull processes, which start in response to customer orders, are divided by the push/pull boundary. This contrast emphasises how supply chain operations should be strategically divided into speculative and reactive components.

Achieving Strategic Fit and Scope

A company's competitive strategy acts as a guide for meeting client needs with its goods and services. This includes the product development plan, which describes the range of new items that an organisation hopes to produce. This is further refined by price, positioning, and promotional strategies, as well as market segmentation and marketing and sales strategy. The supply chain strategy, which influences the sourcing of raw materials, shipping, production, and product distribution, is essential to this strategic framework. These functional strategies must be in perfect harmony with one another and with the overall competitive strategy in order to ensure a coherent and successful organisational plan for satisfying customer needs and market goals (Meindl & Chopra, 2000).

Zone of Strategic Fit

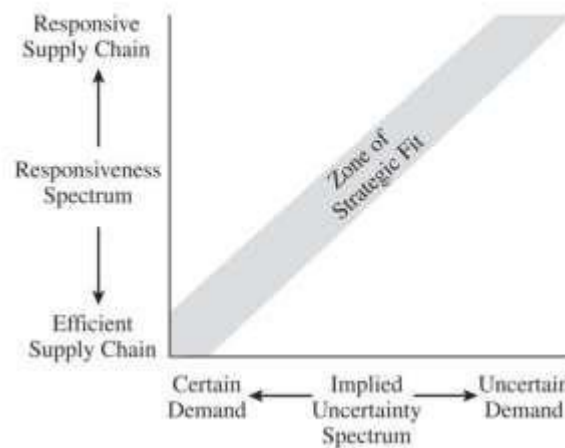


Figure 2. The Illustration of Strategic Fit

When supply chain and competitive strategies work together to achieve common objectives, strategic fit is reached. A corporation may collapse as a result of this kind of alignment failing to occur or from having insufficient processes and resources to carry out the intended strategy. A company's ability to successfully integrate and align its supply chain and competitive strategies is essentially dependent on its ability to execute these plans effectively and with coherence.

Understanding the Customer and Supply Chain Uncertainty

Within the framework of supply chain management, demand uncertainty pertains to the volatility of consumer demand for a specific product. By considering the particular share of demand that the supply chain is responsible for managing and the corresponding qualities that consumers look for in a product, implied demand uncertainty helps to further define the uncertainty that the supply chain faces. Supply chain decision-making depends on the efficient management of demand uncertainty, which calls for flexible techniques to adjust to different degrees of demand volatility (Meindl & Chopra, 2000). This keeps supply chain operations in sync with the ever-changing demands of the market.

Supply Chain Capabilities

There are expenses involved in getting a supply chain to respond quickly. The cost of producing and shipping a product to a consumer is directly correlated with a supply chain's efficiency. The cost-responsiveness efficient frontier curve, which shows the lowest possible cost associated with a

particular degree of responsiveness, serves as a visual representation of the idea. Supply chain decision-makers will find this curve to be a useful visual aid in navigating the trade-offs between responsiveness and efficiency and determining the best balance that fits the organization's operational capabilities and strategic objectives. (Meindl & Chopra, 2000).

Achieving Strategic Fit

It is critical to strike a balance between the supply chain's level of responsiveness and the associated uncertainty. In order to keep up a suitable degree of responsiveness in the face of the current uncertainties, it is necessary to allocate distinct responsibilities to different parts of the supply chain. To back up the organization's overall competitive strategy, it's important to have consistent strategies across all functions. (Meindl & Chopra, 2000). By working together, all links in the supply chain may achieve their full potential and advance the company's strategic objectives and competitive standing.

Expanding Strategic Scope

In order to create a cohesive strategy with shared goals, strategic fit takes into account not only the company's internal operations but also the different links in the supply chain. As part of this integration, there is an intraoperation scope, in which each step of the supply chain works on its own to find ways to cut costs locally, and an intrafunctional view, in which businesses coordinate all of their activities inside a function to cut costs overall. In addition, there is an interfunctional scope that coordinates the development of functional strategies so that they mesh well with the overall competitive strategy. (Meindl & Chopra, 2000). Intercompany scope is another aspect that aims to maximize supply chain excess through supplier and customer collaboration, information exchange to decrease total costs, and overall surplus enhancement. In addition, a company's capacity to attain strategic fit while collaborating with stages of the supply chain that experience dynamic changes over time is highlighted by an agile intercompany scope.

Supply Chain Drivers and Metrics

The importance of a company's supply chain striking a balance between efficiency and responsiveness in line with its competitive strategy is highlighted in this discussion, which centers on the concept of strategic fit. To understand and improve supply chain performance in terms of efficiency and responsiveness, it is necessary to conduct a thorough investigation of logistical and cross-functional drivers, such as facilities, inventory, transportation, information, supply, and price (Meindl & Chopra, 2000). The supply chain's performance in these areas is defined by the complex interplay of various drivers. Innovations and digital technologies influence the structure of the modern supply chain, increasing its complexity. The complex and multilevel structure implies choosing integrated formats based on the economic conditions that allow mutually profitable cooperation (Shcherbakov and Silkina, 2021).

Drivers of Supply Chain Performance

Facilities: Manufacturing and warehouse storage are two examples of the many interconnected supply chain operations that determine an entity's function, or "where" in the chain. This job plays a crucial part in the overall strategy for staying competitive. It involves making judgments about economies of scale, which prioritize efficiency and often result in larger, consolidated facilities, or choosing a larger number of smaller facilities that prioritize responsiveness. The approaches taken by industry heavyweights like

Honda and Toyota illustrate this duality. To successfully navigate this strategic balance, it is essential to consider the facility-related decision-making components, which have a significant impact on the responsiveness and efficiency of the supply chain.

Inventory: Because supply and demand are inherently out of sync, inventory exists inside the supply chain. The responsiveness of the supply chain is greatly affected by this inventory, which is a cost source. Its effects are most clearly seen in the material flow time, which is the amount of time it takes for materials to go from the supply chain's entrance to its exit. (Meindl & Chopra, 2000). Because this mismatch impacts the supply chain's overall flow and responsiveness, effective inventory management is critical for limiting it.

Transportation: In order to move products from one step of the supply chain to another, the transportation function is crucial. Efficiency and reactivity are both profoundly affected by this crucial function. One important way that transportation can improve responsiveness is by cutting down on lead times. This means that customer requests can be met faster. On the other hand, efficiency suffers as a result of this increased reactivity. (Meindl & Chopra, 2000). Transportation, inventory levels, and facility use are all interdependent, thus striking a balance between them is crucial for supply chain optimization.

Information: Collaboration in day-to-day operations is made possible through the interconnection of various phases of the supply chain, which creates an essential channel for coordination. Optimal inventory management and production scheduling rely heavily on this interdependence. (Meindl & Chopra, 2000). By working in tandem, the many links in the supply chain are able to better coordinate the movement of goods and data, increasing the efficiency and effectiveness of the whole.

Sourcing: The equilibrium between supply chain responsiveness and efficiency is heavily influenced by sourcing selections. The capacity of the supply chain to improve responsiveness and efficiency is greatly affected by decisions concerning in-house production vs. outsourcing. Strategic sourcing decisions have played a key role in improving Cisco's supply chain performance, demonstrating the importance of these decisions in striking a balance between efficiency and responsiveness.

Pricing: A major factor in the final price that consumers pay is the pricing structure of the supply chain. Strategic pricing strategies allow organizations to maximize efficiency and responsiveness by efficiently aligning with supply and demand dynamics. One good example is Amazon.com, which has a pricing strategy that modifies costs depending on response times and also makes sure they're competitive. This approach exemplifies the power of price as a tool for striking a balance between product availability and pricing, drawing attention to the role it plays in reaching the sweet spot where supply chain efficiency and responsiveness meet.

Designing Distribution Networks and Applications to Online Sales

As a product moves from the producer to the consumer, it goes through a number of storage and transportation steps that make up distribution in the supply chain. A key factor in determining profitability, this process has a substantial impact on supply chain expenses as well as the total client experience. Among the many supply chain goals that could be pursued—from minimising costs to

maximising responsiveness—the strategic selection of a distribution network takes centre stage (Meindl & Chopra, 2000). Decisions taken in the distribution domain significantly affect supply chain efficiency and effectiveness, which in turn affects profitability and customer happiness. In the automotive sector, for example, Rolls-Royce decided to pay a fee for the use and availability of engines instead of buying them, and by implementing an Internet of Things (IoT) system, they could monitor engine data in real time to provide maintenance (Baines and Lightfoot, 2014; Kohtamaki et al., 2019).

Impact of Online Sales on Customer Service

Crucial to supply chain performance is the reaction time to consumers, which differs between products. In comparison to in-store options, the fulfillment time for physical goods is usually longer. On the other hand, information goods are instantaneous and help with response times. In the digital environment, offering a vast assortment of products is more easier, providing for a broader choices. By consolidating stock and learning more about consumer tastes, we can make more products available when they need them, which improves service and delights customers. In the manufacturing sector, several cases can be observed (e.g. Rolls-Royce, General Electric, Volvo Studio), whereby firms introduced digital technologies to increase the value of the offered products and services (Candell et al., 2009; Lerch and Gotsch, 2015; Kohtamaki et al., 2019)

Faster time to market, more order visibility, and enhanced returnability are all benefits of the modern supply chain landscape, albeit the latter can be difficult to implement, particularly for internet sales. Strong tactics are required to deal with this component because the proportion of returns is often larger. Companies may now advertise their wares and specials to consumers in a more personal and intimate setting thanks to the proliferation of social media platforms that facilitate direct sales. More adaptable pricing, better product portfolio management, and faster, cheaper promotion information conveyance are all possible thanks to this change.

In addition, the digital setting makes it easy to transfer money quickly, which simplifies financial operations all throughout the supply chain. Improved access, personalization, and convenience for customers are just a few ways in which this multi-faceted supply chain transformation is influencing operational elements like response time and product variety. Thus, a new age in supply chain dynamics has begun with the emergence of digital technologies, presenting corporations with opportunities and threats as they try to adapt to the dynamic market.

Impact of Online Sales on Cost

Meeting customer expectations and minimizing supply chain costs both depend on efficient inventory management. When buyers are patient and don't mind waiting for their orders, keeping inventory levels slow becomes a practical option. In order to streamline inventory control and make it more demand-driven, this method entails waiting to introduce product variation until after the client order is received. Making smart choices about inventory management is crucial for cutting costs and meeting consumer demand quickly.

A large portion of supply chain expenses are related to facilities, which include both the quantity and placement of facilities within a network. When making decisions on facilities, it's important to weigh the pros and cons of both expense and timeliness. The overall efficiency is also heavily influenced by the operational costs of these facilities. In order to achieve a balance that is in line with their overall strategic objectives, organizations must thoroughly assess and enhance their facility network (Meindl

& Chopra, 2000). If facilities are well-managed, resources may be distributed wisely to achieve efficiency and responsiveness goals, which in turn helps the supply chain fit strategically.

Coordination in The Supply Chain

This section dives into the idea of supply chain coordination and its impacts, exploring the complexities of supply chain dynamics. It specifically examines the bullwhip effect and how it affects overall performance. We hope to decipher the intricacies that impede smooth cooperation by investigating the sources of the bullwhip effect and identifying obstacles to supply chain coordination. Furthermore, this talk delves into the managerial tools that are essential for good coordination, illuminating practical ways to lessen interruptions and improve efficiency. In addition, the story goes on to talk about how important it is to develop trust in the supply chain and strategically collaborate with other organizations, and it lays out specific steps that can help you do that. Our goal in conducting this research is to gain a better understanding of the complex nature of supply chain coordination so that those involved can better meet the challenges it presents.

Result & Discussion

Company Profile

Since its inception in 2003, Tesla Motors, now known as Tesla, Inc., has evolved from a concept focused on electric sports cars to a multifaceted operation producing solar panels, electric vehicles, and batteries for both residential and automotive applications. Martin Eberhard and Marc Tarpinning, the initial entrepreneurs behind Tesla, aimed to create electric sports automobiles. In 2004, Elon Musk, co-founder of PayPal, joined the venture, injecting over \$30 million and assuming the role of chairman.

Under Elon Musk's leadership, Tesla experienced significant growth and became a leader in electric automobiles, technology, and energy innovation. The introduction of the Roadster in 2008 marked a groundbreaking moment, as it could travel an impressive 245 miles on a single charge. Tesla's headquarters in Palo Alto, California, serve as a hub for technological advancements, while the Tesla Factory in Fremont, CA, handles the production and assembly of all Tesla vehicles. Additionally, the Gigafactory near Reno, NV, in collaboration with Panasonic, manufactures lithium-ion battery cells for Tesla vehicles. Tesla's lineup comprises three models: the high-end Model S, the spacious SUV Model X, and the more affordable Model 3. The company's strategy includes reducing electric vehicle prices to attract new customers and expand its market share. Supercharging stations enable Tesla customers to charge their vehicles at an accelerated rate. Elon Musk, not only the face of Tesla but also a key figure in the tech and automotive industries, contributes to Tesla's success with his diverse expertise in physics, economics, and business.

Tesla Supply Chain Overview

As an industry leader in electric vehicles, Tesla owes a great deal of its success to its supply chain management. The global supply chain presents opportunities for companies to increase revenue and reduce costs by relocating production to countries with lower expenses. However, the opportunities arising from this global supply chain are often accompanied by additional significant risks. Companies can conduct evaluations of cultural and language differences, varying business processes within the same company, as well as different rules or practices to manage supply and demand before engaging in a global supply chain. Through these assessments, companies can minimize the likelihood of failures in the implementation of a global supply chain (Meindl & Chopra, 2000). Vertical integration is fundamental to Tesla's supply chain strategy; the company is highly involved in the production of electric vehicle batteries and other critical components. Locations such as California, Shanghai, Berlin, and Texas are home to the company's Gigafactories, which

allow them to efficiently manufacture automobiles for local markets throughout the world. Not only do batteries fall under Tesla's purview of in-house production, but so do motors and electronic components. As a result of its vertical integration, Tesla is able to keep a tight rein on its production processes, which in turn encourages new developments in electric car technology. The company's ability to increase production, launch new models, and respond successfully to market demands is largely due to its agile and adaptable supply chain. To be a frontrunner in the electric vehicle sector, Tesla needs effective supply chain management, which it has achieved. As we develop our global operations, Tesla continues to map their complicated supply chains in order to understand their sources. Disclosure of supply chain facts by new suppliers is necessary for source verification and risk identification through third-party audits.

Engaging Suppliers

Once we mapped our supply chains, we engage in local contexts to identify risks and develop measures to respond to those risks. This includes visits to countries at the source of our supply chains, audits, collecting GHG emissions data and external stakeholder engagement.

Priority Materials

We focus our efforts on the following materials due to the identified risks and the leverage we have: lithium, nickel, cobalt, aluminum, silica, tin, tantalum, tungsten and gold (3TG).

Less Material Extraction Needed

While the total land use, capital investment and resource requirements are high, a sustainable energy economy actually requires less investment and less material extraction than continuing today's unsustainable path. In the long run, the transition to sustainable energy will reduce global mining and extraction needs. (Supply Chain. (n.d.). <https://www.tesla.com/impact/supply-chain>.)

Battery Chemistry Diversity

Lithium only accounts for roughly 1.5% of the full battery pack weight. Additionally, iron phosphate battery packs contain no cobalt or nickel. In addition to our own cell manufacturing operations, we're currently using cells from four different suppliers with three different battery chemistries.

Human rights and environmental preservation are Tesla's top priorities when sourcing parts for their vehicles. Tesla buys from some of the companies and materials that are directly involved in the construction of their autos. These days, Tesla gets more than 3,000 parts from 350 different vendors spread around the globe. Raw materials are sourced from sub-suppliers by many of their direct suppliers, creating a convoluted supply chain. (Tesla 2, 2021)

As a company, Tesla considers it their job to aid in the global shift toward renewable energy. (Tesla, 2014). In order to achieve this goal, Tesla is making sure that all of its suppliers are protecting human rights and the environment. We achieve this by anticipating and addressing any problems that may arise in the supply chain. Three documents—the Responsible Materials Policy, the Supplier Code of Conduct, and the Human Rights Policy—describe Tesla's requirements for suppliers. (Tesla 3, 2021) Tesla sources its essential parts from vendors all over the globe, particularly in Asia, Europe, and the United States. (Maverick 2022),

The goal is to establish a system where the supply chain of Tesla has a beneficial impact on the local conditions of stakeholders, raising their living standards as a consequence of the company's operations. Responsible mineral supply chain strategies were designed by the corporation in accordance with the OECD Due Diligence Guidelines. Increasing the quantity of goods purchased directly from suppliers, particularly those situated closer to their manufacturing facilities, is the first step. Second, by keeping on buying resources from all over the globe, which has an effect on local communities' living situations. (Tesla 2, 2021)

From a purely economic perspective, they are crucial, since they are the primary building blocks for cathode production, which in turn increases vehicle range and safety and accounts for over a third of the total cost of a battery cell. Also, think about it from the perspectives of the environment and society. This is because,

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although these minerals are mined in different ways all over the globe, they are generally extracted from areas that are experiencing some kind of social, economic, or environmental crisis. (Tesla 2, 2021) Companies are seeking resources in more distant and challenging areas to meet global demand, and when known supplies are exhausted, these minerals are becoming more scarce. And these minerals are considered the most crucial by US, EU, and Canadian authorities since they are essential to transitioning from fossil fuels to a low-carbon economy. Consequently, governments, investors, and civil society are increasingly looking into how mining operations affect the environment and local communities.

Analysis of Tesla's Supply Chain Planning

In an effort to further establish itself in the luxury automobile industry, Tesla joined the market with the intention of producing electric vehicles (EVs) as well as an upscale brand. Continuous development and extension of production capacity was part of its strategy, as was an endeavor to lower prices by taking advantage of decreasing average manufacturing costs. A model of disruption from the top, the changing consumer profile of Tesla is a result of the company's increasingly cheap vehicles. As a result of its steady price cuts, Tesla has been able to broaden its customer base beyond the wealthy to middle-class families, after having initially catered to those with higher incomes who were looking for unique luxury vehicles. While preserving its reputation for innovation and excellence in the luxury automotive business, Tesla is committed to making electric vehicles accessible to a broader audience. This commitment is reflected in their strategic strategy.

Supply Chain Strategy or Design

The success of Tesla can be attributed in large part to the company's supply chain strategy. The world's most valuable carmaker rose to prominence because to the company's innovative and effective supply chain management. To maintain a competitive and cost-effective supply chain, Tesla has employed multiple tactics. With its network of Gigafactories, Tesla controls its own production sites globally. All of the cars and batteries are made at once in the Gigafactories. Because of this, Tesla can swiftly adjust production in response to external circumstances that allow it to do so. Being able to design, develop, and manufacture its own goods in-house at its Gigafactories gives Tesla a great deal of expertise in its own products.

One major perk of the Gigafactories is that they allow Tesla to manufacture everything locally at all times. Because of our global reach, we can cut out expensive and time-consuming shipping. Plus, it's easier for the business to adjust to the regional market.

The ability to produce in massive quantities is yet another benefit that Tesla enjoys as a result of the Gigafactories. Many constraints in the supply chain make this impossible for the competition. For instance, Tesla has figured out how to keep costs down and keep them from going up by building its own batteries. The other companies have to source the batteries from other companies. There will be a dramatic increase in the need for batteries due to the increasing demand for electric vehicles and the fact that all of Tesla's competitors are required to accomplish this. Because of this, the cost of batteries will rise. Because of this, Tesla now has an additional long-term edge over its rivals that they will not be able to overcome anytime soon. (Pressman, M., 2017)

Supply Chain Planning

Products to be Made or Stored at Various Location, In Europe and Germany, for instance, SUVs sell better than in the United States. Due to this reason, the Model Y is only manufactured in Germany by Tesla. Both the availability and suitability of pickup trucks for use on European highways are limited. Having said that, they are rather popular in the US. For that reason, the Cybertruck will not leave the United States for any production.

Supply Chain Operation

Tesla's supply chain operations work to efficiently fulfil specific customer orders according to the set up supply chain. Efficiency in meeting urgent demands is achieved through the effective implementation of predefined operating policies. Decisions made at the operational level include placing replenishment orders quickly, assigning orders to specific shipments, creating pick lists at Tesla's warehouses, setting exact order due dates, establishing delivery timetables, and allocating orders to current inventories or production. Given the limited time frame, Tesla's Supply Chain Operations prioritise rapid decision-making to keep supply chain efficiency high and guarantee accurate and fast client order fulfilment.

Tesla's Process View of Supply Chain

Customer Order Cycle:

In terms of the overall client experience, Tesla's order cycle is a major differentiator. Many people, even those who weren't planning on buying a car at all, end up buying one of the company's vehicles because of the innovative software and other amenities it offers. The ordering process is so well-integrated with Tesla's tech-oriented approach that it feels more like buying a tech product than a regular vehicle.

One further thing that makes driving a Tesla a better experience for customers is how simple the design is. Tesla gets rid of unnecessary buttons and clutter in favor of an intuitive center display, which allows for centralized control, in contrast to the competition's historical designs. This approach to design is in line with what today's customers want and makes products easier to use.

Another important part of the client purchase cycle is maintenance, and Tesla really shines at it. The cars are famously cheap to maintain, therefore there aren't many expenses related to them. Over-the-air upgrades and a doorstep maintenance service are just two examples of how Tesla is revolutionizing the maintenance industry and making life easier for customers. With a focus on the customer that goes beyond the typical dealership model, Tesla stands apart from the competition (Daniel, 2022).

Replenishment Cycle

Tesla's supply chain strategy is distinguished by its nimble approach to inventory management, leveraging the company's agility to swiftly adjust inventory levels. This dynamic responsiveness enables Tesla to promptly adapt to fluctuations in customer demand, ensuring a seamless alignment between supply and demand. Particularly advantageous for Tesla, given their concise production and delivery cycles, this ability to quickly fine-tune inventory levels facilitates the availability of the precise components needed for their rapidly evolving automotive production. By prioritizing flexibility in inventory management, Tesla reinforces its capacity to meet customer expectations in a timely manner, underscoring the strategic advantage of adaptability within the automotive industry's competitive landscape.

Manufacturing Cycle

When it comes to manufacturing cars, Tesla has completely changed the game. Starting with raw materials, the manufacturer crafts each vehicle, ensuring that their production is as easy as pie. Not to mention, the producer constructs the automobiles practically single-handedly, resulting in on his own, unencumbered by the intricate supply networks in the automobile economic sector. The manufacturer's remaining supply chains are in a manner distinct from that of more traditional automakers. Similar to aWhen it comes to technology, Tesla is meticulous about maintaining a multi-layered supply chain in order to prevent obstacles.

Procurement Cycle

Tesla's example shows just how much supplier relations matters in supply chain management, as procurement and production guarantees are more likely to face hiccups when a partnership is new. In Tesla's case, suppliers needed demonstrations of reliability and good faith before becoming willing to allocate resources, but once that was accomplished, once reticent suppliers were even willing to relocate nearby. Now, the company has a logistics park near Fremont, CA, and at least 10 suppliers in the area

Push / Pull Strategy

By utilizing a variety of tactics, Tesla has successfully generated demand for its electric automobiles through the use of a pull strategy. A community-driven narrative surrounding the brand is nurtured by passionate Tesla owners who enthusiastically share their good experiences, allowing the company to use the power of word-of-mouth marketing (Brandtastic, 2021). Satisfied Tesla customers actively interact on social media to exhibit their automobiles and the innovative features of the brand, greatly amplifying Tesla's visibility and influence. To expand its customer base and draw attention to the exceptional features, safety features, and environmental friendliness of its electric vehicles, Tesla uses both organic and targeted advertising strategies. Tesla exemplifies a pull approach in the cutthroat automobile industry by raising brand recognition and fostering positive associations through these channels, which in turn encourages consumers to seek out and select Tesla vehicles.

Achieving Strategic Fit and Scope

Supply Chain Performance Achieving Strategic Fit is a strategy that Tesla as a corporation must put into practice since it requires supply chain and competitive strategy alignment. This emphasizes how crucial it is to maintain alignment between the supply chain capabilities developed by the supply chain strategy itself and the anticipated customer priorities that Tesla seeks to achieve through its competitive strategy. Tesla must also understand the uncertainties in the supply chain and the demands of its customers. The business also needs to be aware of its supply chain's capabilities on a constant basis. Tesla must make sure that its supply chain's capabilities and its competitive strategy are in sync for the company to attain strategic fit. As soon as Tesla completes these steps with success, the Supply Chain Performance Achieving Strategic Fit methodology is put into practice. Fundamental to Tesla's competitive advantage in the automotive sector are the company's strategic fit and brand image. The distinctive brand image of Tesla, which positions the company as a market leader in innovation and transformation, has become an effective selling pitch, generating unprecedented excitement similar to that of tech sector behemoths like Apple. Rising popularity, a loyal consumer base, and high demand are all results of this unique brand identity, which is defined by innovative product design and unconventional methods of production (Light, L. 2020). It is worth mentioning that Tesla has built its great reputation without a conventional marketing staff. Instead, they depend on innovative products like the Cybertruck, which generate buzz through word of mouth. With a whopping 75% of the US market in 2022, it's clear that this strategy is helping Tesla maintain its competitive edge and cement its position as a market leader (Emir, C., 2022). The strategic advantage of Tesla goes beyond just its market dominance. The firm has been at the forefront of electric vehicle mass production, which has given it a leg up in important areas including battery technology, powertrain innovation, driver safety, and mass manufacturing capacities.

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The combination of growing interest in electric vehicles and Tesla's meteoric rise to fame bodes well for the future of the firm, as it will likely be able to hold on to its dominant market position.

Understanding the Customers and Supply Chain Uncertainty

Since the demand of customers are very variative and most likely uncertainty Factors including as technical developments, environmental concerns, and changing market tastes impact the ever-changing demands of electric vehicle customers. If Tesla can't foresee and adapt to these trends led by its customers, it will fail miserably. Tesla is able to adapt its manufacturing and supply chain plans to meet the changing tastes of its customers by using sophisticated data analytics and feedback mechanisms. In addition, the ever-changing governmental environment, the quick speed of technological innovation, and geopolitical issues all contribute to a degree of supply chain instability in the electric car market. In light of these difficulties, Tesla has taken measures to lessen the impact of unknowns. One distinctive feature of the Tesla supply chain is vertical integration, which gives the business more say over critical components while decreasing its reliance on third parties and making the company more resilient to interruptions. By strategically placing Gigafactories across the globe, we can meet demand in different regions and protect ourselves from logistical and geopolitical risks. Tesla also using a proactive approach to navigate supply chain uncertainties by: **Focus on the Customer:** Tesla uses data analytics and feedback methods to understand how customers' preferences change over time. This helps the company adjust its manufacturing and supply chain strategies appropriately.

Understanding Supply Chain Capabilities

Tesla, a leader in the automotive industry, has established a supply chain strategy built around two essential components: flexible inventory management and real-time visibility. In a market where technology advances at a dizzying pace and consumer tastes are always shifting, Tesla's dedication to being nimble and flexible is highlighted by this strategic approach. Tesla is able to quickly detect and resolve possible issues, like as component shortages or delivery delays, by utilising real-time visibility into all aspects of its supply chain processes. By being proactive, Tesla is able to quickly address issues and streamline production while components flow smoothly. Another indicator of Tesla's ability to respond to fluctuating consumer demand is the company's adaptable inventory management system. With the electric vehicle industry's notoriously short production and delivery cycles, Tesla's capacity to swiftly modify inventory levels puts them in a prime position to efficiently satisfy customer needs. When it comes to managing the intricacies of modern manufacturing and guaranteeing customer satisfaction, Tesla's supply chain approach is a model for other industry leaders. It highlights the significance of real-time analytics and inventory flexibility.

Driver of Supply Chain Performance

When it comes to electric vehicles, Tesla is at the forefront of innovation. The company's supply chain performance is driven by a complex web of factors that work together to give them exceptional success. Tesla, a leader in environmentally friendly transportation, has changed the game in more ways than one. The business has shaken up the car industry and the way traditional supply chains work. The innovative manufacturing processes and vertical integration at Tesla impact their supply chain performance. Their market positioning and customer engagement strategies are forward-thinking, and their strategy cover everything from sourcing raw materials to delivering state-of-the-art electric vehicles to customers all over the world. This analysis dives into what makes Tesla stand apart in the dynamic automotive and technology industries, as well as what propels the company's supply chain success.

Facilities: The manufacturing and warehouse storage strategies that an organization employs greatly influence its place in the supply chain, which in turn determines its function and competitive advantage. In this regard, the Gigafactories and Tesla's production methodology are prime examples of the dynamic interaction between efficiency and reactivity. Tesla, in contrast to its competitors, owns and maintains its production locations worldwide, allowing it to centralize the manufacture of both automobiles and batteries. By making this strategic shift, Tesla is able to respond quickly to changes in the market and take advantage of economies of scale, which boost production efficiency. In addition to being centers for design, research, and innovation, Tesla's Gigafactories provide employees with extensive product knowledge and help them reach a high degree of technical proficiency. Furthermore, Tesla is able to minimize delivery times and transportation costs by producing locally because of the global dispersion of Gigafactories. Showcasing its dedication to strategic decision-making, which greatly impacts its supply chain performance in a dynamic market, Tesla has adopted a decentralized approach that is in line with the necessity to balance responsiveness and efficiency.

Inventory: To better meet consumer demand, Tesla uses a production-to-order approach and keeps fewer vehicles in stock than conventional automakers. The organization maximizes production efficiency and minimizes extra stockpiling by adhering to the principles of just-in-time manufacturing. Localized production and effective inventory management are two outcomes of Tesla's Gigafactories, which prioritize vertical integration and in-house manufacturing. The supply chain agility of the organization enables it to swiftly adapt to changes in the market and strike a strategic balance between efficiency and responsiveness. Ongoing customer happiness and reduced need for large-scale inventory corrections are both contributed to by Tesla's dedication to software updates and over-the-air enhancements. While exact figures regarding stock on hand could change, Tesla's method places an emphasis on efficiency, adaptability, and customer-centric approaches to inventory management.

Transportation: All along its supply chain, Tesla uses a wide variety of transportation options to get parts and finished goods to customers. Part of this process involves the use of trucks to move automobiles and parts between assembly plants, warehouses, and customers' doorsteps. Because it is both economical and efficient, rail transport is a popular choice for long-distance shipments. Tesla is considering using cargo ships for international shipments. When time is of the essence, like when components required for production must be transported quickly, air freight is used. The Tesla Semi, an electric semi-truck, is a new addition to Tesla's transportation fleet that brings innovation and sustainability to the freight hauling industry. To round out the delivery process, Tesla uses a mix of local delivery trucks, traditional car carriers, and even electric vehicles for the last mile. With this all-encompassing method, Tesla is able to optimize the mobility of its supply chain by taking into account aspects like cost-effectiveness, environmental impact, and the unique needs of each shipment.

Information: The management of Tesla's inventory is also optimized through the use of big data. It is possible for Tesla to determine which components are in great demand by evaluating the data collected from its vehicles and then adjusting its inventory accordingly. As a result, Tesla is able to reduce the likelihood of experiencing delays or shortages by ensuring that it has the appropriate components in stock at the appropriate moment.

Sourcing: Some of the materials and companies needed for production of Tesla's cars are purchased from their direct suppliers. Nowadays, Tesla has over 350 suppliers from all over the world providing the company with more than 3000 parts. Many of their direct suppliers receive those raw materials from their sub-suppliers: This leads to a complex supply chain. (Tesla 2, 2021) The three most crucial minerals for battery production—nickel, cobalt, and lithium—were also part of Tesla's responsible sourcing program. (Tesla 4, 2021) First and foremost, from a business perspective, they are significant because they are the primary ingredients used to make cathodes, which are responsible for almost one third of a battery cell's total cost and are essential for improving the range and safety of electric vehicles.

Also, think about it from the perspectives of the environment and society. This is because, although these minerals are mined in different ways all over the globe, they are generally extracted from areas that are experiencing some kind of social, economic, or environmental crisis. (Tesla 2, 2021)

Pricing:

When it comes to automobiles, Tesla's value-based pricing strategy is spot on. The business markets its EVs as life-altering adventures rather than just transportation options. Tesla recognizes the distinctive and premium qualities of their products by basing prices on the perceived worth of their innovative and eco-friendly automobiles.

Due to the commodity nature of many automobile products, Tesla is able to stand apart by using value-based pricing. The approach takes into account the fact that consumers are investing in state-of-the-art technology, exceptional performance, and a dedication to sustainability when they purchase a vehicle. This strategy gives consumers a strong argument for choosing Tesla over conventional gas-powered automobiles, which is in line with the increasing desire for environmentally beneficial options.

The value-based pricing model is in line with Tesla's emphasis on establishing good connections with suppliers. The corporation places a premium on its supply chain, which it uses to acquire high-quality parts that boost the vehicles' performance and value. By doing things this way, Tesla is able to improve the quality of its products and fortify its alliances, which guarantees a steady supply of essential components.

The value-based pricing approach is essential for Tesla to preserve its premium brand image and cultivate customer loyalty while the company innovates and advances electric car technology. Tesla can maintain its dominance in the electric vehicle market and increase product longevity by learning about and catering to the needs of customers who are ready to spend more for an exceptional driving experience.

Tesla also adjusts their strategy depending on the location. Using a skimming pricing approach, Tesla entered the Chinese market from November 2018 to October 2019. The demand price elasticity was low when Tesla first entered the Chinese new energy vehicle market, and the company aimed its products toward celebrities and the well-off, who were both concerned about the environment but couldn't care less about the price. Consequently, Tesla initially entered the Chinese market with the brand positioning of "high-tech vehicle + new energy" to enhance its product identity and generate high prices. Impressions of a well-known and high-quality brand. (Yi Zhou, 2022)

Designing Distribution Networks and Application to Online Sales

Unlike other car manufacturers who sell through franchised dealerships, Tesla uses direct sales. It has created an international network of company-owned showrooms and galleries, mostly in prominent urban centers around the world. By owning the sales channel, Tesla believes it can gain an advantage in the speed of its product development. But more importantly, it also creates a better customer buying experience. Unlike car dealerships, Tesla showrooms have no conflict of interest. Also, customers only deal with Tesla-employed sales and service staff. Including the showrooms, Service Plus centers (a combination of retail and service center), and service facilities, Tesla has 225 locations around the world as of July 06, 2017. Tesla has also made use of the Internet sales where consumers can customize and purchase a Tesla online. (Mohit & Neeraj)

A key component of Tesla's success, especially in the context of online sales within the car sector, is the unique way it designs distribution networks. Tesla, in contrast to more conventional car companies, sells its vehicles directly to consumers using an extensive online platform that lets them personalize, order, and pay for their vehicles. This change in thinking calls for a rethinking of distribution networks and is also in line with shifting customer tastes.

Strategically placed delivery centers and service hubs define Tesla's distribution network design. In order to ensure that cars reach clients quickly and efficiently, these centers are crucial to the last-mile delivery process. Delivery times are minimized and the client experience is made more smooth thanks to the planned location of these hubs. In addition, Tesla's distribution strategy is heavily focused on vertical integration. Customers can visit company-owned showrooms to get a feel for the brand and get individualized support.

By incorporating real delivery hubs into the online platform, Tesla has successfully applied its distribution network design to online sales. Efficient order fulfillment is made possible by real-time visibility into inventory levels and order status, allowing Tesla to meet the demands of its continuously expanding customer base. The company's commitment to sustainability is evident in its distribution approach. Electric trucks are used to bring electric automobiles to delivery hubs, reducing the environmental impact of transportation.

Impact of Online Sales on Customers Service

Online sales have revolutionized customer service at Tesla, breaking away from the mold of conventional car dealerships. In addition to revolutionizing the buying process, Tesla has reimagined customer service by allowing customers to browse, configure, and purchase vehicles online.

Customers are empowered by self-service capabilities, which is a noteworthy impact. Customers may learn a lot about Tesla's products, features, and prices on the website, which has a wealth of information. Customers are more informed because to this self-sufficiency, which means less handholding is required throughout the traditional sales process. When it comes to customer service, though, Tesla backs up their autonomy with strong channels like online chat, email, and phone support, so you can reach out to them whenever you need. Online sales' direct-to-consumer strategy has also made customer assistance more efficient and individualized. Throughout the ownership journey, Tesla's customer care professionals are available to assist customers directly, answer questions, and provide real-time updates on orders. Reinforcing Tesla's dedication to customer happiness, this direct contact route strengthens the customer-brand relationship.

The way Tesla handles repair and maintenance reflects the influence of internet sales on customer support. The business uses over-the-air (OTA) software updates, which enable remote diagnostics, proactive problem solutions, and ongoing performance enhancement of vehicles. In addition to improving the ownership experience as a whole, this makes the service model more convenient and efficient by reducing the frequency with which consumers need to visit service centers for normal upgrades.

Impact of Online Sales on Cost

Online sales have contributed to Tesla's operational efficiency and had a revolutionary effect on the company's cost structure, shaking up the automotive retail industry. Cutting out the middleman—the conventional dealership—is one of the main ways to save money. By moving away from a network of dealerships and instead selling directly to consumers through internet channels, Tesla has been able to cut costs in areas like showroom upkeep, inventory storage, and dealership staff pay.

Online sales have simplified the sales process for Tesla, which has reduced costs in different areas of the transaction. Automated order processing, less administrative burden, and less paperwork are all benefits of digitizing the sales journey. Because consumers can design and buy cars directly on the website, cutting out middlemen, the platform also allows for more efficient use of resources.

Online shopping has also helped Tesla streamline its inventory management and cut down on carrying expenses. The elimination of needless vehicle hoarding in response to dealer demands is made possible

by the direct connection between online orders and production, enabling a more demand-driven manufacturing approach. The just-in-time production strategy helps reduce the costs of storing inventory and lessens the financial strain of having too much stock on hand. (Holland, M. (2019, March3))

It is clear from Tesla's cutting-edge service and maintenance approach that internet sales have an effect on costs. By allowing remote diagnostics and issue resolution through over-the-air (OTA) software upgrades, the need for actual visits to service centers is significantly reduced. In addition to saving money compared to more conventional service methods, this improves the client experience.

Tesla Challenge

There has been a long history of delivery delays for Tesla cars. It's one of the numerous things that most Tesla buyers have griped about while placing their orders. There have been clients who have waited months, and some who have waited over a year, with no clue as to why or when their automobile would come.

1. Supply Chain Issues

Problems with the supply chain have been one of the main reasons Tesla deliveries have been late. Every major automaker has been feeling the effects of the worldwide chip shortage, which has been slowing output for some time. Despite ongoing issues with delivery deadlines, Tesla was the only company to triple output during this time (the previous two years). It seems, though, that even it can't be immune indefinitely, since it began to encounter these problems in the first quarter of 2022.

So far, manufacturing has been significantly cut and Tesla delivery has been further delayed due to supply chain concerns stemming from a chip shortage. Tesla was forced to postpone the shipment of certain long-range models until 2023 as of June 2022. Consider the Model X, for example; it won't be available for purchase until sometime between February and May of 2023.

Some buyers have also complained that they did not receive all of the components for their vehicles because of problems in the supply chain. The Electronic Control Unit (ECU) with the charging port is one such component. Some clients have complained that their cars are complete but won't be delivered due to missing components. So far, no one knows when the part will be ready, and some have waited months for it.

There has been no proof of an ECU shortage, yet rumors persist. In addition to the ECU problem, some buyers have mentioned that problems with the drive unit have caused their orders to be delayed. According to the findings, Tesla staff have stated that the drive unit repair is currently unavailable, which is the root reason of the ongoing delay. It is clear that multiple parts are involved, even if you might assume that Tesla is only experiencing problems with the supply of one element. Therefore, there may be additional delays, even though some customers may receive their cars early. The rates of missing part supply are crucial.

2. Inaccurate Delivery Estimation

The company's inaccurate delivery estimate is another reason Teslas don't arrive early. Although Tesla did not give them a specific date, they are able to anticipate when their car will be ready by looking at past customer experiences and other variables that impact production. But this is not how Tesla sees things. Rather, they provide delivery date estimates that are often inaccurate.

Having this error arrive later than anticipated would have been preferable, but alas, it has arrived the opposite way around. After the initial date estimate, Tesla consumers are needed to wait an additional month. Any customer, no matter how patient, will find this annoying, and it may even cause them to lose interest in purchasing the car.

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There is a lot of room for improvement in Tesla's delivery date accuracy if the company takes production and delivery risks into account. Early rather than late deliveries are possible outcomes of a well-thought-out risk plan. The majority of buyers will find this more satisfactory.

3. Order Location

How early customers can obtain their electric vehicles depends on their area when they place an order with Tesla. The likelihood of delivery being early for locations closer to Fremont, California is higher than for states farther away. For the sake of meeting its quarterly delivery objective, Tesla prioritizes making deliveries closer to Fremont than other locations. Now, under these conditions, it's possible that delivering to further places won't work.

It may take more time for Tesla to make resources available to sites that are farther away. In some cases, there can be a holdup in obtaining these resources because of shortages. A lack of transportation options is one such example. Tesla has announced that it is facing a scarcity of these resources, making it difficult to fulfill client orders in certain regions due to a lack of available vehicles and ships. Customers in certain areas may encounter longer delivery delays than average due to Tesla's limited transportation options.

Conclusion

This Paper examines Tesla's supply chain management in detail, looking at its planning procedures, operational aspects, and important strategies. Topics covered include Tesla's efforts to find a strategic match, problems to solve, factors to discover, and supply chain performance evaluation in general. The article highlights the ways in which Tesla's innovative practices—including a vertically integrated strategy, flexible inventory management, and real-time visibility—contribute to an efficient and responsive supply chain. Sustainability and social concerns are given due attention as the investigation into Tesla's dedication to responsible mineral sourcing continues. In the future, supply chain effectiveness and efficiency could be improved by Tesla's relentless innovation, just like its groundbreaking use of over-the-air software updates. Improving supply chain performance is one of Tesla's goals, and one way the company plans to do this is by broadening its network of suppliers and business partners. Customers will have a smooth experience dealing with Tesla's unique products thanks to this strategic approach, which is in line with Tesla's dedication to customer happiness.

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