MONETIZING VEHICLE DATA

How to fulfill the promise

Capgemini invent
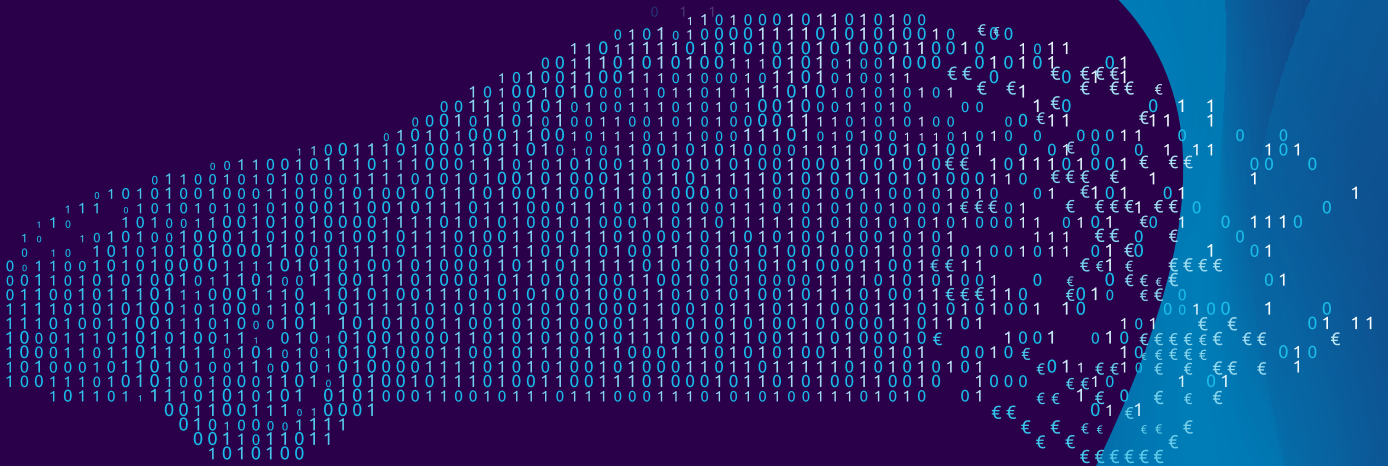
EXECUTIVE SUMMARY

How has the market evolved?

Predictions of the global revenue for vehicle data monetization by 2030 range between $80bn to $800bn, highlighting the enormous potential for both automotive OEMs and service providers using data for service innovation.

However, despite heavy investments in IT platform infrastructure, in-vehicle technology, and service innovation by OEMs, achievements are falling short of projections. Volumes of connected vehicles started to rise later than expected and data signals are often restricted to a limited set of basics. Factors such as these mean market growth is slower than many experts have predicted.

Capgemini has undertaken extensive research into this area, including a survey of 3,000+ end customers in the EU and industry expert interviews. This research explores the main obstacles and investigates how automotive OEMs and service providers can better exploit the potential.

Major obstacles identified for OEMs and service providers:

- Low end customers' willingness to share vehicle data due to trust and transparency issues
- High complexity of setting up a suitable data collector and platform infrastructure
- Lack of service innovation culture to successfully manage novel data-based business models from ideation to implementation
- Service providers are given limited access to vehicle data.

To overcome these obstacles, Capgemini recommends the following actions:

- **DATA TRUST:** Build end customers' willingness to share data by increasing transparency in data use and incentives to increase consumer trust and adoption.
- **CUSTOMER CENTRICITY:** Establish customer co-creation in a collaborative setting with automotive OEMs and service providers to design service experiences that customers enjoy.
- **DATA ENRICHMENT:** Enrich vehicle data with other data sources (e.g. customer data, third-party data) to build more valuable data-driven services.
- **DATA COLLECTOR STRATEGY:** Develop a universal data collector box in all vehicle models to increase the volume of data signals for greater service innovation.
- **ORGANIZATIONAL SETUP:** Embed service innovation within a new organizational setup and collaborate with partners to speed up prototyping and scaling.
- **SERVICE PRIORITIZATION:** Prioritize investments carefully, systematically evaluating data monetization opportunities to form a manageable set of promising services.

How Capgemini can help

Short-term business success with vehicle data has been overrated in the past. However, be patient. Keep on investing and testing, as it will be a major revenue pool in the future. To fulfill the monetization promise and add a central in-vehicle data collector, both supply and demand must be built up – starting with simple but value-creating services. At the end of the report, Capgemini presents its evaluation of the most prominent services based on personalized vehicle data. The segmentation of the results can help OEMs and service providers determine which services they should prioritize.

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HOW FAR HAS VEHICLE DATA MONETIZATION PROGRESSED?

VEHICLE DATA –
THE BIG PROMISE

Overall, the monetization of data has become one of the most promising profit pools across industries. Among other data sources, organizations rely especially on the utilization of vehicle data, be it for internal processing, product optimization, or generating new revenue streams through service innovation.

Capgemini's 2020 Connected Vehicle Trend Radar confirmed that vehicle data monetization is the connected vehicle ecosystem's most promising value driver for automotive OEMs. In fact, Capgemini's experts have identified estimates suggesting that in 2030 the global vehicle data market will be worth $80–800bn.

Automotive OEMs and service providers have been swift to invest in vehicle data monetization, aiming to achieve early mover advantage and new revenue streams. Worldwide, there are more than 150 established startups in the connected vehicle platforms sector. The volume of investments made in these startups amounts to more than €500m.

Meanwhile, vehicle data platforms have been launched, external platform players integrated, privacy-compliant consent management solutions established – and data has started flowing. Early services offered include pay-as-you-drive, vehicle status, e-mobility charging, and service maintenance.

EARLY ACHIEVEMENTS LAG
BEHIND EXPECTATIONS

Despite this progress, connected vehicle sales, available data, services offered, and market penetration all fall short of projections. Of the data monetization use cases that automotive OEMs intended to launch, fewer than 20% have actually been offered to end customers. According to Capgemini research and in-field project experience, many remain at the proof-of-concept stage. In 2020, however, automotive OEMs and service providers are not yet seeing significant revenue streams from this source.

Less data is available than earlier projections suggest. In 2017, experts predicted that modern vehicles would be able to provide more than 400 data points, generated from at least 200 different sensors.

Currently, however, on average 100 data points are available, whether via automotive OEMs' own data platforms or those of service providers. Moreover, today's data transmission techniques are unable to send even this volume of vehicle data to OEMs' servers in real time. In future, however, Capgemini experts expect that the next generation of vehicles will soon be able to provide up to 10,000 data points.

10,000+
data points will
be available on
vehicles in the future

FIGURE 1

THE RANGE OF POTENTIAL DATA SIGNALS IN CONNECTED VEHICLES (EXCERPT)
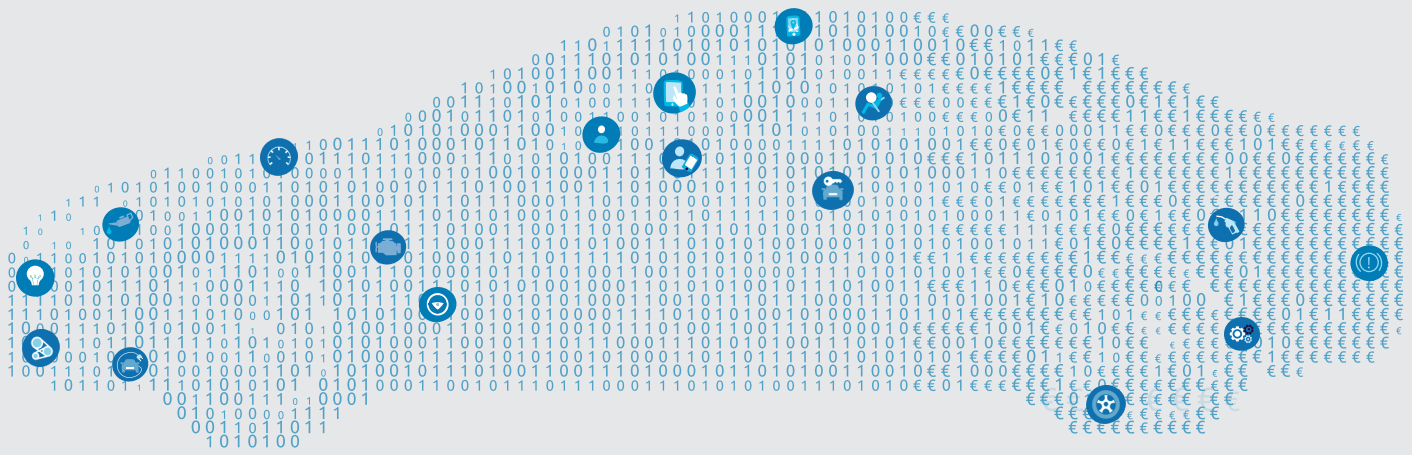
BREAKDOWN

Crash severity, crash location

DOORS & WINDOWS

Status of convertible roof: sunroof, doors, windows, hood & trunk, spoilers, service flap

DRIVER

Driver identity, preferred settings

DRIVER CONDITION

Heart rate, stress level, diabetes level

DRIVING

Mileage, acceleration/deceleration, remaining range, activation time of ECO or SPORT mode, average distance, driving style evaluation, average fuel consumption, intensity of braking operations, gearing behavior

ELECTRIC VEHICLE

Battery health and voltage, charging profile, charging status, electrically driven part of the route, consumption of electrical energy, mode of the last trip, recovered energy

ENGINE

Ignition, engine temperature

FUEL

Range of tank capacity, remaining range, tank capacity

GENERAL

Instrument display unit, outside temperature, date and time in the vehicle, availability of teleservices, orientation of vehicle, vehicle position

LIGHTS

Condition of lights, condition of turn signals

LIQUIDS

Coolant and oil temperature, coolant and oil level, brake fluid

NAVIGATION

GPS speed, navigation destination, position of the vehicle – latitude & longitude, time and distance to navigation destination, alignment of the vehicle, state of motion of the vehicle, maximum number of POIs stored in the navigation device, free POI spots

SECURITY

Belt status, passenger airbag

SERVICE

Date of next inspection, trip details (distance, time, events, positions…), date of next service, date of brake fluid change, distance to the next service, time threshold for main and exhaust emission test, check control messages, low-voltage battery, remote service result, remote service type, time threshold for service information

SMARTPHONE

Mobile phone pairing, use pattern of applications

WARNING SYSTEMS

ABS/ESP events, DTC, ADAS events, automatic teleservice call, teleservice battery guard, number of CBS messages, sensors (parking, distance, speed)

WHEELS

Status of tire pressure, tire warning indicator status, status of brakes, status of parking brake

WHAT OBSTACLES HAMPER MONETIZATION?

To understand why vehicle data monetization is not gaining traction as fast as expected, we reviewed the situation from the perspectives of end customers, automotive OEMs, and service providers.

END CUSTOMERS' PERSPECTIVE

We conducted research with an EU sample comprising 3,000+ participants from Germany (37%), France (33%), and the UK (30%). To understand the perspectives of automotive OEMs and service providers, we conducted several expert interviews.

Many end customers are unwilling to share data
Sharing vehicle data still raises mixed feelings with participants and only around one-third are willing to share data. Interestingly, when considering the German sample more closely, participants exhibit a higher willingness to share vehicle data compared to the other two countries.

Looking more deeply into the group who are generally willing to share their vehicle data, a clear trend emerges: end customers are particularly concerned about personalized, as opposed to anonymized data sharing, with only about one-third willing to share this type of data (two-third for anonymized data).

Not enough awareness about the purpose of data sharing
Uncertainty is a major issue when participants were asked about data sharing. While more than 80% are not even aware of the data their vehicle transmits, pointing out the benefits and use cases raises willingness to share by 28%, suggesting that lack of understanding of the proposition is a barrier. Total transparency around how their vehicle data is used can mitigate concerns regarding data security and misuse.

Vehicle data needs different incentives to share
Outside the vehicle ecosystem, gamification and competition are usually key motivating factors for sharing data (especially personalized data). However, when it comes to vehicle data, only a small number of respondents said these incentives increase their willingness to share vehicle data.

"I WANT TO KNOW EXACTLY WHAT I AM SHARING BEFORE I AGREE."

— Capgemini study participant from Germany

For data that they consider sensitive, end customers prefer to have full control and discounts in return for using services. The proportion of participants willing to share personalized data increased to approximately 50%, when discounts were mentioned as an incentive.

Automotive OEMs are trusted most with data
Around 36% of participants stated that they trust automotive OEMs when it comes to data sharing. Of these, heavy users (those driving their vehicle more than five days a week) were more open to releasing their data to automotive OEMs.

Interestingly, data platform providers were the group that participants trusted least – presumably because they are seen as operating a "black box," where end customers have no insight into how their data is being used.

AUTOMOTIVE OEMS' PERSPECTIVE

A break with tradition is needed
Most automotive OEMs have acknowledged that their history does not equip them to provide data services for their end customers. Besides a cultural mismatch, there are practical difficulties, such as inadequate skill sets, resources, processes, and digital business sense for innovative pricing models (as there is no historical pricing information to build business cases). Often, automotive OEMs are confident about designing new business models, but lack steering processes to manage their service portfolio roadmap. Hence, their service development funnel is too ambitious so that only a few services reach implementation status.

"WE DO NOT HAVE A DATA SERVICE DNA AND ARE HAVING TO BUILD UP THE CULTURE – AND THE COURAGE – FOR DIGITAL BUSINESS MODEL INNOVATION FROM SCRATCH."

— Thomas Geiger, Data Business Expert, AUDI AG

There are similar concerns regarding the distribution of services directly to end customers. Until now, automotive OEMs' core business has been selling vehicles through importers, with services outsourced to partners. Now, OEMs have to take a huge step, not only towards service innovation but also towards direct distribution of services to their end customers.

Another roadblock is that data platform providers and service providers are perceived by automotive OEMs as competitors rather than enablers for fast service adoption. OEMs prefer to protect their own services (e.g. predictive maintenance) and exploit them fully themselves. They are afraid to let in other market players.

"FOR HISTORICAL REASONS THERE IS A WIDE, COMPLEX VARIETY OF IN-VEHICLE COMPONENTS, WHICH MAKES IT CHALLENGING FOR AUTOMOTIVE OEMS TO MANAGE VEHICLE DATA IN A STRUCTURED AND CUSTOMER-FRIENDLY WAY."

—Thomas Geiger, *Data Business Expert, AUDI AG*

Market uncertainty is inhibiting maturity and lack of technical standards is hampering progress

Automotive managers told us in focus interviews that innovation around the vehicle data business model is inhibited at both business and technical levels by uncertainty, since politicians and lobbyists have not yet managed to agree on a common industry standard.

Lack of common data and platform standards is another major inhibitor. Most automotive OEMs have complied with the ExVe ISO standard, but are still implementing platforms according to their own standards. Service providers, however, are primarily interested in purchasing data that is standardized across automotive OEMs.

Setting up a user-friendly platform infrastructure is complex

Managing vehicle data is a challenge, especially given the variety of components in a typical vehicle and considering the current, highly heterogeneous, system landscape. The challenge starts with the data catalogue: automotive OEMs do not always know what data they already have and where it is stored. On top of the component variety, OEMs lack a universal data collector technology, leading to a heterogenous set of data signals across vehicle models and a limited volume of connected vehicles with relevant data signals overall. This reduces the possibility for advanced services that require a certain set of data signals and also the motivation for service providers to invest in such services.

To guarantee a privacy-compliant solution, new peripheral systems need to be developed and integrated (for example, consent management and harmonized user IDs). Also needed is a general data strategy to define data points, data depth, and GDPR handling. Moreover, advanced vehicle services, with live input of location-based data, challenge automotive OEMs to change their data collection aggregation from centralized (cloud-based) to decentralized (edge-based) infrastructures.

Automotive OEMs feel they are short of some competencies, such as experience in platform technologies and data security. All traditional automotive OEMs lack sufficient IT development skills and capacities for quick implementations. The GDPR has already changed internal data use but transferring data to external parties raises additional privacy issues.

SERVICE PROVIDERS' PERSPECTIVE

Early adopters rely on costly and inconvenient workarounds

Recently introduced digital products from service providers have aimed to leverage vehicle data to create more convenient products and services for their customers. Because automotive OEMs fail to provide data via standardized APIs for those new products, service providers feel that obtaining necessary vehicle data sometimes entails undue effort, costs, and risk. For instance, insurance companies have felt compelled to individually develop hardware solutions such as telematic boxes or on-board diagnostic dongles.

Technical barriers hamper provision of new services

Service providers lack the resources to connect to each automotive OEM individually. They are keen to work with vehicle data platform providers via APIs as they consolidate multiple automotive OEMs on one platform with one standardized API. The need for hardware retrofits or manual data entry currently means that activities such as taking out a new insurance policy are not streamlined enough.

Another issue mentioned by suppliers is not being able to provide a service until significant historic data is available. For example, designing an insurance policy supported by telematics requires millions of miles' worth of data about driving behavior. Service providers are therefore considering more workarounds, such as using telematic data from the customer's phone instead of from the vehicle.

Automotive OEMs withhold relevant data points

In addition to the technical challenges of obtaining data, service providers know that certain desirable data is being withheld by automotive OEMs, either because of data protection concerns or because the automotive OEMs want to safeguard their own business interests (e.g. in after-sales service).

"BOOKING A NEW TELEMATIC INSURANCE POLICY HAS TO BE AS EASY AS PAYING VIA PAYPAL."

—*Lead Vehicle Operations Strategic Tasks, German Insurance Company*

KEY SURVEY FINDINGS

1. WILLINGNESS TO SHARE VEHICLE DATA

Would you in general be willing to share the data generated by your vehicle?

	0	20	40	60	80	100
No	**37%**					
I don't know	**34%**					
Yes	**29%**					
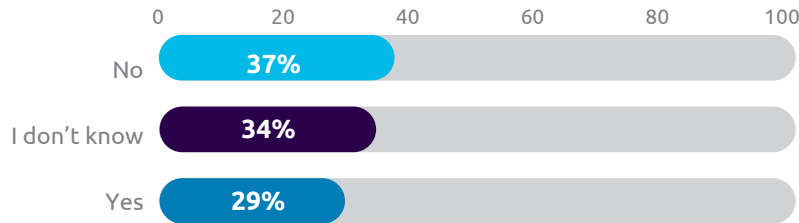
Germans are 10% more willing to share their vehicle **data** with OEMs than other Europeans

2. SHARING ANONYMOUS VS PERSONAL DATA

In general, there are anonymized and personal data. Which of these data would you be willing to share?*

2/3 Anonymized data

1/3 Personal data

* Of those who are willing to share data in general or unsure about their willingness
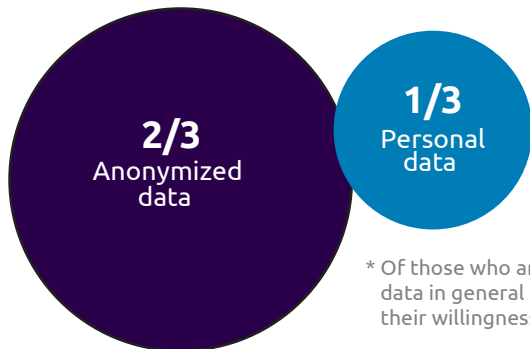
3. GENERAL AWARENESS GAP

Do you voluntarily share your data with third parties to receive incentives? For example, do you participate in programs such as Payback or share your running route on Facebook? These apps use your data. Please now reconsider the question.
Do you voluntarily share your data with third parties?

	0	20	40	60	80	100
30% Before awareness						
58% After awareness						

28% increase
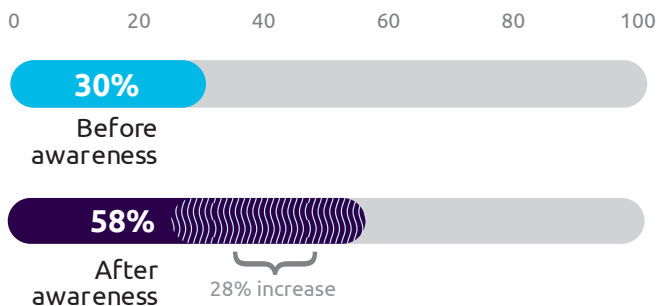
4. VEHICLE DATA SHARING KNOWLEDGE

Does the participant know what data their vehicle transmits?

	0	20	40	60	80	100
No	**82%**					
Yes	**18%**					
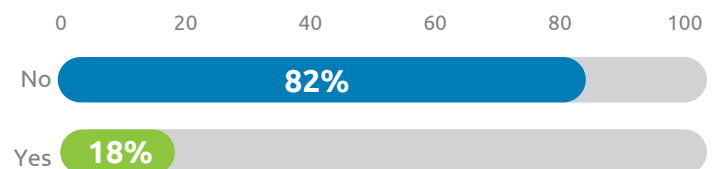
5. MAIN CONCERNS ABOUT SHARING DATA

Why don't you want to share your data?

	0	20	40	60	80	100
Privacy concerns	**47%**					
Uncertainty about how data will be used	**45%**					
Unauthorized data sharing	**41%**					
I don't trust the company	**27%**					
Lack of trust in company	**22%**					
No interest in data-based services	**6%**					
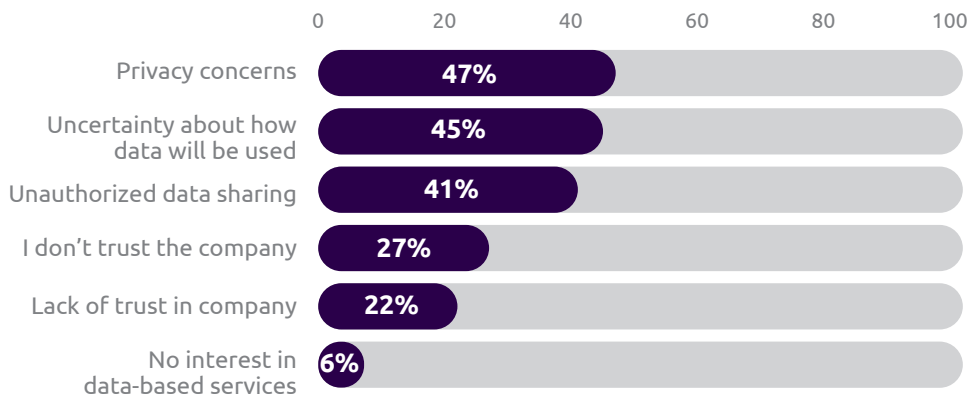
6. MITIGATION OF CONCERNS

What could automotive OEMs do to give you a better feeling when sharing your data (anonymous or personalized)?

	0	20	40	60	80	100
Clear transparency about how my data is used	**62%**					
Notification of unusual activities	**32%**					
Multi-level authentication	**29%**					
Investment in better security technology	**25%**					
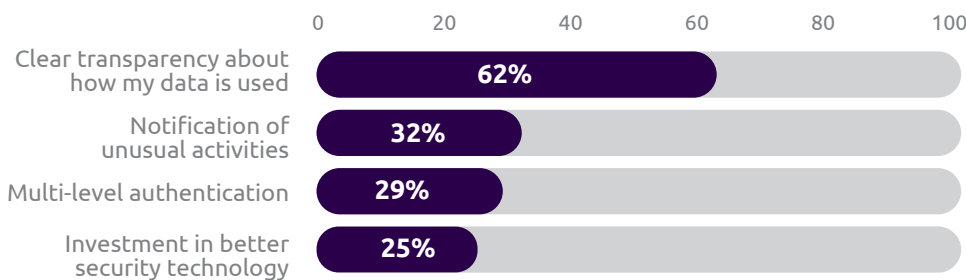
7. INCENTIVES

What would be incentives for you to share your anonymous/personal data with vehicle manufacturers?

	0	20	40	60	80	100
100% control of data	**51%**					
Discounts (vouchers)	**45%**					
Giveaways	**32%**					
Gamification	**12%**					
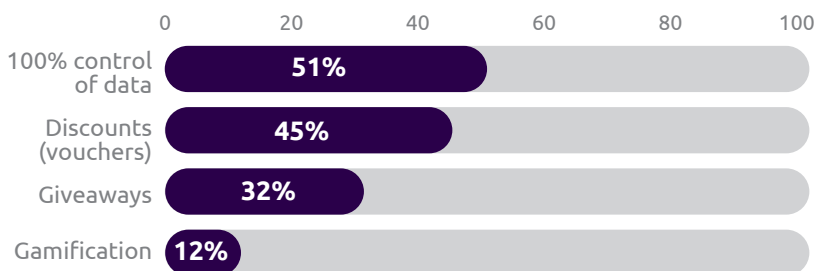
8. TRUSTED PARTNERS FOR DATA SHARING

With whom would you be willing to share your data (personalized or anonymous)?

36% Automotive OEMs

32% Insurance companies

Platform providers **13%**

21% Government

multiple answers were possible

11
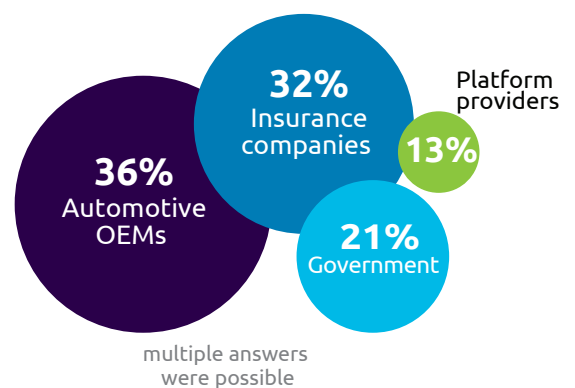
HOW CAN WE REALIZE DATA'S FULL POTENTIAL?

BY FOLLOWING THE RECOMMEDATIONS BELOW, YOU CAN SUCCESSFULLY REALIZE DATA'S FULL POTENTIAL.

Build end customers' willingness to share data via increased transparency around data use and incentives to raise consumer trust and adoption

To overcome end customers' reservations about allowing their data to be used:

- Create awareness of the reasons for data sharing via marketing and sales
- Provide transparency about what data is being used, how, and why – including the use of external data platforms
- Assure end customers that they have 100% control over the use of their data. Explain the consent management process, and that no personalized data will be shared without consent
- Design the consent flow to be as convenient as possible, incorporating it into a user-friendly mobile and in-vehicle UX design
- Offer discounts – not gamification – to incentivize data sharing, and transparently show the savings from using the service
- Gain trust by starting with anonymized data, which one-third of end customers are willing to share without incentives – this may encourage sharing of personalized data later
- Build trust and excitement by showing end customers how many others were helped thanks to sharing

their anonymized data, or its positive environmental impact
- Focus on heavy-vehicle users, as they show above average willingness to share data.

Establish customer co-creation in a collaborative setting with automotive OEMs and service providers to design service experiences that customers enjoy

Given their lack of historical data about what works, automotive OEMs know that they have to collaborate closely with service providers. For example, they need guidance from providers about what services should be offered first, and feedback about what services end customers value most in practice.

"JUST DIGITIZING THE CURRENT SERVICE PORTFOLIO BASED ON VEHICLE DATA COMPONENTS IS THE WRONG APPROACH. BOTH AUTOMOTIVE OEMS AND SERVICE PROVIDERS NEED TO THINK FROM AN END CUSTOMER PERSPECTIVE, ADDRESSING CONCRETE NEEDS, AND BUILD INNOVATIVE DATA-BASED SERVICES AROUND THAT PERSPECTIVE."
—Daniel Pathmaperuma, *Mobility Data Architect*

More importantly, both parties need to involve end customers within their service innovation process right from the beginning. The collaborative approach can succeed only by putting the end customer at the center.

Enrich vehicle data with other data sources (e.g. customer data, third-party data) to build more valuable data-driven services

This way, you can make both new and existing offers more customer centric. Consider all the possibilities for accessing vehicle data, whether via automotive OEMs or third-party platforms.

Successful services need to be highly personalized since certain categories of service interest some end customers more than others – for example, those offering convenience advantages (e.g. time savings), welfare benefits (e.g. traffic safety or energy savings), and lifecycle facilities (e.g. CarCV).

"MANY SERVICES CURRENTLY BEING PILOTED OR LAUNCHED WILL NOT BE THE FUTURE KEY VALUE DRIVERS, BUT THEY WILL FOSTER MARKET ITERATION AND FASTER SERVICE ADOPTION."
—*Business Lead, Digital Business, Automotive Supplier*

Develop a universal data collector box in all vehicle models to increase the volume of data signals for greater service innovation

One of the key technological challenges identified is the coexistence of multiple vehicle data collectors across vehicle models. For OEMs to be able to collect, store, and monetize available data points, a universal vehicle data collector box is essential. To overcome this complex technical challenge, digital business units that are responsible for service innovation need to work closely with engineering units to jointly define a strategy for progressing rapidly with such a data collector.

Only once this technology has been implemented will the volume of available data points increase, bringing the opportunity to design more advanced services. This will result in more attractive services that will be more appreciated by end customers, increasing both adoption rates and external service providers' interest in investing in vehicle data-based services.

Embed service innovation within a new organizational setup and collaborate with partners to speed up prototyping and scaling

Automotive OEMs need to decide where to locate the service innovation ecosystem, and whether it should be business- or engineering-driven. They also need to decide which skills and resources should be provided internally and which obtained externally.

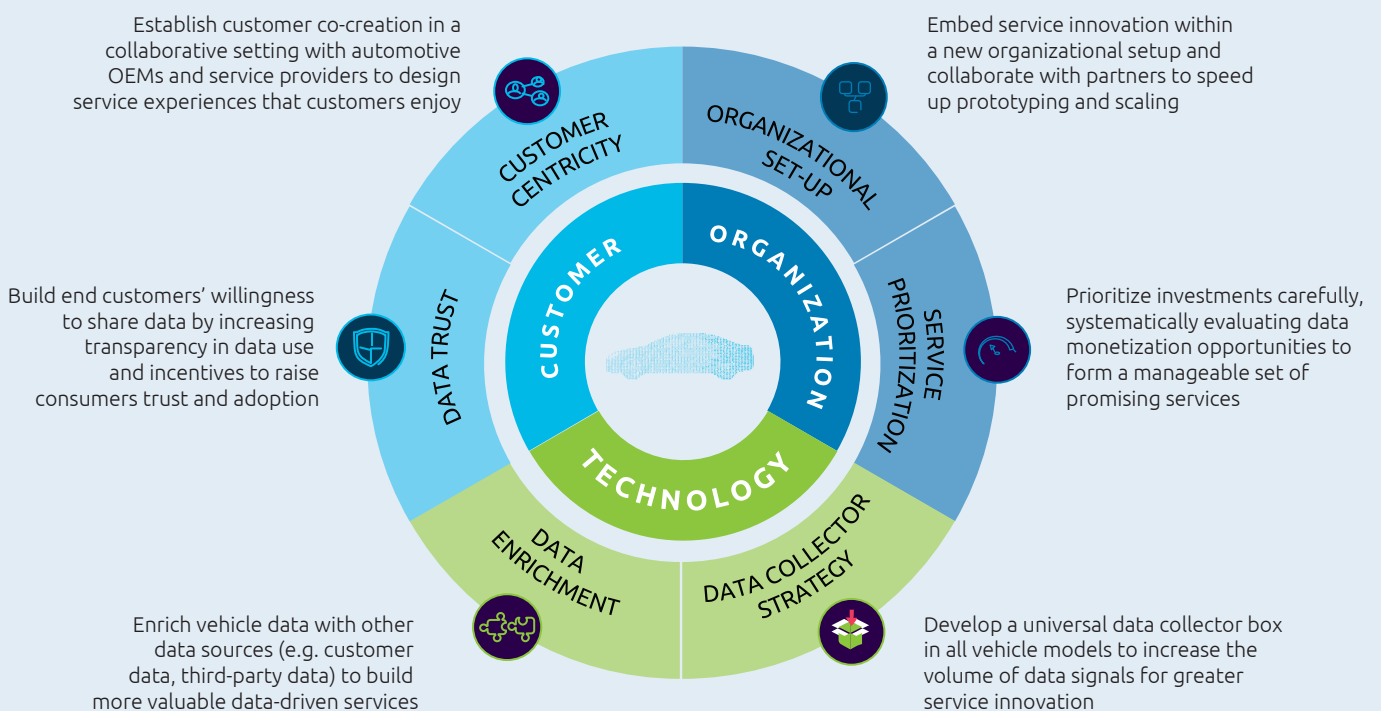We recommend decoupling service innovation from existing department structures and embedding it in a new organizational setup. The implementation process can be accelerated by situating it in a focused, data-driven environment that merges internal and external competencies. Internal focus should be on vehicle data and device infrastructure. External skills should be brought in for business modeling, pricing, and service innovation.

"THE CURRENT CENTRALIZED SETUP, WITH PRODUCT OWNERS STEERING EXTERNAL PARTNERS, NEEDS TO BE BROKEN UP, SO THAT EXTERNAL PARTNERS CAN DRIVE SERVICE INNOVATION AUTONOMOUSLY AND MORE EFFICIENTLY."
—Daniel Pathmaperuma, *Mobility Data Architect*

FIGURE 4

MONETIZE-NOW FRAMEWORK

Establish customer co-creation in a collaborative setting with automotive OEMs and service providers to design service experiences that customers enjoy

Embed service innovation within a new organizational setup and collaborate with partners to speed up prototyping and scaling

Build end customers' willingness to share data by increasing transparency in data use and incentives to raise consumers trust and adoption

Prioritize investments carefully, systematically evaluating data monetization opportunities to form a manageable set of promising services

Enrich vehicle data with other data sources (e.g. customer data, third-party data) to build more valuable data-driven services

Develop a universal data collector box in all vehicle models to increase the volume of data signals for greater service innovation

Within that new organizational setup, close collaboration with analytics and technology companies and service providers is essential.

Test the data flow, processes, and service design within the organization and collaborate with technology companies and service providers to gain further external expertise. Vehicle data monetization affects the entire value chain, from back-end IT systems to pricing mechanisms. Successful services depend on carrying out tests right across the partner ecosystem and learning from the process. It is essential to experiment within test environments now, in order to achieve long-term maturity in the data business and shape the future portfolio.

Prioritize investments carefully, systematically evaluating data monetization opportunities to form a manageable set of promising services

Setting up the vehicle data infrastructure is automotive OEMs' responsibility. Other services that need to be developed in-house by OEMs include those that ultimately contribute to key brand components, and those where end customers perceive added value from having them offered by their vehicle brand. Moreover, OEMs can also benefit from indirect monetization through internal vehicle data analytics from, for example, process cost reduction, R&D and product optimization.

"I SEE HUGE POTENTIAL FOR INDIRECT VEHICLE DATA MONETIZATION, ESPECIALLY IN AFTER-SALES FOR PREDICTIVE MAINTENANCE, STATISTICAL ANALYTICS FOR WORKSHOP ACTIVITIES AND OVER-THE-AIR MAINTENANCE."
—Stephan Fingerling, *Chief Information Officer, MAN Truck & Bus SE*

On the other hand, services that require data from multiple automotive OEMs (e.g. parking or traffic apps) can only be created by data platform providers who can aggregate the data sources to gain full market reach. In addition, services that lie far away from key automotive OEM competencies can be implemented faster and better by service providers.

Clearly, automotive OEMs should open up their data ecosystems so that service providers can launch additional services The larger the service portfolio, the more end customers will use it.

For their part, service providers should avoid getting involved with hardware provision in order to gain access to vehicle data. Instead, they should collaborate with automotive OEMs early in the service development stage, as it will be easier to improve data provision than build workarounds. At the same time, they need to connect with data platform providers to get full access to all participating automotive OEMs' data through one standardized interface.

Individual investment decisions need to comply with the general vehicle data strategy and should be guided by a portfolio steering process. This is inherently important as it sets the foundation for all future phases (and all our recommendations) on the road to successfully monetizing vehicle data.

To facilitate the prioritization of services, we have developed an evaluation approach and applied it to the some of the most prominent services currently on the market that are based on personalized data. The following chapter can serve as a guide for OEMs and service providers as to which services to focus on in the short, medium, and long term.

HOW SHOULD VEHICLE DATA-BASED BUSINESS OPPORTUNITIES BE PRIORITIZED AND EVALUATED?

WHICH SERVICES SHOULD BE IMPLEMENTED?

As indicated in our recommendations, we observe a strong discrepancy between the potential set of vehicle data-based services and those actually implemented. Technical barriers and market uncertainty are the main drivers for this hesitancy in investing in new service offerings. Therefore, we suggest that OEMs and service providers should base their service portfolio strategy on the following two dimensions of evaluation:

Dimension 1: Revenue potential: How much revenue can I potentially generate with a particular service?

Dimension 2: Go-to-market speed: How fast can I gain access to the market for a specific service?

Our approach to determine the two dimensions is shown in Figure 3.

This process helps you estimate the projected business value available from data monetization via a given service, and the timescale for realizing that value. As shown in the figure, the go-to-market speed calculation takes account of the complexity of the data needed, the level of technological readiness, and whether (or how many) ecosystem partners are needed.

In this way, you can validate and compare the relative levels of market readiness of different services. As shown in Figure 4, we conducted this type of evaluation for a set of prominent, revenue-generating services requiring personalized data. The results can be summarized to the following categories:

The Premium Roadsters – Services with medium to high revenue potential that can be brought to market in a short period of time. These are services (e.g., first notification of loss, pay-as-you-drive, smart key) that require only few data points and do not involve multiple ecosystem partners, to be implemented in the short term.

The Promising Hybrids – Services with either a high revenue potential or a fast go-to-market speed. These are services (e.g., advanced carCV, smart home integration, extended warranty) that require numerous data points from multiple ecosystem partners, to be implemented in the mid- or long term.

FIGURE 3

Revenue potential calculation

Connected car park	Number of connected vehicles × Growth of connected vehicles
Service demand	Service adoption rate × % of adoption rate
Service monetization value	Service monetization value × Trend of service monetization value
Potential side effects	Additional revenue sources + Cannibalization effects

Go-to-market (G2M) speed determination

- Data complexity indicator (Scale 1 to 3)
- Technical readiness level (Scale 1 to 3)
- Ecosystem complexity level (Scale 1 to 3)

$\bar{X}$ = G2M Speed
1 = Slow
3 = Fast

FIGURE 4

Go-to-market speed
Calculation based on Capgemini's Car Data Evaluation Approach

CATEGORIZATION

Premium Roadsters	Promising Hybrids	Crawling Bumpers
— Easy/fast market access	— Medium market access	— Slow/medium go-to-market
— High revenue potential	— Significant revenue potential	— Low revenue potential
Implement in short term	Implement in mid- or long term	Deprioritize

The Crawling Bumpers – Services that show limited revenue potential and/or take considerable time to bring to the market. These should be deprioritized.

The evaluation results shown can vary significantly and are not generalizable. We strongly suggest applying the prioritization approach described here in a way that is specific to the organization and the context.

All things considered, we suggest focusing first on services that are fast to implement and/or already showing significant monetization potential. This way, OEMs and service providers can stimulate customer demand for further data-driven services and increase their willingness to share data. The approach also allows the stepwise setup of an enhanced IT infrastructure and data ecosystem. After this preparatory stage, it will be possible to monetize the services created by offering more complex services with higher long-term monetization potential.

HOW CAPGEMINI APPROACHES VEHICLE DATA MONETIZATION

As global leader in consulting, digital transformation, technology, and engineering services, the Capgemini Group is at the forefront of innovation and enables clients to fulfill the promise of vehicle data monetization. We help clients realize their business ambitions through an array of end-to-end services and established frameworks from vehicle data strategy definition to service portfolio management.
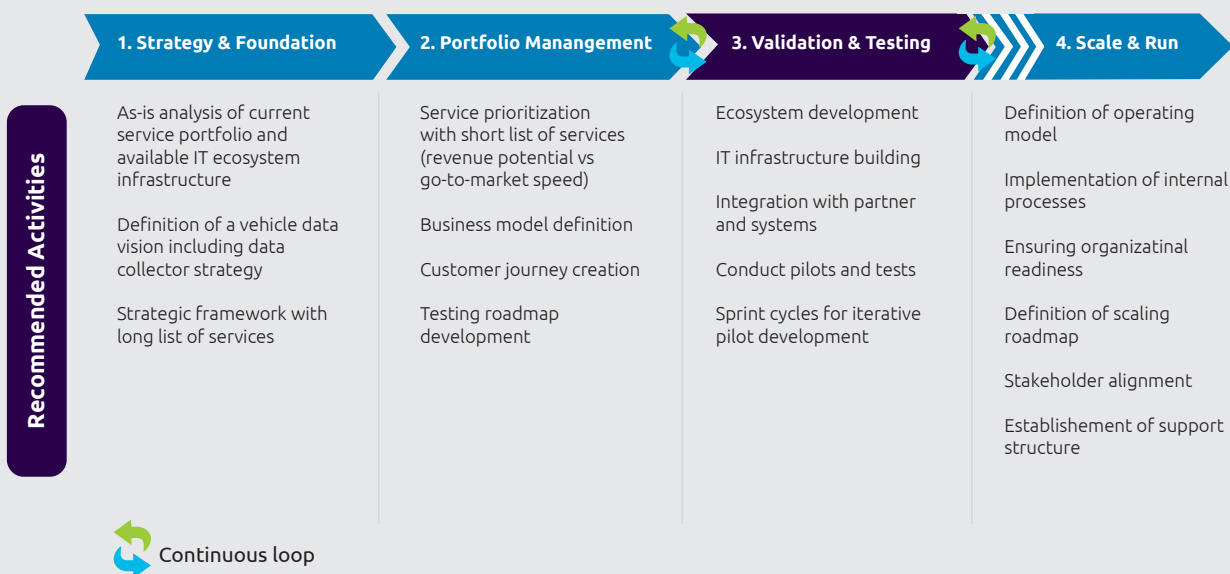
We support our clients along their data journey by bringing the right ecosystem partners to the table and by validating and testing the service innovations that they need to scale sustainable, profit-oriented digital businesses. Recent

ecosystem partnerships, for instance with the leading vehicle data platform startup "Otonomo," boosts our clients' ambitions and reduces their time to market.

The Capgemini Vehicle Data Monetization Phase Model offers a proven, four-phase approach for automotive OEMs undertaking vehicle data projects. See Figure 5 below.

FIGURE 5

CAPGEMINI VEHICLE DATA MONETIZATION PHASE MODEL

1. Strategy & Foundation	**2. Portfolio Management**	**3. Validation & Testing**	**4. Scale & Run**
As-is analysis of current service portfolio and available IT ecosystem infrastructure	Service prioritization with short list of services (revenue potential vs go-to-market speed)	Ecosystem development	Definition of operating model
Definition of a vehicle data vision including data collector strategy	Business model definition	IT infrastructure building	Implementation of internal processes
Strategic framework with long list of services	Customer journey creation	Integration with partner and systems	Ensuring organizatinal readiness
	Testing roadmap development	Conduct pilots and tests	Definition of scaling roadmap
		Sprint cycles for iterative pilot development	Stakeholder alignment
			Establishment of support structure

Recommended Activities

↻ Continuous loop

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"Monetizing Vehicle Data" is part of Capgemini's **Smart Mobility Connect**, a series of custom automotive offers addressing the need for customer centricity. Smart Mobility Connect empowers clients to digitalize their core business and customer-facing channels (connected customer), monetize new growth potential (connected services and products), expand the profit pool with new partnerships (connected ecosystem), and transform to a customer-centric business, leveraging the overarching AI-enabled customer engine platform.
https://www.capgemini.com/service/invent/smart-mobility-connect/

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Capgemini Invent is an integral part of Capgemini, a global leader in consulting, digital transformation, technology and engineering services. The Group is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms. Building on its strong 50-year+ heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. Capgemini is driven by the conviction that the business value of technology comes from and through people. Today, it is a multicultural company of 270,000 team members in almost 50 countries. With Altran, the Group reported 2019 combined revenues of €17billion. *People matter, results count.*

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