

# The *dual transition*

The path to a digital and sustainable economy



# Executive conversations with...



**FRANK LOYDL**  
Chief Information Officer

**Audi AG**



# DRIVING VALUE, WITH DATA

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Audi AG is one of the world's leading producers of premium cars. It is a part of the Volkswagen Group, and is headquartered in Ingolstadt, Bavaria, Germany. The company operates in more than 100 markets and has 85,000+ employees worldwide. The group reported a revenue of €50.4 billion in the first three-quarters of 2023. Audi has set a goal of introducing only fully electric models to the market from 2026 onwards, accompanied with gradual phasing out of production of vehicles with internal combustion engines by 2033.

*Frank Loydl started his career with Electronic Data Systems, gaining extensive experience in various positions in the manufacturing sector, particularly in the automotive industry with General Motors. He subsequently worked with Logica CMG and EMC Corporation before moving to head delivery management at T-Systems for Volkswagen AG in 2009. He took on this task directly with the group in 2013 and since 2016 has been responsible for software development within the group. During his time in the Volkswagen Group's IT department, Frank established not only agile work methods but also a value-oriented management model and oversaw the process of internal change to make the organization into an agile enterprise. Frank Loydl has been the CIO of Audi AG since February 1, 2018.*

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### TRANSFORMING LEGACY APPLICATIONS TO IMPLEMENT NEW TECHNOLOGIES

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#### Can you give us an overview of Audi's transformation journey?

At Audi, we started our transformation in 2018, repositioning IT from a responsive department to a leading strategic function. Audi has a 100-year-plus history, which is reflected in the technology base. The biggest challenge was to navigate an IT landscape of over 3,000 applications designed in the late 1970s and 1980s. So, it was not just about the adoption of new technologies. We needed to transform the existing architectural landscape such that new technologies could operate on the existing data to create value.

We need to figure out how to balance innovations with legacy. Effective coordination of social, cultural, and organizational changes is required to realize the true value of newer technologies.



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## SOFTWAREIZATION

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**'Softwarization' is one of the biggest trends in the automotive industry. How has this impacted your business?**

As the market changes, with software as a service point, we need to understand how much existential risk we are willing to take. Hence, the entire portfolio is discussed in this context. The strategy is to decide what we can manage in-house and where we need to partner.

I have started to create our in-house software development centers, in partnership with top-quality software developers, to reconfigure our supply base.

For the rest, we identify partners based on requirements, quality, compliance issues, etc. There will be much more cooperation with other software players, and this is something that has already started.

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### What is your road map for future usage of AI, augmented reality (AR), and virtual reality (VR)?

Currently, we have a very strong team working on generative AI. Let me give you a few examples. For the past couple of years, we have been designing tire rims with the help of generative AI. In concrete terms, FelGAN works either by rapidly proposing a large number of photo-realistic designs itself or by recombining existing designs in a targeted way. In this way, the system acts as a kind of spontaneous idea hub for Audi's rim design team, allowing them to exchange new versions and variations.

Another example is the roll-out of AI for quality control of spot welds in car-body construction. Using AI, we are able to analyze 1.5 million spot welds on 300 vehicles in each shift. Previously, using an ultrasound model, we were only able to check around 5,000 spot welds per vehicle. Similarly, audio streams are being used to diagnose car problems.

In general, we see a huge potential in AI. On the one hand, to improve our internal processes, on the other hand, to offer a better customer experience. We are also experimenting with AR. However, we do work quite a bit with digital twin and simulations. That said, usage of VR is largely limited to marketing aspects, often used in showrooms, and not so much in product design.

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## HARNESSING DATA

**What are the key value drivers that organizations can use to realize the potential of digitalization?**

Availability of data is the key value driver. People think that our data is in databases, which is not true. There are applications where more than 50,000 lines of code are required to interpret the data.

For example, in a dealer-network-based sales approach, there is a local in-country subsidiary that sells to big dealers. They, in turn, sell to smaller dealers, from whom the end-customers purchase the cars. This results in sales data being distributed in various formats across thousands of networks in different geographies. This makes sales data incomparable or inaccessible in real time, making it impossible to generate insights for decision-making.

We need to extract this data from these disparate databases and make it available to people or systems in a form that they can actually use. This is the maximum value driver we can provide to the business.



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### **How will this kind of data availability create value?**

There are two clear advantages that come with wider availability of data. First, we will reduce redundancies significantly and thereby have the opportunity to create synergies. Secondly, we will be able to respond faster, not only to customer requirements in respect of the end product but also to any kind of requirement in the system. It will also help create new products and optimize existing ones.

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### THE VALUE OF COLLABORATION

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#### **How important will collaboration be in creating new business value in the digital landscape?**

Partnering gives us access to knowledge we don't have, not only in terms of product development but also in terms of direct cultural interchange.

For example, we have a successful joint venture with Capgemini called XL2 to provide technology and consulting services. The joint venture helped us to become faster and improved quality, and we are now able to provide services we couldn't previously, while creating new business models.

Similarly, we have a hybrid strategy for cloud. We are big enough to derive value from economies of scale, having our own cloud for the group. However, we also use public cloud, which allows us to access new technologies and scale software products rapidly. For example, our partnership with 4.screen helps us deliver more comprehensive, context-related real-time information to our customers through our in-car infotainment systems.



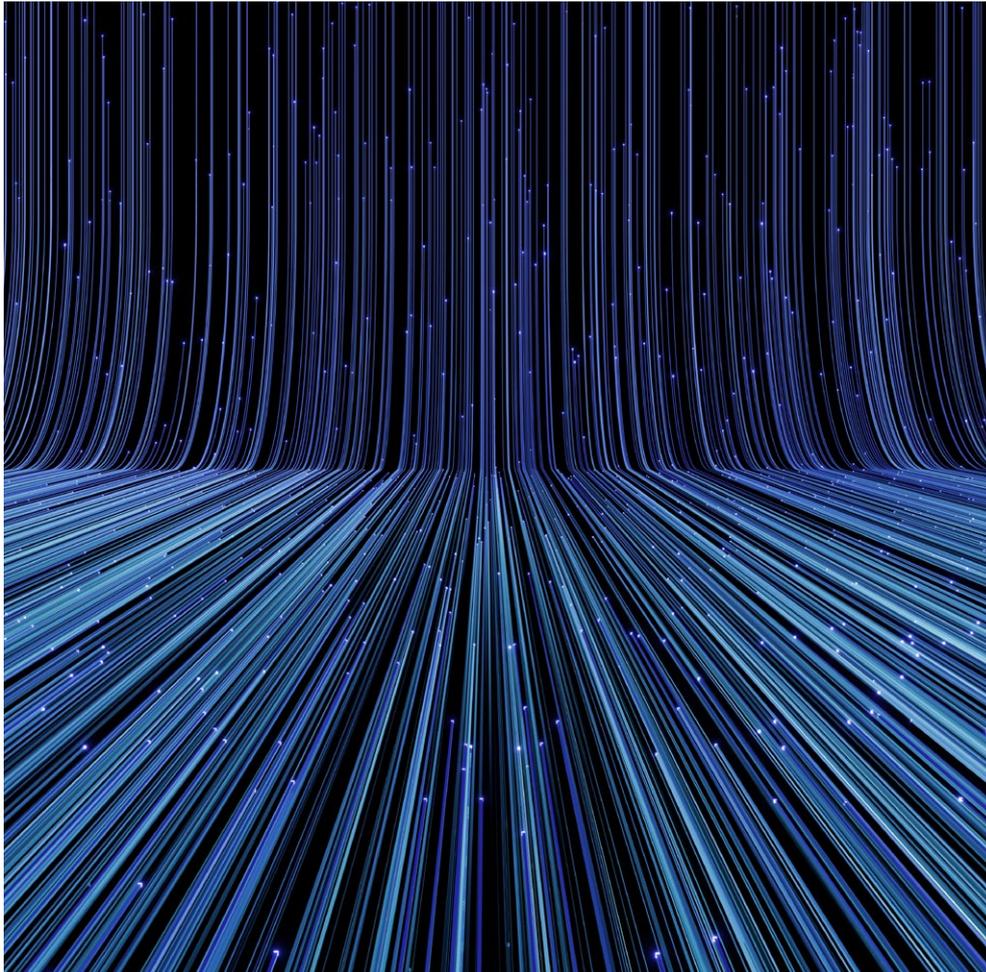
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### PREPARING YOUR PEOPLE

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#### How do you plan to prepare the workforce for this fast-evolving environment?

There are assessment centers where trainers will evaluate employees interested in upskilling. We have developed a transformation program that consists of 18 modules, lasting about two years. These modules are customized based on workforce level and geography. It's all about preparing for the future.





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