5 Digital Transformation Use Cases in the Automotive Industry

The automotive industry is on the brink of significant technological disruption. Underpinning Industry 4.0 and the next-gen of mobility is the rapid emergence of artificial intelligence, intelligent automation, predictive analytics, and Big Data – delivering real-time insights to enable powerful innovation and transform the way automotive companies operate.

Technological advancement has ushered in an era of new driving experiences and business models. Moreover, organizations must adjust to changing customer expectations, ensuring they can deliver personalized and more meaningful customer engagement on every channel.

Additionally, the COVID-19 pandemic has led to unprecedented challenges, halting production, affecting demand and supply, and causing thousands of automotive workers to shift to remote locations. Now, as the automotive industry carefully navigates the road to recovery, industry leaders are signaling the onset of the new normal, heralding in digital transformation at an unparalleled speed. The automotive industry is no longer just about "manufacture, buy, service, sell." Instead, automotive companies must now build a "connected vehicle platform" that integrates with all surrounding systems and provides robust, end-to-end experiences to customers.

Below, we'll have a look at some of the innovative use cases of AI, automation, and analytics that automotive companies must consider to become more agile and resilient and set the stage for continuous improvement in operations.

Digital Transformation Journeys to Watch for in the Automotive Industry
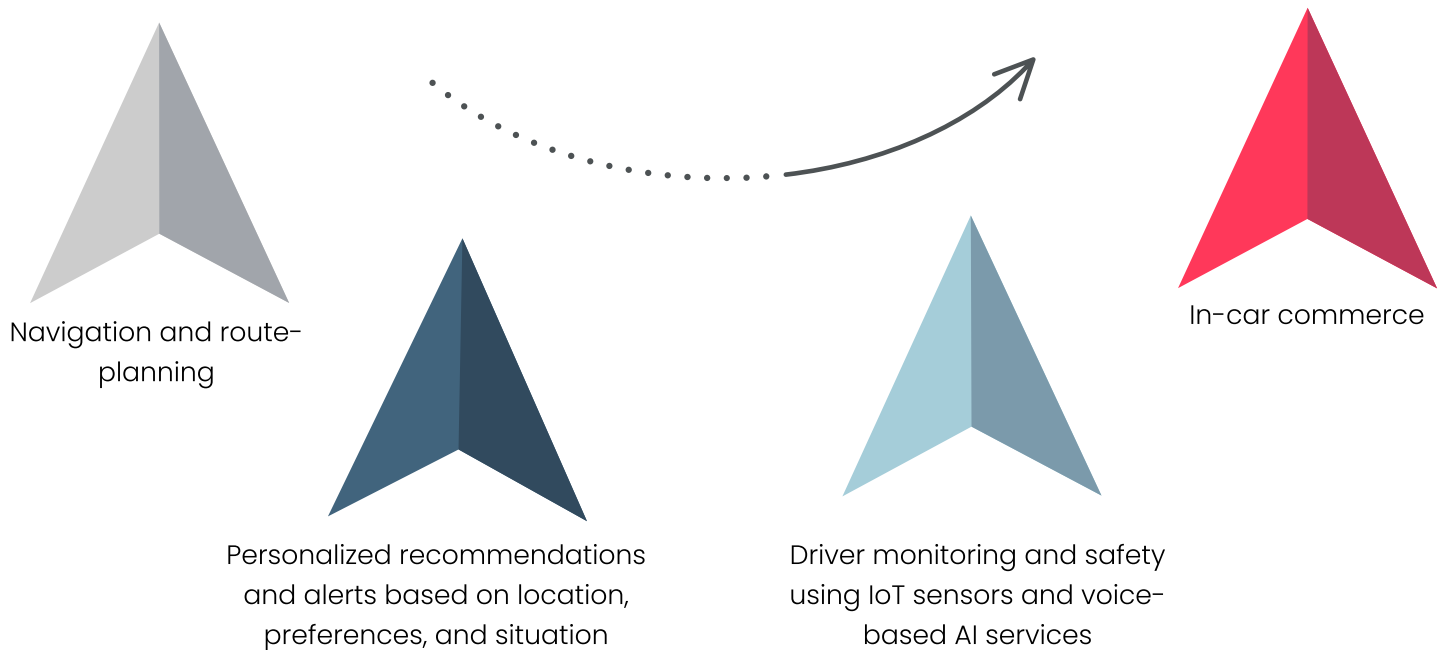
1. Enhance in-vehicle driver experiences

Today's drivers expect real-time and contextually meaningful information at their fingertips while on the road. They want built-in apps and systems to predict their needs, respond immediately, and deliver connected mobility experiences.

Building connected driver experiences in the era of "software-defined vehicles."

At Acuvate, we can leverage Microsoft Azure Maps, Microsoft PowerApps, and our enterprise bot-building platform, BotCore, to modernize in-vehicle driver experiences with real-time location intelligence and voice-based virtual assistants.

Navigation and route-planning

Personalized recommendations and alerts based on location, preferences, and situation

Driver monitoring and safety using IoT sensors and voice-based AI services

In-car commerce

With Azure Maps, automotive companies can add maps, routing capabilities, and geospatial services to vehicles. Moreover, the solution offers rich data visualizations and image layers on maps with multiple map layers and heatmaps.

Additionally, intelligent voice-based virtual assistants integrated with maps and other third-party services can anticipate driver needs, understand context, answer queries, and create a seamless experience using insights from cloud data.

From the moment drivers enter up to the point when they leave the vehicle, IoT sensors can monitor driver behavior. The bot can push remote alerts if the driver fails to follow safety protocols.

2. Facilitate fleet management using emerging mobility services

For automotive companies that deploy fleets of vehicles, continuous real-time information analysis is essential to optimize the management of these mobile assets, track vehicles and drivers, refine operations, anticipate future change, and communicate key insights to relevant stakeholders.

Modernize fleet management with advanced analytics and AI

Acuvate helps clients leverage Microsoft's most-renowned AI, machine learning, and advanced analytics technologies to study location data and gain spatial awareness of all mobile assets at a given time. We can develop and deploy AI bots into the system that provide real-time insights into delays, congestion, and other issues, while IoT-connected sensors refine and improve the overall transport experience. Here's how

Onboard IoT sensors collect information on vehicle performance, transfer it to the cloud, evaluate potential risks or malfunctions, and execute over-the-air updates to fix issues

Real-time driver and ridership information boost in-the-moment decision-making

Connected infrastructure manages parking by broadcasting space availability to reduce traffic

For example, Mr. X manages thousands of cars, trucks, and delivery vans. Through a powerful suite of IoT sensors and AI-enabled bots, data from vehicles and drivers is fed into a centralized platform for analysis

Mr. X can then do the following

- Check the amount of gas in each vehicle and monitor metrics like speed, braking, mileage, and acceleration

- Run large-scale simulations to assist drivers with the best routes depending on traffic patterns and the weather forecast

- Receive real-time data on vehicle performance to alert the maintenance crew and schedule replacements

- Monitor driver wearables like headbands and smartwatches to analyze the quality of sleep, project fatigue levels, and ensure drivers don't work more hours than assigned
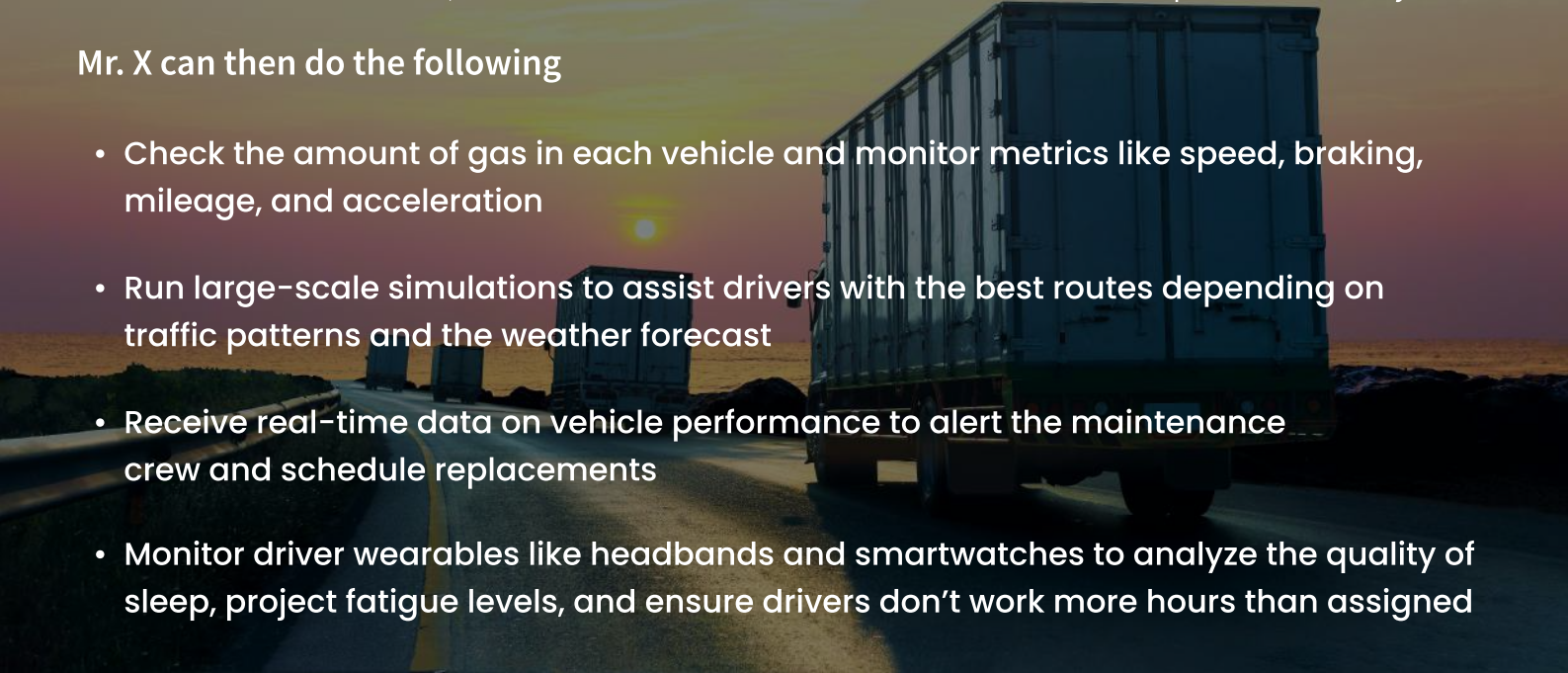
Daimler Trucks leverages Microsoft Azure Cloud to deploy a data analysis tool for fleet management.

To help fleet managers increase vehicle reliability and reduce operational costs, commercial vehicle manufacturer Daimler Trucks North America leveraged Azure, Microsoft's cloud computing service, to build Detroit Connect, a data capture and analysis program for cloud-connected vehicles. Designed to assist fleet managers in making informed, data-driven decisions, Detroit Connect helps Daimler better understand vehicle performance, determine productive road time, and improve fuel efficiency. Consequently, customers can understand deteriorating fuel economy performance (whether it is driver behavior or a machine learning issue, or just the vehicle's load) and rapidly respond to emerging issues within a fleet.

3. Drive agility and efficiency with low-code app development

Global automotive companies employ thousands of employees working across different departments. For large modernization initiatives, the assurance of a bespoke product that will drive change across the entire organization, the resources spent on deployment are worth the expenditure.

However, the same investment may feel interminable for small incremental changes that may affect only a particular department or a small number of employees, especially if the organization strives to maintain itself as a lean company. In such a scenario, empowering employees to create solutions to everyday problems and inefficiencies with low-code app development platforms can reduce costs, infuse agility, and provide a quick way to innovate.

After all, automotive companies must ensure that the entire organization – from the C-suite executives to the factory floor is equipped and empowered with the right tools.

How can automotive companies quickly create unique apps for specific business use-cases?

As a Microsoft Gold Partner, Acuvate can help citizen developers in automotive organizations develop solutions to everyday business problems with Microsoft's low-code app development platform called PowerApps. Such apps can fulfill the following use cases

User look-up app to assist employees in finding each other's location and contact details; helpful since automotive plants can sometimes run as long as a mile.

Log issues with machinery and other equipment through mobile apps for a quick resolution.

Automate manual data entry tasks through apps and save hundreds of hours in employee productivity.

Toyota uses Microsoft PowerApps to develop a facilities management tool

Toyota has already created more than 400 apps via Microsoft Power Apps. Chris Ingalls, Business and Solution Architect at Toyota, explains, "You don't have to worry about system design, infrastructure, or networking. PowerApps gives citizen developers a best practice and model-driven design."

For example, Toyota's facilities employees have developed an app to enhance safety and boost efficiency across its vast campuses. The app allows employees from all departments to quickly log issues that warrant attention by scanning a location-identifying QR code and uploading a photo. Facilities employees can then prioritize safety issues and attend to multiple problems in the same vicinity.

4. Build the "office of tomorrow" with digital workplaces

Stakeholders in the automotive industry (original equipment manufacturers, or OEMs and dealers) must ensure that the entire organization (from C-suite to the factory workers) stays connected, collaborates effectively, and accesses the right information at the right time.

The importance of global collaboration and workplace transformation has increased many folds as the automotive industry faces disruptors in shared cars, self-driving vehicles, connected fleets of vehicles, and of course, the challenges posed by the COVID-19 pandemic.

Consequently, automotive companies must build a modern workplace in the cloud that unifies devices, data, processes, and relationships, allows teams to connect in an impactful way, and streamlines workflows by offloading repetitive tasks.

Creating a connected, empowered, and productive organization with a digital workplace

Acuvate helps clients improve communication, collaboration, information discoverability, and knowledge mining with our autonomous modern SharePoint intranet solution, Mesh 3.0, and the Microsoft 365 cloud.

Porsche Holding drives the future of modern workplaces with the Microsoft 365 Cloud.

Herbert Lohninger, Head of Digital Workplace Services at Porsche Informatik, said, "Employees need a mobile way of working that empowers them to interact easily with colleagues, partners, and customers through simplified knowledge sharing. Microsoft 365 Apps for enterprise fills that role."

Porsche Holding represents the Volkswagon group brands, retailing, importing, and providing after-sales service to users in 27 countries.

As such, as stated by Pinia Eder, Chief Information Officer at the Porsche Bank Group, "Porsche Holding chose Microsoft 365 to connect people and information intelligently so that we can work together to grasp business opportunities without worrying about the technology."

5. Meet rapidly evolving customer expectations

In today's digital era, vehicle shoppers already have a lot of information in hand before they show up at the dealer for a test drive. They have made up their mind about what they want and how much they want to spend.

Consequently, automotive companies must keep up with evolving customer expectations and transform the way vehicles are marketed, sold, and maintained.

Today's customers demand omnichannel digital experiences and expect personalized engagement at every touchpoint of their journey with the brand. Dealerships must create a unified view of each customer to move them from online research to actually buying seamlessly.

Leveraging data analytics, advanced CRM systems, and AI chatbots to power a digital car buying experience

Acuvate can help automotive companies leverage machine learning and advanced analytics to bring together customer data from various platforms and legacy backend systems and discover insights that drive proactive engagement.

Track and analyze engagement history to deliver interactive marketing

Increase CSAT with data-driven customer relationships

Streamline sales through fluid conversations between shoppers and dealerships

Empower customers with digital experiences akin to their experiences in other retail segments

Moreover, our sales and marketing bots can help you deliver consistent messaging across all channels, track engagement, tailor proactive communications to suit customer needs, and automate workflows for service agents in the field.

About Acuvate

Acuvate Software is a global player in next-generation digital services and consulting with 15+ years of experience improving business efficiencies and revenue for numerous automotive enterprises worldwide. As a Microsoft Gold Partner, we leverage all things Microsoft to build enterprise apps that support intelligent analysis, collaboration, and orchestration of information, to redefine sales, service, mobility, and experience.

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