



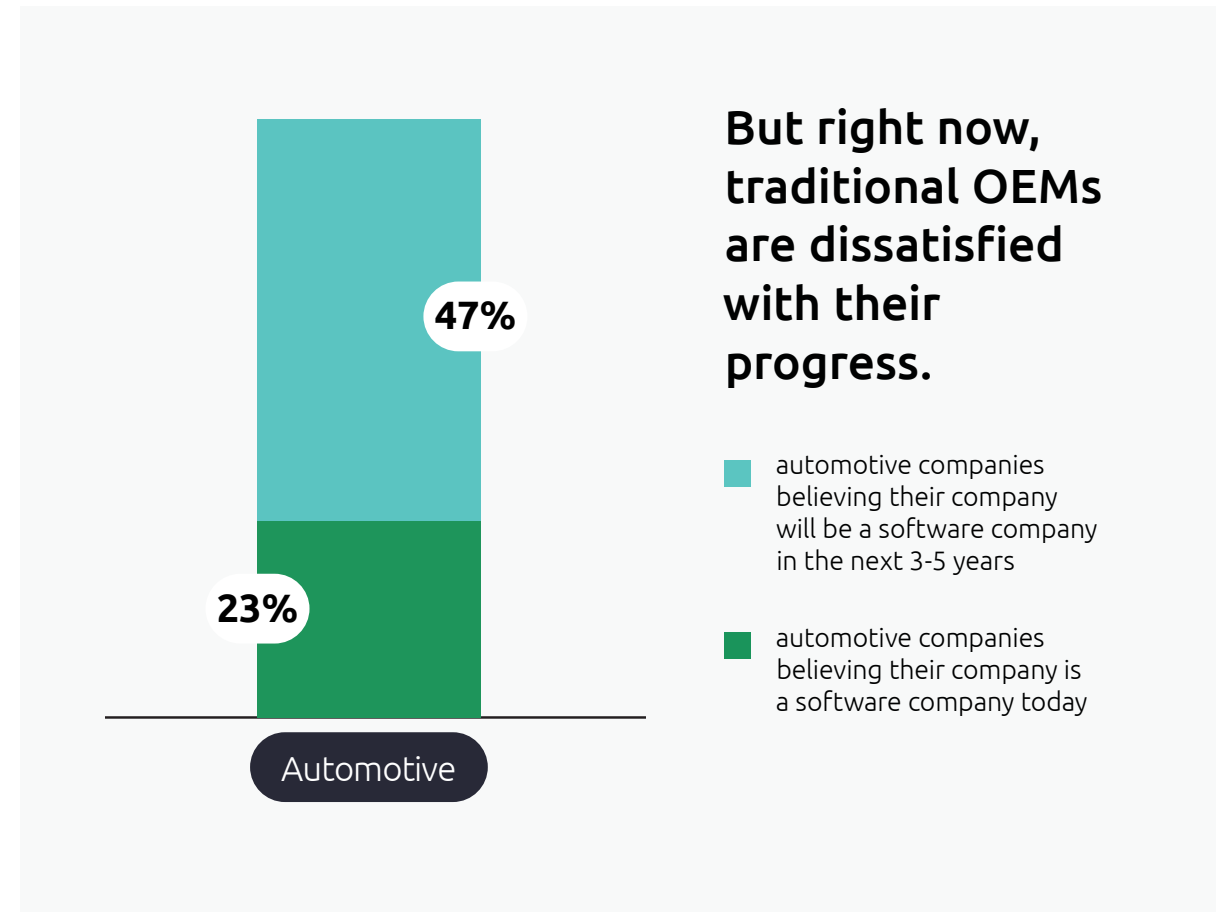
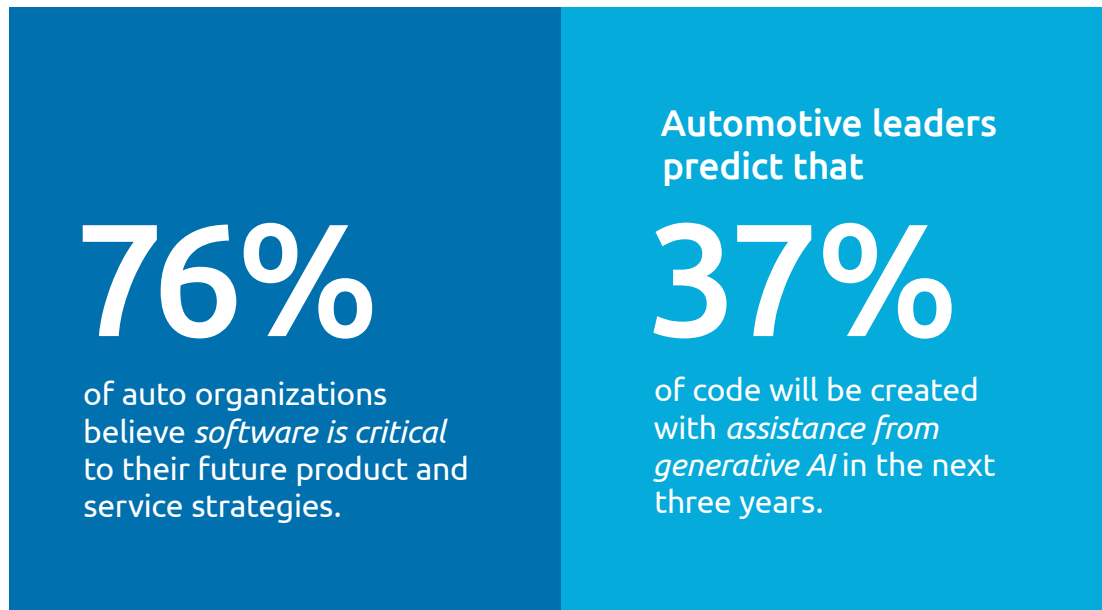
Software-driven mobility

Deliver the mobility experience that users expect by accelerating the pivot towards a software-driven ecosystem

Capgemini 

Introduction

The automotive industry needs to succeed at software-driven mobility (SDM). It must do this via a rapid, yet controlled, process of software-driven transformation (SDT) delivering software-defined vehicles (SDVs) and associated mobility services.



The urgency to achieve software-driven mobility has multiple drivers

Customer expectations about seamless experiences



arising from familiarity with ride-sharing, micromobility, subscription-based services, and other new models.

The promise of controlling product complexity



improving both vehicle architecture and electrical/electronic hardware.

Increased flexibility and maintainability combined with personalization



thanks to abstraction.

Extra revenue potential



e.g. from continuously offering and updating relevant new services, or data monetization.

Help in meeting sustainability goals



by simplifying services like measuring the influence of driving style on energy consumption, and associated data collection.

Relative to digital-native market entrants, traditional OEMs face obstacles

Culture & talents



- Limited participation in mobility & digital ecosystems
- Difficulty attracting and retaining software talents

Organization & processes



- Solid operations: R&D, digital business, and software items
- Waterfall approach not accommodating mixed cycles

Consistency & value over time



- Inconsistent user interfaces isolated from ecosystems
- Rare and limited updates & aging user experience
- Software development limited by basic hardware

Reliability & dependability

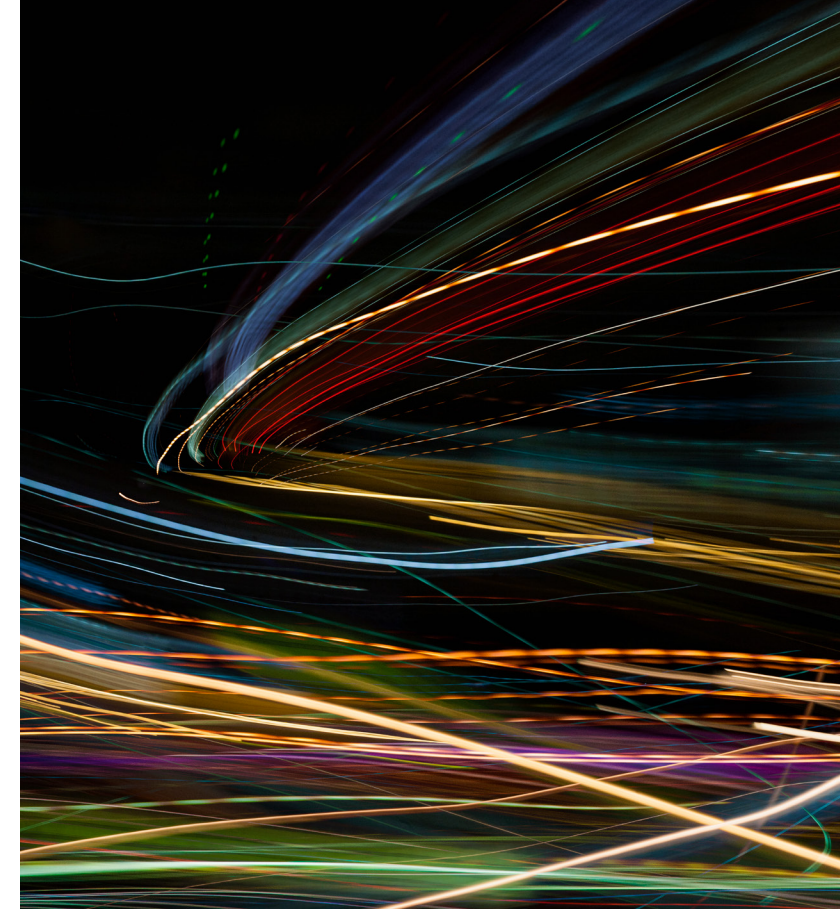


- Restricted ability to correct defects
- Limited security mechanisms

Flexibility & efficiency



- Extensive duplication of inconsistent code
- Complexity of delivering new capabilities and services
- Diversity of product services architectures



Realizing the software-driven mobility opportunity requires a managed transition – which depends on three key enablers

Accelerating to transform into a software company



Defining a **software strategy** leveraging core capabilities and prioritizing investments



Addressing **talent & culture** through a reskill & upskill and change management program



Driving the **software transformation** and execution of the value model

Laying the foundations for a software platform



Establishing end-to-end **architecture standards** for product and services



Ensuring **software compliance** with regulations, standards, and contractual terms



Setting up and running a **cybersecurity program** [define | protect | defend]

Streamlining industry-grade software delivery



Creating a streamlined **software factory** [processes | methods | tools]



Shaping an innovative **testing strategy** focused on end-user experience



Setting up and running **efficient testing** across all environments

Customizing software across business:

software for **products** | software for **services** | software for **enterprise**

Success also requires leveraging the mobility ecosystem

Ability to provide a continuous flow of high-quality software to the end-user maximizing automation.

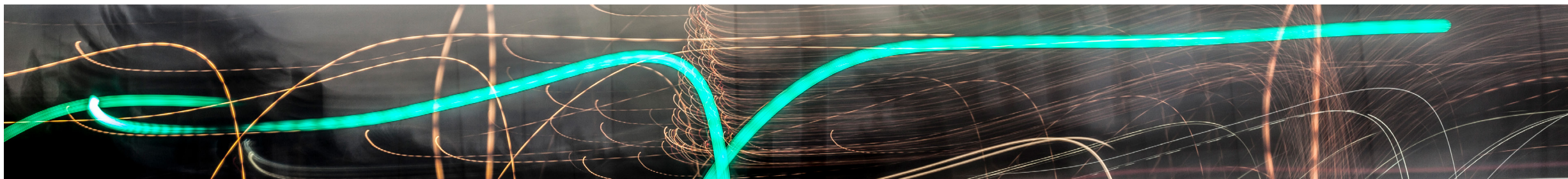
Development of highly integrated software regardless of hardware boundaries via simulation of functions and services across the whole fleet and across many generations, at any point in the lifecycle.

Flexibility and adaptability in design to accommodate internal and external disruptions to the requirement such as new regulations or technologies, or unforeseeable events.

Use of a reliable, modern technology stack to minimize the risk of systems and services becoming outdated, and to create a homogeneous and future-proof IT landscape.

Orchestration of IT/OT/IoT, cloud and edge along value streams to break down technical islands and create streamlined, transparent continuity of services driven by value streams.

Tearing down silos and extending the use of the ecosystem by using modern IT capabilities to enable new business models and customer-centric services, increasing product value and revenue.



For a quick start, target areas where significant progress can be made in a few weeks or months

Launch a maturity assessment to build the foundations for transformation

with an objective assessment of strengths and weaknesses in software transformation to date, using market performance as a baseline.

Initiate transformation by defining the roadmap

based on your vision and goals plus the maturity assessment. Consider establishing a software-driven transformation office to monitor progress.

Analyze skills availability and needs

then identify ways to fill gaps, e.g. through recruitment, upskilling via a “software academy,” collaboration with the ecosystem, or a combination of these.



With this approach, a traditional OEM can equal and overtake digital-native newcomers in software-driven transformation



Culture & talents

The OEM contributes to – and interacts with – the mobility ecosystem. It can attract and develop teams of software talent, and mesh key automotive knowledge with software skills.



Organization & processes

Appropriate software practices are established as a backbone for the whole company; this helps to break down silos. Agile at scale can be adopted for all software product development, accommodating mixed cycles.



Consistency & value over time

A consistent end-user experience is enforced company-wide, with one software architecture used across the full range. Software upgrades are frequent, delivering value continuously throughout the lifecycle.



Reliability & dependability

The company reacts in a timely manner so that it can promptly correct – or preferably prevent – defects. State-of-the-art cybersecurity practices and tools are fully and deeply integrated into organizational processes.



Flexibility & efficiency

The company meets customer expectations by delivering software efficiently, and ensuring that it is of top quality, with no duplication or inconsistency. It is adept at using abstraction to control complexity.



Software-driven Mobility

Deliver the new mobility experience

Capgemini

Download the
point of view

to learn more about Capgemini's integrated and structured approach to software-driven mobility.

About Capgemini

Capgemini is a global business and technology transformation partner, helping organizations to accelerate their dual transition to a digital and sustainable world, while creating tangible impact for enterprises and society. It is a responsible and diverse group of 340,000 team members in more than 50 countries. With its strong over 55-year heritage, Capgemini is trusted by its clients to unlock the value of technology to address the entire breadth of their business needs. It delivers end-to-end services and solutions leveraging strengths from strategy and design to engineering, all fueled by its market leading capabilities in AI, cloud and data, combined with its deep industry expertise and partner ecosystem. The Group reported 2023 global revenues of €22.5 billion.

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