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Distribution strategy of Volvo Cars last-mile logistics with direct to end-consumer sales

Master's thesis in Supply Chain Management

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Abstract

The development of e-commerce has evolved fast during the past decades within all commercial products with several different pick-ups and delivery options, return options, and interaction of both online and offline interaction. Companies are required to adapt to new trends and customer behavior which is also affecting the sales and distribution of cars. The impact of Covid-19 has enabled companies to move into more digital interaction with its customers due to limited physical interaction, which has also led to a demand for better remote communication.

The thesis has investigated the direct-to-consumer strategy, including what digital and operational capabilities are necessary to establish a successful last-mile delivery of cars in the automotive industry. The data collected through the literature review and interviews complemented each other and was presented in the empirical findings.

From the empirical findings, it can be concluded what and how trends and customer behavior shapes OEM's business model, challenges and opportunities with benchmarking last-mile delivery services in the e-commerce industry, and what digital and operational capabilities can support last-mile logistics.

Furthermore, the SWOT analysis and Porter's five forces regarding the empirical findings were discussed in the last chapter. These models provided valuable insights into Volvo's strengths, weaknesses, opportunities, and threats regarding implementing the direct-to-consumer strategy and last-mile delivery services. Additionally, Porter's five forces give a broader picture of shaping strategy to be profitable in a market characterized by fierce competition.

Keywords: Distribution, Strategy, Last-mile logistics, Business model, Wholesale model, Automotive industry, E-commerce, Direct sales.

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.

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We also want to thank all internal and external interview participants at Volvo Cars for taking the time to share their knowledge and expertise with us. They provided us with valuable insights which were hard to find in the literature and widened our perspectives regarding our research questions.

Finally, we want to thank our supervisor and examiner at Chalmers, Gunnar Stefansson, who has guided us through this Master´s thesis and provided us with the proper guidelines and valuable inputs.

Gothenburg, May 2021

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Marcus Broström Robert Svantesson

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Terminology

AI: Artificial Intelligence
APAC: Asia-Pacific Countries
B2B: Business to business
B2C: Business to consumer
BTO: Build to order
BTS: Build to stock
CBV: Care By Volvo
CRM: Customer Relationship Management
EMEA: Europe Middle East and Africa
GDPR: General Data Protection Regulation
GPS: Global Positioning System
LSP: Logistics service provider
IoT: Internet of Things
MC: Multi channel
OEM: Original Equipment Manufacturer
OC: Omni-channel
PDI: Pre-Delivery Inspection
RFID: Radio Frequency Identification'
SC: Single channel
SCSL: Sales Company Stock Location
SWOT: Strength, Weaknesses, Opportunities and Threats
TPL: Third party logistics

1. Introduction

1.1 Background

Society's use of the internet and online shopping has increased in the last decades, resulting in a considerable boost in the transportation of goods (RPA & VREF, 2016). The importance of flexible and convenient delivery and return options have been raised, leading to more online and offline interaction for consumers (Schmidt, Trenka, Franzén, Gerhard & Holtgrave 2019). The outbreak of Covid-19 during the year 2020 has accelerated change in the behavior of companies and consumers in society (Church & Ezama 2020). Due to decreased physical interaction, communication is handled remotely between companies, and consumers have started to shop more and more online. Online sales and home delivery to end-consumers have increased in clothes, food, and electronic devices and have influenced the customer expectations of product distribution (Kim, 2020).

According to Koroth, Mazurek, and Pater (2019), the increased online sales have affected the new generation of customers' requirements on the traditional process of ordering and purchasing cars in physical dealerships. Selling through only dealerships is becoming an outdated business model, and customers are looking for new alternatives to purchase their cars, especially millennial customers. The delivery options have up until recently been limited to only pick-up the car at dealerships. However, this might change soon. According to Schmidt et al., (2019), millennials will make up to 40% of the automotive customers by the year 2020. In this group, 69% are interested in-home delivery as an option when purchasing a new car. Schmidt et al., (2019) mentioned the benefits for consumers to order online compared to visiting dealers; easier to compare between different brands and models, no need to negotiate due to fixed prices, a broader selection of cars, higher accessibility, and less time-consuming. These factors are changing customer behavior and have proven to lead to a more significant transformation within the future where dealerships are moving towards becoming service centers for the OEM's and handling their maintenance.

Kanda, Kuisma, Kivimaa, and Hjelm (2019) bring up the importance of having intermediaries and argue that these actors play a vital role in providing information both upstream and downstream and creates a closer relationship between the actors within the network. Eliminating actors within a network may miss out on the benefits intermediaries can contribute to and lead to customer loss and potential sales. However, a transformation of the OEM's business model in the automotive industry seems inevitable. The traditional wholesale model used for many years might not be as competitive in the future because of the changing demand of customers regarding the selling process and customer experience. The traditional OEMs have been product-centric for a long time, competing on technical solutions, new features, and reducing cost to meet customer demand. Since today's cars are focusing more on the customer experience, convenience, and connectivity, it opens up competition from IT companies. These companies have experience and expertise in digital customer interaction, retail, and customer relationships and can become a real threat to existing OEMs. OEMs need to adopt more consumer-centric services and mindset to compete

with disruptive business models and new companies entering the automotive industry to stay competitive Schmidt et al., (2019).

1.2 Introduction of Volvo Cars

Volvo Cars were founded in 1927 by AB Volvo and were owned by AB Volvo until 1999 when Ford acquired Volvo Cars. Now Zhejiang Geely Holding Group is the majority owner of Volvo Cars and has been since 2010. Volvo Cars is the fastest Growing premium Original Equipment Manufacturer (OEM) with 705 000 cars sold, approximately 42 000 employees, and a revenue of 274 Billion SEK (Volvo Cars annual report, 2019). Volvo Cars and Geely Group are owners of Polestar, Lynk&Co, and their software stack developer called Zenseact (i.e., formerly part of Zenuity).

1.3 Purpose

The purpose of the research is to understand customer behavior trends within the automotive industry, how direct to end-consumer distribution has been implemented in various industries, and furthermore analyze what digital and operational capabilities are needed to establish last-mile logistics delivery services.

1.4 Research questions

1. How does Volvos business model look regarding the distribution of cars?
2. What kind of third-party last-mile delivery services exist in other industries relevant to OEM's distribution of cars?
3. How do trends of consumer expectations affect the traditional business model regarding last-mile delivery?
4. What are the digital and operational capabilities needed to support the direct-to-consumer strategy within last-mile logistics?

1.5 Scope and limitations

The report will analyze the direct-to-consumer distribution within automotive and what capabilities are needed to support the strategy. The focus will be on the outbound logistics and how they can perform the last-mile delivery, including the returns. The research will investigate how the strategy can be implemented initially on the European market due to complex laws and regulations in other global regions. Due to limited research on last-mile logistic options within the automotive industry, the strategy will also be benchmarked to other products with similar characteristics to find synergies.

2. Literature review

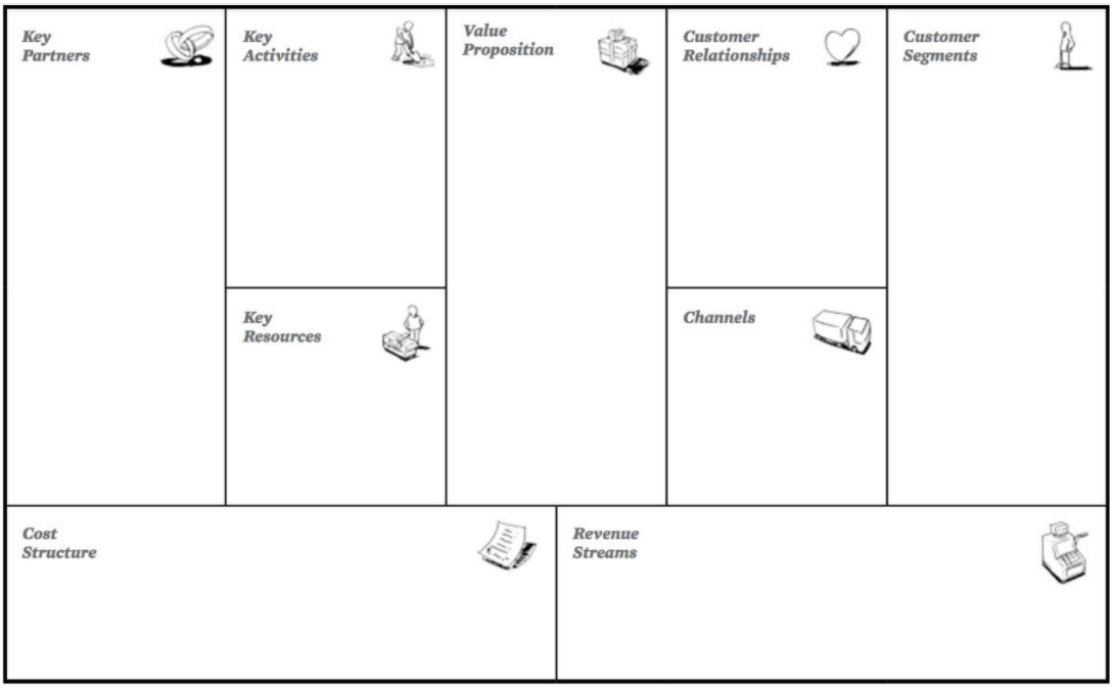
The literature review will present and describe useful theories that will be used to analyses the collected data from the interviews in the empirical findings chapter. The

Literature review is structured in the following way: Business model, Distribution channels, Distribution services, Digital and operational capabilities and Tools and Methods.

2.1 Business model

Focus on business models has gained ground in recent years due to rapid changes in markets with increased globalization and new innovative and disruptive ways to generate revenue (Brandtner and Freudenthaler-Mayrhofer 2020). Business models heavily influence the company strategy and depend on specific characteristics and the market position of the focal company (Voigt, Buliga & Michl 2016). In 1954 Peter Drucker introduced the business model concept, and since then, many definitions of what exists in today's literature. Brandtner and Freudenthaler-Mayrhofer (2020) describe a business model as a plan for how a company can create revenues on their products or services, including creating value for the customer in the long term. According to Voigt, Buliga, and Michl (2016), Peter Drucker describes that all business models need to include three sets of elements, value proposition, value creation, and value capture. Then we have Osterwalder & Pigneur (2010) which are two respected authors in the research of business models. They have constructed a business model canvas template with nine characteristics defining the business model in figure 1 below.

Figure 1:*Illustration of the nine back and front stage elements of the Business Model Canvas (Osterwalder and Pigneur, 2010).*



The backstage elements include *vital partners, cost structure, key activities, and critical resources.* The front stage elements include *value propositions, customer relationships, customer segments, channels, and revenue streams.*
Brandtner and Freudenthaler-Mayrhofer (2020) have the following description of each element:

- *Key partners:* The supply network constantly needs to be updated by the business model because the supply network is a crucial part of assuring that the excellent quality of a service or product is offered to the end customer.
- *Cost structure*: The internal cost structure of a company depends very much on the current business model and value proposition. The cost structure is adapted to the offered product or service, and when that changes, the cost structure does so as well.
- *Key activities*: The key activities in a company are what processes need to be performed to complete the product or service offered to the customer.
- *Key resources*: The resources a company possesses are used to perform activities that can be both tangible and intangible, like special equipment or experienced staff.

The front stage elements include value propositions, customer relationships, customer segments, channels, and revenue streams.

- *Value proposition*: The value proposition is basically what products or services a company offers the customer. The value of the product or service depends on the customer's needs and expectations.
- *Customer relationship*: Customer relationship includes how to maintain already existing customers but also how to attract new customers if the business model changes.
- *Customer segments*: Segment customers and focus on specific customer groups that will benefit the companies' value proposition, both existing and potential customers.
- *Channels*: The channels can differ but mainly include how to interact with the customer through information and communication, different alternatives for transactions and payments, and physical distribution, including how to connect product or service with the customer.
- *Revenue streams*: Revenue streams are basically how the company is getting paid, which depends on its business model and offers. It could be a subscription model, leasing, or a more traditional one-time transaction.

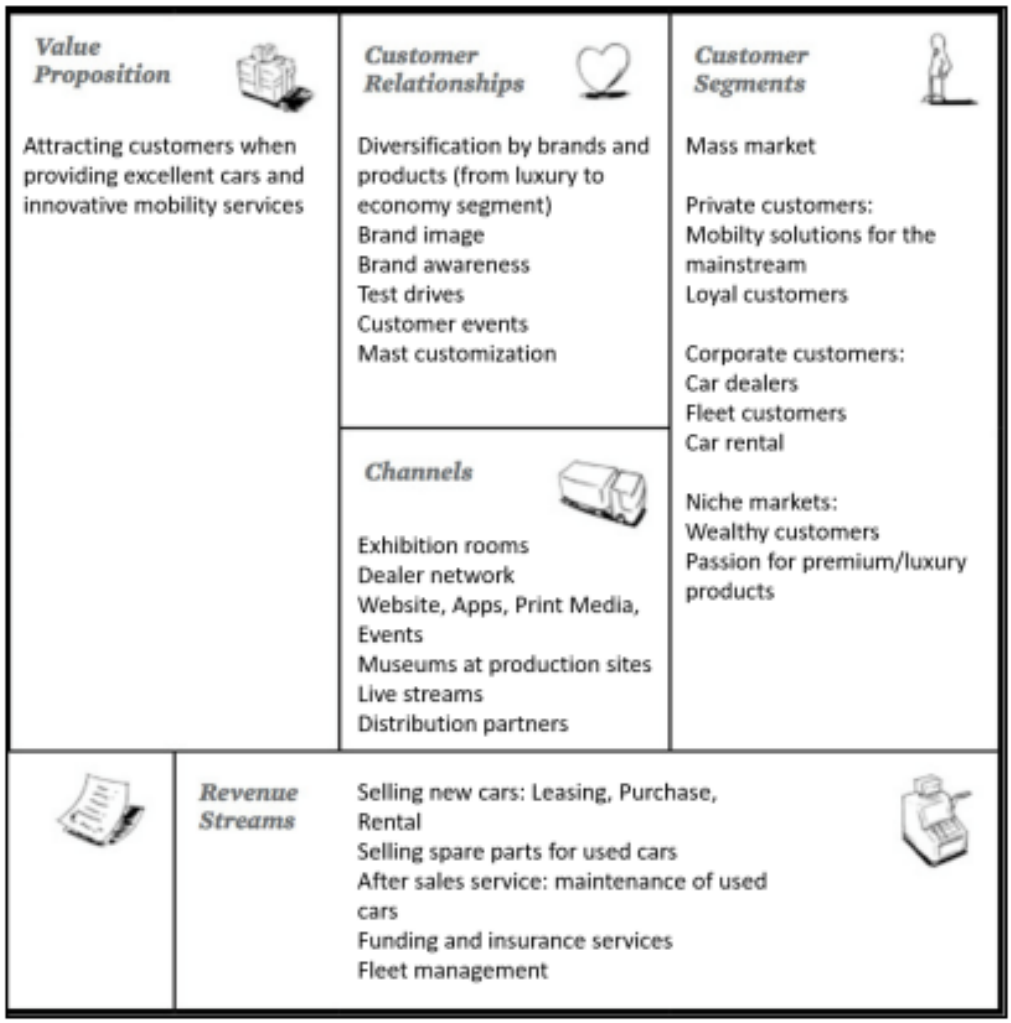
2.1.2 Traditional business model in the automotive industry

The traditional business model in the automotive industry focuses on the backstage elements in figure 1 of the business model and is product-centric by offering new specifications and technical solutions to improve their products (Brandtner and Freudenthaler-Mayrhofer, 2020). The value proposition within the traditional automotive industry is to offer their customers high-quality cars with high technical standards. The traditional business model works well when customer behavior and needs are relatively stable and if people value technical solutions (Brandtner and Freudenthaler-Mayrhofer, 2020).

Considering the front stage elements in figure 2, OEM's traditionally use a wholesale model where they sell cars to their dealer network, then sell the car to the end consumer. This is traditionally the OEM's primary sales channel, but fleet sales and rental cars are also common (Hübner, Wollenburg & Holzapfel, 2016). In addition,

OEM's generate revenues through one-time transactions or in the form of leasing cars and primarily through various after-market services, insurance packages, and spare parts (Brandtner and Freudenthaler-Mayrhofer, 2020). The OEMs try to build customer relationships through market positioning by strengthening brand image, offering test drives, physical interactions with consumers, and providing some after-market services such as services and maintenance (Brandtner and Freudenthaler-Mayrhofer, 2020). The OEM's also differentiate themselves to competitors by segmenting their customers to mass market with high volume sales or niche markets focusing on quality and margins, build premium cars or more basic products, private sales with one big transaction or corporate sales with leasing of car fleets (Brandtner and Freudenthaler-Mayrhofer, 2020).

Figure 2: *Traditional front stage business model for OEMs (Brandtner and Freudenthaler-Mayrhofer, 2020).*



2.1.3 Emerging business model in the automotive industry

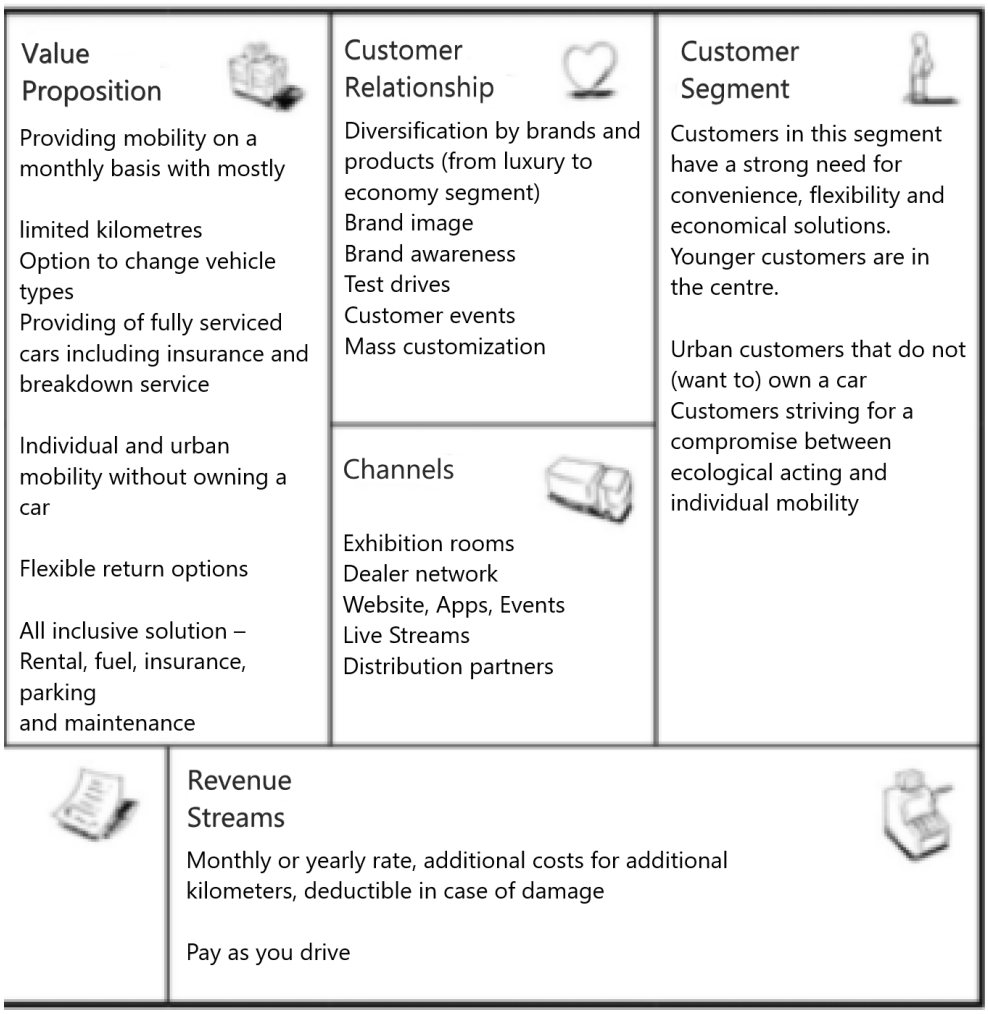
In contrast to traditional business models, the emerging business models are customer-centric rather than product-centric. It focuses more on customer needs and behavior to make the business model more attractive, as illustrated in figure 3 (Brandtner and Freudenthaler-Mayrhofer, 2020). According to Schmidt et al., (2019),

40% of automotive consumers consist of Millenials in 2020, also described as generation Y & Z (Brandtner and Freudenthaler-Mayrhofer, 2020). These customers have different behavior and requirements than traditionalists, which need to be met in the future to stay competitive (Brandtner and Freudenthaler-Mayrhofer 2020). Furthermore, Brandtner and Freudenthaler-Mayrhofer's (2020) findings indicate multiple essential factors for these new automotive customers, such as sustainability, digital interaction through online channels, flexible mobility, and ownership solutions.

Due to the need for ownership of cars are shifting towards usage of cars, there have been numerous companies entering the automotive industry with new business models offering subscription models and car-sharing models (Brandtner and Freudenthaler-Mayrhofer, 2020). The subscription model is a form of monthly fee payment similar to the leasing model but includes more extensive services in the care package with insurance, repairs, and maintenance. With this model, the customer never owns the car, and they can also switch between different car types to satisfy the customer's needs all year long (Brandtner and Freudenthaler-Mayrhofer, 2020). With the subscription model, automotive companies can attract customers looking for convenient and flexible usage of cars. The subscription model is also easy to interact with through digital channels like the smartphone and attracts millennials who cannot afford to pay for a premium car through one transaction. However, they can afford it with the subscription model with a monthly fee (Brandtner and Freudenthaler-Mayrhofer, 2020).

Car sharing is another mobility solution that attracts millennial customers because of the convenience and flexibility it provides. Instead of owning a car or having a monthly fee with the subscription model, the customer pays when they drive the car, usually an hourly fee (Spubler and Dennis, 2016). The car is accessible via electronic devices such as smartphones, where customers can reserve the car and use it for a specific time. The car often has electronic systems with a digital key in the application, making it a hassle-free experience when the customer interacts with the car (Spubler and Dennis, 2016). Furthermore, gasoline and insurance are all covered by the hourly fee.

Figure 3: *Emerging front stage business model for OEMs (Brandtner and Freudenthaler-Mayrhofer, 2020).*

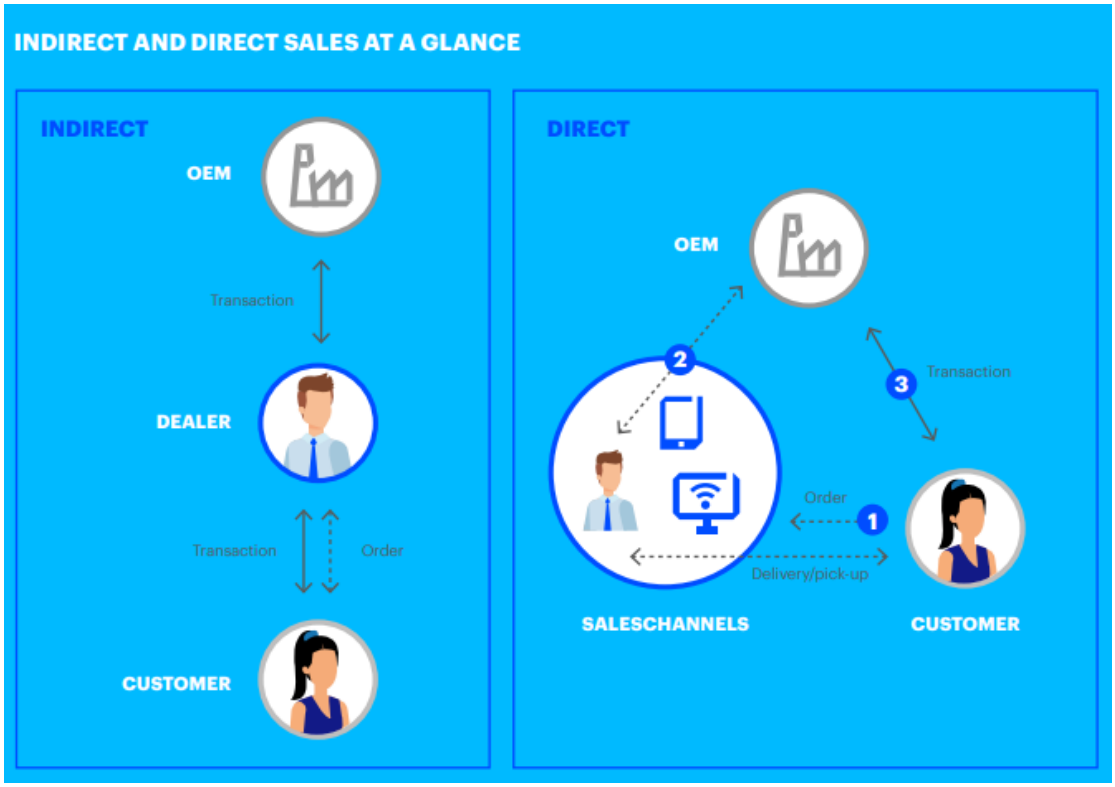


2.1.4 Agent model

The agent model is described by Schmidt et al., (2019) to change the role of today's dealers from operating in an entrepreneurial fashion to instead act on behalf of the OEM like an agent where they receive a commission of total sales. The agent model is customer-centric, and this enables OEMs to control both online and offline sales channels, which enable omnichannel and thus improve the consumer journey (Morrissey, Stricker, Tsang & Zayer, 2017). Furthermore, OEMs get more access to consumer data, enabling improved experience, more efficiency in sales, and control over all channels and prices (Schmidt et al., 2019).

Figure 4 below shows an illustration of how the direct sales with the agent model look like. First, the customer places an order to one of the sales channels online or offline. The agent then forwards the order to the OEM. The car is then distributed from the OEM to the agent's showroom, where the handover with the customer occurs. The transaction occurs between the customer and the OEM, which pays the agent a commission (Schmidt et al., (2019).

Figure 4: *Illustration of differences between indirect and direct sales (Schmidt et al., (2019).*



According to Schmidt et al., (2019), the agent model provides multiple benefits for the OEM in the automotive industry:

- Access to customer data
- Seamless omnichannel and consumer journey
- One price on all sales channels
- Practical sales activities and ability to push new digital services and offers to market
- Market transparency and ability to optimize the sales network

All factors contribute to achieving accurate customer access and experience enabled by more control over sales channels and better consumer journeys through Omni channels (Morrissey et al., 2017).

Despite all the benefits, there are also drawbacks with the agent model affecting both OEMs and dealers. The OEMs balance sheets will increase because instead of selling their cars to dealers and handing over the financial risk to dealers, the OEM is responsible for the car until the car gets sold to the end customer (Schmidt et al., (2019). Furthermore, for the OEM to take on an increasing number of activities in the sales function, they also have to acquire the knowledge and expertise to invest in more personnel or find partnerships with experts in the field (Schmidt et al., 2019).

2.1.5 Trends & Customer behavior

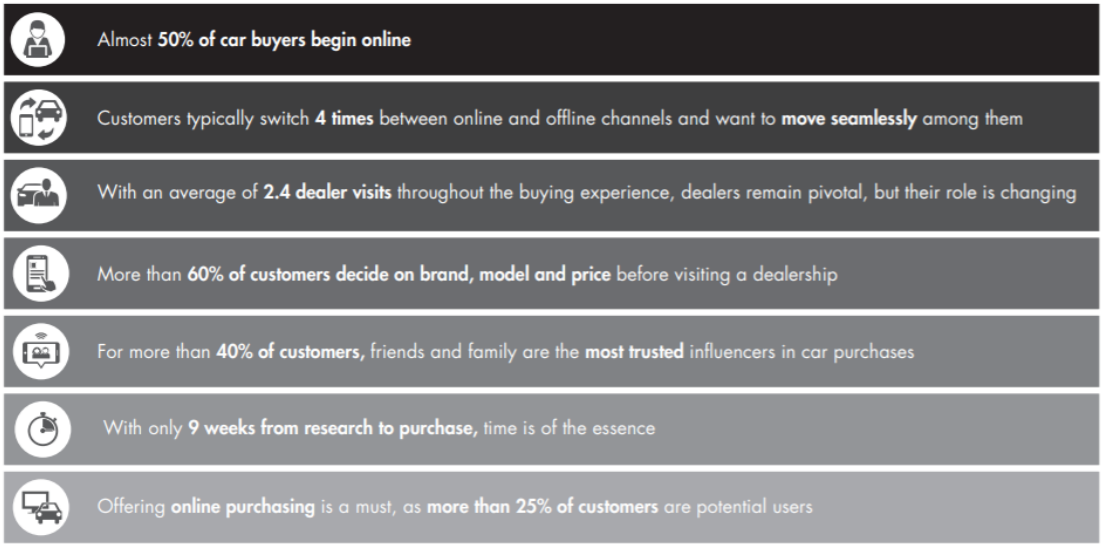
Schmidt et al., (2019) conducted a market survey regarding customer satisfaction with the current offline sales model through dealerships. Their study shows that 1 in 5 millennial customers are currently not satisfied with the traditional way of purchasing a car, mainly the dealer experience. According to Schmidt et al., (2019), the main reasons for dissatisfaction are that customers need to negotiate car prices with salespeople at a dealer, and customers are not sure they get the best price possible. Furthermore, the inability to purchase the car directly online and difficulties in getting help with the right financial option to pay for the car is a concern for the customer of the future (Schmidt et al., 2019).

The survey also provides insights into customers' willingness to adopt online sales models and what benefits they see with these sales channels (Schmidt et al., 2019). One of the benefits from a customer point of view is comparing cars and prices due to the broad selection of cars available online. There will be fixed and lower prices for customers if they buy directly online instead of through a dealership that applies their margin on the car. Furthermore, customers express the availability around the clock with online channels and how this can be timesaving by gathering more information online rather than having to visit dealers (Schmidt et al., 2019).

Customers who want to compare cars and prices online before visiting dealers prefer fixed prices to feel like they always get the same offer on the same car regardless of which sales model they choose. There is also 69 percent of millennials interested in home delivery of cars in the future (Schmidt et al., 2019).

From viewing figure 5, one can tell that the customer journey, in many cases, already starts online where the customer is doing their research about their potential future car. The customers are getting more prepared for their car purchase regarding what type of brand, model, features, and price that suits the customer's demand (Morrissey et al., 2017). Online channels can save time instead of visiting a physical dealership to get all this type of information. This enabler is also essential for the dealers and OEMs to capture that the customer might choose more freely on what car they are interested in and without being affected by the different dealers impacting the customer's purchase. Commercial and interaction with relatives as families and friends are also essential to capture with already signed customers. These customers often share their perceptions and experience about their car and service and then affect a new potential customer for the dealers.

Figure 5: *Bains global automotive consumer survey regarding omni channels (Morrissey et al., 2017).*



2.1.6 Transformation from indirect to direct sales

OEM's that are looking for direct sales and adoption of the agent model need significant changes in mainly three areas. Change perspective from product-centric towards customer-centricity and insights, use and leverage their already established dealer network to their advantage, and transform the company on a structural level (Schmidt et al., 2019).

For OEMs to be more consumer-centric, according to Schmidt et al., (2019), they need to take control of the sales channels and have direct interaction with the consumer interface, not indirectly through dealers. OEMs need to become retailers and manage customer data in centralized CRM systems to analyze customer preferences and generate more sales (Schmidt et al., 2019). Integrating OEMs and dealers' sales channels through the agent model is a way to gather customer insights and create a holistic view of customer data to improve customer experience in all touchpoints through the consumer journey. Even though the agent model provides many benefits for future operations, the change to an agent model is complex due to OEM's, in general, having old systems. Furthermore, high interdependencies between systems and stakeholders will influence the speed and maturity of this digital transformation (Koroth et al., 2018), (Llopis-Albert, Rubio & Valero, 2021).

OEM's are very dependent on their dealer networks which are also one of the significant advantages they have over new and disruptive automotive companies entering the market. According to Schmidt et al., (2019), OEM's need to further leverage their dealer network and relationship to make a win-win situation with the agent model in the future. However, many dealers raise concerns over becoming obsolete, increasing competition, and losing their independence with the agent model (Schmidt et al., 2019). In order to counter these concerns from the dealer's point of view, Schmidt et al., (2019) explains that collaboration between the parties is a crucial factor where both actors need to share costs and profits to make the agent model sustainable. Dealers should not fear becoming obsolete because they perform

customer service activities like test drives, personal interactions, and professional handovers. These are indispensable both now and in the future. Dealers' concern about losing their independence will not be that relevant because of the ever-changing customer behavior and new companies entering the market, which most likely will put dealers under pressure when it comes to their margins. According to Schmidt et al., (2019), as much as 97 percent of consumers come back with lower counter offers after visiting and comparing prices with other dealers. Price pressure may lead dealers to sell cars at negative margins if the price pressure continues. The agent model can help prevent this in the future by getting commissions from the OEM's, thus reducing the financial risk, and creating a win-win situation where both OEMs and dealers are dependent on each other (Schmidt et al., 2019).

Schmidt et al., (2019) propose four factors to consider when approaching the dealer with the agent model strategy:

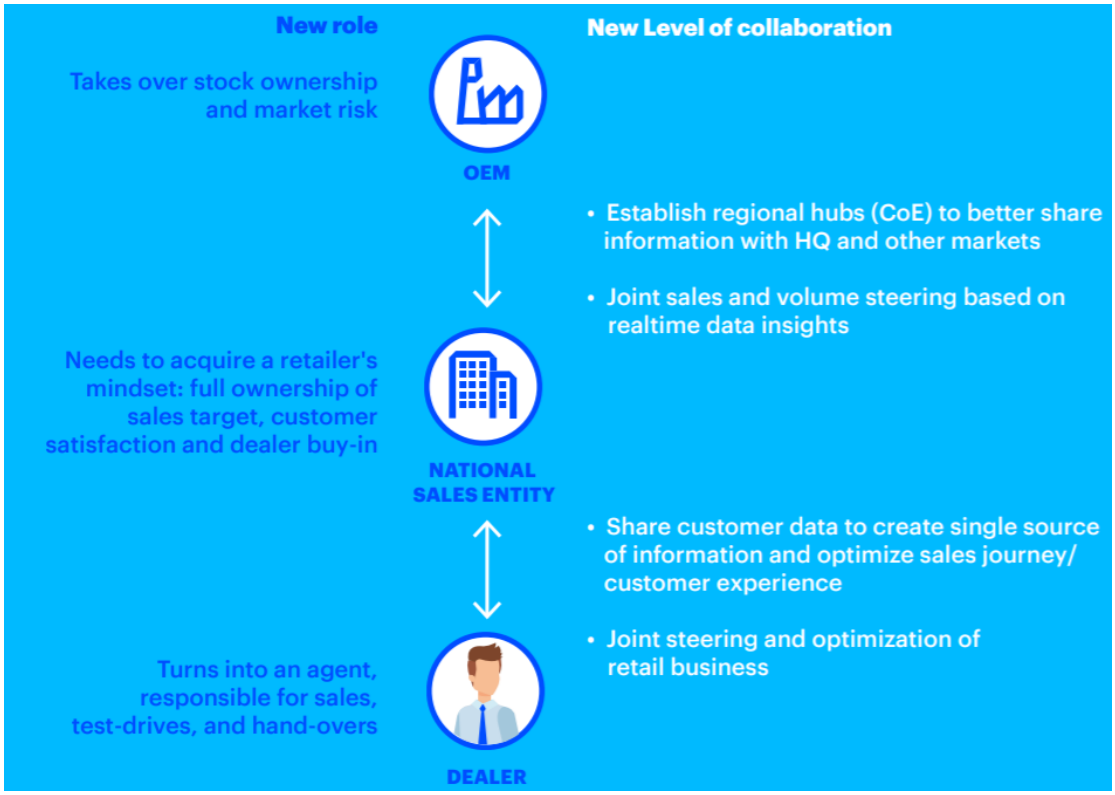
- Communication
- Structure
- Rewards
- Support

OEMs need to involve and communicate with dealers and national sales entities (NSE) early in the transformation to get the dealer onboard and present and discuss operational changes. Since OEMs in the agent model will perform activities currently performed by the dealer, there needs to be a close collaboration where OEMs can learn from dealers' interaction with consumers. In an early stage, discuss rewards, negotiations about future margins, and commissions with dealers. There is also a need for OEMs to support dealers throughout the process regarding training in IT systems and establish the roles and activities performed by different actors (Schmidt et al., 2019).

The third area in need of change described by Schmidt et al., (2019) is transforming the OEM's organization, culture, and business model. With the agent model, many of the roles and responsibilities related to the sales channels currently performed by dealers will shift to OEM's, and therefore the organization needs to change. OEM's will own the customer and transaction data which means OEMs need the capability to analyze and make sense of the data. New functions and operations need to be established to capture the value of the data and generate a higher level of customer behavior and preferences to personalize marketing and sales channels to specific customers and boost economic aspects and sales (Schmidt et al., 2019).

Cultural changes will come from indirect sales towards the agent model, meaning the OEM's and NSE will have to adopt the mindset of a retailer, taking on new roles and responsibilities, as seen in figure 6 below. These actors will need customer-centric insights and are responsible for sales activities, including regulating prices and discounts to optimize stocks, meet sales targets, and improve the customer experience (Schmidt et al., 2019). Regulating stocks is essential because the OEM's will take on more risks with the agent model by owning their stocks to make sure they can supply customers but at the same time keep stock as low as possible. Furthermore, Schmidt et al., (2019) mentions that OEMs need to be agile and quick to respond to changing demands because they control the whole customer journey through sales activities and operations.

Figure 6: *Illustration of the actors changing roles and responsibilities with the agent model (Schmidt et al., 2019).*



Schmidt et al., (2019) also expresses the need for OEMs to change their business model as a part of the agent model transformation due to higher expected competition and lower margins in the future with the traditional sales model. As new mobility solutions are rapidly gaining ground in urban cities OEM´s could profit more through subscription models.

2.2 Distribution channels

2.2.1 Single-channel logistics, multi-channel logistics and Omni-channel

Hübner, Wollenburg and Holzapfel (2016) mention several different channels that retailers can use to deliver goods to their customers but also the levels of developing their distribution channels. The first one, which is the most generic channel to use in their distribution, is the 'Single Channel' (SC) and works by using only one sales channel. A retailer operating through an (SC) sells their goods through their physical store or an e-tailer who is only operating through selling on their website. For example, Zalando is doing. The advantages of using an SC are the less complex logistical part of coordination. The disadvantages are that customers enjoy the physical interaction with products that, for example, companies who only operate as e-tailers fail to capture. The author explains that retailers tend to develop their sales channels to more than one channel to expand their business and target a more significant customer segment.

Hübner et al., (2016) mention that the next step of developing an SC is to establish their distribution through a Multi-channel (MC) where customers can purchase products both online with direct distribution and by entering the physical store. The channels are operating as individual channels with different systems, different warehouses, and separated payments flow. From a customer perspective, the multi-channel distribution is of both beneficial and less beneficial aspects. The establishment of a company that uses a multi-channel distribution enables customers to both order products online as purchasing them in physical stores. Since multi-channels are not an integrated system by the operating channels, customers cannot order a product online and return the product in the physical store. The same goes for products purchased in the physical store, which, if needed, must also be returned in the physical store. This restricts the logistical aspects for both the customers and the company using their retailer and e-tailer. However, according to Weinberg, Parise, and Guinan (2007), the establishment of MC compared to an SC benefits the customer journey as for the customer experience.

In order for retailers to establish an even better customer experience, Cotarelo, Calderón, and Fayos (2021) argue that one who operates with an MC should move towards the use of an Omni-channel (OC). Due to the structure of an OC, customers will have a seamless shopping experience whether they order products through online channels or offline channels. An OC is established to work as one integrated system, offering customers the same supply in all channels at the same price and making the shopping experience seamless and more accessible for the customers. Moving from an MC to an OC is complex, requires high investments, and takes much effort to educate personnel to operate in a coordinated system. The benefits of an OC establishment are appreciated from the customer's point of view since they can order an item online. If the item does not fit, the customer can send it back or visit the physical store to return it or change color or size. From the company's perspective, there are several benefits, and two of them are a decreased tied-up capital and at the same time offering a broader assortment.

2.2.2 Customer journey, Customer experience and Touchpoints

The interaction between a customer and a company is called the customer journey and has different so-called *touchpoints* during the customer's interactions with the company. Touchpoints can be all types of interaction a customer has with a company, such as seeing the company at a commercial, talking to the company, talking about the company with a friend, or purchasing a product or service from the company. The first touchpoint is often when the customer sees a commercial about the company or when someone else is sharing their experience about their interaction with the company. This stage is one of the most critical stages. The company wants to catch its customer's attention, but this is also where the customer makes his first impression about the company, making it so important. The customer journey often continues when the customer buys or uses the product or service. It ends when a replacement has been made or if the customer switched to a competitor instead. A customer journey that includes many touch points leads to a more complex journey and therefore gets even more critical to map to keep the customer and decrease the *churning*. The churn is where the customer leaves or ends a contract. For example, in the telecommunication industry, when a customer ends his/her subscription at Telia

and then switches to Tele2. The churn rate is essential to understand and forecast potential customers who might leave to avoid losing customers, resulting in loss of income. Gaining customers is often a much more expensive touchpoint than maintaining a customer due to many commercials. Therefore, companies want to achieve very high switching costs, such as Apple (Slof, Frasincar, and Matsiiako, 2021). If a customer has an iPhone and a Macbook, this customer is more likely to purchase an Apple watch instead of a Garmin if the customer is looking for a smartwatch.

2.2.3 The role of dealership

Within the automotive industry, OEMs have dealerships which are also called retailers, who work as an intermediary between the OEM's and the end-consumers. The end-consumers can either be individuals or companies, and most dealers offer cash-sold cars, leasing contracts, and subscriptions-payments of possessing a car. Dealerships' purpose is to operate with their physical store, offering their customers the possibility of visualizing the car, test-driving, answering customers' questions about the product, and supporting financial contracting.

Yavorsky, Honka, and Chen (2020) argue that most customers at several markets are visiting dealers before making their choice of purchasing a car. This is due to inspecting the product, finding the right product that fits the customer's needs, discussing the equipment of the product, and different payment options. However, the authors bring up an example where the customers have decreased their frequent visits to dealers due to gathering all information about the product online and even the actual purchase online. In 1986, customers visited an average of 4,6 different dealerships before purchasing a car. In 2002, a new study was made which showed the number had decreased to an average of 2.2 visits to different dealers. The last study was conducted in 2016, which showed that the average of customer visiting dealers had decreased to 1.3 and is believed to be related to the amount of data that is now possible to access through the internet. The authors still claim that the dealership has a vital role in providing the customers with information and expertise. Additionally, to this and because the purchase of a car is, for most people, one of their most significant purchases, customers tend to be more comfortable interacting physically with the dealers when buying a car.

2.2.4 Build to order and Build to stock

The automotive industry and other industries use different types of order fulfillment strategies, and two common strategies within the automotive industry are build-to-order (BTO) and build-to-stock (BTS). The two order fulfillments are established very differently. The geographical location of where it is produced, and which market the cars are distributed to have a big impact on what strategy to go for. A car defined as BTO is a car that is configured on the requirements of what the customer demands and, therefore, often leads to a longer lead time. However, the lead time can differ depending on how configured the customer demands its car to be.
In contrast, some customers only make fewer configurations, making it easier to standardize the production of cars and match cars that have already been starting production. In contrast, BTS cars are produced where the OEMs or dealers make forecasts to match supply and demand from the customers. This fulfillment

contributes to a faster alternative of delivery if the customer is entering a dealer and results in a higher risk for the dealer due to increased tied-up capital and the risk of not providing the customer what it wants and therefore also not generating sales. The demand for BTO cars vs BTS cars differs widely between different markets due to customer behavior, where BTO cars stand for 48% of the cars sold in Europe and ín the US, BTO cars only stand for 6% of the sold cars. (Buergin, Beisecker, Fischer, Geier, Tutsch, Hercamp and Lanza, 2017).

2.3 Distribution services

2.3.1 Last-mile delivery

Winkenbach (2018) describes the modern last-mile delivery as challenging for several reasons and a critical method to apply. In the retail business, companies face the coordination between store delivery and home delivery, small order quantities, and very erratic customer demand. Additional to this is the home delivery handover-point problem since the delivery often occurs during office hours when customers are not at home. The ideal establishment for a Logistic Service Provider (LSP) would be to deliver full truckloads to increase the utilization and achieve economies of scale. To accomplish this, there is a need for fixed delivery to enable this. However, the LSP often faces non-full truckloads and orders from customers who have different delivery locations. To overcome this challenge, it's getting more common within the retail business to establish an omnichannel to offer their customers a broader assortment, more delivery and return options, decrease the tied-up capital and improve the customer experience. This offering is very beneficial for the actual customer but requires both time, expertise, and high investments from the retailers to establish. Except for these challenges, companies risk jeopardizing their operation, loose income, and business, which many retailers have gone through and failed to accomplish these capabilities. It is not only competitors to retailers forcing them to establish an omnichannel because it gets more and more common, but due to the customers demanding to receive an integrated shopping experience when interacting with a retailer.

Lim and Winkenbach (2018) argue that the role of technology is a critical enabler in order for retailers together with LSP to overcome these challenges. Using technology as a digital capability contributes to retailers' sustainable competitiveness, making them more innovative and attractive to customers. The author also brings up the potential benefits of using crowdsourcing logistics within the last-mile delivery. This is an area that is not that explored within this industry. Through platforms, individuals can perform the same services as companies called crowd logistics (Carbone, Rouquet & Roussat, 2017). Crowd logistics enable individuals to perform services using Airbnb for renting out their house and competing with the hotel actors. Blablacar, Uber, and Bolt are also defined as crowd logistics. These actors are huge competitors to regular taxi companies offering a competitive price for transporting individuals from point A to point B (Pan, Trentesaux, Ballot & Huang, 2019). Lim and Winkenbach (2018) also conclude that retailers should exploit their click-and-mortar, also called Omni-channel, focusing on high differentiation of product service by making the customer experience more personalized and giving the option of having several different delivery options.

2.3.2 Third Party Logistics

Banks & Hajibashi (2021) describe the collaboration with Third-party logistic (TPL) providers in the aftermath of the covid-19 pandemic as critical when companies are looking to be more customer-centric and resilient to variations in the market. The market fluctuations during the pandemic have affected companies globally, therefore having relationships with the right TPL's is fundamental (Banks & Hajibashi (2021). The retailer needs to adapt according to the new market conditions and focus on transforming their value chain to manage costs, have sustainable operations, and develop existing and new capabilities in the future. Banks and Hajibashi (2021) explain that huge investments and the benefits of collaborating with a TPL are valuable because they already possess the expertise and physical networks. The right TPL can provide transparency and visibility throughout their operations, making it easier for the retailer to be flexible and act fast to improve customer service.

From a retailer or an e-tailer perspective, the use of TPL could make their operation tremendously more efficient because the re/e-tailer can focus on their core business and outsource activities that other companies as TPLs' can perform better. With the help of a competitive TPL, the re/e-tailor can establish an integrated business and make more use of their united resources. The re/e-tailor are good at selling, marketing their products, and offering a high product segment. At the same time, TPLs' are good at using their resources as warehouses to perform pick-up and delivery services. Establishing a relationship with a well-developed TPL can also benefit the re/e-tailor regarding economic and environmental aspects. TPL's have higher resource utilization and developed a platform offering the customers the possibility of visualizing where the products are and when it is estimated to be delivered. More and more common that TPL is using advanced analytics, AI, and machine learning to continuously improve and develop their business, which benefits both the re/e-tailor, the TPL, and the end-customer. Banks and Hajibashi (2021) argue that companies must leverage their relationships with the right TPL: s to improve growth and a competitive, sustainable operation, increasing customer service, and experience.

2.4 Digital & Operational capabilities

2.4.1 Platforms

Flynn, Koufteros, and Lu (2016) explain that the distribution industry faces several challenges and uncertainties that affect their delivery precision, costs, and time. There are different uncertainties to which could be divided into *micro-level uncertainty*, *meso-level uncertainty*, and *macro-level uncertainty*. The micro-level uncertainty is somewhat predictable and can be handled with the correct information, data provided, and the proper procedure to avoid struggle. For example, products and information are more likely not to be delivered at the right time and to the right quality the longer the distance within the chain is distributed. Products or information that interact with many actors and in many steps need to be handled cautiously and methodically. The meso-level uncertainty arises between two or several actors and means a lack of information shared between the actors. The reason for actors not to share information

or data is that there is an underlying factor where an actor believes that they possess information that the other actors could exploit. Due to this structure, one or several actors may act in their self-interest and provide the other actors with only a limited amount of data and information. The last one, macro-level uncertainty, is more complex than the previous two and related to more unpredictable occasions. Uncertainties connect to the macro level are defined as rapidly changing, and actors often have little or even non-prior experience to these problems. Unforeseen problems can be sudden accidents or road construction, which could cause traffic jams affecting vehicles from delivery on the appointed time and result in extra spent money and time. In Addition to this, unpredictable implications can cause natural disasters such as tsunamis or a pandemic such as COVID-19, affecting millions of people and businesses from operating as they usually are doing.

To the mentioned problems and challenges within the transportation industry, Humayun, Jhanhji, Hamid and Ahmed (2020) brings up the use of the Internet of Things (IoT) and Big Data, which could have substantial beneficial impacts within several different industries if appropriately used. The author explains a large amount of data within companies and within the distribution industry, which can, through the help of platforms, lead to cost reduction, distribution efficiency, and customer satisfaction. The use of platforms enables B2B to share information between each other but also for B2C. Customers often want to follow their ordered products and follow the distribution until it is delivered. According to Muni Sankar and Booba (2020), many companies have made investments as track and trace to satisfy their customers to have the ability to follow their orders. The use of RFID and GPS makes it possible for the customers to understand the current location of their order, plan for the delivery and understand if the order will be delayed or delivered earlier than planned. Platforms and the use of GPS and RFID make it possible for companies to communicate with the end-customer without the human communication part. Through platforms, information can be provided in real-time about road congestions, road accidents, and weather status to mitigate risk management. The help of platforms can solve many of the challenges of micro-and macro-level uncertainty but are not that efficient to macro-level uncertainties.

2.5 Tools and Methods

2.5.1 Porter’s five forces

Mintzberg (1987) states that "*Strategy is a plan - some consciously intended course of action, a guideline (or set of guidelines) to deal with a situation*". There are different strategies to use in different types of business where Porter’s five forces have been commonly used to achieve a competitive strategy. According to Porter (2008), five forces shape the strategy: Threat *of new entrants, Bargaining power of buyers, Bargaining power of suppliers, the threat of substitute products or services, and Rivalry among existing competitors.* The five forces can help businesses understand the key elements of competition within different industries to achieve long-term profitability and shape strategy to gain sustainable competitive advantages (Porter, 2008).

The threat of new entrants is a force that depends on how high or low the entry barriers are in the industry but also on how aggressive the response will be from the existing actors (Porter, 2008). The threat of entry is high when entry barriers are low and vice versa. For a company to gain market shares, there need to be barriers against competitors established in economies of scale, switching costs, and capital requirements, to mention a few (Porter, 2008).

The bargaining power of buyers applies when a few big companies in an industry with many small suppliers offer simple products or services, thus capturing high value and leveraging their negotiation power (Porter, 2008). The bargaining power of buyers allows them to assert pressure and play the suppliers against one another to push down product or service costs and increase their profitability. The buyers can benefit from economies of scale by buying products in significant volumes with discounts but simultaneously demand better quality from the supplier or threaten to switch suppliers (Porter, 2008).

The bargaining power of suppliers is another force that can negatively impact profitability in a market. Suppose the supplier is more powerful than the company. In that case, they can push for higher prices or threaten to lower quality and service to specific companies, which is a form of high bargaining power of the supplier to raise their profits (Porter, 2008). Porter further explains a few scenarios where the supplier is extra powerful. If there are few big suppliers when the supplier acts in more than one industry and thus has multiple revenue streams, when the cost of switching supplier is high, when the supplier has very specific products or services and when there are no other substitutes in the market.

The threat of substitute products or services is another of Porter's five forces that refer to when a new competitor enters the market and fulfills the same or similar functionality as already established companies in that market. However, they differ in their business model (Porter, 2008). To mitigate the threat of substitutes and maintain their profitability, they must differentiate themselves and keep on increasing their product or service offers (Porter, 2008). Furthermore, Porter (2008) mentions low switching costs for the buyer and high perceived trade-offs concerning price versus performance from the customer's perspective as situations where threats of substitutes in a market are high.

Rivalry among existing competitors is perhaps the biggest threat to a company's profitability in a market where many companies with the same size and power offer similar products or services to consumers (Porter, 2008). Rivalry often leads to destructive price wars of constantly responding to competitors' lowered prices, which only transfers the industry's profit to the customers. According to Porter (2008), there is a need in these situations for companies to differentiate themselves from competitors in other ways than just focusing on price in order to achieve higher profitability in that market. It can be through branding, increased service, or targeting different customer segments.

2.5.2 SWOT analysis

Falcone, Tani, Tartiu, and Imbriani (2020) explain the SWOT analysis, a standard tool used by organizations to establish strategic planning and understand the competitiveness of an organization's strategy. The SWOT analysis structure includes internal and external factors that consider factors that the organization can and cannot affect. The internal factors are 'strength' and 'weaknesses,' and the external factors are 'opportunities' and 'threats.' As the internal factors explain the current situations of the organization, the external factors explain capabilities within the future. They can be used to describe the environment where the organization is operating within.

The 'strengths' of an organization could be competence or resources that the organization possesses that are advantageous compared to competitors and other organizations. However, 'weaknesses' are the opposite where the organization is underperforming an activity or service compared to competitors or other actors. 'Opportunities' are a potential goal for the organization to achieve competitive advantages compared to competitors. The last one regarding' threats' could be current competitors on the market and new entries of competitors, which could lead to damages of the organizations as loss of sales and market shares. Falcone et al., (2020).

3. Methodology

This section will present the approach of the Master thesis, what data that has been collected and how the collection has been performed including ethics and trustworthiness.

3.1 Research Strategy

The data collection in the report consists of a literature review and interviews in qualitative research. According to Corbin and Strauss (2015), these methods will help validate and discover important variables later in the project. The literature review was conducted to understand what potential market suits the strategy and what capabilities are needed to support the strategy to analyze the empirical data. This was done by reading scientific articles mainly through the Chalmers database and reading external popular academic journals and e-books on Google Scholar. The qualitative part helped understanding how the last-mile delivery affects the result depending on which market the strategy is implemented in since markets differ in the form of urbanization and the geographical size of a country that affects logistical issues.

According to Bryman and Bell (2011), interviews can be structured differently depending on previous knowledge of the researcher about the subject and which structure to use in order to gain reliable information from the data collection. The author also argues that unstructured and semi-structured interviews provide the most amount of information but in order to have a better control of the interview, semi-structured interviews were determined. Considering these aspects, this method is proven to be most suitable for this project due to the limited experience of the interviewer within the field.

For all of the interviews, the semi-structured approach was adopted for several reasons. Partly to limit the spread of answers from the interviewee, have a higher focus on the relevant question but also ask follow-up questions on exciting topics to get more detailed information (Bryman & Bell, 2011). Furthermore, it is essential for the interviewer to confirm the given answers at the end of the interview with the interviewee. The confirmation part minimized the effect of both misunderstanding the question by the interviewee and gave the interviewee the possibility to change an incorrect answer that the interviewer had written down from the interview. According to Bryman and Bell (2011), this way of structuring an interview contributes to a higher degree of validity.

3.2 Ethics

The thesis involves qualitative studies through interviews, and it is essential to consider the ethical aspects when performing these interviews with respondents from different organizations. Ethics is separated into four different areas: *harm to participants, lack of informed consent, invasion of privacy,* and *deception* (Bryman & Bell, 2011). The first one considers not to harm the interviewee by putting them in a situation where one gets harmed either by physical or mental harm in the form of

stress, blackmail, or any other negative experiences. *Lack of informed consent* considers if the respondent has received enough information before the interview in the form of what topic to discuss and which question will be involved in the interview. *Invasion of privacy* covers the area of not exposing the interviewee where he or she feels forced to provide information where the privacy of the individual or the company could be threatened. *Deception* refers to tricking the interviewee in some way to provide critical information for the benefit of the interviewer.

In order to mitigate the mentioned factors during the interview, the respondents were treated with respect, had the option of being anonymous to avoid future conflict with their company, and could choose freely which questions to respond to or not. The interviewee was provided with relevant information before the meeting, including what topic to discuss and a draft of the questions. This was important for the interview preparation and gave the interviewee time to investigate the subject. The interviewee was able to see the questions and decide whether the interview would be held or which questions to answer. The aim of the study was clearly described for the interviewee, and consolidated material after the interview were also presented to avoid deception.

3.3 Trustworthiness

According to Bryman and Bell (2011), dependability and bias are of high importance to consider when establishing a report that includes interviews and other sources. In order to achieve dependability in the report, Bryman and Bell (2011) argue that it is favorable to record and document the data collection during the whole time of the project. This includes recording interviews, saving the questions and the participants from the interviews. The reason for making this documentation is to trace back to the source and time when the data was collected. There is always a risk of bias when conducting qualitative interviews, which can affect the trustworthiness of the information, especially with unstructured interviews (Bryman & Bell, 2011). Unstructured interviews enable the interviewee to exaggerate positive data that benefits them and under exaggerate negative information. A potential risk is also that the interviewee steers the conversation and talks more about specific areas.
An example would be for areas where a company is more successful. In order to mitigate these risks, the interviews were performed as semi-structured to only get answers to the asked questions during the majority of the time. Another course of action to mitigate bias information was to compare and confirm with other external sources, which will also have been considered when performing the literature review.

3.4 Start-up with Volvo Cars

In order to get a broader understanding of Volvo Cars' structure, past performance, and future vision, a meeting was conducted with the supervisor for the thesis at Volvo cars, seen in table 1. The meeting with Volvo was held in an unstructured and informative way, allowing for deeper discussions in specific areas. In this stage of the project, opportunities and future challenges with Volvo's future strategy were explained and discussed. In this meeting, the plan for the continuing process of the thesis was conducted, and the representative gave suggestions on contacts to reach out

to and start interviewing. The representative made sure that the future interviewee would accept the proposal of interviews by informing these individuals about the purpose and its importance.

Table 1: *Volvo's presentation of company structure*

Start-up meeting	**Role**	**Company**	**Date**
Introduction of Volvo Cars Corporate	Global Strategic projects & Governance	Volvo Cars	18-01-2021

3.5 Interviews held with Volvo, affiliates and LSP

In order to establish the interviews in a way that would provide as good information as possible during the sessions, all interviews were structured as semi-structured to have a clear direction of asking specific questions but flexible enough to have room for other inputs and discussion. The interviews were established with nine different individuals who provided enough information to base the analysis on the empirical findings and literature review. Each participant was provided with all interview questions at least two days in advance to have the opportunity to prepare for the interview but also to give comments on the questions beforehand and if needed to adapt them better.

First interviews at Volvo Cars were held to understand research question one and research question two to understand current situations, including strategy, operations, and what had initiated this master thesis. Following these, the interviews continued with individuals with more knowledge and information regarding research question three and research question four about the future vision and challenges. Regarding research question three and four, the interviews were conducted with Lynk & Co and Polestar to understand their business model. Both these companies are early adopters of the future business models and affiliates within the Volvo Cars. At the end of all interviews, the interviewer asked about potential other contacts to interview to get more information regarding specific topics.

Notes were taken during the interviews, but to secure the inputs, all interviews were recorded and transcript to have the possibility of comparing the notes with the interview again and reflect upon the provided information. This establishment ensured that the notes taken during the sessions matched what the interviewee had responded to, and the interviews were performed in the following order, which table 2 describes.

Table 2*: Interview sessions with Volvo Cars internal and external contacts.*

Interviews:	**Role:**	**Company:**	**Date:**
Interview 1	Outbound Logistics Engineering EMEA & Intercontinental	Volvo Cars	05-03-2021

Interview 2	Outbound Logistics Strategic Projects	Volvo Cars/Lynk & Co	09-03-2021 & 12-03-2021
Interview 3	Outbound Logistics Engineering APAC	Volvo Cars	15-03-2021
Interview 4	Head of Logistics	Polestar	17-03-2021
Interview 5	Global Outbound Logistics Operations	Volvo Cars	22-03-2021
Interview 6	Global Online Business	Care by Volvo	25-03-2021
Interview 7	Representative	LSP in Scandinavia	30-03-2021
Interview 8	Representative	LSP in China	01-04-2021
Interview 9	Consumer Journey Manager for Delivery & First Use	Volvo Cars	09-04-2021

3.6 Research Approach

Answers to research questions one, two and three were in general found within the literature but to complement the provided information, the first two interviewees had the possibility to confirm the stated facts. Since there is a small gap in the literature regarding research question four in the report and the last-mile delivery within the automotive industry, the nine individuals were interviewed to complement the theoretical framework. Due to the fact that the interviews were semi-structured, the subjects were discussed more freely and allowed to get inputs from the interviewee, which would not be provided if the interviews only were structured. The establishment provided the interviewee with personal thoughts and reflections about the undiscovered area.

By the help of the literature study and collected interviews, the empirical findings were established and analyzed. The empirical findings made it possible to conduct a SWOT analysis combined with three of Porter's five forces were established to create an overview of their traditional wholesale model in order to compare their new potential strategy.

4. Empirical findings

In the following chapter, the collected data will be presented and analyzed with help from the literature and from the interviews with Volvo Cars, Polestar, and external actors as LSP. The interviewees have provided the following fact by answering the interview questions and combined their ideas and personal reflection of strengths and weaknesses.

4.1 Volvo's wholesale model

With the traditional wholesale model, Volvo Cars produce both built-to-order (BTO) and build-to-stock (BTS) and the distribution volume differs between markets. According to Volvo, in the European market, there is a high rate of BTO cars because customers prefer to modify their cars and decide on more premium features and specifications than in the US for example. This means that the customer modifies the car to their needs but also that the lead time increases. The order is specifically customized for the customer right from the start until the car it is built. The BTO cars flow through Volvo´s supply chain and are required to arrive at the dealer at the right time, at the right quality and quantity in order to meet customers' expectations regarding delivery promise.

The BTS cars usually have more standard features specific to a particular market than BTO cars which means that Volvo can offer shorter lead times on these cars. The BTS cars have been configured to a forecasted demand but can be adjusted by the dealer to specific customer requirements with aftersales modifications. In the US market, many customers prefer going to the dealership and buying a car off the shelf because they want their car with a short lead time (Volvo Cars, 2021). When it comes to the distribution of BTS cars they are allocated to the customer later down the pipeline in the supply chain and these cars are either shipped to the dealer or kept in the stock location for some time. While at a stock location there is a need to perform maintenance on stocked cars to keep the right level of quality and charging level with electric vehicles before receiving an order for the car from the dealer.

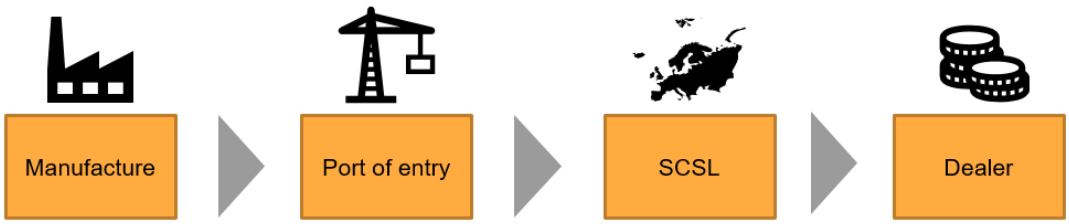
Similar to other OEM´s, Volvo partners with other actors to perform activities like sales and transportation through their dealer network and collaboration with Logistic service providers (LSP). The LSP's help Volvo to transport their cars to the dealers through road, railway, and by sea globally but also perform smaller services as PDI at the stock locations and is a vital partner in accordance with (Banks & Hajibashi, 2021). The dealers in the next step are now performing all the handover parts and have a vital role in handling the interaction with the customers, providing them with information and handling after-sales regarding maintenance, services, and representing Volvo Cars as a brand. Additionally, dealers handle all the activity of test driving when customers visit the dealership and have direct contact with the customer. This is the actual physical interaction between the brand and the customers, representing last-mile delivery which makes this an important touchpoint for the dealers to perform professional handovers and provide the customer with a premium experience. Volvo Cars state that a satisfied customer will spread the word to their friends and families and directly affect the brand image and future sales which is in line with Yavorsky et al., (2020).

- *How does Volvo's business model look like regarding the distribution of cars?*

In accordance with Brandtner and Freudenthaler-Mayrhofer (2020) Volvo cars use the wholesale model when distributing cars. This model is very traditional and commonly used where OEMs lease or sell their cars through their global dealership network. Volvo Cars has a global footprint with factories in Europe, the US, and China where their cars are produced. When the cars are assembled, Volvo plans and books for transportation of the vehicles which are then distributed to the different markets.

From the European market perspective seen in Figure 7, the cars are produced in one of the global factories in EU, US or China. Cars produced in US and China arrives through the port of entry in Belgium, cars produced in EU are distributed to the market sales companies stock location (SCSL). The car is finally distributed to the dealer, currently, the last mile, where the customer comes and picks it up as a handover point.

Figure 7: *Volvos distribution of cars in EMEA from manufacturer to dealer.*



4.2 Benchmarking last-mile delivery services in e-commerce compared with the automotive industry

This chapter will provide an overview of the most important challenges and opportunities collected from the interviews and the literature. These challenges and opportunities are important to understand and keep in mind when benchmarking last-mile delivery of cars with e-commerce in order to find potential synergies.

4.2.1 Challenges when benchmarking with e-commerce

4.2.1.1 Complex markets

The automotive market is very complex in its nature because it is popular to customize the car with different specifications and preferences globally. E-commerce products are more generic with a bunch of different standard models, but the customer cannot usually customize the product to the same level as with a car. There are

millions of possible combinations and variations the customer can choose from for a BTO car, but the iPhone produced by Apple has very limited options for customization even though it's a global product. A car is also for many people one of the biggest purchases of their life and the value of the product affects customers' demands on the product.

Volvo Cars are operating in different markets, which results in different cultural behavior of customer expectations. Therefore, customers also have different demands and preferences depending on which market one is looking at. Considering the global markets, it is not easy to develop one optimal solution that fits all markets. Therefore, the offers need to be optimized to the market Volvo is configuring their car to.

According to Volvo, cars are mainly BTS in the US because customers are used to visiting dealers and buying the car directly from stock with minor aftermarket modifications. Therefore, US customers expect short lead times when they buy a car, which means the dealers must have extensive facilities to accommodate big stocks of cars. Volvo also states that laws and regulations prevent OEMs from bypassing dealerships in the US market, making direct sales and last-mile delivery options limited in the current setup. In APAC, the customer prefers to customize and configure their cars, which results in a lot of BTO cars. According to Volvo, many of their customers in China like to customize their cars with different features and specifications to feel unique. This means customers are willing to wait longer for their dream car, thus making BTO cars more popular in this market. In APAC, there are also different laws, regulations, and cost of labor compared to the US market, meaning more creative solutions for last-mile delivery involving more staff would be possible. On the other hand, the European market has a combined demand for both BTO and BTS cars, with a high adoption for both cashed and leased cars. The establishment of car fleets, company cars, and leasing has been a raised demand from customers, which is quite different from both the US and APAC markets. Considering these different markets and customer behavior when configuring a car, Volvo Cars cannot establish one optimal solution that fits all the different market demands.

4.2.1.2 Complex product

Delivering cars is challenging compared to delivering, for example, commercial products, which companies like Amazon do. This is because cars are more complex due to their size and value. The size of the cars is a problem when it comes to transport options and the last-mile delivery. Smaller commercial products that fit in boxes can be stacked and consolidated in trucks and transported to a cross-docking center where the product is distributed to the final store or customer in smaller vehicles. Cars require more extensive and specialized trucks for transportation and last-mile delivery to the end customer. The value of a car is another factor that adds complexity to the last mile delivery. According to Volvo, the customer feels a need for physical interaction with the car, asking questions, and understanding the product and features because of the car's high value. In comparison, a person can order a commercial product without physical interaction before purchase because the value and complexity are often low. The expectation of the handover also differs between a car and a commercial product because of the value of the product. The commercial product can arrive at the customer's door or mailbox without a physical handover. According to Volvo, customers expect the handover of a car to be more personal and include a delivery person with knowledge and expertise that can answer questions and

help the customer. Therefore, the size, value, and complexity of a car require different capabilities for the last mile delivery than commercial products. Cars can be configured to a whole different level of complexity, including different features, packages, and colors of exterior and interior compared to what one can order when purchasing commercial products. This affects the possibility of short lead times and handling the returns smoothly due to less standardized product configurations. When consumers are ordering commercial products online, one often orders an item in different colors or sizes to try them out at home and later return the ones that do not suit the customers. This whole process is rather hard to implement for a car purchase due to its size and value. The establishment of a configured car which a customer has ordered and later on regrets and wants to return results in a more complex situation since it could be challenging to find a customer that wants exactly those configurations that the previous customer wanted. Another challenge for the automotive industry is the "14-days free return," which the e-tailer offers with their commercial products. This offer contributes to OEM's and dealers may increase their tied-up capital if customers decide to return their ordered car.

4.2.1.3 Environmental and Economic aspects

A significant challenge with distribution goods within the automotive industry or commercial products is the truck utilization and CO2 emissions when performing the transport. Trucks are often not fully loaded when delivering goods and even less loaded when returning, resulting in a great challenge of making the transport efficient. Due to this and earlier operation, it is more efficient regarding economic and environmental aspects to distribute cars to dealers because one truck can bring many cars at once where a customer later enters the dealer and picks up their car. The challenges to overcome are making the transport of cars in greater scalability and using electric vehicles to have less impact on the environment. However, investing in a fleet of electric vehicles affects the economic aspects, requiring a clear understanding of investment return. The scalability is closely correlated with high urban cities and regions, which also comes with challenges due to congestions and small unloading spaces for cars. For commercial products, carriers may use smaller vehicles or even smart vehicles to efficiently distribute the goods through crowded cities compared to what is required when delivering a car on a truck. Commercial products are quickly dropped off at post offices or in the customer's mailbox, which is not as easy to implement when delivering a car to a customer within the inner city. The infrastructure adaptation is not in line with the increasing population in urban cities. It is not built for home delivery of big trucks containing cars which makes the transportation of cars within these areas a significant challenge (Polestar, 2021).

4.2.2 Opportunities when benchmarking with e-commerce

4.2.2.1 Customer data

The E-commerce industry is beneficial for the collection of customer data for numerous reasons and due to several important touchpoints, that exist when a customer is making a potential car purchase, the customer data could make the whole

customer journey more optimized. The company can give recommendations to the customers depending on previous purchases, target ads on new models, products, and services, update and provide customers with relevant individual newsletters and campaigns to promote more sales. In accordance with Slof, Frasincar, and Matsiiako (2021) customer data also provides the company with a 360 view of the customer in all touchpoints, meaning the customer does not have to repeat themselves.

Customer data is of high importance to collect due to the fact that it could provide Volvo Cars with consumer insights about what the customer wants, having direct interaction via online channels instead of indirectly through the dealers. Additionally, it enables the ability to adapt test drives and showroom visits depending on customers' previous experiences with similar cars and models to create a more personal experience.

Volvo´s affiliate Polestar has come further with these implementations of collecting more direct customer data. What Polestar does to collect customer data is that they have direct contact with the customer in their space where customers can see the car but all orders are placed online. This gives Polestar direct interaction and information on what people actually buy and what they are looking for. Polestar then needs to work with this data so that the speculation is still speculation but based on a calculated background. When it comes to the volume, they have both speculation and ambition that they can impact with different tools which means they can choose how big their pipeline will be and they can analyze this and have demand-driven forecasts. This all comes down to predicting what customers want by getting direct inputs and turning the data into more sales and better customer service.

4.2.2.2 Customized service

Even though all the challenges of benchmarking with other industries there are some factors that can synergize well in the automotive industry. Volvo mentioned the possibility to create a customized service for each customer by creating an account, called Volvo ID, similar within e-commerce before purchase with different delivery options depending on the customer demand and experience discussed by (Slof, Frasincar, and Matsiiako, 2021). By adopting omnichannel establishment, the customers have the possibility to use different online and offline channels in line with Hübner et al., (2016). This makes it possible for customers to choose whether they wish to collect their car at a local dealer, a handover point, or get it delivered to their homes, workplace, or nearby area either by truck or car depending on markets. The service could also include different return options depending on the customer preferences similar to how e-commerce is established. The customer has the option of sending the commercial product back within 14 days for free either at post offices or returning the product to one of the brand's physical stores. Volvo mentioned a future scenario with the possibility to deliver a new car and pick up the customer's old car for return or the customer can drive the car by themselves back to a dealer for drop off depending on regions and markets.

4.2.2.3 Coordination between actors

The establishment of a different last-mile delivery for the OEM's which other industries are using as Amazon requires a more developed operation which is efficient coordination between actors. Amazon has managed to do this with the help of their platform in order to both communicate with their supplier and their customers which

has been proven to be very successful. Polestar states that *"if amazon started off with building a website where you can buy a book and then sell this book, and then they ask the customer to go to the bookstore and pick up the book, I think Amazon would not be in the business today with that model. But what did they do? They say, hey, I will deliver it to your home. I make sure you can easily order it and easily get it and they realize it really comes down to if you let the customer down on the delivery promise date one or two times then the customer will order somewhere else. It's a mixture of easy access to what you have when you are browsing from your own device to a system back that fulfills exactly what you order and you know you have it at a certain date."* Taking this statement into consideration, the platform is a vital enabler in order to establish the coordination between actors in order to be competitive among competitors and make the customer journey as good as possible.

The example illustrates well what makes amazon successful and the importance of having a platform to support the business model and coordination for delivery precision. A well-developed platform could enable many beneficial outputs such as the communication and coordination between Volvo, the third-party actors, and the end-consumers. Customers may have different preferences regarding pickup destination and date depending on where they live. Therefore, actors need to actively cooperate with customers' requirements and then it is necessary to complete the handover with customers quickly and professionally without taking up too much time. This platform is in turn crucial for efficient operational activities including track and trace of products during transport but also having contact with the customer on where and when to deliver the car. With the help of a platform, the LSP can easily agree on what location where to deliver the car to, for example, If the customer lives in an urban area where home delivery is difficult one can agree on another location close to the customer's home but easier for the LSP to offload the car.

4.2.2.4 Precision more important than Speed

Today customers expect speed when having their products delivered to them and are often requiring delivery within days or up to a week of commercial products which affects the requirement of speed deliveries of cars as well. Although the speed of delivery is important it can be found in the express industry that delivery precision is more important than delivery speed for customer satisfaction (Volvo cars, 2021). As earlier mentioned by Polestar it comes down to making sure that the customer can trust the delivery date in order to achieve recurring customer purchase. Porter (2008) mentions the competition with commercial products in the e-commerce market is high, other companies provide the same or similar product, and prices and switching costs are low. The automotive industry has similar characteristics and therefore reliable last-mile deliveries are crucial to keep and attract new customers.

- *What kind of third-party last-mile delivery services exist in other industries relevant to OEM's distribution of cars?*

***Table 3**: Challenges and opportunities of benchmarking automotive with other industries.*

Challenges	**Opportunities**
• Complex markets	• Customer data
• Complex products	• Customized data
• Environmental aspects	• Coordination
• Economic aspects	• Precision more important than speed

The concluding challenges and opportunities are listed in table 3, where one can see that establishing a different last-mile delivery within the automotive industry has an entry barrier to overcome regarding the customer demand and handover requirements from Volvo. Due to Volvo having different customers worldwide with different customer requirements of their wanted car, the standardized offer is rather hard to generalize, making the markets complex to adapt to. From the literature study and the interviews, one can also conclude that cars are in the current situations rather hard to deliver to customers home or close to their home the same way as original commercial products because of Volvo's requirements regarding their handover. The handover point is a touchpoint where Volvo and its customers ask for a more developed delivery than expected when delivering commercial products, contributing to a significant challenge. Additionally, regarding the environmental and economic aspects, one can conclude that both the infrastructure and the scalability are something that needs to be elaborated on in order for these two to be operated efficiently. As argued earlier within the chapter, a new last-mile delivery of cars needs both investments of electric vehicles, additional delivery alternatives, and expertise in performing these handovers. Last-mile delivery of cars is new and in an early stage, and there is a lack of services and a gap between capabilities from LSP and OEMs on the market to fulfill the complete last-mile delivery service. It is not easy to compare cars and commercial products because of the complex market and product of cars.

The collected data from the interviews with internal and external actors provides several opportunities seen in figure 8 for Volvo to improve their operation and increase their competitive advantages. Customer data has been the first identified enabler and can help Volvo collect more information about their customers in the present state and understand trends and customer expectations within the future to faster adapt to these expectations and be at the forefront of developing their business model. With the help of a more efficient CRM system, Volvo can improve their customer experience, which is beneficial for Volvo and the customer to make them feel unique. In order to establish the second enabler, which is customized services, Volvo needs to use the customer data regarding customer behavior and trends to gain market shares and having the customer more involved with choosing delivery options. Volvo should offer similar delivery options, which is seen in other industries as used with commercial products. From the interview with the Scandinavian LSP, one can identify that this LSP can meet most of Volvo's requirements regarding their distribution of cars to the customers, including handover and returns. The

Scandinavian LSP may also handle the coordination between different actors in a more efficient approach by the third enabler. The coordination between actors refers mainly to the communication between the actors to make the delivery of cars as efficient as possible and meet the demand of customers' requirements. This can be seen within the e/retailer industry, where companies have established the omnichannel business to offer customers more flexible pick-up and return options. The coordination led to the last enabler, which stated that delivery precision is more vital than delivery speed, especially regarding cars. A customer who has been configuring a car is more interested in having their car delivered to a specific date and time where the pick-up suits the customer's schedule. It can be seen within the e/retailer-industry, where the customers can have their home delivery between timeslots when the customer is actually at home.

4.3 Consumer trends within automotive

4.3.1 Digital interaction

According to Volvo, customers still visit the dealer before their car purchase, both for getting the expertise and information from the seller and the physical interaction. However, many dealers are only offering the possibility of purchasing a car in the physical store without digital interactions. According to Volvo, the downside of only selling cars through dealers is that customers often get biased information and negotiating with a seller can be stressful for the customer and more inconvenient than the customer wants. Customers are getting more used to buying products online, where the impact of covid-19 has been an enabling factor. The online distribution offers short delivery lead times, and the delivery options are plentiful to meet every customers' needs. The online segment also provides a broader segment that enables the customer to do their research more quickly and efficiently than the process would be if interaction with different brands and models in physical interaction. Due to that, more customers now have more access to all information through digital channels twenty-four hours of the day. This increases the urges for OEMs and dealers to improve their online channels to reach out to their customers.

4.3.2 Ownership

Volvo has detected a change in the customer behavior regarding their cars in Europe, the Middle East, and Africa (EMEA), which has gotten them to act accordingly. Customer buying behavior changes from the typical ownership where the customer cash the car or commits itself to a longer time frame as leasing contracts. Instead of these commitments, customer demands have moved to convenience and usage, which means that the trend moves from a willingness to wait with long lead times for their dream cars to demanding short lead times for their car with a complete care package. This applies especially in cities with high congestion and increasing demand for mobility. Subscription models and car-sharing are becoming more popular. In the European market, it is popular to lease the car, and customers are demanding more and more extra services and care packages. A complete car package includes insurance, warranty, changing of the tires, and possibly charging infrastructure for electric vehicles. This trend has been above all more and more enlightened within the inner city and urban regions due to that customer's fluctuating demand for their car.

Some days and weeks, the demand might be frequent for using the cars and other times less frequent; therefore, the possibility of only paying the car for the actual usage has been raised.

In order to capture the new customer demand, Volvo has adopted a business model for those looking for convenience and flexibility of car usage by their subscription service called CarebyVolvo (CBV). CareByVolvo is offering a subscription model where the customer signs their contract on a three-month notice period which differs from the leasing arrangement. The differences between the leasing and subscription models are the level of service included in the subscription model and the flexibility to end the subscription within a shorter time frame, and the ability to switch to another car model compared when leasing a car. Additionally, Volvo Cars offer customers this possibility by their fleet M Mobility. The customer can book a car online when it fits the customer's schedule, pick the demanded car and pay online for the journey, including the insurance, gas, and potential toll. The customer, later on, replaces the car to the original location.

4.3.3 Millennial customers

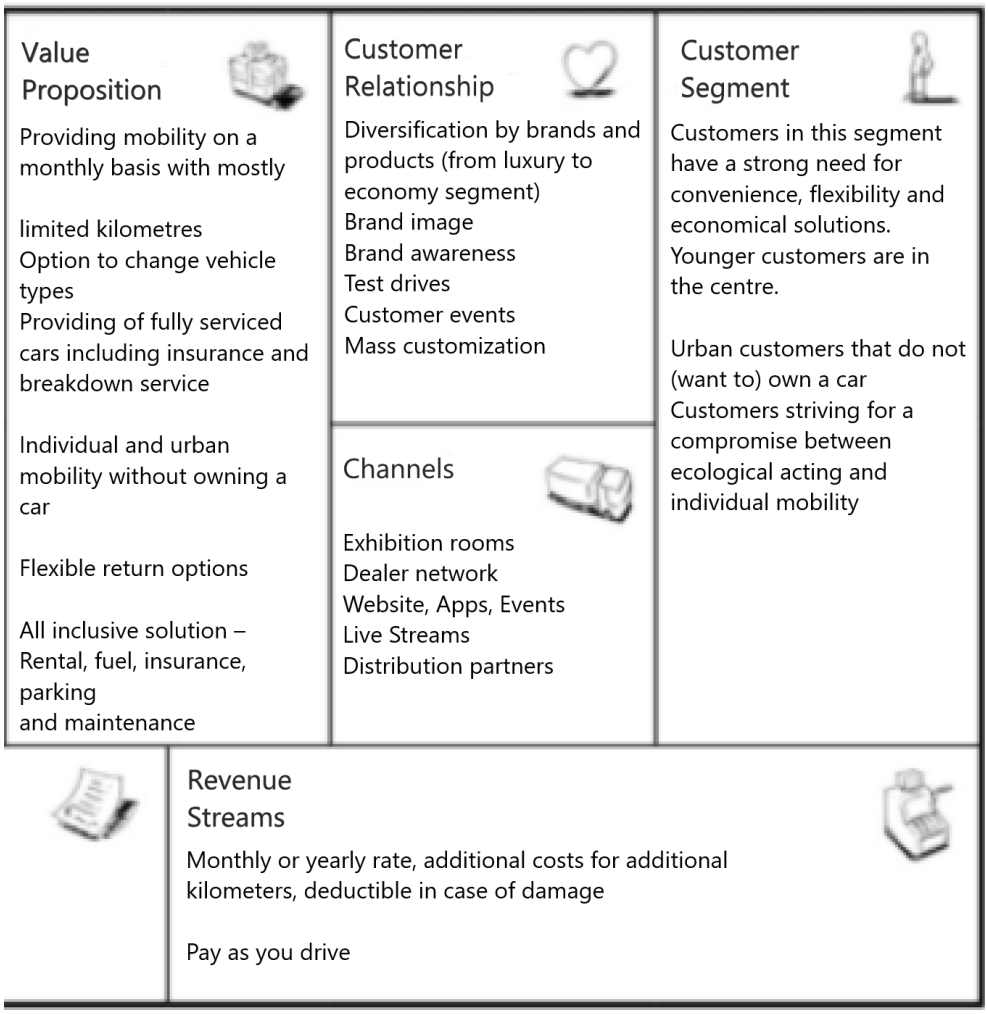
Millennials are an increasing customer segment in today's automotive industry, and these customers generally have more awareness for environmental sustainability and are more selective when choosing a mode of transportation. In general, they are more eager to adopt different mobility solutions like car-sharing platforms and electric vehicles. These customers are also less interested in paying for insurance or parking fees when the car is idle. Since cars are idle most of the time, the possibility of sharing cars with other individuals can result in an increase in utilization, less traffic at parking lots and pavements. Volvo also recently launched a new concept in EMEA where their subsidiaries Lynk & Co provides the customers the possibility of buying a car or subscribing to a car with a notice time of only 30 days. The customer who buys or subscribes to a Lynk & Co car is called "paying members" and can rent their car to other individuals called "Non-paid members" for a smaller fee in order to decrease their monthly payment.

- *How do trends of consumer expectations affect Volvos traditional business model regarding last-mile delivery?*

Today's customers' trends and demands are changing. OEMs need to transform their business model accordingly to satisfy customers' needs of convenience and flexibility by providing better online channels to improve customer experience. Digital interactions, car ownership, and millennial customers are all factors that affect how OEMs create and capture value for their customers in the future. In figure 8 the value proposition is changing because customers are less interested in car ownership. They want convenience and flexibility from new mobility solutions like car subscription models or car-sharing platforms. This also matches the customer segment where the new generation is asking for another concept that is in line with Brandtner and Freudenthaler-Mayrhofer's (2020) emerging business model in the automotive industry. Regarding the channels, one can see that online channels are becoming an increasingly important factor in communicating with customers and establishing the

actual purchase. Taking these factors into account, Volvo has already begun to provide these services with M, CareByVolvo, and their affiliate as well to cover the transforming needs of customers.

Figure 8: *Adopted emerging front stage business model for OEMs combined with empirical findings (Brandtner and Freudenthaler-Mayrhofer, 2020).*



The agent model in figure 4 by Schmidt et al., (2019) presents how this transformation requires Volvo to act in order to go from offline indirect sales through dealers to direct sales with offline and online channels. From the customer's perspective, one can either communicate and order through the dealers if that is what the customer wishes for and make the transaction directly with the OEM. The agent model enables customers to access more digital information, including booking test drives, interacting directly with the OEM online, and choosing delivery options. Previously, customers' main delivery option has been to go to the dealer and pick up their car themselves. However, when purchasing a car online, the customers nowadays expect to have the possibility of having their car distributed to their home instead. According to Volvo, the more online sales are being made, the more the customers' expectation of getting their car distributed either to their home or a location closer to their home than at the dealer increases. Due to Covid-19, the physical interaction has been limited. This trend has already been seen as increasing

demand in the American market and is now heading to the EMEA market. Volvo has now started to have more digital interactions with customers to show videos and share information about the car from their showrooms. Some cars have been distributed directly to customers' homes or a nearby location to pick up their car and by the help of a digital key, which has enabled a digital handover. This has reduced the time spent on the physical handover process and interaction and led to providing more options for the last-mile delivery.

4.4 Digital and operational capabilities within the direct-to-consumer strategy

4.4.1 DIGITAL CAPABILITIES

4.4.1.1 Platforms

The first steps within car production are not very interesting for the customer. However, when delivery is getting closer, the customer demands more transparency when and where the car will be delivered to the customer. This capability is more developed for commercial products where customers can follow their orders close to real-time. The current processes and digital systems are adapted to the traditional business model and the wholesale model, where there is room for improvements. Volvo needs to develop its current platform to better communicate and coordinate between them, the LSP, and the end-consumers. Volvo Cars further needs to develop capabilities within last-mile delivery, including home delivery and returns

There are a few digital capabilities required to improve the direct-to-consumer strategy and customer experience. First of all, there is a need to establish a modern digital platform capable of handling all types of information about customers and orders. A well-developed CRM system can offer this segment where information about the customers can be handled efficiently to improve the customer experience. Different actors have different systems, and their CRM system needs to be integrated with all actors to share relevant customer data. The customer data should be used to analyze customer needs and preferences to retain more happy customers and more future sales. Amazon is a role model for collecting customer data, analyzing the data to provide a better customer experience, and getting loyal customers that end up buying more of their products and services. Performing these types of digital capabilities is very difficult without a sophisticated platform and a well-organized collaboration established with experienced actors and LSP with the right digital capabilities to handle the last-mile delivery like Amazon do. The system needs to offer customers the ability to order the product, schedule services or maintenance, and schedule returns. The ability to communicate should be easy and efficient regarding making the test drives, determining the delivery location and time, proposing a date for service, and where the LSP can pick up the car for delivery and return.

Dealers and customers want more transparency to coordinate better handovers, thereby improving the customer experience. This means new requirements of efficient communication through digital platforms. Currently, all dealers have access to Volvo´s ordering system, where dealers are ordering cars and gets information with order updates. If Volvo decides to use dealers as a place for delivery, there might be a

need for a different type of communication. Internal systems have been developed over time to streamline current traditional ways of selling cars. However, the last mile is a new dimension that requires new development and integration for communication and coordination of handovers to end customers. Their systems need readjustments to communicate and provide their dealers and customers with proactive information regarding the delivery precision to meet customers' demands of transparency and customer experience

4.4.1.2 Omni-channel & Customized service

There is a need to establish a good customer journey through both online and offline channels where the same information about the customer can be easily accessed in all customer touchpoints for a more personal experience in an omnichannel. The omnichannel can be established by connecting the consumer journey from site to store where the customer starts online but can also visit stores where they can get help to place an order online. There should also be a possibility for the customer to choose how the car is delivered because a customer in e-commerce who orders something online is not expected to go to a certain place to pick up the product. At the same time, a car is not a commercial product, it is about having a good dialogue with retailers who currently have the primary relationship with customers and team up with them. Customers who once have purchased a car from a brand or dealer, often end up at the same company and purchase their products again if the experience has been good. There needs to be a close bond between the customer and the company in order for the customer to feel trust and be comfortable buying their products or services. Volvo wants to mediate their expertise and provide a clear hallmark about what the Volvo experience should be like at dealers and handovers in order for the customer to have the same experiences regardless of touchpoint.

Although digital channels are very important there needs to be a good connection to offline arenas for OEMs to meet the customer and to find out customer preferences in order to be responsive. The aim with Omni channels is to make the interaction as personal as possible and make sure that all channels in all different points of contact have the same and all relevant information about customers. There is a great challenge to have a 360 view of customers in all situations and to be able to create customer profiles. Customers may need more help if it is their first car, especially if it is an electric car with different setups and charging stations, they have a lot of questions and need different support.

Taking this into consideration, most offline arenas have a long standard product review but there is a need to adapt the product review for different customers' needs depending on their previous knowledge and experience about Volvo and their different car models. Volvo needs to understand the customer's perspective and their needs from when the order has been placed on the car all the way to the handover point. This enables the Volvo representative to better prepare the handover and focus on the right service for that specific customer. Currently, it takes the handover process on average two hours with all settings and setup of the car according to Volvo. One enabler in order to shorten this time is to move some of the physical interaction activities into a digital touchpoint upstream where customers could get more digital information at an earlier stage. For example, have interaction with the customer in an app so the seller can focus on delivering a wonderful experience for customers where they can have a more discovering approach to the car at the handover. However, due

to the fact that cars are now more digitally advanced with software and regarding continuous upgrades of these, it's important to be able to communicate with the customer during the whole journey.

Volvo has a lot of different customer segments and there is not one customer journey that fits all which is a challenge to overcome. Regarding car sharing model Volvo cars have their own car sharing service called M. M-customers have the car during a short time period and the introduction of the car is not fully developed and are in need of digital capabilities in order to share all information about the car and for the customers to connect with the Volvo support team. Several surveys have been performed by Volvo to acquire customers' habits, experience, and what can be improved. Volvo needs to collect data about the customer to customize the service. The service and last-mile delivery can be totally customized depending on the customer's previous experience with the product resulting in making the customer journey more convenient for the customer.

4.4.1.3 Data security

There is a need for data security regarding handling customer personal data because there will be a lot of digital interactions between the customer and the OEM. The car will be connected to the OEM's platform in order for them to see when service and maintenance are due in order to support the customer with proposing a date and booking a slot time at a local dealer for service. If the OEM offers to pick up and deliver service, they should also coordinate these activities digitally through the platform without this information reaching unauthorized persons. There is a lot of personal data from the customer to create these digital profiles that need to be considered due to laws and regulations with GDPR in Europe. Personal data is when information can be connected to a specific customer, as the name, personal number or the phone number of the customer that the OEM needs to deal with in the right way. Protecting customer data and ensuring customers are safe with the OEM is a core capability to create trust between the company and its customers.

Another thing to take into consideration is the process regarding the transaction through either online or offline channels. Security is essential, performing a credit check, making sure that the car is handed over to the right person, and checking if the financing is resolved at the dealership or online verification on the website before delivery. This is very relevant for last-mile delivery and puts demands on up-to-date information on the platform. The OEM needs to ensure they have good data security and do not deliver the car without a confirmation of transaction or deliver the car to the wrong individual.

4.4.2 OPERATIONAL CAPABILITIES

4.4.2.1 Logistic Service Provider

There is a need to collaborate with suitable LSPs in different markets and regions who can provide a total solution, including a Pre-Delivery Inspection with a functionality check of the car and adaptation to the specific market requirements for every car. Additionally, pick up and deliver vehicles to dealers or direct to consumers with track and trace information of the cars. The LSP also needs experienced people who can deliver the cars to the customer's house or nearby and pick them up again with the

right type of truck. Which type of trucks are best suited for delivery and pick up depends if the customer location is in an urban city, in the countryside, or even on a specific market. In some cities, there might be restrictions on how heavy the truck is and what fuel they are using. Perhaps it is not allowed to drive a truck with diesel like most trucks use today because of the emissions in urban areas. In discussion with Volvo, it was mentioned the alternative of delivering the car on its own wheels depending on market preferences to reduce emission and improve mobility in urban areas. In general, customers in different markets has different perceptions about the meter indication and how many miles is acceptable on a new car when receiving it. The customer allows their new car to have a maximum of 100-150km on the car's meter indication in the UK market. This makes transportation of a new car on its own wheels possible in this kind of market. However, in China, the customer allows a maximum of 5km on the meter indication meaning the car needs to be transported on a truck, at least to the customers local area. However, if the car is transported on its own wheels to the handover, the driver can be a salesperson with the right expertise, realizing a professional handover with less headcount in a more cost-effective way.

By 2030 Volvo has an ambition of reducing their emissions and the goal of having fully electric cars. Therefore, Volvos' LSPs need to invest in their electric vehicle fleet to match Volvo's sustainability vision and demands of reducing emissions. Modern yards with electrical charging stations are also vital. They should be located close to cities to minimize transportation distance and cost for the last-mile delivery to dealers or direct to consumers.

4.4.2.2 Professional handover

Regarding handovers, the LSP should have capabilities in line with the OEM´s requirement on what they expect when wanting to radiate professionalism. One challenge regarding handovers is who should perform them and what capabilities are required to deliver a premium experience to the customer when delivering the car. When the customer visits a dealer for the handover of the car, it is a well-developed retail process of handling the transaction and helping the customer with their questions and connecting their smartphones to the software in the vehicle. This service is more problematic to replicate when delivering the car directly to the consumer through an LSP who lacks the required skills and knowledge to help the customer at the handover. Additionally, timeliness and good quality of goods should be guaranteed where the goal is to deliver cars to the customers in good condition and at the right time.

The last step within the customer journey is a critical touchpoint where the company and the customer have face-to-face interaction were the outcome will affect the customer experience. Therefore, it is essential to be service-minded and dress and act appropriately like a Volvo ambassador. When delivering a car with premium service, the driver or someone in the truck with the driver needs to have the competence to understand the customer needs and answer all questions asked by the customers about the car, administration, software connection, etc. The handover personnel represent Volvo as an ambassador and have a vital role to make the customer experience within this last step as good as possible to have the customer both happy with the handover and share the experience with family and friends.

4.4.2.3 Handling returns

With the Care by Volvo subscription model, there is a need for Volvo to manage the cars after the subscription has ended. Currently, the subscription model is relatively new, and few cars have been returned after the subscription has ended. To enable multicycles in subscription Volvo, need to refurbish the returned car before it is ready to deliver to a new customer.

Handling the return flow of cars has been identified as one of the most challenging parts due to several different factors. When handling the return flow of cars, the optimal solution would be to have a truck with an entire truckload that will deliver all the loaded cars at the same place where cars are needed to be picked up and distributed back to a modern yard or a dealer. This would result in 100% utilization in both ways and an additional consolidation of the cars could be made at the dealer or a modern yard. In order to increase the utilization of distribution, one can establish yards closer to the cities to transport full trucks of goods to the yard and then divide the shipment into smaller vehicles for the last-mile delivery. Considering urban cities, the use of modern yards is crucial due to different restrictions on what vehicles are legally allowed to drive through the cities and the amount of congestion trucks cause. When a car has been returned to a yard, the car needs to go through a refurbishing service and charge if it is a hybrid or electric vehicle before being delivered to a new customer. The reason for distributing the cars to a yard instead of a dealer is because the space at a dealer is often limited and might have limited charging stations and areas where the refurbishing service can be done.

4.4.2.4 Identify and prioritize BTO and BTS

The production of BTO-cars and BTS-cars is, as discussed earlier, slightly different depending on which market one is looking at, for example, in China, where many customers prefer BTO-cars. In the US, it is the other way around where the customers want to enter the dealers and pick up their car the same day, resulting in a demand for BTS cars. Volvo has found that it is of high importance to identify if a car is produced as a Build-to-order car or a Build-to-stock car and sees this as a vital capability. This identification gives the possibility of prioritizing a BTO car over a BTS car. The reason for wanting to switch priority on the production of cars is due to increased customer satisfaction. If a BTO car has been delayed in production, it is of high importance to decrease this delay and make this a number one priority over a BTS car that will only be stored at a dealer. A BTS car is often not that dependent on a critical lead time as BTO cars because BTS cars are often stored for a shorter time in an area before being delivered to the actual dealer. The ability to identify and prioritize the right cars will support delivery promise and delivery precision to the end customer. Furthermore, it is critical to prioritize BTO cars because it is a customer order and can spread the word to friends about their shopping experience and generate more sales.

- *What are the digital and operational capabilities needed to support the direct-to-consumer strategy within last-mile logistics?*

***Table 4**: Concluding table of the Digital and Operational capabilities discovered in the empirical findings.*

Digital capabilities	**Operational capabilities**
Platforms	Logistic Service Provider
Omni channels	Professional handover
Customized service	Handling returns
Data security	Identify and prioritize BTO and BTS cars

The collected interviews combined with the literature review regarding the digital and operational capabilities needed to support last-mile logistics are listed in table 4.

A well-developed platform is a critical tool for communicating with the involved actors regarding when and where the car should be delivered and follow the order in real-time. After the last-mile delivery, the platform may help the customer answer how the car is working and arrange maintenance, services, and the return flow. From benchmarking with the e-commerce industry, Omni-channels have been identified as a more standard requirement from the customers' perspective, influencing customers' requirements of how the OEMs should operate. The omnichannel implementation has a vital role in fulfilling customized services due to its seamless shopping experience and an integrated database of customer data and behavior. In addition to these capabilities, data security is a factor that customers are worried about, especially when making an order of a more significant amount for a car purchase. Therefore, data security is vital to meet to gain the customer's trust and prevent infringement as fraud and identity theft.

In order to establish the operational capabilities to meet the demand of last-mile delivery within the automotive industry, one needs to establish several points. Logistics service providers have a vital role in performing the distribution of cars to the end-consumer with the offer of making home deliveries to the customers or a location closer to the customer than the dealer's location. Regarding premium cars as Volvo, customers expect professional handovers, including delivering a car that has gone through a PDI, being in the proper condition, and informing the customers about all car features when being delivered. When making the delivery of a car, the LSP needs to collect the old car if it is needed from the customer and return this to a local dealer or a modern yard where refurbishment can be performed. These performers are all established to satisfy the customer's experience and create a unique customer journey. Additionally, to these capabilities, the identification and priority of BTO-cars and BTS cars has been a repetitive subject where the OEMs should hurry up a BTO to meet the promised delivery date.

5. Discussion

This chapter will provide a SWOT analysis based on the empirical findings from the interviews and the literature. There will also be a discussion about Porter's five forces including the effects of implementation, economic and environmental aspects regarding last-mile delivery.

5.1 Evaluation of Volvo's wholesale model

Table 5*: SWOT analysis of Volvo cars traditional wholesale model towards last-mile delivery strategy.*

Strength	**Weakness**
• Dealer network • Premium product • Professional handovers at the dealers	• Platforms • Different IT-systems on markets and at dealers • Indirect customer data from dealers
Opportunities	**Threat**
• More efficient communication • Increased customer experience • Understanding of customer behavior	• Disruptive competitors • Demographic • Politics

5.1.1 Strength

Currently, Volvo has the digital and operational capabilities to meet the customer demand of the traditional wholesale model, including dealer network, premium product, platforms, and professional handovers. Volvo is seen as an OEM with a very successful operating business and has excellent strengths on all levels. However, the transformation to the direct sales strategy requires an extended development on all these levels to meet the requirements when establishing the last-mile delivery to end-consumers (Polestar, 2021). Volvo´s affiliates Polestar and Lynk&Co in addition to their subscription model, Care by Volvo, and their mobility and car sharing service, M, are operating more towards what Volvo Cars strive for operating in the future but are still in an early stage with several levels to improve their way of working regarding last-mile logistics. These affiliates, subscription models and car sharing models are strengths for Volvo to target different customer segment and are operating as disruptive companies to take additional market shares but also for Volvo to understand customer behavior in the future.

5.1.2 Weaknesses

According to (Pérez-Amaral et al., 2020), the amount of data that can be collected today has never been as large as it is today. In order to be able to handle this amount of customer data, Volvo needs to develop their platforms to be able to analyze

customers' behavior and integrate it into their CRM system. This also correlates closely with the implementation of an omnichannel where customers are offered a seamless shopping experience (Hübner et al., (2016) whether the interaction between Volvo and the customer is online or offline. By establishing an omnichannel and a more developed CRM system and platforms, Volvo has a greater possibility of creating customer profiles, communicating directly with customers, and making the communication with LSP and dealer more efficient. Moving from the traditional wholesale model towards their new direct-to-consumer strategy, one can identify Volvos platforms, IT systems, and indirect customer data collection as their weakness.

5.1.3 Opportunities

Much can and needs to be done regarding Volvo opportunities to move towards the direct-to-consumer strategy and capture customer trends and behavior (Volvo cars, 2021). Volvo's collaboration with their dealer network is already very successful. A dialog with additional actors such as logistics service providers has developed, which is also vital to move towards direct-to-consumer distribution. With the help of an LSP with developed platforms, truck fleet, and expertise Volvo can solve many of those challenges that the implementation of their new distributions face (Scandinavian LSP, 2021). A market leading LSP can increase the efficiency of communication between the involved actors, increase the customer experience, and collect data from the customer to better understand the customer behavior. However, there is one challenge that Volvo still faces regarding this potential solution, and that is the requirement of professional handover, including a detailed introduction of the car, which in the current situation, no LSP can provide without the right training.

5.1.4 Threats

There is always a threat of disruptive companies or business models in the automotive industry because of the fierce competition. In recent years, new mobility solutions where usage is more important than ownership like VOI and Uber have gained ground in urban areas. There might be more innovative alternatives on the way. There is also a threat for Volvo when it comes to politics, laws, and regulation in different regions in the world. As mentioned in the section about complex markets, there is currently an issue in the US market where laws and regulations, according to Volvo, prevent OEMs from bypassing dealerships when selling a car. This makes direct sales and last-mile delivery options limited in the current setup in that specific market. The threat of demographics is another possible concern for last-mile delivery. Suppose a customer lives far out in the countryside. In that case, it might not be economically or environmentally justified to perform transportation by truck of one vehicle and then drive the truck back empty. As mentioned in the section about LSP, there can be rules established regarding vehicle types and weight of the truck in urban areas and cities with large populations and high congestion. There can also be regulations on emissions from diesel trucks which are mainly used today, and few alternatives of LSPs who can offer fully electric vehicles for these transports.

5.2 Threats and competitors

During this chapter three of Porter's five forces will be discussed due to the fact that these three sections are closely correlated with the data collected and what is found in the section above from the SWOT-analysis of Volvo Cars.

5.2.1 Threats of new entry

The threat of new entries within the automotive industry has proven to be big where electrical car companies like Tesla, Xpel and Nio are some of the most recent to enter. If autonomous vehicles enabled through AI are gaining ground in the future it opens up for big IT companies like Google and Apple to enter the market, perhaps in collaboration with an OEM. This is because the car as a concept is developing at a rapid pace and what used to be a comfortable way of transportation from point a to point b is now so much more. The service and experience can be more important than ownership of the car, thus opening up for new competitors with experience to enter this market. Therefore, in line with Porter (2008), Volvo constantly has to search for new services like last-mile deliveries, evaluate their current capabilities and be responsive to customer demands to keep or gain market shares. Volvo's big advantage as an established OEM is their extensive dealer network which means leveraging the dealer network with all the infrastructure, economies of scale, experience and expertise is a big barrier for new entrants.

5.2.2 Rivalry among existing competitors

According to Porter (2008), the rivalry among the already established competitors is perhaps the most significant threat to profitability. Premium OEMs with extensive resources and long history provide the same or similar products and services. They risk a destructive price war if they do not differentiate themselves on other aspects than price to achieve profitability. Tesla was one of the first OEMs to adopt the trend of electric vehicles. Since then many have followed in their footsteps due to increased awareness about the environment and emissions within the automotive industry. According to Porter (2008), companies can differentiate themselves through branding, improved service offers, and targeting different customer segments. Volvo differentiates themselves from competitors with M mobility and CarebyVolvo and their affiliates Polestar and Lynk&co to follow new mobility solutions such as car sharing, subscription models, electrified vehicles, and the direct-to-consumer strategy. With the help of their affiliates, they have good segmentation in the automotive industry providing many services and can use synergies to drive change in last-mile delivery to increase their competitive advantage.

5.2.3 Threats of substitution product/service

Volvo has since many years back operated by the traditional wholesale model, which has proven to be very effective, gained many customers, and widened their dealer network. However, during the last years, many new competitors have entered the market with similar services and customer segment, but also new business models to meet customers' requirements. Earlier the use of dealerships has been seen as the right

way of operating by giving the dealer a percentage for handling the sales of cars. However, recently companies like Carwow and Autohero have entered the market and are, according to (Porter 2008), so-called threats of substitution. Carwow and Autohero operate as digital dealers acting as agents and providing services more customer driven. These companies offer a broad supply of different car brands, including better online visibility and the service of distributing their cars directly to the consumers. The customers can quickly check all the car information, make the transaction, and get their ordered car delivered to their home for no extra fees, which have resulted in being rather attractive among the customers. These two companies might not be a direct threat to Volvo since they sell used cars their user-friendliness can be considered as disruptive within the automotive industry and other OEMs might look at them to find synergies for new car sales. Volvo might widen their services and offer the same services or establish a collaboration with these actors to increase their competitive advantages. Perhaps it they could be potential partners for Volvos last mile in the future. However, the collaboration with actors like this would give these companies a percentage of commission that Volvo needs to evaluate if it would be profitable and add customer value.

6. Conclusion

This master thesis has addressed the distribution strategy of Volvo's last-mile logistics with direct to end consumer sales, how the business model is structured now and how to enable the last-mile delivery within the automotive industry in the future. The theoretical and empirical findings observe that OEMs, including Volvo, have been operating according to the traditional business model regarding the distribution of cars. However, they have identified trends and customer behavior that calls for change. The study has identified the need to transform the traditional business model to a more customer-centric business model. Earlier, OEMs have addressed their customers through dealerships where the dealers have had the interaction with the customers, establishing a relationship and impacting what type of car the customers purchase. The business model has been proven to be effective and still generates a significant sales volume for Volvo cars. However, customer behavior, trends and the increasing urban population are now requiring adoption of mobility solutions.

Millennial customers have less demand for ownership of cars and a greater interest in convenience, flexibility, and new mobility solutions, with a possible outcome of more services and only paying for the actual use of the car. Due to the increased use of online services as within other industries, customers require that these services be offered in the automotive industry. Similar to what is offered within the re/e-tailer industry, where Omni-channels have increased operating, customers now require similar delivery options when purchasing their cars. The findings from benchmarking the automotive industry with the re/e-tailer industry have identified challenges and opportunities. However, these potential synergies are rather hard to copy due to that a car is a more complex product, more complex markets, and economic and environmental aspects needs to be considered to find the best solution in respective market. Considering this, the industry cannot be generalized worldwide, and there is no “one fits all” solution for last-mile delivery yet in place due to this complexity.

Volvo Cars have established affiliates, Polestar and Lynk & Co, to offer similar distribution strategies with direct to consumer sales as Carwow and Autohero. However, the two later mentioned offering a total solution of home delivery service which Polestar and Lynk & Co today is not offering. Polestar and Lynk & Co are operating to gain new customer segments, but more can be done to achieve the same services as Carwow and Autohero. Furthermore, to establish the last-mile delivery within the automotive industry, Volvo is needed to meet additional digital and operational capabilities than what is used today. The modern digital society puts pressure on traditional OEMs to improve their platforms and implement Omni channels to customize the customer service while maintaining proficient data security. The operational capabilities include collaboration with LSPs that can offer a total solution with PDI, high delivery precision, professional handover, and return distribution of cars.

7. Further research

This research has focused on where customer trends are heading in the automotive industry, what can be benchmarked with other industries, and what capabilities are needed to perform a new last-mile delivery service. Some aspects have been unexplored as to how to proceed with the implementation, including economic and environmental aspects.

The study has been performed with one OEM and a few external actors but excludes implications from other OEMs than only Volvo Cars. Since the study has been performed regarding Volvo cars' perspective and vision, it could be further explored within other perspectives of OEMs. Additional to this, the possibilities of widening the infrastructure development should be analyzed to calculate if the implementation of this strategy is of use.

A crucial operation within the e-commerce industry for providing the customer with convenience and flexibility is their generous returns of products. It needs further research on how this can be handled within the automotive industry. There exist challenges regarding scalability when delivering cars in urban areas with trucks, including a professional handover. Further research needs to be performed on own wheel delivery to see if this is the way to go in the future or if disruptive companies can provide better alternatives.

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Appendix - Questionnaires

Interview with Outbound Logistics Engineering EMEA & Intercontinental

Introduction:

- Can you describe your role and what includes in your daily operation?

1. **How does Volvo's business model look regarding OEMs' distribution of cars?**

a. What are the benefits with the current wholesale model?

i. What makes the business model sustainable/not sustainable on a long-term horizon?

b. What are the challenges with the current business model?

. Low margins?

i. Long lead times?

ii. Bad impact on the environment?

iii. Less understanding of customer behavior?

c. What is the strategy for Volvo cars/Volvo group within the next 5 years regarding the wholesale and direct to consumer sales model?

d. What are the big challenges with establishing online sales regarding the direct to consumer strategy?

e. How can an omni-channel be established regarding distribution direct-to-customers combined with the wholesale model?

f. Where does the responsibilities of outbound logistics start and where does it end?

. Does it include mobility services (returns, bringing the car to service?)

i. From our understanding, Volvo wants to have the cars returned in the future to make smaller services/maintenance. Will these services be handled by the Outbound Logistics department or will a new department be established in order to handle similar services? (fleet management)

ii. Will returns only be of interest if leasing cars to the customer or will it also include customers who have purchased the car?

iii. What is the strategy of collecting and re-distribution of cars from customers regarding service and maintenance? How will it work and what potential third-party actors might be involved?

iv. Have you discussed what location the cars will be consolidated at before returning back to Volvo's facility? Building up new cross-docking-hubs or by the help of your established network and dealers?

2. **What kind of third-party last-mile delivery services are found in other industries that are relevant for OEMs distribution of cars?**

a. How much are you influenced by new competitors? (Carwow, Sixt, Carnext, Autohero etc.)

b. How are you influenced by Lynk&Co and Polestar? Has there been a discussion regarding a collaboration of the last-mile logistics distribution and returns?

3. How do trends of consumer expectations affect the traditional business model regarding last-mile delivery?

a. What are customers expecting regarding delivery options and mobility services in the nearest future?
b. What delivery options has/will Volvo offer for online sales (direct-to-consumer sales)? Delivery to dealer, delivery to Hub, Home delivery?
c. How will the transformation from "car-as-a-product" to "car-as-a-service" affect last-mile delivery and returns?

i.What are the main challenges?

d. Are you moving towards a similar strategy as Lynk&Co (few models, high standard, focus on shared mobility, provide more cars through M mobility) or does Volvo want to cover a different customer segment?

4. What digital and operational capabilities are needed to support the direct-to-consumer strategy within last mile logistics?

a. What does the customer demand? Such as notifications, and track & trace, choose different delivery options, easy to schedule services, etc.
b. What capabilities are required from the LSP provider to be able to perform last-mile delivery including returns? Including maintenance and repairs during the time customers are at work, home, etc.

Interview with Outbound Logistics Strategic Projects

Introduction

- Can you describe your role and your daily operations?

Våra frågor:

1. We understand that you work in collaboration with Lynk & Co, can you describe this collaboration and?

a. Can you describe their business model?

b. What has pre-booking looked like on the European market?

i.Percentage of purchased cars vs Percentage of leased cars.

2. What does the current collaboration within the Geely group look like in the European market? (Volvo, Polestar, Lynk & Co)
3. What does the future collaboration with Lynk & Co look like?
4. What is Lynk & co´'s strategy and what does car distribution look like?

. Does it have or should a warehouse be built up in Sweden or in the immediate area or should everything be "Build-to-order"?

a. Is Lynk & Co performing the distribution or is there a third party involved?

5. Where is the car delivered? Dealer, DC or home delivery?

. How are service, maintenance and updates handled?

a. Charging cars on DC?

.Will Lynk & Co have its own charging posts, or will it be outsourced to a third party?

6. How do I cancel a subscription?

. How is the return of leased cars handled?

.What happens to the car afterwards?

7. What are the biggest challenges for Lynk & Co?

. Have you marketed your courage to any particular customer segment?

a. Has it done any surveys on customer satisfaction of Lynk & Co's business model and online sales?

.Regarding demand

i.Has Lynk & Co started distributing cars in the Netherlands yet?

8. How are updates and notices about where the car is before it is delivered externally to the customer?

Additional questions:

9. Focus on Last-mile delivery

10. On Lynk & co´'s website it says, "When it's time for booked service, we pick up your car, take it to the workshop and return it to you." How does this work in practice and what is required digitally (coordination between all involved actors (lynk & co, LSP provider and customer)) and operationally to enable this?

a. Only in urbanized areas?

11. Is the customer willing to pay extra for a home delivery or is it included in the price, if possible, how does the delivery take place?

. Linked to environmental and economic factors?

a. Example: MCC in GBG and then deliver to KBA?

12. A customer who bought a car from Lynk & Co and then wants to sell his car after x number of months / years. Does Lynk & Co then want to buy the car from the customer or is it not of interest? If Lynk & Co wants to buy back the customer's car, what does Lynk & Co do to buy the customer's car? Ex, offers a discount on the next purchase or the like? The customer gets paid better by selling on blocket, for example.
13. Have you discussed additional services around the car that you can make money on in the future?

Interview with Outbound Logistics Engineering APAC

Introduction

- Can you describe your role and what includes in your daily operation?

Our questions:

1. From the previous monthly global outbound logistic team meeting and from the slides you sent us we understood that your department in APAC has started implementing a new network design with distribution of cars to consumers? Can you tell us a little more about that?
    a. How is the new setup?
    b. What is the feedback? From customers and employees at Volvo? Is it working well?
    c. What are the challenges?

2. What has influenced Volvo to approach its customers with their new distribution strategy?
a. Influenced by Polestar and Lynk&Co?
b. Competitors?

1. **How do trends of consumer expectations affect the traditional business model regarding last-mile delivery?**
    a. What are customers' current expectations regarding last-mile delivery in APAC and delivery options/mobility services in the nearest future?
    b. What delivery options has/will Volvo offer for online sales (direct-to-consumer sales)? Delivery to dealers, delivery to Hubs/yards, Home delivery?
        i.How can you enable that?
    c. How will the transformation from "car-as-a-product" to "car-as-a-service" affect last-mile delivery and returns?

.What are the main challenges?

2. What kind of third-party last-mile delivery services are found in other industries that are relevant for OEMs distribution of cars?
a. How much are you influenced by new competitors? (Carwow, Sixt, Carnext, XPeng, NIO etc.)
b. Have you established a distribution network for returns of vehicles and what are the challenges with the strategy?
c. Are you collaborating with Lynk&Co and Polestar on the last-mile delivery distribution and returns?

3. What digital and operational capabilities are needed to support the direct-to-consumer strategy within last mile logistics?

a. What does the customer demand? Such as notifications, and track & trace, choose different delivery options, easy to schedule services, etc.
b. What capabilities are required from the LSP providers to be able to perform last-mile delivery including returns? Including maintenance and repairs during the time customers are at work, home, etc.

Interview with Head of Logistics at Polestar

Introduction

- Can you describe your role and what includes in your daily operation?

Our questions:

1. What is the lead time of configured cars today and what's the future goal of lead time?
2. Are Polestar producing its cars on speculation as Lynk&Co or are they producing on Build-to-order? If Build-to-order, how do they accomplish short lead times?
3. How does the actual delivery take place when a customer is going to pick up their car?

a. Where does the hand-over take place?

4. How do trends of consumer expectations affect the traditional business model regarding last-mile delivery?

. Do you offer home delivery?

a. How can you enable home delivery?

b. why not?

c. Will you offer home delivery in the future?

d. How will you handle the return distribution?

e. Are there any competitors offering home delivery? Tesla?

f. Do you have any collaboration with other companies in the last-mile logistics?

g. What digital and operational capabilities are required to achieve direct to consumer sales?

h. What capabilities are required from the LSP provider?

5. Are there any subscription models at Polestar?

a. If yes, how does the model work?

i. What's the notice-period?

ii. What happens with the car when a customer wants to sell their car or when the lease-period is over?

b. If not, will you offer it in the future?

6. I see on your website that you have something called Genuine services where you offer pickup and delivery when service and maintenance is due, how does that work?

. digital key?

a. communication between all involved parties (Polestar, LSP, consumer)

b. Required capabilities from LSP?

7. Are there more cash-sold Polestars or more leased Polestars?

. Do you receive a higher profit on leased cars compared to cash-sold cars or is it the other way around?

8. What are the main challenges for Polestar regarding distribution and returns?

. Have you targeted a special customer segment?

Interview with Global Outbound Logistics Operations

Introduction

- Can you describe your role and what includes in your daily operation?

Our questions:

1. How does the strategy of reaching the targets of 50% online-sales, 50% electrical vehicles until year 2025 affect your daily operations?

a. What operational changes must be done and what are the challenges?

2. How does the distribution between leased, subscription and cash-sold cars affect the operation of global outbound logistics?

. Both delivery and return

3. What is the lead time of configured cars today to the European market and what's the future goal of lead time?

. How are you handling the production of build-to-order cars and cars that are built on speculations?

i.The priority of production?

4. How does the collaboration with Polestar and Lynk & Co and their strategy affect the distribution of cars from Volvo?
5. Do you believe that the last-mile delivery will change when going from the wholesale model to direct to consumer sales online?

. Are you able to offer home-delivery of cars today?

6. What operational capabilities are needed to support the direct-to-consumer strategy within last mile logistics?

. What capabilities are required from the LSP providers to be able to perform last-mile delivery including returns? Including maintenance and repairs during the time customers are at work, home, etc.

7. Are you totally transparent with the customers regarding information during the distribution from point of sales to delivery?
8. Does Volvo´s responsibility end when the car is delivered to a dealer?
9. Are all transports outsourced or do Volvo handle some of the distribution themselves?

Interview with Global Online Business

Introduction:

- Can you describe your role and what includes in your daily operation?

Our questions:

1. Can you describe CBVs business model?

a. What kind of value are you creating for the customer?

b. Which is your customer segment?

2. Is there a solution to swapping the car for a larger or smaller car?

3. Can you buy the car after the subscription has been created?
4. It says on the website 5-6 months delivery time and that a loan car can be offered during this time. How does this work?
5. Why is the lead time so long?
6. How flexible are regarding the different models?
7. If 1000 customers order a car today, can you supply this demand today?
8. What happens if you can´t meet the customer demand? Has this happened?
9. What happens with the car after the subscription?
10. Do you have subscription on used cars to a lower price?
11. How do you deliver he car to customers?
12. When service needs to be done, does the customer drive the car to a dealer or do you pick it up?
13. Do you pick up the car when the subscription has ended?
14. What digital and operational capabilities requires for Care by Volvo for this concept?
15. How does your collaboration with LSP look like?
16. What is the difference between CBV and Lync & Co and their subscription regarding the models?
17. Do you have any collaboration that can give synergies now or in the future?
18. What are your biggest challenges?
19. How does your distribution work and what your capacity to customer?
20. How are your current sales?
21. What´s your capacity of rented cars?

Interview with Representatives from Logistics Service Provider in Scandinavia

Introduction:

- Can you describe your role and what includes in your daily operation?

Our questions:

1. What services do you currently offer regarding car transport to dealers and end customers?
2. How has your way of working changed in recent years regarding home delivery? Both linked to trends and the impact of COVID-19?

3. How do you think your way of working will change soon?
4. Do you offer home delivery of cars to the end customer?
    a. If not, how can make this possible?

i. Will you be offering it in the future?
ii. How will you handle the return flow?
iii. Are there any competitors who offers this service?
iv. Do you have any collaboration with other companies that can offer home-delivery?

5. What digital and operational capabilities are needed to support this strategy and return flow except track & trace?
6. What does the OEMs demand?
7. Do you need to invest in a new infrastructure and perhaps in electrical vehicles?
8. Do you offer services where you can pick up the customers car to do services, maintenance or test drives?
9. Is it possible to offer in the future?
10. If yes, what would be the biggest challenges?
11. What are the biggest challenges with home-delivery and the return of cars?
    1. Economical aspects?
    2. Environmental aspects?
    3. Urban cities and infrastructure?

12. Do you take inspiration from other industries or other similar services which are applicable within the distribution of cars?

Interview with Head of Logistics (Logistic Service Provider in APAC)

Introduction:

- Can you describe your role and what includes in your daily operation?

Our questions:

1. How has your operation changed during the last years regarding last-mile delivery of cars to end-consumers and how do you believe it will change in the nearest future?
2. Do you offer home delivery?

a. If not, how can you enable home delivery?

i. why not?

ii. Will you offer home delivery in the future?

iii. How will you handle the return distribution?

iv. Are there any competitors offering home delivery?

v. Do you have any collaboration with other companies in the last-mile logistics?

3. What digital and operational capabilities are needed to support the home delivery and pick-up services within last mile logistics?

. What are the requirements from the OEM´s perspective?

a. Do you need to invest in new infrastructure, electric vehicles etc.?

4. Do you perform pick-up and delivery services regarding test driving, services and maintenance? (Collecting the cars at customers, bring them to a dealer/service-center and then return the car back home to the customer)

. How does this work and what are the challenges?

5. What are the main challenges for you regarding home delivery services and return of cars?

. Economical aspects

a. Environmental aspects

b. Urbanization/infrastructure

6. Do you believe that there are services performed in other industries that you can learn from regarding last-mile delivery for distribution of cars?

Interview with Consumer Journey Manager for Delivery & First Use

Introduction

- Can you describe your role and what includes in your daily operation?

1. How will the consumer journey be affected when you move from the traditional wholesale model towards direct-to-consumer sales?
2. How can you accomplish a good consumer journey both online and offline (omni-channel)?
3. How do the trends of consumers affect the consumer journey?
4. Do you see an increased interest of home-delivery among cars?
5. What are your biggest challenges?
6. Have you been inspired from other industries as e-commerce or similar?

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