


At Volkswagen in Wolfsburg: Dr. Nikolai Ardey, Head of Volkswagen Group Innovation (left), talks with Porsche Consulting's Senior Partner Dr. Hagen Radowski (right) and Communications and Marketing Director Jan Boris Wintzenburg. © Porsche Consulting/Max Arens

# Innovations that excite customers

**20/02/2025** Interview with Porsche Consulting Magazine: How Volkswagen Group Innovation Head Dr. Nikolai Ardey and his 500-strong team of specialists are fostering innovations and looking towards the future.

Dr. Nikolai Ardey, Head of Volkswagen Group Innovation, leads around 500 employees worldwide. In an interview with Porsche Consulting Magazine, he talks about the crucial role innovation plays in ongoing product development. About the importance of digitalization, artificial intelligence, and software for the future viability of the automotive industry. And about the need for strong partnerships to accelerate the pace of innovation. The international Group Innovation department is responsible for developing innovations for the Group's passenger car brands. Dr. Ardey and his highly specialized team are also exploring future-oriented topics such as semiconductor design and quantum computing, as well as materials research for batteries, lightweight construction, and new recyclable synthetics. Their development work additionally concentrates on the overarching topics of circular economy and decarbonization.

**Mr. Ardey, what does a "Group Innovator" do?**

We pursue future-oriented topics while gaining inspiration from external ideas and discoveries. And we believe in the power of innovations — they're the driving force behind progress.

**Are you more a manager or an engineer?**

I'm an engineer by background. But both are important. Leadership and management skills are crucial for leading Group Innovation, an internationally networked department with around 500 highly specialized members. Mutual technical inspiration, however, is every bit as important, and that is especially appealing to me as an engineer.

**How would you define innovation?**

Innovation is what enables new technologies to not only succeed on the market but also excite customers. It's what goes into cars and therefore out onto the roads, and what customers view as progress. That is our main criterion for success.

**So your focus is on the value for customers?**

Yes, we're talking real added value. The Volkswagen Group has strong brands and iconic products. We sell high-quality automobiles throughout the world. Technological leadership and innovation are some of the main reasons people buy our cars.

**Do you still go on refining your products?**

Of course we do! But not in terms of foundational research. Innovations are crucial for continuing to enhance our products. That's the core of our work. As an automotive company, it's therefore essential that we prepare for the future with the help of well-chosen technological partnerships. As for academic expertise in foundational research, we gain that from our partnerships with universities.

**Are you still doing research in areas that aren't directly related to cars?**

Yes, at Group Innovation we maintain expertise in some special, future-oriented topics that don't have obvious docking points at the company — for example, semiconductor design and quantum computing.

**You're looking way down the road there ...**

Quantum computing will be powering major applications for the entire industry, including in cybersecurity. We won't have to build quantum computers ourselves in the future, but we need to understand how to use this technology. We're doing joint research on it with IBM, for instance.

**What share of your work is devoted to that kind of research?**

Future-oriented topics that are not immediately ready for serial development account for about 20 percent of our work. Most of our work is on product innovations that should go onto the market as quickly as possible. This balance enables us to meet market demands while also pursuing long-term technological breakthroughs.

**Are we seeing a paradigm shift in cars right now?**

We're going through a number of changes at once. The first is surely the shift from combustion engines to electric drives, and we're right in the middle of that. The second is in the digital capacities that cars have, including software as a customer interface, cloud applications, and ever more powerful driver assistance systems. We as a company want to keep engaging intensively with this area. A third change is how mobility is developing. Car ownership remains very important, but people will want to make much greater use of mobility as a service in the future. We therefore need to think about how we can offer such services and what vehicle concepts align with them.

**We're talking a lot about software. Are you still making any innovations in hardware?**

Absolutely! We have a lot of expertise in materials research: battery materials, lightweight construction, new recyclable synthetics, and regenerative materials for interiors — these are all important topics for us. The German automotive industry is still the world's pioneer in this area and we want it to stay that way. In recent years we've also taken greater strides toward digitalization, artificial intelligence, and software — a good third of our resources flow into this area.

**What about sustainability?**

Here the priorities are on big topics like the circular economy and decarbonization. Our teams are working on cellulose and hemp linings for interiors, for example, and initial results are very promising. Under Porsche's leadership we're working on direct air capture (DAC), a technology that extracts carbon dioxide from the air and uses it in making synthetic fuels.

**Why does Volkswagen even have a central innovation department? Wouldn't it make more sense for each brand to do this work directly?**

The logic is the following: there's one foundation for everyone, and each member can then individualize. The brands concentrate on their specific product innovations and markets, while we ensure that everyone has access to new technologies. This gives us the greatest possible synergies and efficiencies.

**How is the Volkswagen Group structured in general?**

I see a number of pillars here. Group Innovation views itself as a high-powered innovation department for all the brands. At the same time, the Group seeks strong partners from industry and technology — like in our joint projects with Rivian Automotive in the United States or Xpeng in China. We're in close contact with leading international universities and research institutes. And we promote start-ups with

our venture-innovation approach.

**So you continue to need external partners?**

Of course, because innovations are also about speed. Dogmatic attempts to do things all on your own haven't proved to be successful. The fast players are the ones who join forces with others. We at Volkswagen have taken a very pragmatic approach here. It doesn't conflict with our own areas of expertise. They're important for assessing the skills of potential partners and achieving the best results.

**What are your time frames for planning?**

Researchers used to develop prototypes and send them to advance development departments for evaluation. A small number of those went on to serial development and finally into cars. However, that structured, traceable principle doesn't give us the high-speed innovation cycles we need as a modern automotive company. We're moving toward viewing ourselves far more as an innovation enterprise in our own interest: as intrapreneurs who guide innovations quickly and comprehensively from the initial idea to the start of production.

**Does that mean a Group Innovator has to revamp Group processes before concentrating on innovations as such?**

The Group already has many divisions that use agile principles. I do think, therefore, that in most cases the idea first gains hold, and then the processes. People with the courage to champion their projects usually attract support. Then we decide together how to put the projects into practice.

**How do you motivate your employees for this change?**

Future-oriented work, namely high-yield research and innovation, requires us to keep moving at all times. I aspire to this myself, and expect it from my team. We don't get anywhere by studying topics in ivory towers just for the fun of it that will never be ready for series production. At the same time, we shouldn't just be satisfied with passing projects on. If you're passionate about something, you have to see it through.

**Does that mean you only work on projects that are sure to be well received by customers?**

An entrepreneurial spirit is the very essence of our team. In my experience, it's worth backing the ideas you're sure of — without necessarily waiting for each seal of approval. But we also know that not every attempt will be successful. After careful assessment, we sometimes have to let go and turn our attention to the next ideas. Flexibility and decisiveness are both essential if you want to remain innovative over the long term.

**To what extent does AI play a role in your work?**

Artificial intelligence will be an integral part of cars in the future, especially in new driver assistance systems and driverless vehicles. We use AI as a tool. Our futurology department uses AI to analyze hundreds of thousands of patents around the world and generate a detailed map of research focuses. We can see exactly where the industry's interests are tending, and how they will be influencing the cars of tomorrow. That provides important guidance to our Group's brands for their product planning.

**How do you actually recruit the experts for your team?**

We don't have any shortage of applicants. Of course it would be great to have higher staffing levels in certain areas, but that isn't easy at the moment. Our clear aim is therefore to achieve as much as possible with a committed team and the resources at hand.

**So you also need to cut costs?**

Yes, we're doing our part here too, of course. The current situation is posing enormous challenges. We have to concentrate on the essentials and work even more closely together. And if truth be told, we've become rather good at that.

**Is Volkswagen capable of remaining at the forefront of the automotive industry?**

I'm absolutely convinced of that.

**You mentioned driverless cars. What is your vision for them?**

One vision is this one here (points to the car in the room). The vehicle behind me is probably Germany's first street-legal car without a steering wheel or pedals. It's a development platform, a unique prototype. We call it the Gen.Urban. We'll be using it to study how people spend their time in driverless cars.

**How do you drive with the Gen.Urban?**

You call the car with an app, the car arrives and greets you, and you get in. A voice assistant asks where you want to go and what you'd like to do in the car. Are you looking for relaxation with reclined seats, atmospheric light, and air-conditioning? Or is your family along and you'd like to play a trivia game on the big front display? Each drive can be a unique experience.

**This car is approved for the road and really drives?**

Yes, it is. We've been testing the Gen.Urban in real traffic in Wolfsburg since mid-2024.

**Was it hard to get the approval?**

There was a huge amount of red tape. We'd decided three years ago to build this car from scratch and

put it on the road. Authorization was a big challenge and also an important experience. But we'd really have to think about taking this path again.

**What does a car like this cost?**

It's a prototype, so a certain amount of money and resources went into it.

**Are you waiting with bated breath for similar cars to be approved?**

Our ride-pooling service MOIA, Volkswagen ADMT, and Volkswagen Commercial Vehicles are working together to put driverless cars on the roads in two years. Dozens of prototypes are already out in Munich and Hamburg, and in Austin, Texas every day. Development is proceeding at an extremely fast pace. And if you look at China and the USA, you'll already find a few competitors with commercial operations, too.

**With mixed results — they've already had some accidents!**

That's true. Statistically speaking you can't exclude accidents, unfortunately. The law of big numbers, however, shows that driverless cars already account for 84 percent fewer airbag-release accidents than human drivers, and are expected to get even better. Driverless cars don't get tired, drink alcohol, or have blind spots, so you're safer in them than in cars driven by people. This technology has the potential to substantially improve traffic safety.

**Does that mean driverless cars are a foregone conclusion?**

One of the reasons they're coming is that they offer real benefits to people who can't or don't want to drive themselves. That means they can help the Volkswagen Group acquire a new group of customers.

**If you weren't the head of Group Innovation, what would you be doing?**

I love going to work every day. Who knows, if I hadn't decided to study engineering, my life might have taken a different tack. I might have become a violin maker. Or an opera singer. I've always been fascinated by devotion to craftsmanship and art.

## Info

Text first published in Porsche Consulting Magazine.

# MEDIA ENQUIRIES



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## Image Sublines

Path: Innovations that excite customers/Images/img_1.jpg
Title: Dr. Nikolai Ardey, Head of Volkswagen Group Innovation, 2025, Porsche Consulting GmbH
Subline: Nikolai Ardey is the head of Volkswagen Group Innovation. He and his highly specialized team develop innovations for the corporation's passenger vehicle brands and pursue key future-oriented topics such as decarbonization, driverless vehicle technology, semiconductor design, and sustainable materials. © Porsche Consulting/Max Arens

Path: Innovations that excite customers/Images/img_2.jpg
Title: Dr. Hagen Radowski, Senior Partner Porsche Consulting, 2025, Porsche Consulting GmbH
Subline: Hagen Radowski, Senior Partner at Porsche Consulting, in discussion with Nikolai Ardey. With over two decades of experience in the IT sector, Radowski directs international consultancy work in the semiconductor industry and oversees Volkswagen's software subsidiary CARIAD. © Porsche Consulting/Max Arens

Path: Innovations that excite customers/Images/img_3.jpg
Title: Dr. Nikolai Ardey, Head of Volkswagen Group Innovation, 2025, Porsche Consulting GmbH
Subline: "Driverless cars have the potential to substantially improve traffic safety," says Nikolai Ardey, Head of Volkswagen Group Innovation. © Porsche Consulting/Max Arens

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