

BERYLLS

VEHICLE-AS-A-SERVICE: FROM VEHICLE SALES TO CUSTOMER AND VEHICLE LIFETIME VALUE MANAGEMENT

January, 2022

EXECUTIVE SUMMARY

- **A** **To meet their mobility needs**, customers increasingly want to move from vehicle ownership toward use-based models (**38% increase** in market share by 2025) that offer greater flexibility and access to the latest technology, while minimizing risk.
- **B** **As a result**, these 'Vehicle-as-a-Service' (VaaS) products massively gain in importance – and also attract people who don't have cars today, unlocking an additional potential market of **1.32 million** customers¹ in Germany alone.
- **C** **VaaS customers** are **five times** more willing to order via new channels (online/digital) and via a wider range of third-party multi-brand providers, going beyond carmakers and dealerships.
- **D** **Brand loyalty** among VaaS customers is **50% lower** compared with traditional customers, posing a risk that incumbent carmakers and dealers will lose market share to new players – while enabling new EV-only brands to enter the market without requiring big budgets to build offline sales networks.
- **E** **The car industry's** entire sales and business model will change dramatically as vehicles return to providers after shorter cycles. This means more sales events and customer interactions for providers, making operations more complex, but also brings more profit opportunities.

¹ Within the group of interviewed persons (i.e. age group of 16-56 years)

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INTRODUCTION

The automotive industry is going through the greatest period of transformation in its history. There will be more change in the next 10 to 15 years than there has been over the past 130 years, as a result of several distinct trends happening in parallel.

However, it is too simplistic to put this period of disruption solely down to rapid advancements in the areas of electric powertrain and autonomous driving technologies. This product-centric view overlooks the equally profound change in the way customers want to achieve mobility. More and more people perceive traditional car ownership as a burden rather than an advantage, and instead favor flexible, use-based mobility services, tailored to their individual needs at any one point in time.

The automotive industry is the last major sector whose underlying business and sales model hasn't been disrupted by digitization – until now. The Vehicle-as-a-Service (VaaS) model allows customers to use vehicles for a variety of time periods ranging from years to minutes, via products such as vehicle leasing, subscriptions, and short- and mid-term rentals. As a result, VaaS will turn on its head the decades-old model of cars being sold to one owner through a dealership.



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At this point in time, we still cannot predict the exact end point of the change that is underway, but we have a good idea of the direction of travel. The key trends are:

- » Most VaaS products are being offered **directly to consumers online**, reducing the relevance of traditional dealerships and allowing for even more flexibility and customization for customers
- » As a result, **the current automotive distribution model** – a trinity of the OEM, its retail network and the OEM-owned captive financing companies which provide car loans to its buyers – **will ultimately be broken up**
- » Instead, monetization will happen via **recurring revenue over multiple use cycles** – successful players will master keeping a connection with both customers and vehicles over their lifetimes
- » A host of **new players**, some from previously unconnected sectors, will enter the market **via new channels**

The good news, however, is that Vehicle-as-a-Service offers also spark interest among people who don't own a car today. Based on our market survey, **we estimate an additional potential market of up to 1.3 million customers in Germany alone**, who can be brought into the automotive market.

INTRODUCTION

ONE-MINUTE READ

- **1 VaaS sales will increasingly** happen through digital channels and third-party providers rather than via traditional dealerships alone.
- **2 Ownership of the vehicles** will remain with the VaaS providers¹, requiring them to find another use cycle and customer for each vehicle after a contract ends – a paradigm shift from the traditional, one-time asset sales model.
- **3 Vehicles will need to be actively managed** through many more usage cycles – perhaps first via a subscription service, followed by leasing and later sold as a traditional used vehicle – to achieve the required financial returns. An updated sales and operating model is a prerequisite for OEMs.
- **4 Success will no longer be measured** in total sales volume, but by share of customer and vehicle lifetime value (CLV and VLV), which we believe will lead to a profit increase of up to 50% and a broader customer base, compared to the traditional sales model.
- **5 The new VaaS ecosystem** will redistribute value creation and capture in the auto industry and make that industry highly appealing to new players beyond traditional OEM groups and their captive financing companies.

¹ In this report, 'provider' refers to the party offering the VaaS product to end customers, comprising OEMs, dealers, captives, leasing companies and any other incumbent or new provider.



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EVOLVING CUSTOMER DEMANDS DRIVE CHANGE

When it comes to individual mobility, customer demand patterns are changing. Vehicle ownership is no longer the aspiration of many customers, as a result of the following trends:

Flexibility: Well-educated younger people live much more mobile lives than previous generations, constantly on the move in pursuit of different opportunities. Long-term commitments and rigid asset ownership are not in sync with this way of life. Instead, these customers demand flexible solutions that constantly adapt to their changing environment. All-inclusive monthly rates for access to a vehicle are preferred to enable budgeting.

Technological advancements: Today, vehicles become outdated sooner than they did in the past, as a result of ever-

shortening technology cycles for key parts of the car, including driver assistance systems (i.e. autonomous driving) and connected services.

New vehicle brands: Customer choice is also increasing as new OEMs enter the market, and buyers are more reluctant to be tied to one make and model for a long time. There is a growing preference for flexible offerings allowing them to switch easily between brands and vehicles.

IMPLICATION 1: NEW VAAS PRODUCTS DEVELOP

VaaS products serve these customer needs better than traditional ownership products such as credit financing, with the following customer-centric product specifics:

No transfer of vehicle ownership: Customers use rather than become the legal owner of the vehicle during the duration of the contract. This relieves them of the burden of selling their used car, including the financial risk of losing money based on the residual value development during the life of the contract.

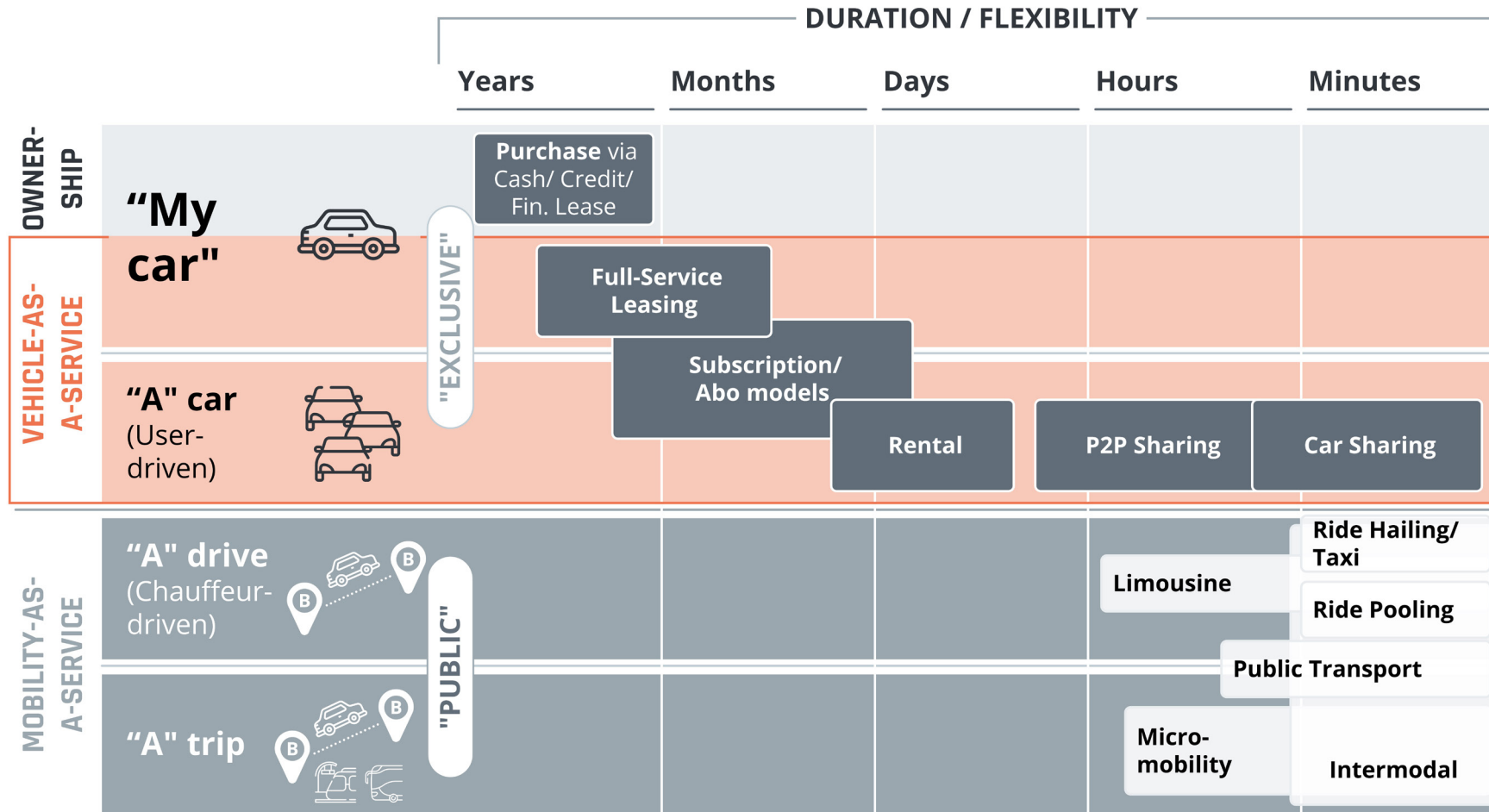
Flexible contract periods: The multi-year finance contracts used today are replaced by flexible and adjustable terms. Minimum durations, sometimes of less than a month, increase flexibility for customers.

Full-service offerings: Bundling together all the required services to keep the car running (such as tire changes or service and maintenance) ensures a hassle-free customer experience while they are using the vehicle.

All-inclusive monthly rates: Fixed prices allow customers to budget their actual monthly mobility spending based on transparent total cost of mobility (TCM).

Modular contracts: VaaS products are built on modular service components that can easily be included or left out, based on the current mobility needs of the customer.

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Range of customer commitment, highest to lowest:

Vehicle ownership: The customer purchases a specific car via cash or credit financing and becomes the legal owner of the car.

Vehicle-as-a-Service: The customer either leases or subscribes to use a specific car, or gets access to one via rental or sharing offers. Either way, there is no ownership transfer from the provider to the customer during the contract period.

Mobility-as-a-Service: Customers are passengers being moved from A to B, without getting behind the steering wheel of the car.

WHERE DO VAAS OFFERINGS SIT WITHIN THE WIDER MOBILITY ECOSYSTEM?

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IMPLICATION 2: SALES SHIFT FROM OFFLINE TO ONLINE

The vast majority of new vehicles are still sold offline, whether by OEMs and their franchise networks, supported by finance offerings from their captive finance arms, or by independent and multi-brand dealerships.

When customers were spending a lot of money for a very long-term purchase, this in-person model fostered trust and put up significant barriers to entry for new players.

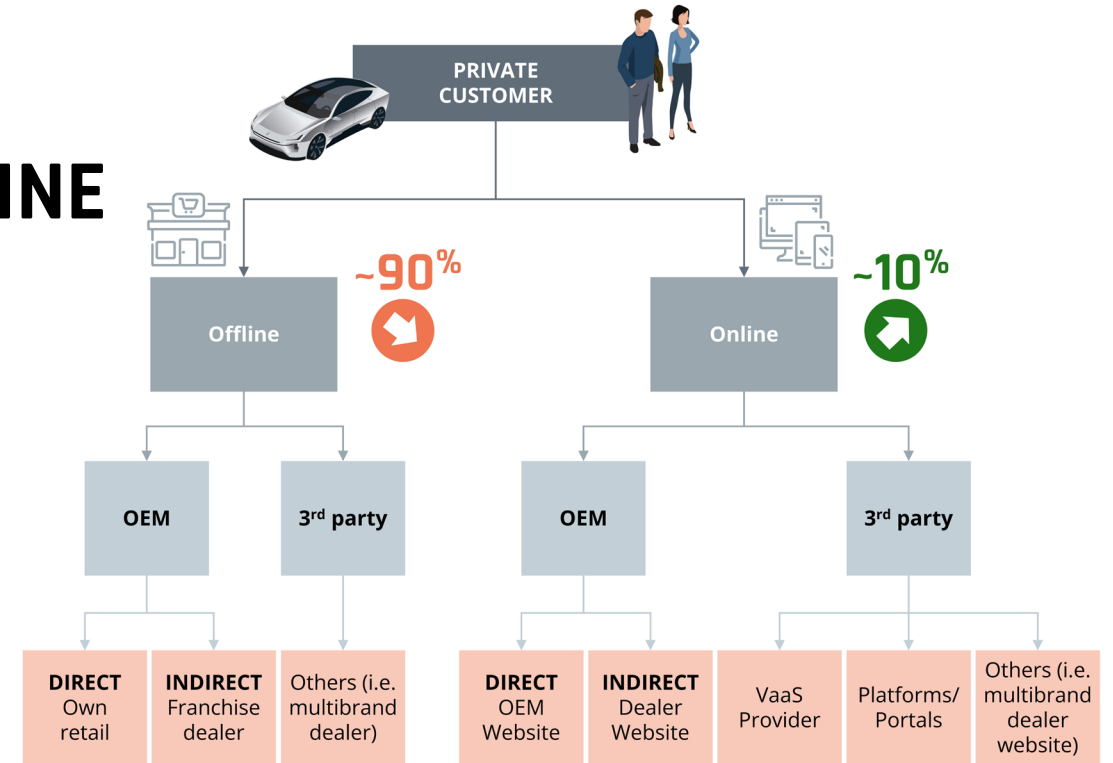
However, customers are now well used to researching and comparing models and offers online. Combined with the less risky nature of VaaS products (as vehicle ownership stays with the provider), the auto industry is at an inflection point, challenging the traditional protected sales model.

From now on, an increasing share of vehicles will be purchased online. Naturally, incumbent automakers and retailers, as well as new digital challengers, all want to conquer the emerging digital sales chan-

nels. E-commerce players have already established themselves as trusted channels and intermediaries for customers in many other industries and sectors, such as travel, banking, insurance or utilities.

Automotive OEMs will need to quickly learn the rules of the game in the online world and build their own digital channels. Otherwise, they might end up as simply stock suppliers to established or newly built multi-brand VaaS providers.

This is no small task - getting customers' attention and attracting enough traffic in the highly competitive e-commerce landscape (in particular going up against well established e-commerce brands) will require a commitment to substantial digital marketing spending.



To be attractive to customers, digital sales channels must provide a coherent experience across online platforms (social media sites and the OEM's own website for example) and offline dealerships. Customers must be able to start and end their journey wherever they want, whether that is online or in-person. Digital contract signing and closure will be required features, as well as billing and digital payments.

BACKGROUND OF THE MARKET SURVEY

4



Additional information on the market survey

Representative survey of 2,040 private customers in the age group of 16-56 years (GenX – Z) in Germany to understand where, how and why they are going to buy/ order vehicles

Survey sample covers new, used & non-car customers for all brands (premium & volume) and regions (rural vs. metropolitan)

The survey was conducted online by an independent market research institute in Dec '21

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KEY OBJECTIVE OF THE SURVEY

Listen to the voice of the younger generations to analyze the changes in vehicle usage & ownership needs of tomorrow's automotive customers

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BACKGROUND OF THE MARKET SURVEY

Overview of analyzed products in scope

OWNERSHIP

- » All purchase options with ownership transfer
- » Exemplary: Cash payments, credit financing & financial lease contracts
- » Average usage period: >5 years

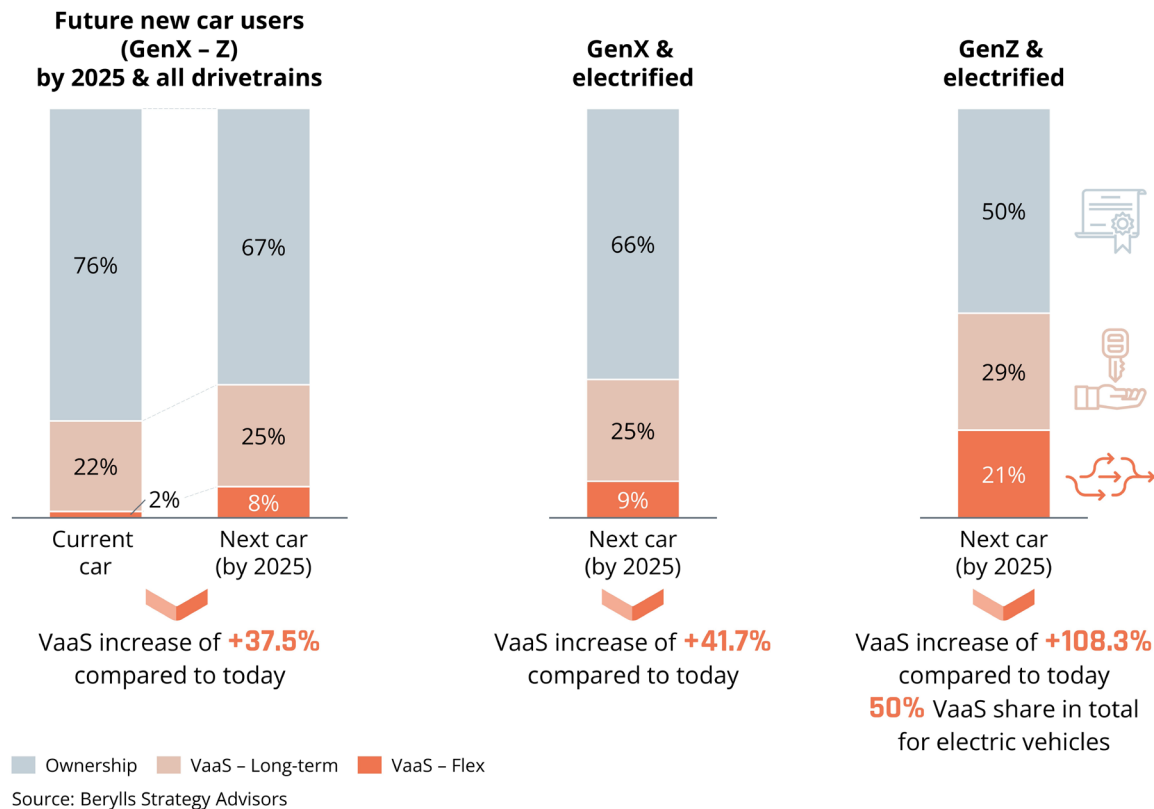
VAAS - LONG-TERM

- » Leasing offers without ownership transfer
- » Exemplary: Operational Lease, Full-Service Leasing
- » Average usage period: 3-4 years

VAAS - FLEX

- » Flexible offers without ownership transfer
- » Exemplary: Car subscriptions, mid-/ long-term rentals, Short-term leasing/ FlexLease
- » Average usage period: 1 year

CHANGING DEMAND IN FUTURE NEW CAR PROSPECTS



1.32 million people or 13% of today's non-car customers would consider getting their own vehicle using a VaaS offering

FINDINGS

Customer demand is shifting towards VaaS offerings (+37.5%)

This trend is fuelled by two drivers which will further accelerate this market shift in the future:

- » Younger generations used to subscription models are more interested in similar offers in cars
- » Market penetration of electric cars results in considerably higher demand for VaaS offers across all age groups (up to 50% VaaS market share in GenZ)

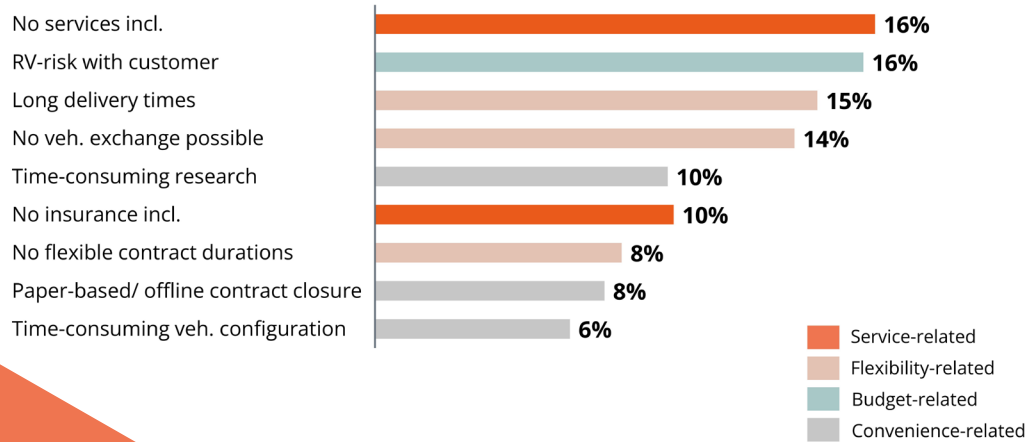
VaaS offers are an important lever to conquer/ convert non-car customers back into the automotive ecosystem

THERE IS AN INCREASING DEMAND SHIFT FROM OWNERSHIP TO VAAS MODELS

VAAS CUSTOMERS WANT FLEXIBILITY, SMART SERVICE BUNDLES AND PREDICTABLE MONTHLY RATES

OVERVIEW OF CURRENT PAIN POINTS OF OWNERSHIP CUSTOMERS

Current new car users (GenX – Z) & ownership



FINDINGS

There are four main drivers for customers to switch from ownership to VaaS offerings:

- » **Smart service bundles:** to increase convenience, all relevant services must be included
- » **Predictable rates:** monthly rates without capital commitment to allow predictability and transparency on TCM
- » **Flexibility:** contracts must be adjustable to fast-paced lifestyle
- » **Convenience:** lean and efficient digital processes save customers' time and effort

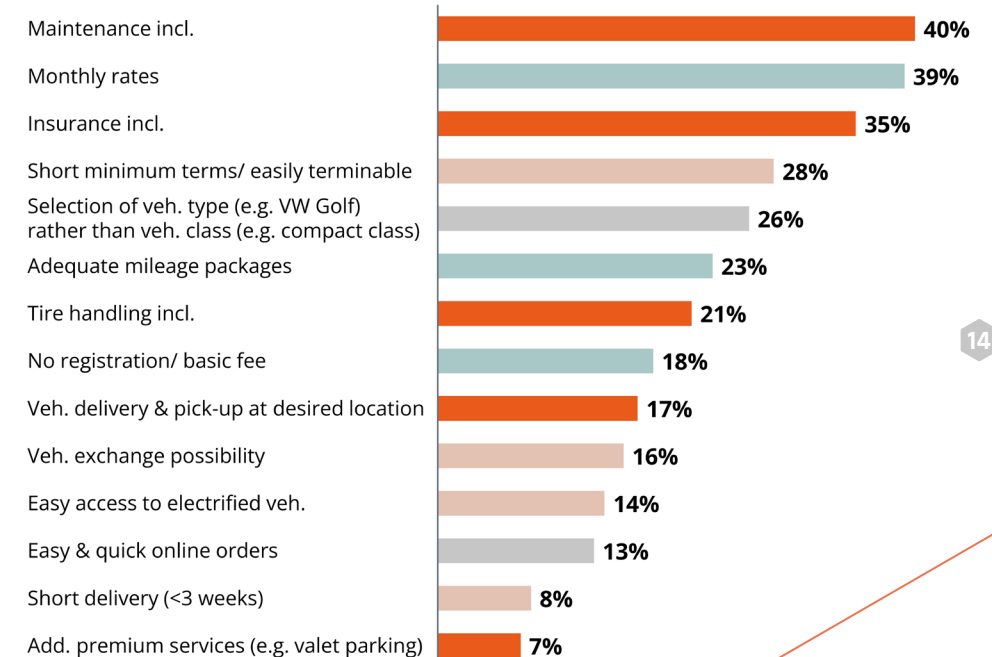
As VaaS customers compare offers mainly by rate brand, color & configuration loose relevance

41% of VaaS - Flex customers

favor lower monthly rates over the option to choose the brand, color or specifications of their future vehicle

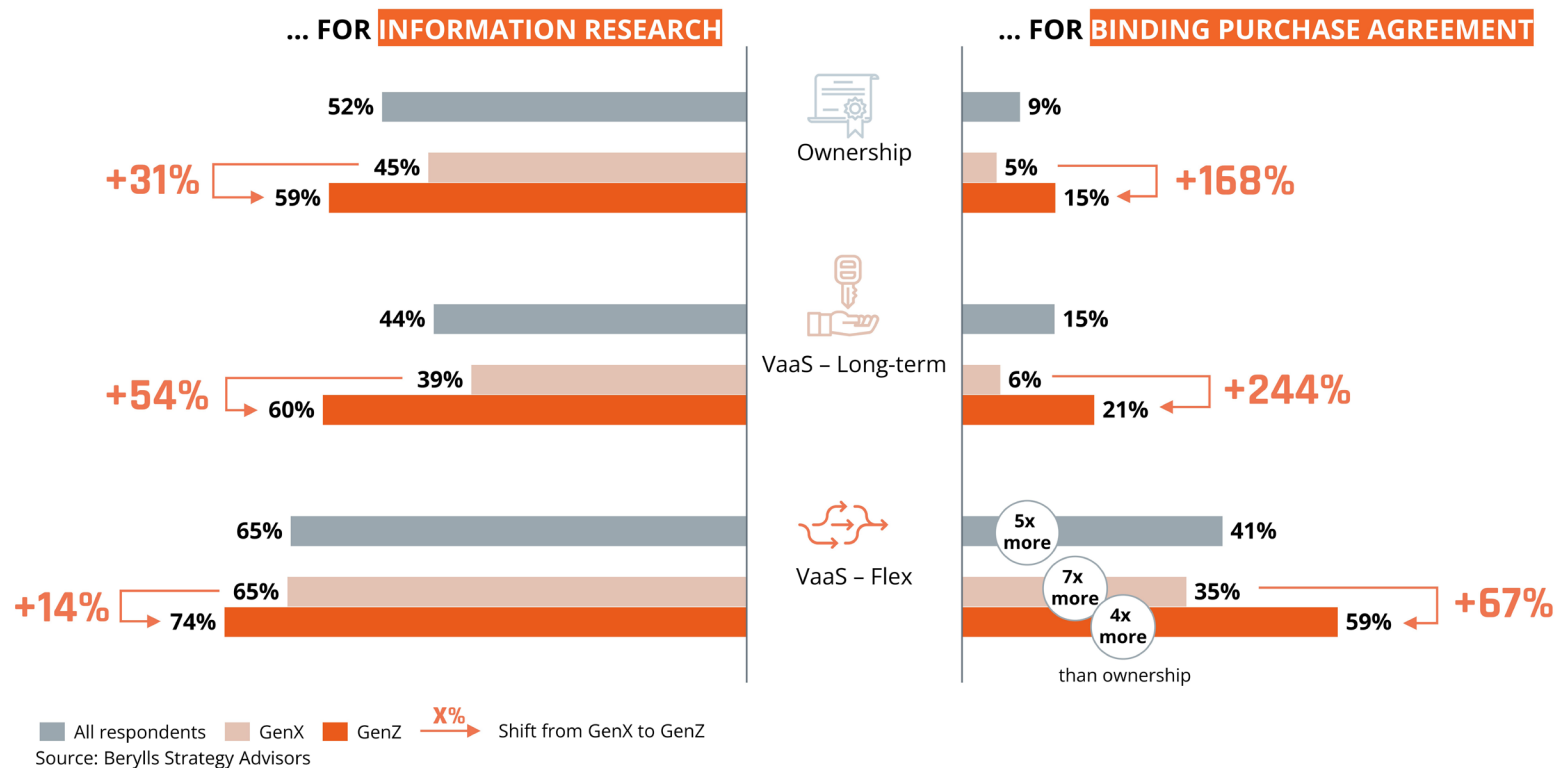
WHAT SPECS MUST AN ATTRACTIVE FUTURE OFFER PROVIDE?

All current new car users (GenX – Z)



Source: Berylls Strategy Advisors

ONLINE CHANNEL PREFERRED ... for the next vehicle (by 2025)



NO OWNERSHIP TRANSFER AND CONVENIENCE MEAN MORE CUSTOMERS WILL ORDER VAAS OFFERINGS ONLINE

51% of today's
non-car customers
would consider
ordering a car
online

Many OEMs
(e.g Daimler, BMW,
Stellantis, Volvo) have
defined targets of
20-25% for online
direct sales

FINDINGS

Customers' willingness to order online is much higher for offers without ownership transfer

VaaS-Flex customers show the highest interest in online sales

Customers' acceptance to order ownership models online are too low to bring OEMs' direct sales targets to life (9% vs. 20-25%)¹

1 in 2 respondents without their own car (23% of all respondents) would consider ordering a future vehicle legally binding online

As more direct sales channels emerge, the historic role of retail networks as market entry barrier for new providers will fade

¹ OEMs' press releases

The ability to test new brands and models are the key reasons why customers want to exchange vehicles in Flex offers

FINDINGS

Today, 9 out of 10 respondents ordered their current vehicle via OEMs' offline retail networks

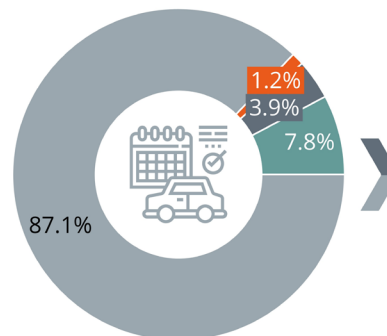
For future vehicle orders two trends are emerging:

- » Share of OEMs' D2C-online sales might increase three-fold
- » Up to 40% of flexible VaaS offers might be sold by 3rd parties

3rd party providers offer a wider portfolio and more brands, providing curious customers with a wider selection and better comparability. It poses a considerable threat for incumbent OEMs that 3rd parties will convert their customers with attractive offers for other brands

WHERE DID YOU ORDER YOUR CURRENT VEHICLE?

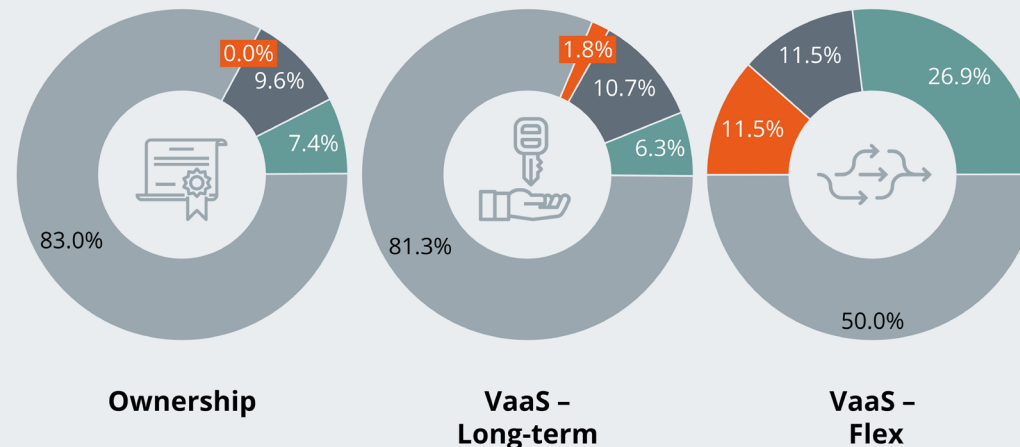
All current new car users (GenX – Z)



■ Multibrand Dealer
 ■ VaaS Provider
■ OEM Retail
 ■ OEM D2C – Online
 Source: Berylls Strategy Advisors

WHERE ARE YOU GOING TO ORDER YOUR NEXT VEHICLE?

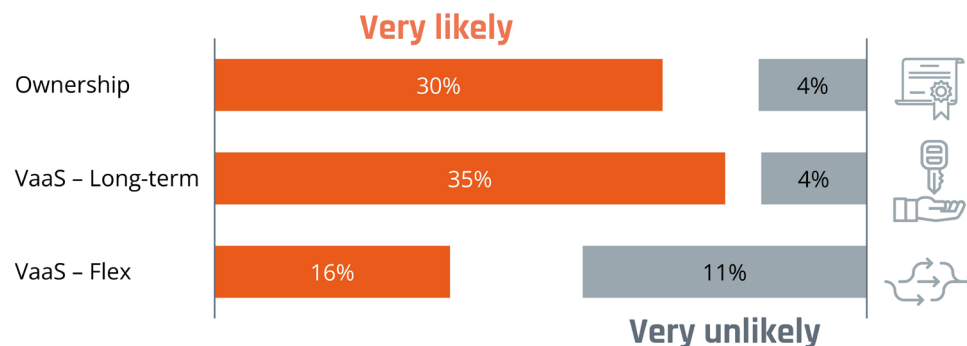
All future new car users (GenX – Z) by 2025



DIRECT CHANNELS OFFER THIRD-PARTY PROVIDERS THE CHANCE TO GAIN CONSIDERABLE VAAS MARKET SHARE

WOULD YOU GET ANOTHER CAR FROM YOUR CURRENT BRAND

All current new car users (GenX – Z)

**TOP5 ORDER CRITERIA FOR THE NEXT VEHICLE (by 2025)****FUTURE VAAS –**
Long-term customers

1. Total monthly rate
2. Specific vehicle type/ segment
- 3. Specific brand**
4. Configuration possibilities
5. Vehicle age/ condition

FUTURE VAAS –
Flex customers

1. Total monthly rate
2. Specific vehicle type/ segment
3. Vehicle age/ condition
- 4. Specific brand**
5. Electric drivetrain

Source: Berylls Strategy Advisors

VAAS FLEX CUSTOMERS ...

... show a
2x greater
interest in testing
new models and
segments*

... have
4x higher
interest in
testing new
brands*

... are
3x more
interested in
new
drivetrains*

*Compared to vehicle ownership customers

BRAND LOYALTY WILL DECREASE AMONG VAAS CUSTOMERS

FINDINGS

Brand loyalty will decrease among users of flexible offers, who are eager to try something new

The vehicle brand itself also becomes less relevant in future order decisions by VaaS customers

In the past, new entrants (e.g. Infinity) had a hard time entering the German market successfully

In the future, new entrants can convert customers with the right VaaS offer distributed online

The lasting success of single brand/ OEM-centric channels comes into questions, as more open-minded customers start their journey on comparison platforms and might be converted there



NEW VAAS PRODUCTS:

Private customer demand is changing from vehicle ownership to usage requiring a whole range of flexible new so-called Vehicle-as-a-Service (VaaS) offers, which will result in further decreasing average contract durations (compared to traditional offers) for the respective providers



OFFLINE TO ONLINE:

Due to the product configuration of VaaS offers & no ownership transfer to end-customers, a much higher share of them is willing to order vehicles via VaaS offers legally binding online



NEW COMPETITION ONLINE:

Online/ direct channels open the market for 3rd party providers, for which the necessity to run an own retail network has possessed a considerable market entry barrier in the past



BRAND LOYALTY DECREASES:

At the same time brand loyalty of VaaS customers is decreasing and other purchase criteria – e.g. actual monthly rates, flexibility, ... – become their main driver to compare offers



MULTIBRAND OFFERS KEY FOR CUSTOMERS:

Consequently, VaaS customer journeys might start on comparison platforms (like for electricity or insurance contracts) to identify the right offering. Incumbent players who rely on the power of their brand (built with a lot of marketing budget) might be outdone by new players with better pricing/ service bundles

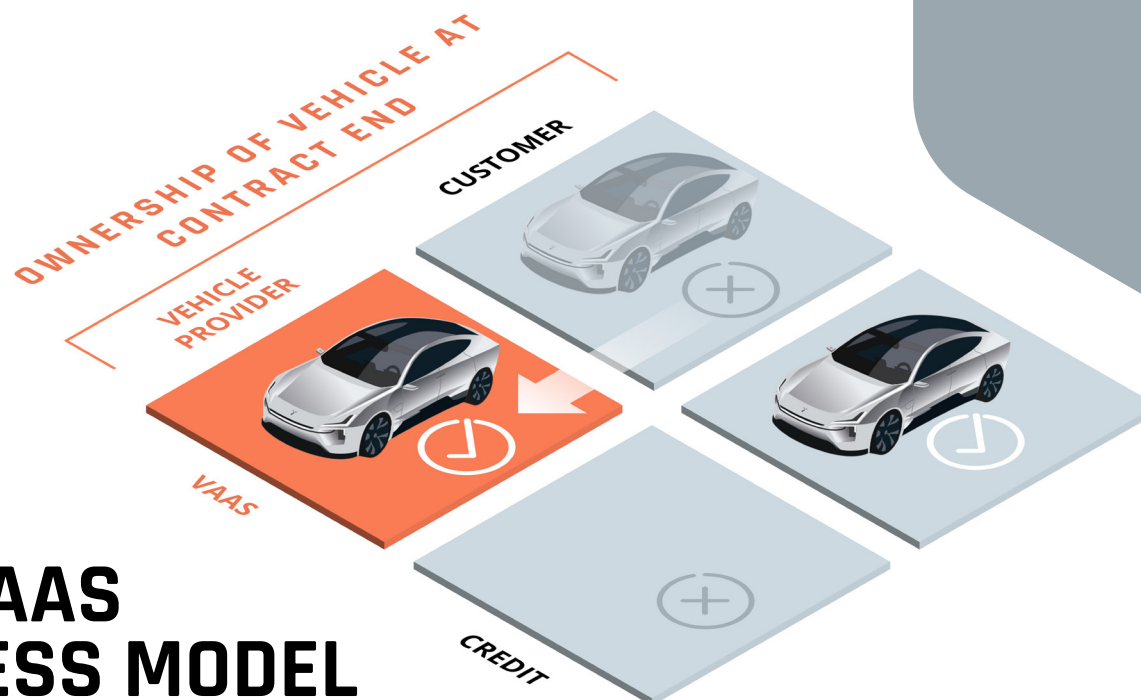
KEY TAKEAWAYS FROM THE CUSTOMER SURVEY

The game changer of VaaS is that vehicle ownership does not transfer to the customer. This has a major impact on OEMs' business model.

In contrast to ownership products where the end customer takes legal possession of the vehicle after the financing contract ends, VaaS providers remain the legal owner of the vehicle, with cars returning to their yards after the particular contract, or use cycle, is over. In most of the VaaS offers that currently exist, OEMs try to get away from having to take back used vehicles by negotiating buy-back agreements with their dealer network who take care of the majority of remarketing processes today.

However, as more and more customers choose VaaS products, this approach will reach its limits, due to capacity constraints in the existing dealer networks. OEMs and their captives will therefore not be able to get all of the returned vehicles off their balance sheets and will need other ways of finding new owners for the

se used vehicles. Demand for used cars, as well as new, will be affected by drivers turning away from rigid ownership in favor of more flexible use contracts. OEMs and captives will need to consider this when adjusting their sales model to include VaaS options.



IMPLICATIONS OF VAAS ON THE OEM BUSINESS MODEL

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In order to remain profitable, VaaS providers need to put aside the traditional OEM sales model and think in terms of a multi-cycle sales model.

Shorter use cycles will put pressure on vehicle providers' profitability and increase risk. Break-even per vehicle will not be achieved within one use cycle anymore – if the provider sells the vehicle at the end of the first VaaS contract based on its residual value, in most cases, they would realize a loss.

Instead, revenue and profit recognition will be stretched over a longer period of time. Yet there is an additional difficulty to this because returns are more at risk due to customers' ability to terminate the contract and return the vehicle earlier than expected.

There are two levers to make the VaaS business profitable:

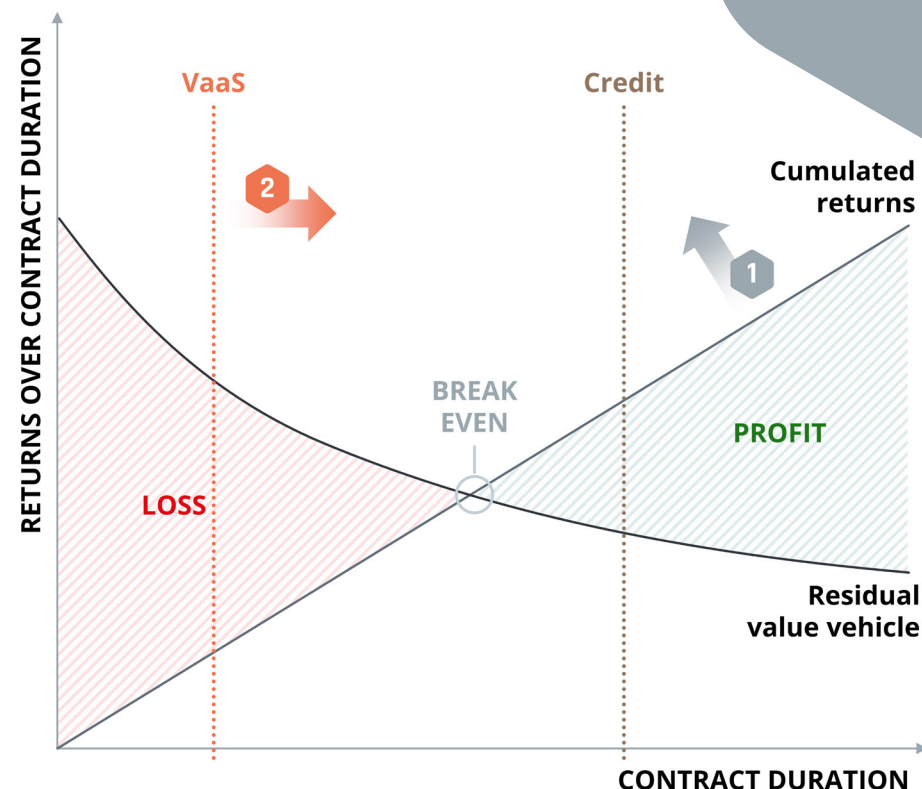
1 Increase customer lifetime value (CLV)

If a customer ends the current VaaS contract and does not want to extend their use of the vehicle via any new contract or buy

the used vehicle from the provider (e.g. via a credit contract), a suitable new vehicle should be offered to the customer instead, to retain them within the provider's ecosystem. If the provider also successfully finds a customer for the old car, they end up with two customers rather than one at the end of the first use cycle, allowing the company to scale its customer base considerably.

Building loyalty and adding customers in this way has the potential to both grow the business and bring down costs, because vehicles are in use for longer and less marketing spending is needed to bring in new customers.

OEMs can also pull the break-even point in the existing VaaS contract forward by generating more revenue per customer by cross- or upselling additional services (e.g. vehicle- or driver-related services). Price increases alone will not work because VaaS rates will become highly competitive. Instead, the most successful way will be to provide additional value-adding services for the customers.



2 Extend vehicle lifetime value (VLV)

As with CLV, VaaS providers can optimize vehicle lifetime value (VLV) in two ways. They can hold on to the vehicle longer across multiple use cycles to extend the period in which they can earn money from it and increase the number of customers per vehicle, which ultimately will

drive the number of units in operation. In addition, providers can optimize the return on each vehicle by selling complementary products and services tailored to the vehicle, as well as by optimizing its utilization rate. That includes both the number of contracts and the amount of time it is in use.

PROFITABLE VAAS PROVIDERS WILL BUILD MULTI-CYCLE SALES MODELS TO REPLACE THE TRADITIONAL MODEL

THE GOOD NEWS? MAXIMIZING CLV AND VLV WILL MAKE OEMS MORE PROFITABLE

5

$$\Sigma (CLV + VLV) = \text{PROFIT}$$

CLV = **VLV =**

Our analysis shows a profit increase potential of **40-50%** compared to the traditional model

DEFINITION

Maximize the share of customers' wallet via increased service penetration and loyalization

KPIs

Renewal rate, Loyalty rate, Churn rate, # of contracts per customer, Share of Wallet, NPS, ...

DEFINITION

Maximize the addressable share of vehicle lifetime value by holding on to vehicles longer/ across more cycles

KPIs

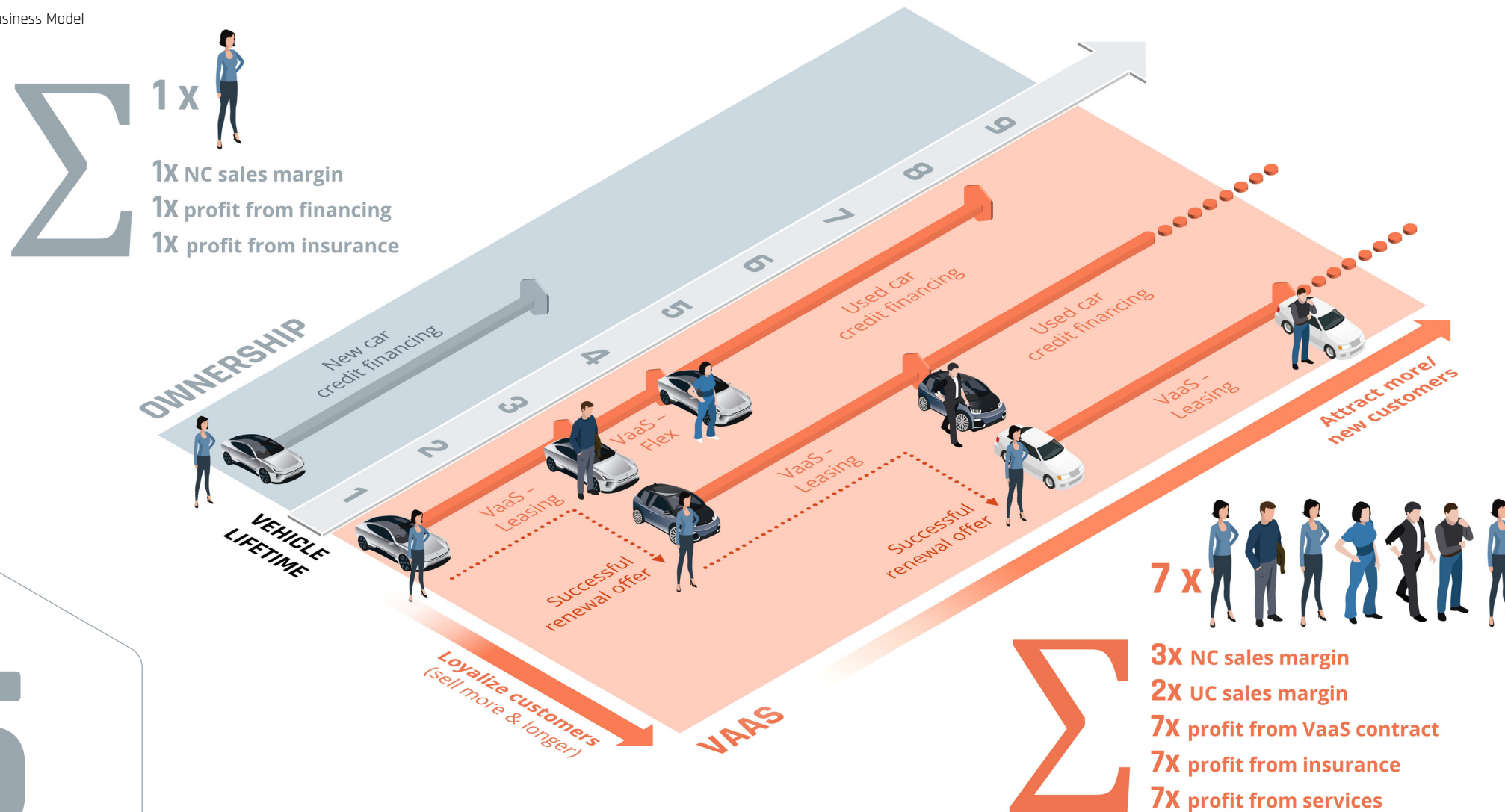
Units in Operation, Return on Vehicle, Utilization Rate, Avg. holding period per vehicle, Avg. # of customer per vehicle, ...

DEFINITION

From traditional transactional unit sale to portfolio based recurring revenues

KPIs

Annual recurring revenues



IMPACT OF OLD VS. NEW BUSINESS MODEL - EXPONENTIAL GROWTH OF CUSTOMER BASE VIA SMART LOYALIZATION

GOOD DATA HOLDS THE KEY TO SUCCESS

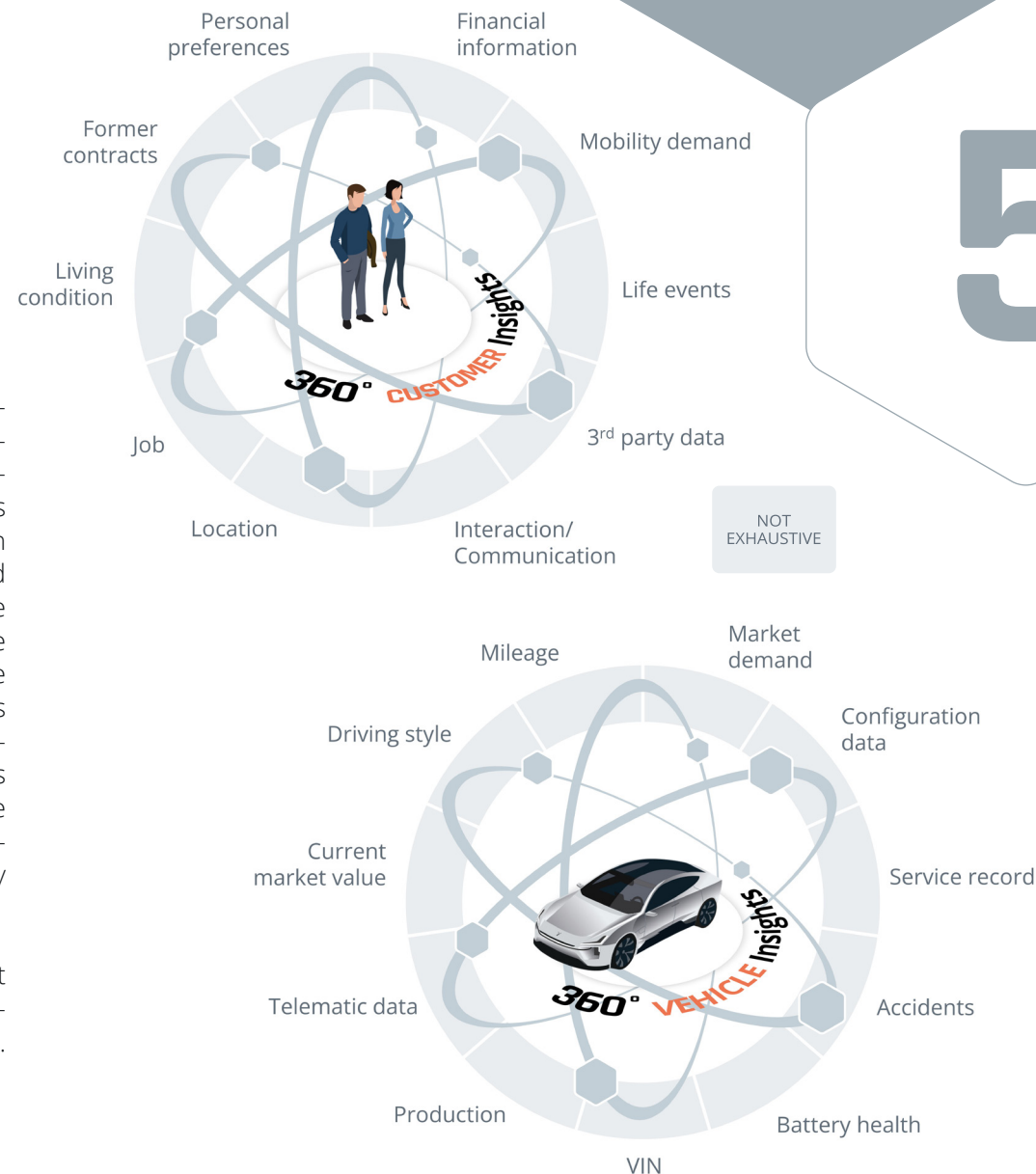
Comprehensive customer and vehicle data insights will enable OEMs to make the most profitable decisions in the future VaaS business model

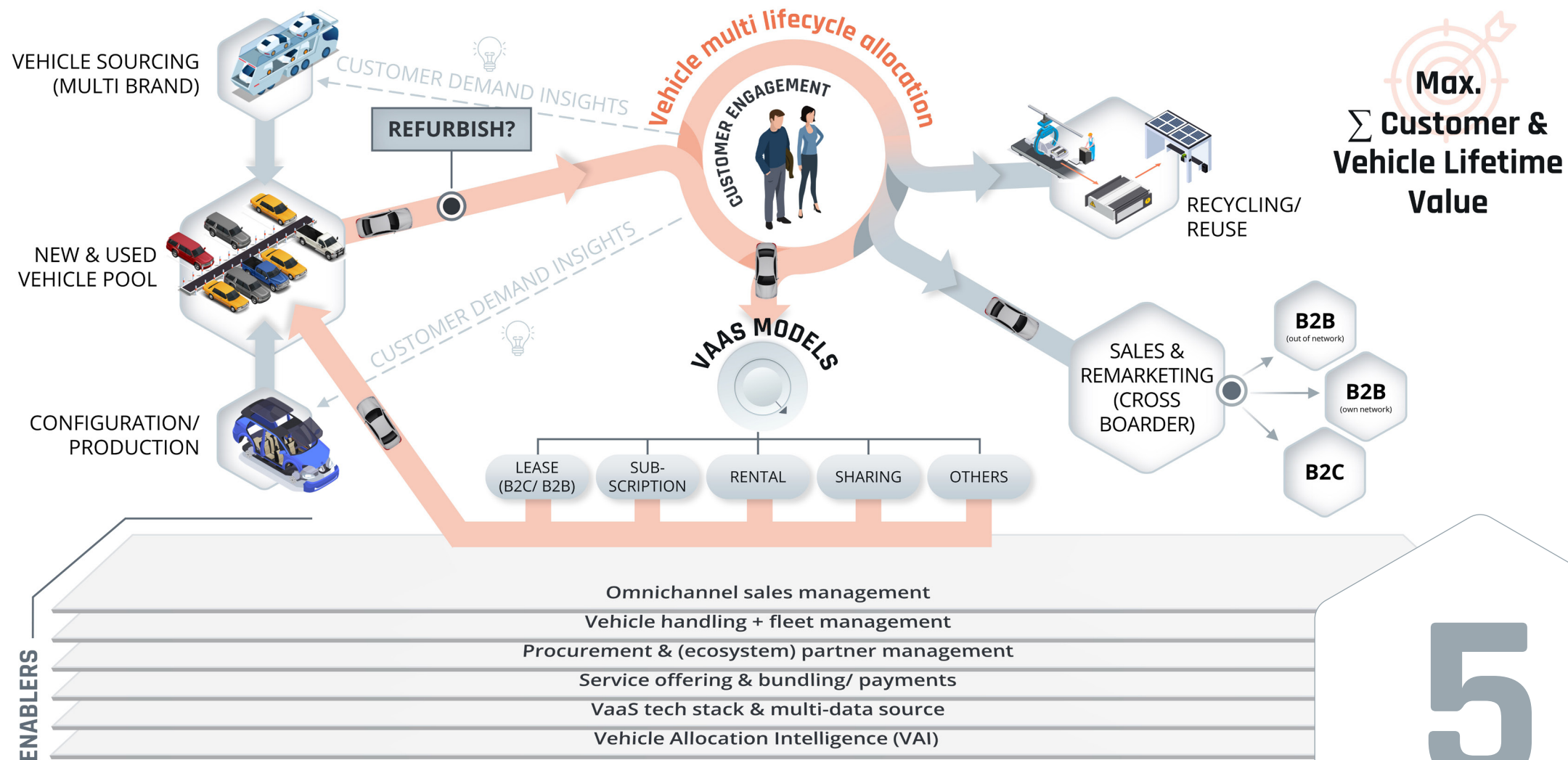
To maximize recurring revenues, OEMs need better than ever customer and vehicle data transparency, in order to make the right offer to the right customer at the right time:

360° customer data insight: All available databases across the company must be combined within a central customer relationship management (CRM) system. Contracts need to be revised to obtain customers' consent for direct offers and personalized marketing campaigns. Data from external sources (such as third-party databases and social media via natural language processing and sentiment analysis) also needs to be made accessible. This will further enrich customer insights and achieve full transparency on what the real demand picture is, enabling VaaS providers to make the right offer at the right time.

360° vehicle data insight: Vehicle owners must ensure they have full transparency on their vehicle status and condition. This can be static data such as vehicle configuration, dynamic data such as service history or mileage, or any kind of permanent impairment (for example battery health status or accidents). The vehicle dataset should also include the most up-to-date market prices across different sources (leasing websites, on-line used car marketplaces, etc.). All this information can be used to predict more accurate asset values for different markets or channels than that provided by traditional, linear residual value curves.

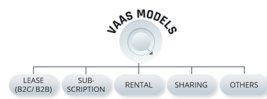
Nevertheless, pure access to data is not enough without the accompanying analytical capabilities to derive meaning from it.





VAAS BUSINESS MODEL TARGET PICTURE: MULTI-CYCLE VIEW TO MAXIMIZE VEHICLE LIFETIME VALUE (VLV)

5



	Next VaaS Cycle	Remarketing			Recycling
CHANNEL/ PRODUCT	Any VaaS offering	B2B (franchise network)	B2B (independent dealer/ broker)	B2C	Alternative business models (e.g. 2 nd life energy storage solution)
VEHICLE	Returns to provider after lifecycle	Sold via auction to own dealer network	Sold via auction to 3 rd party network	Sold direct to retail customers	Dismantled, esp. for EVs with battery 2 nd life
CLV & VLV POTENTIAL					
EVALUATION	Full control over next lifecycle & customer access	Potential depending on dealer's sales process	Least beneficial as customer & vehicle access is lost	Direct customer interaction & add. Lead generation	Beneficial if parts value exceeds expected cumulated returns

In an advanced VaaS business model, OEMs and vehicle owners will actively manage vehicle lifecycles using data to maximize VLV. Based on the customer insights they can generate, providers will know what vehicles to build or purchase to adapt their vehicle fleet to best meet market demands.

Next VaaS Cycle

The optimum solution from a profit point of view is to find the next best vehicle for an existing customer, and also find a new customer for the existing vehicle. If both these things happen, providers achieve consistent growth by adding more customers and optimizing utilization of their vehicle fleet.

Remarketing

However, there may be vehicles that the provider does not want to keep in the fleet. This could be the case if the resale value is higher than the expected cumula-

ted VaaS returns from further cycles, or if there are too many similar cars in the fleet.

Remarketing – B2C

Whatever the reason, selling the vehicle via a direct-to-consumer (D2C) channel is the best option from both a CLV and a VLV perspective. Selling a vehicle D2C offers upselling opportunities for additional services, and is 10 to 20 percent more profitable for the provider than selling the vehicle in a B2B auction.

Remarketing – B2B (franchise network)

In some cases, OEMs might want to ma-

nage their dealer network or reduce the time and effort spent reselling directly to consumers, and sell to their franchise network instead.

Remarketing – B2B (independent dealer)

From a VLV perspective, the least good option is to auction vehicles outside of the franchise network to third party dealers. By doing so, both customer and vehicle access, including all CLV and VLV potential, will be lost.

Recycling

With the advent of electric vehicles and

respective new business models around battery second life, dismantling and recycling components might also become an important part of profitability.

For most providers, it makes sense to gradually evolve towards the multi-cycle model. Building up their own direct-to-consumer channels with partners can help to generate the profits needed to invest in building up the required enablers of this future business model.

MAKING THE MOST OF MULTI-CYCLE SALES MODELS

WHAT ELSE DO OEMS NEED TO DO TO MAKE MULTI-CYCLE SALES PROFITABLE?

5

For each of the enablers below, OEMs face a make, buy or partner decision depending on time-to-market requirements, existing capabilities, strategic relevance and available budget:



Omni channel sales management

Integration of own and third-party online and offline channels to allow seamless customer journeys, a coherent customer experience and digital transactions.



Vehicle handling and fleet management

Multi-brand vehicle fleet management and handling, for tasks such as maintenance, vehicle operations and logistics



Procurement and ecosystem partner management

Sourcing of third-party vehicles and services as well as building and management of partner ecosystems



Service offering and bundling/ payments

Ongoing scouting of value-added (mainly digital) customer- and vehicle-related services, and integrated payments, billing and invoicing (e.g. for parking or functions on demand)



VaaS tech stack

360° customer and vehicle insights via big-data analytics and AI; end-to-end integration of digital front ends and back end (such as website and contract management systems) to enable flexible adjustments



Vehicle allocation intelligence (VAI)

A data-driven approach that dynamically estimates the best combination of VaaS contract cycles to optimize total VLV

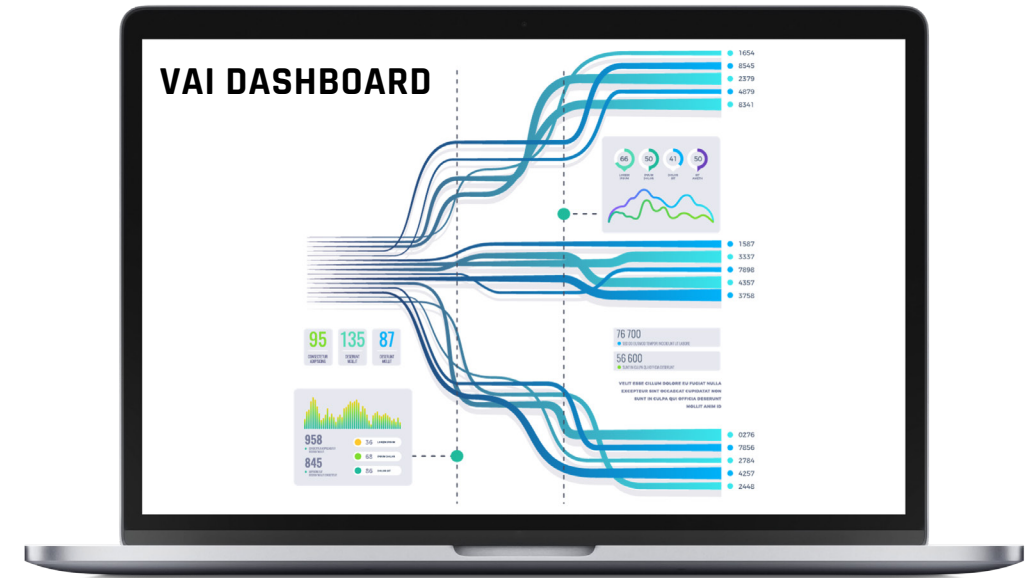
ce a lease return in the provider's short-term rental fleet while at the same time offering it for sale to private customers via the OEM's own or 3rd parties digital channels.

Today, sales decisions are predominantly driven by static future residual value expectations and resale auction prices of vehicles. In a VaaS sales model, the major question in the future will be, what is the best combination of contract lifecycles per vehicle to maximize vehicle lifetime value?

Depending on market conditions, it might be better to route a given vehicle to a subscription product cycle for a few months before being sold to a private customer. Or it may make sense to pla-

The more contracts and the shorter the customer lock-in time per vehicle, the harder it gets to predict ideal combinations over a vehicle's lifetime. So for this future business model to work, it will be paramount for OEMs that pursue it to build up what we call vehicle allocation intelligence (VAI).

VAI is essentially a data-driven algorithm that dynamically estimates the best combination of contract cycles to optimize total VLV on a vehicle portfolio level. Once mastered, the provider has a real-time portfolio view and can maximize profit by moving its own fleet vehicles between different customers, markets and types of VaaS contracts.



The customer insights that are gained by holding on to vehicles can be leveraged to optimize the fleet and profits via two levers:

- » **Vehicle configuration:** building (or retrofitting during refurbishment) the specification packages that will have the most beneficial impact on VLV for future contract cycles.
- » **Renewal and lead generation:** On-top of renewing existing customers, bet-

ter understanding of customer demand can generate customer leads for additional new and used vehicles, which helps to reduce customer acquisition cost.

For certain OEMs and fleet owners, due to their size it may not make sense to build these capabilities in house. This opens up a potential market for software as a service (SaaS) providers to sell such multi-brand data-driven VAI capability on demand.

KEY ENABLER IN FOCUS: VEHICLE ALLOCATION INTELLIGENCE (VAI)



FOUR CALLS TO ACTION FOR OEMS AND CAPTIVES TO DEFEND THEIR MARKET SHARE

6

As we have set out above, a profitable future VaaS business model means staying in control of the vehicle and routes to customers through a multi-cycle vehicle lifetime. Under this overarching strategy, there are various configurations of successful business models.

We recommend **four actions for OEMs to take** to maintain or even grow their current market share. The extent to which they pursue each one should be based on their own strategy and capabilities:

- 1 Build additional VaaS products and services**
- 2 Maximize service penetration to increase profit per cycle**
- 3 Optimize remarketing strategy and channels**
- 4 Build and scale VAI capabilities**

Build additional VaaS products and services

WHAT?

To be able to monetize the VaaS and VLV concept, OEM groups first need to build options whereby they retain control of the asset after the first contract cycle and route a vehicle to its next cycle, which may include leasing, subscription or rental.

These VaaS products can also be offered via partners to decrease time to market and complexity.

TOP LINE

A higher number of redeployment options will help to reduce the time required to find another customer for an available vehicle, and ultimately increase overall vehicle fleet utilization.

A diverse VaaS offering will both help to address all segments of the VaaS market as the vehicle ages, and have options for each required cycle duration. This flexibility enables OEMs and fleet owners to best exploit market potential.

A standardized and comprehensive offering across markets is also a prerequisite for increasing the topline via cross-boarder allocation of vehicles to take advantage of different demand and prices across markets.

BOTTOM LINE

Standardized offerings across markets allow providers to improve their bottom line via economies of scale, harmonized processes and IT infrastructure, and stronger purchasing power in their relationships with third-party service providers.

FOUR
ACTIONS FOR
OEMs

1

2

4

3

BUILD ADDITIONAL VAAS PRODUCTS AND SERVICES

Maximize service penetration to increase profit per cycle

WHAT?

VaaS will require a fundamental mindset shift among OEMs and fleet owners towards becoming services businesses. For example, the current cash cow of aftersales will be turned into a cost, as providers will be responsible for maintaining and refurbishing vehicles because they remain the legal owner.

Instead, additional value-added services will play an essential role in unlocking new profit pools, and service portfolios need to be optimized in two ways:

TOP LINE

Differentiation and integration: The vehicle itself will become only a part of a wider service offering. Therefore, seamless integration and service levels, quality and scope will be the new differentiating factor between different VaaS providers competing for customers. The providers that achieve the highest customer satisfaction scores will win the greatest market share.

Service expansion: To capture a larger share of CLV and VLV, providers need to integrate their own and third party services into their VaaS offerings. This includes both vehicle-related services (functions on demand or EV charging, for example) as well as customer-related services that may go beyond their mobility needs.

BOTTOM LINE

A value-added service portfolio should be standardized across markets to remain efficient and realize economies of scale, as well as buying power with service partners and suppliers. Services should be available to configure and add on in a modular way, as well as instantly and digitally accessible.

FOUR
ACTIONS FOR
OEMs

1

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3

MAXIMIZE SERVICE PENETRATION TO INCREASE PROFIT PER CYCLE

Optimize remarketing strategy and channels

WHAT?

Although vehicles will remain on the balance sheet of a VaaS provider much longer than before, the majority will still be sold off at a certain point in time.

So, with a vastly increased number of vehicles under their ownership, OEMs will need to professionalize their resale operations, to establish the channels that can absorb higher volumes of vehicles in a timely way and sell them profitably.

TOP LINE

Optimizing profitability by making cross-border sales will become commonplace.

Having their own direct-to-consumer (D2C) channels increases flexibility in sales opportunities and opens additional market segments for VaaS providers.

By leveraging their D2C channels, VaaS providers can exclude intermediaries such as independent B2B dealers and improve their margins.

Using their own channels also gives OEMs pricing authority and transparency on final transaction prices. The data can be looped back to the VAI to improve its decisions

BOTTOM LINE

Building and managing these sales channels in-house provides the highest degree of control. Nevertheless, the customer acquisition cost to gain the required traffic might greatly exceed potential returns for some providers. Therefore, partnering with providers that have already built channels with strong customer traffic may offer a strategic advantage.

FOUR
ACTIONS FOR
OEMs

OPTIMIZE REMARKETING STRATEGY AND CHANNELS

Build and scale VAI capabilities

We expect this to be the hardest part of the transformation for OEMs as it is the least correlated to their traditional core business and sales model. However, vehicle allocation intelligence will be the central control and distribution unit of the whole future VaaS business model, so we have not separated the top and bottom line benefits in this case. Its degree of professionalism and automation will be decisive for the future profitability levels of VaaS providers.

Due to its novelty and complexity, we recommend development in stages:

Stage 1 – Learn: Make existing internal data sources accessible, then aggregate and combine them to create a single source of truth for customer and vehicle data. Develop a first set of ranking formulas (for example in a particular market) to estimate expected profits for a vehicle per possible channel. Then use the static spreadsheet data to manually assess and decide on the next VaaS product cycle and compare profits against a “pure resale” alternative. There is a high degree of human involvement at this stage, before progressing to algorithms in Stage 2.

Stage 2 – Predict: Link additional external databases and search real-time data to further enrich the internal database. Upgrade ranking formulas to automated algorithms with limited human interference. Connect additional markets and channels to the decision engine.

Stage 3 – Automate: Upgrade to self-learning algorithms and invest in artificial intelligence to enhance VAI and increase its processing power. Ultimately VAI should be capable of predicting and comparing not only the next, but also multiple use cycles into the future, to identify the most profitable path through the vehicle’s lifetime.

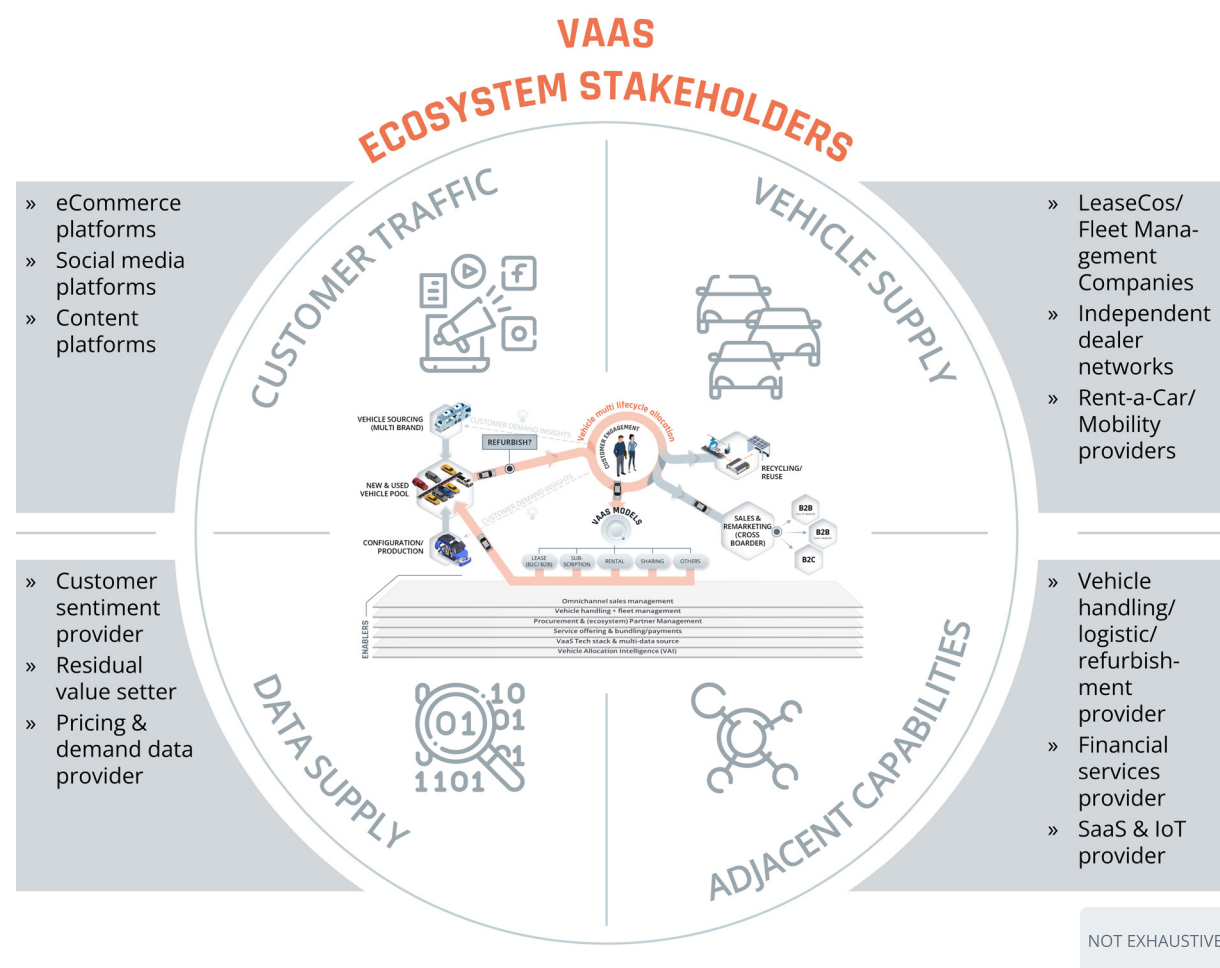
WHAT?



BUILD AND SCALE VAI CAPABILITIES

VAAS OPENS UP A MULTI-BILLION INDUSTRY TO NEW ENTRANTS

The VaaS business model, with its priority shift from first cycle sales towards multi cycle management, will redistribute value creation and capture in the auto industry, and make the industry highly appealing for the following players, going beyond traditional OEM groups:



Insurance providers

- » **Indirect approach:** collaborate with VaaS providers to become their integrated insurance (e.g. comprehensive cover) partner
- » **Direct approach:** launch an own subscription model to minimize cost & complexity for interim cars for customers involved in accidents (i.e. bottom-line improvement)

Charging provider

- » **Indirect approach:** collaborate with VaaS providers to become their preferred charging partner
- » **Direct approach:** Promote own charging card by selling EVs via VaaS offers to lock in customer in own charging network (i.e. top-line improvement)

SaaS provider

- » **Indirect approach:** cooperate with VaaS providers to become their preferred outsourcing partner for SaaS solutions
- » **Direct approach:** Build an own B2C VaaS platform jointly with customer traffic & vehicle provider

Financial services provider

- » **Indirect approach:** Join forces with VaaS providers to become their preferred (re-) financing partner
- » **Direct approach:** Partner with Used Car platform providers to sell UCs via full-service leasing to retail & SME customers, to steadily build own fleet as entry point for VLV

CONCLUSION

The automotive industry is already dealing with the transformation of its production model, as electric and increasingly autonomous vehicles take over from conventional diesel and petrol models. However, a second massive transformation of the sales and business model, is also gathering pace, and OEMs cannot afford to fall behind.

Based on our survey findings, customers' brand loyalty is expected to be cut in half when it comes to flexible offerings and such a change cannot be ignored. There are innumerable examples of companies in other industries, such as retail or media, becoming irrelevant after failing to adapt to new digital sales and service models.

The good news is, we believe the car industry has less to lose from this change than some other sectors. As we have outlined above, profitability will increase if OEMs and other providers maintain ownership of the vehicle and maintain their customer relationships over many vehicle use cycles. In addition, 13% of today's non-car owners are interested in "as-a-Service" offerings, opening-up considerable additional business opportunities.

Our customer survey has proven the market shift towards VaaS offers is further picking up speed – in particular driven by younger generations. Customers will increasingly switch to using vehicles "as-a-Service", rather than buying them outright, and to order these services through digital channels. Now is the moment for OEMs to invest in making the changes that will enable them to keep and grow their market share in the new VaaS world.

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