

# Unlocking the value of data for the automotive industry





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# Introduction



Data is the key to differentiation and success in the automotive industry, which relies on vast quantities of data to make decisions. Today, however, much of this data is held in silos, often insecurely, and is not accessible to other parts of the organization. A lot of it is not being used at all. This lack of accessibility deprives your organization of valuable insights precisely when the demands on the industry are skyrocketing.

By applying advanced methods of managing and mining your data, you can better understand the story it's telling you. These insights can help you with every aspect of your business: development, your supply chain, or a blind spot you don't even know about,

but that is potentially blocking lucrative new opportunities for growth.

At NetApp, we deliver industry-leading data-management capabilities. We're here to help you access and analyze your data so you can stay competitive with data-driven digital transformation that performs at the speed of now. By building interconnected platforms accelerated by artificial intelligence and deep learning, we remove the speed bumps and help you achieve optimal performance.

When it comes to your digital transformation, you know the destination. With us as your strategic partner, you'll have the speed, resilience, and responsiveness to get ahead

and continuously transform in a fast-moving industry. We partner with the three major cloud providers—Google Cloud Platform, Amazon Web Services, and Microsoft Azure—for service at hyperscale. Our hybrid, private cloud, and on-premises solutions are world-class, which makes us flexible: “One size fits all” isn't our style.

This ebook explores automotive trends and how NetApp can help you handle them. We can't build cars, but we can deliver the data that help you build cars better.



NetApp Automotive Team





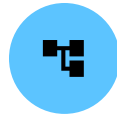
## Chapter 1

# The changing automotive world



# In the automotive industry today, we're seeing a new normal.

According to a Gartner resport, 87% of senior business leaders say that digitalization is a high priority to boost their competitive position.<sup>1</sup> Recently, we have experienced how the global pandemic accelerated the need for digital transformation, particularly in the automotive industry. On the factory floor, more automation is improving efficiency and quality. In the office (or rather: out of the office), remote workers must have the ability to collaborate efficiently, even when sharing large files and datasets. Across an altered supply chain, more transparency and stronger connectivity can help to source and secure essential components.



Digital transformation requires complete digitalization and automation across the supply chain, and specifically the digitization of the factory floor, to increase efficiency while protecting workers.



Modernization of legacy systems supports initiatives such as safety (particularly in the time of global pandemics) with improvements to the factory floor and the overall supply chain.



Transformation in the vehicle: Connected cars need software development and a digital backbone supporting over-the-air personalization, customer experience, brand, and telemetry data used for insurance and predictive maintenance.



Improved customer experiences through partnerships: Creating innovative user experiences with new services by partnering with telcos and technology companies.



Searching for new revenue through connected services, data monetization, and partnerships with technology companies.



The automotive industry isn't alone in pushing for big changes. Connected and empowered customers increasingly expect their vehicles and transport services to become “mobility experiences” that make their lives easier and safer through advanced technologies. They are also looking for more virtual and personalized services from the companies that make and sell their cars.

A study by the World Economic Forum found that data-driven services connecting consumers to their vehicles could potentially benefit the automotive industry to the tune of \$117 billion between 2016 and 2025.<sup>2</sup> Global economic turmoil aside, there are still many new paths to revenue waiting to be explored.

## Digital transformation is imperative

Holistic connectivity between compute and data strategy is foundational to both digital transformation and the digital life of the vehicle.

# 86%

of organizations say they're ready to invest in new digital technologies to boost their competitive position.

Source: The Manufacturer – Annual Manufacturing Report 2020





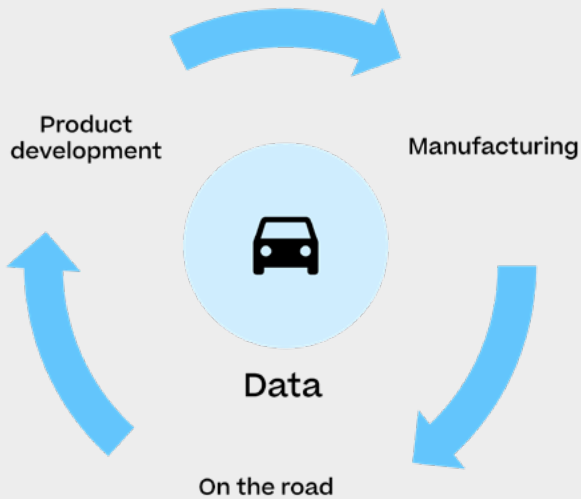
## Chapter 2

# More data, more problems



## Data is the engine for automotive

Digitalization must pervade the complete lifecycle, from design all the way through production.



Vehicle information is driving an explosion of data in the automotive industry. Connected cars publish large datasets at an incredible rate, making it possible to track location, monitor vehicle and engine functions, and capture and remotely interpret information such as engine-generated fault codes. As customers desire personalized experiences from their cars, their preferences also drive data.

The technical decisions associated with storing and managing high volumes of data of different formats, sizes, and characteristics need to be thoroughly reevaluated so that crucial information is not left untapped.

## Data must be:

- Secure
- Standardized
- Able to move flexibly in real time between enterprise IT, private cloud, edge, public and multicloud, and the vehicle

If companies can get control over their data, there are opportunities for massive growth. According to *Auto Tech Review*, overall global revenue from the monetization of vehicle data could reach up to \$750 billion by 2030.<sup>4</sup>







But data silos are major obstacles to finding value.  
They impair business vision in three ways.

### Within each plant

- Reporting and analysis cannot be consolidated across independent systems.
- Components often have discrete servers and management tools.
- New technology, such as 5G, AI and ML, is challenging to incorporate.

### Across an organization

- Factory (OT) and business (IT) remain disconnected.
- Backup and disaster-recovery capabilities are often discrete or nonexistent.
- Software updates and data backups are tedious.

### Across a supply chain

- Lack of visibility hampers agility and responsiveness to changes, causing inefficiencies and reducing productivity.
- Fleets don't connect to core data center services.
- Service centers lack real-time access to the supply chain.



## Locked out of your data?

The automotive sector is facing a perfect storm: Increasingly strict regulations and penalties are swelling costs; and changing consumer demands are shaking up the market. Meanwhile, the new normal continues to disrupt the old ways of building and buying cars.

Having a data advantage can help your enterprise deal with today's harsh climate. But too much unstructured or siloed data can easily become a drawback. For instance, a single test vehicle generates over 1 billion images every year—and at least 3 million of these may need to be labeled.<sup>5</sup> The unplanned growth of your data footprint can result in out-of-control IT costs and an inability to analyze larger quantities of incoming information. No matter how much data you have, if you can't unlock it, it can't take you anywhere.





## New demands require new thinking

At the start of the COVID-19 pandemic, automotive companies around the world saw sales plummet by at least 20%.<sup>6</sup> Thousands of employees were laid off, and thousands more began working from home. Management suddenly had to grapple with the unexpected fallout, in addition to other long-standing challenges.

The first priority was safety. To ensure that workers could safely return to the factory floor, and to get the most value out of a reduced workforce, the entire supply chain had to be modernized. If that alone wasn't difficult enough, falling consumer demand meant that any modernization would have to be done while simultaneously bringing down costs.

The impact of COVID-19, while devastating, was only one of many new hindrances to growth. CO<sub>2</sub> penalties had already been hitting bottom lines for years, and the desire for connected vehicles and the millennial shift away from car ownership to car sharing was old news. On top of this, the emergence of new technologies saw stiffening competition, threatening long-term market share for brand-name automotive enterprises. Many existing revenue streams were becoming obsolete long before 2020.

To optimize the factory floor and beyond, industry leaders need to gain control over their massive and growing data footprint. Technology partners can help them manage and secure sensitive data that is globally dispersed among offices, remote workers, and testing sites, while bridging the internal divides that hinder the gathering of insight from data.





## Chapter 3

# Show me the data



Profit margins are tight, and there is more pressure than ever to find different ways to grow. Without end-to-end visibility across the supply chain, many automotive enterprises will see increased erosion of profitability, with no clear route forward. Digital transformation is necessary to survive and thrive in the long term.

Data is key to uncovering risks and unlocking new streams of revenue. Automotive industry leaders require affordable and efficient solutions to connect their data and extract value from it. This need has resulted in new opportunities for automotive companies to partner with tech firms and jumpstart data-driven profitability.



## Platform modernization and data integration pay immediate dividends

NetApp offers automotive leaders a common platform to gain a complete view of operations, from product development to service centers. With AI- and ML-based solutions and fully managed services spotting inefficiencies, safety gaps, and anomalies, NetApp provides the fuel to power innovation.

Our experts collaborate with management and IT teams to close the gaps between data silos. We make sure that all endpoints are compatible, enabling secure and stable data sharing across the global supply chain. By combining traditional and modern IT, our customers can store data both on their premises and in the cloud. The right employees can now access the right data, whenever they need it.

NetApp® solutions, services, and capabilities, which include harnessing AI and ML, make it possible to process, secure, analyze, contextualize, and share information with unprecedented ease, giving our customers full control over their data. Our clients can better

identify risks to workers on the factory floor, and they can track the fulfillment of processes and the status of goods in transit with greater accuracy.

These advanced capabilities make it easier to build smarter connected cars by using all perspectives captured on testing sites, while also catching errors to avoid costly recalls. Automotive users receive more personalized services as they interact with fully connected systems, increasing their satisfaction and driving brand loyalty. Employees also benefit from consistency by being able to collaborate in a similar manner everywhere, whether they're in the company office or their homes. They can work more efficiently on everything from engine designs to environmental impact studies.





# Top automotive use cases

## Autonomous driving

Autonomous driving is the holy grail of the automotive industry right now, but the challenges are significant. Each vehicle deployed for R&D generates up to 1TB of data per hour. Teams can expect to accumulate hundreds of petabytes of data as autonomous driving projects continue.

## Connected vehicles

Today, vehicles use cellular and Wi-Fi connections to upload and download entertainment, navigation, and operational data. In the near future, we'll also see cars connecting to each other, to our homes, and to infrastructure. AI will play a role in predictive maintenance, in-car assistance, recommendations for infotainment, and more.





## Mobility as a service

Machine learning challenges in mobility-as-a-service models are significantly different from those in autonomous driving; they include things like predicting demand, optimizing fleet efficiency, setting prices, and preventing fraud. These distributed problems may require smart algorithms on the consumer's device (smart phone), in the vehicle, and in the cloud, along with long-term, secure data management for regulatory compliance.

## Smart manufacturing

Automotive companies must increase operational efficiency to free up capital for other investments. Industrial Internet of Things and Industry 4.0 technologies are key to streamlining business, automating and optimizing manufacturing processes, and increasing the efficiency of the supply chain.

As the industry undergoes digital transformation, automotive leaders are becoming better informed in their decision making. A deeper understanding of incoming data bolsters innovation, which in turn improves product quality and creates additional revenue streams. Instead of drowning in data, it is possible to monetize it.

NetApp is known as a leading data specialist in automotive because of our agility, speed, embedded security, and advanced data management capabilities. As the global leader in data cloud services, hybrid cloud services, and on-premises data centers, we have the fastest and most streamlined capabilities for enterprise workloads, delivering subsecond latency across mission-critical applications.

We are constantly striving to perfect our own data fabric so that it realistically reflects the times that we live in. What we learn is what we share.

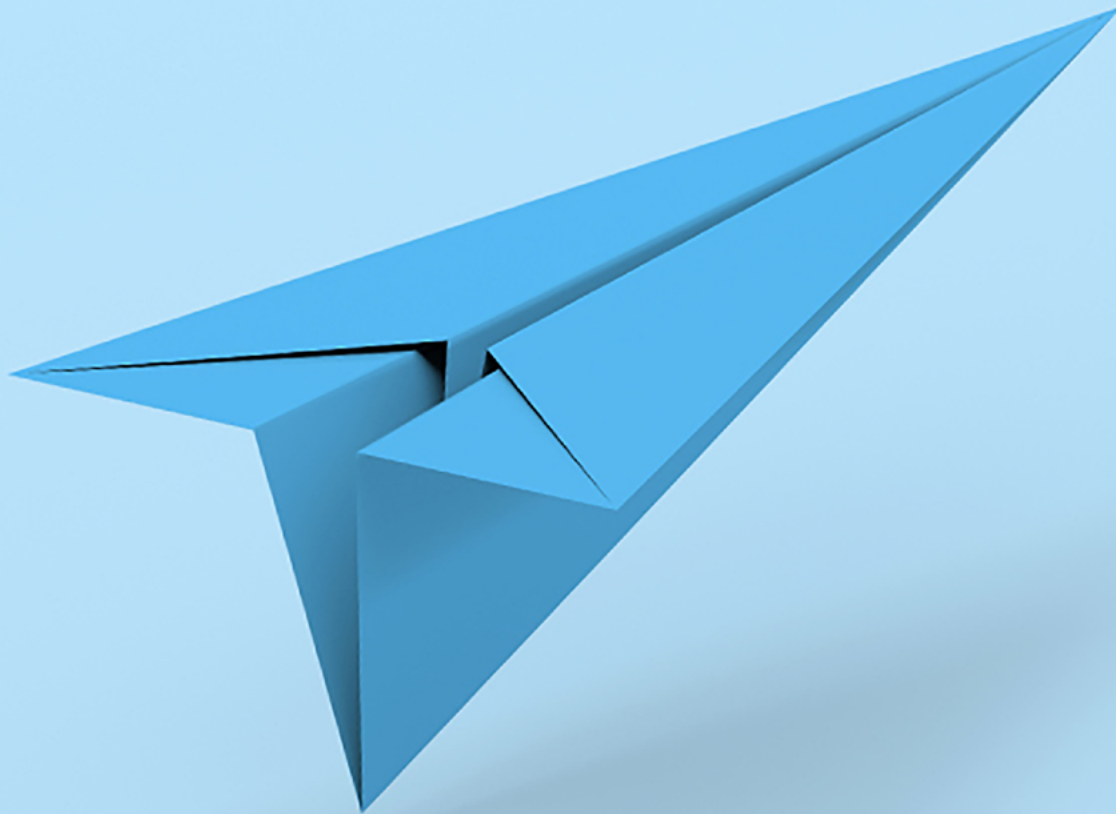


# “If you can dream it, you can do it.”

Enzo Ferrari

To find out more about the latest in automotive technology, you just need to contact us. Book a discovery session with a NetApp automotive data expert so that we can share the innovation we are creating in partnership with other industry leaders. We're excited to demonstrate the variety of solutions that we have for your business.

[Learn more](#)





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## About NetApp

In a world full of generalists, NetApp is a specialist. We’re focused on one thing, helping your business get the most out of your data. NetApp brings the enterprise-grade data services you rely on into the cloud, and the simple flexibility of cloud into the data center. Our industry-leading solutions work across diverse customer environments and the world’s biggest public clouds.

As a cloud-led, data-centric software company, only NetApp can help build your unique data fabric, simplify and connect your cloud, and securely deliver the right data, services, and applications to the right people—anytime, anywhere.

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