

tomorrow.
now!

IN EVERYTHING WE DO, OUR FOCUS IS ON ONE THING:
"VORSPRUNG DURCH TECHNIK" FOR OUR CUSTOMERS.
WE HAVE ALWAYS LISTENED VERY CLOSELY TO THEM SO
WE CAN UNDERSTAND WHAT THEY WILL WANT
TOMORROW. EXPERIENCE AUTOMOTIVE SOLUTIONS FOR
THE FUTURE WITH THE **AUDI 2015 ANNUAL REPORT**.
SOLUTIONS THAT SURPRISE, EXCITE AND MOVE PEOPLE.
SOLUTIONS THAT ARE ONE STEP AHEAD.

tomorrow.
now!



The background image shows a futuristic car interior. A large digital display at the top shows a city street view with a blue arrow pointing forward. The display also shows the temperature 42°F, the song 'Leaves', and the street name 'Woodward Ave'. Below the display, there's a power gauge showing 26% power. The Audi logo is visible on the right side of the dashboard. The text 'in no vate. now!' is overlaid on the image in a large, white, sans-serif font.

in no⁰¹ vate. now!

WHICH IDEAS ARE BIG ENOUGH TO SHAPE
THE AUTOMOTIVE FUTURE? VISIONS ARE
ALREADY BECOMING SOLUTIONS TODAY.
AUDI INNOVATES.

PHOTO: AUDI AG

10:45 AM

01



BLUE SKY THINKING.

Prof. Rupert Stadler, Chairman of the Board of Management of AUDI AG, meets up with Silicon Valley expert Christoph Keese to discuss innovation, disruption and the rapid ascent of digital **business models in the Internet age**.

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35 mph

02



THINK. SHARE. DARE!

Audi Innovation Research (AIR) is where the future is created. In San Francisco, creative minds discuss tomorrow's mobility. And experience **piloted driving** today on the racetrack in Barcelona.

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IT'S A SAFE BET!

Intelligent **assistance systems** not only improve safety and convenience in road traffic – they also change the crash test dummies' everyday work. An unusual interview before and after the crash test of the new Audi A4.

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BEAM ME UP, AUDI.

Audi is not just generating excitement with the new A4, but also creating a special experience when buying a car with the **virtual reality headset**.

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THE TRANSFORMERS.

The future of production belongs to the **Smart Factory**. As an innovation driver, Audi Toolmaking plays an essential role here. A look behind the scenes at the example of the new Audi Q2.

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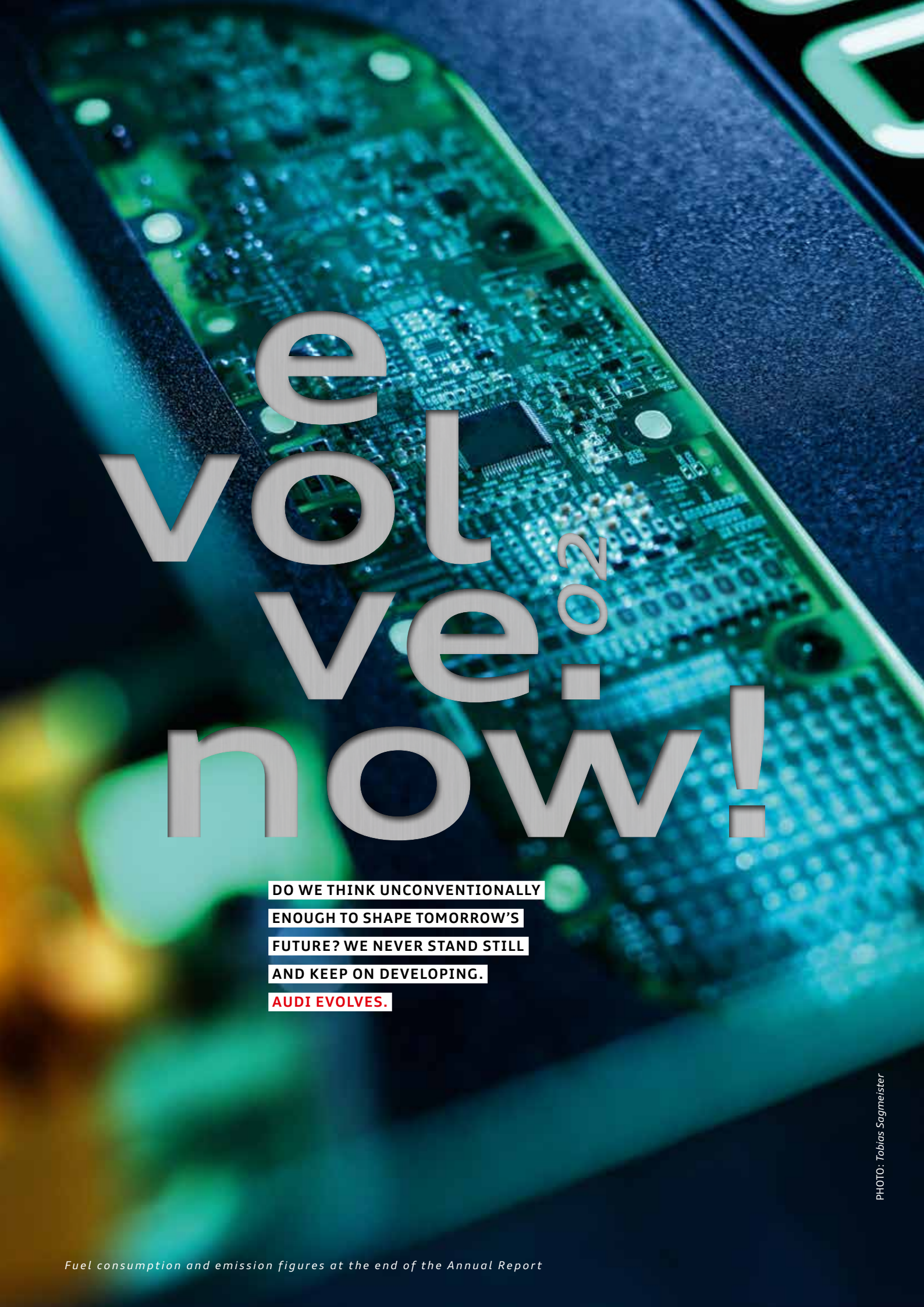
06



IN THE SPACE FACTORY.

In Somerville, near Boston, Audi is showing the **urban future** together with public and private partners: piloted parking cars, networked traffic lights, swarm intelligence. An inventory of the situation.

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e vol ve: now!

DO WE THINK UNCONVENTIONALLY
ENOUGH TO SHAPE TOMORROW'S
FUTURE? WE NEVER STAND STILL
AND KEEP ON DEVELOPING.
AUDI EVOLVES.

PHOTO: Tobias Sagmeister

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INNOVATIVE BY TRADITION.

Surrounded by automotive legends, Audi Board Member for Finance and Organization Axel Strotbek and Dr. Elgar Fleisch, Professor of Technology and Information Management, discuss what change through **digitalization** means for Audi.

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HIKES PEAK.

In the test laboratories of **Audi Quality Assurance**, limits are explored under extreme conditions. A conversation between Sylvia Droll, Head of Materials Engineering in Quality Assurance, and ultrarunner Anne-Marie Flammersfeld.

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FIT FOR THE PREMIUM LEAGUE.

Staying focused on the finishing line, maintaining a high level of performance and getting there ahead of the rest. On the way to series production, **Audi Procurement** needs strong partners who meet premium standards.

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SHANG-HYBRID.

What do the Audi Q7 e-tron 2.0 TFSI quattro and the second-tallest building in the world have in common? They both share the vision of **sustainability and efficiency** – without sacrifice or compromise. On location in the mega metropolis Shanghai.

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WELCOME TO AUDI MÉXICO!

San José Chiapa in **Mexico**. Beginning in 2016, this is where the new Audi Q5 will be built in one of the most modern automobile plants in North America. By superbly qualified employees. For the whole world.

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EFFICIENCY VERSUS EXCITEMENT.

Aerodynamics versus aesthetics. Revolution versus evolution. The Audi e-tron quattro concept reconciles what may sound as different as black and white – all with the goal of **electric mobility**.

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FUEL FOR THOUGHT.

Sun, wind, water and CO₂ are ingredients for **synthetic fuels** which could change the world. So how does this work? A visit to the scientists and inventors behind Audi e-fuels who, by joining forces with Audi, want to bring the energy revolution into the tank.

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IS IT ENOUGH IF OUR
CUSTOMERS ARE SATISFIED? OR
DO WE WANT TO DELIGHT THEM?
WE TRUST IN GOOSEBUMPS
AND ADRENALINE. WITH
UNFORGETTABLE EXPERIENCES.
AUDI PERFORMS.

per form. now!



Wherever you see this symbol, there are **movies, picture galleries or additional information** to be discovered. Simply download the recognition app **layar**, hold your smartphone or tablet over the symbol and dive into the multimedia world with augmented reality.

PHOTO: AUDI AG

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HUNTER IN THE NIGHT.

The new Audi R8, the fastest and most powerful series-production Audi ever, makes its way through the night. Thanks also to the latest **lighting technology**, the journey is safe and an experience for the senses.

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CATCH ME IF YOU CAN.

The Audi Sport TT Cup offers the perfect environment for **young talent in motorsport** to develop. One of these young drivers, Mikaela from Sweden, shows us her world during a walk around the track. Ready. Set. Go!

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BULL'S-EYE.

Concept cars are a medium for projecting future visions. They are superlatives on four wheels and act as inspiration, predictions and signs of things to come. The three studies Sesto Elemento, Asterion and Urus offer a glimpse of the future of **Lamborghini**.

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READY TO SCRAMBLE.

Ducati has revived the legendary **Scrambler**. We find out what that feels like from someone who knows: motorbike expert and stuntwoman Sarah Lahalih. A roadtrip with the new Scrambler Icon – with the spirit of the 1960s and a feeling of freedom included.

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Finances.

REPORT OF THE SUPERVISORY BOARD

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COMBINED MANAGEMENT REPORT OF THE AUDI GROUP AND AUDI AG

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EXPERIENCE THE WORLD OF THE
ANNUAL REPORT INTERACTIVELY AS WELL.
www.audi.com/ar2015



120 KILOGRAMS

The new generation of the Audi A4 fascinates with its ground-breaking synthesis of technology and aesthetics. One priority during development was to reduce CO₂ emissions – in part through consistently employing lightweight construction. Consequently, the unladen weight was cut – depending on engine version – by up to **120 kilograms**. The body of the new Audi models is the lightest in their class thanks to an intelligent mix of materials.

With **54,809 delivered motorcycles**, Italian subsidiary Ducati exceeded the 50,000-unit volume mark for the first time in the last fiscal year. This is an increase of more than 20 percent over the previous year's figure. The primary driver behind this dynamic growth: the new Ducati Scrambler, which sold more than 16,000 units in its first full year of production.

54,809 MOTORCYCLES

To date, the Audi brand has delivered well over three million cars to Chinese customers. The company's success story in China began in 1988. In October 2010, the first million in sales was achieved. The second was posted in July 2013 and was closely followed by the third in May 2015. In other words, it took 22 years for the first million, but most recently, only **22 months**.

22 MONTHS

1.8 MILLION AUTOMOBILES

During the 2015 fiscal year, a total of **1,803,246 Audi brand automobiles** were delivered to customers all over the world. This exceeded the previous year's figure by 3.6 percent, despite the fact that the first representatives of the current model initiative – the new A4, the new Q7 and the new R8 – were not yet available in all world regions. With this, Audi confirmed its position as the best-selling premium brand in Europe and China. Audi deliveries grew twice as fast in the United States as in the market as a whole. Lamborghini achieved a historic benchmark as well in 2015, selling more than 3,000 supercars for the first time. The Lamborghini Huracán contributed a large share to this success, with more than 2,200 units of the car being delivered.

2:01.01 MINUTES

With successes in piloted driving, Audi is constantly advancing a major trend in the automotive world. The latest generation of the Audi RS 7 piloted driving concept has surpassed previous top performances once again on a challenging race track: the Sonoma Raceway in California. "Robby," as the technology platform is nicknamed, needed just **2:01.01 minutes** for the 4,050-meter-long course – faster than most racing drivers. Audi will be offering piloted driving in series production for the first time in the upcoming generation of the Audi A8.

20 NEW MODELS

The model initiative for the Audi brand continues to gain momentum. The company plans to introduce more than **20 new or updated models** and derivatives into the market during 2016 alone. Alongside the entry-level SUV Audi Q2, with which the brand is tapping into completely new customer segments, the new SQ7 rounds out the new SUV portfolio at the top end. Moreover, the Audi team at the new location in San José Chiapa, Mexico, is working intensively on the start of production of the Q5.

*Fuel consumption and emission figures at the end of the Annual Report.
The Audi Q2 and the Audi SQ7 are not yet available on the market.
They do not yet have Whole Vehicle Type Approval and are therefore not subject to Directive 1999/94/EC.*



*Dear Readers,
Dear Shareholders,*

When does the future begin? Many think it starts tomorrow, but we at Audi believe otherwise: Our future begins today! After all, what happens tomorrow is built upon what we do today. This is the central theme of our 2015 Annual Report: **tomorrow.now!**

No doubt, these are especially challenging times. But this is precisely what motivates us at Audi to give our all. In the course of the diesel issue our primary focus remains on the trust of our customers and therefore on uncomplicated and sustainable solutions. A record number of deliveries once again in 2015 confirms that we are on the right path.

Our industry is undergoing change – **now** is the time for something new: new drive systems, new assistance systems, new alliances. Because the connected car requires a connected world, we have formed new partnerships in digital maps and services. And because the intelligent car can only fully develop its enormous potential in an intelligent city, we are working in cooperation with the cities. As part of our Audi Urban Future Initiative, a Memorandum of Understanding was signed with the city of Somerville in November 2015, during the Smart City Expo World Congress in Barcelona. On the east coast of the United States, we will be testing innovations like piloted parking and the next generation of connect services for the city of the future.

In the words of Johann Wolfgang von Goethe: “Success has three letters: Act.” Read in the following pages how we are shaping the future of mobility and using every change as an opportunity.

Prof. Rupert Stadler

Chairman of the Board of Management of AUDI AG

The Board of Management.



PHOTO: Uli Weber

Dr. Bernd Martens
Procurement

Axel Strotbek
Finance and Organization

Dr. Dietmar Voggenreiter
Marketing and Sales



Prof. Rupert Stadler
Chairman of the
Board of Management

Dr.-Ing. Stefan Knirsch
Technical Development

Prof. h. c. Thomas Sigi
Human Resources

Prof. Dr.-Ing. Hubert Walzl
Production

HERE



The future of mobility begins with digital real-time data. With its highly precise and up-to-date maps as well as its pioneering concept for location-related services, HERE is one of the leading technology providers in the digitized world of mobility – and is also playing a central role in developing piloted driving. Thanks to the company's digital mapping and location services, in the future, cars will be able to recognize road hazards in advance and adjust their driving accordingly. The broad customer base of HERE, which includes a wide range of industries, will also benefit from this. As new shareholders in HERE, AUDI AG, the BMW Group and Daimler AG are supporting this independent and open course.

AUDI CONNECT EASY DELIVERY



No time to wait for a package to arrive at your home? Soon this will no longer be a problem thanks to a new logistics service that Audi has already successfully tested together with Amazon. This service means that Audi drivers can have their deliveries from the postal and logistics company DHL placed directly in the luggage compartment of their car. For this, the driver authorizes tracking information for his or her Audi to be disclosed for the delivery period. The courier then receives one-time, digital and keyless access to the trunk.

Audi is using an app to optimize vehicle access for the up to 350 trucks that arrive each day at the Audi plant. The app provides information at the start of the journey. When the driver comes within 50 kilometers of Ingolstadt, the app communicates via GPS with the truck control center regarding timing and assigns the truck to one of the 60 unloading stations. The app checks the cargo list when the truck is 20 kilometers from the destination, and one kilometer before arrival, the goods are automatically registered. This saves up to 30 minutes per truck, helps untangle traffic around the plant and makes sure the unloading stations are utilized efficiently.

QUICK CHECK-IN FOR TRUCKS



01 in no vate. now!

PILOTED DRIVING. VIRTUAL REALITY. SMART FACTORY.

OUR INNOVATIONS SHAPE THE AUTOMOTIVE FUTURE.



01

BLUE SKY THINKING.

TEXT: *Julian Fritsch*



Frankfurt Airport: 50°2' N, 8°54' E. Welcome to Hangar 7, the technology cathedral of Deutsche Lufthansa AG. Access to this gigantic high-security hall is normally reserved for flight engineers and specialized workers. The Airbus A380, the largest passenger aircraft in the world, is being readied for service. Prof. Rupert Stadler, Chairman of the Board of Management of AUDI AG, and Silicon Valley expert Christoph Keese take a seat in the cockpit. Time to take off on a discussion of innovation, disruption and the rapid ascent of digital business models in the Internet age.



Mr. Keese, you spent half a year in Silicon Valley discovering how start-ups and digital giants from Palo Alto to San Francisco are creating both innovation and disruption. What is the next big thing that awaits us?

KEESE: You need to be in the right place, especially in the virtual world. If you're where innovations are launched, you soon find out what you should be investing in. If you're in the wrong place, you'll be behind the game. Consider this: Californians no longer believe in production, they believe in data aggregation. They are inventing and developing platforms. That makes them disruptive.

What makes Silicon Valley's innovators so strong – is it really just down to high risk and flat hierarchies?

KEESE: Take Palantir, for example – a big data specialist from Palo Alto. Nothing inherently spectacular in that. But this innovator is run by just four managers. The remaining 1,200 employees all have the same rank and title: Forward Deployed Engineer. A made-up label. The employees are constantly reorganizing themselves project by project, and that enables them to analyze myriads of data incredibly fast. So success certainly isn't a question of hierarchy. **STADLER:** Bureaucracy paralyzes progress. We've recognized that, which is why we quickly need to break down hierarchies. That was one reason why we established our Audi Innovation Research (AIR) think tank in San Francisco in 2012: to develop new, innovative technologies faster and permanently expand our network in Silicon Valley. But the start-ups there are simply more venturesome than we are; less bureaucracy gives them more speed.

Mr. Keese, were you able to sense that speed?

KEESE: People who launch start-ups have an idea on Saturday, start writing the code on Sunday, pitch for risk capital on Monday, and six weeks later the product is on the market. An impressive feat that reflects incredible resolve.

And it came as a bit of a surprise to you. You traveled to Silicon Valley with the classic business attire of suit and tie, and soon realized that it doesn't go down too well there.

KEESE: My suit very rapidly became redundant. First it was folded away in my case, then hung in my closet. But I didn't need it once. Apart from a few investors, nobody wears one there.

Wouldn't that be absolutely taboo in German industrial enterprises?

STADLER: We still have quite a hierarchical mindset and need to learn that there's a faster and more flexible way that's just as responsible. But first we need to overcome our fear of change.



PROF. RUPERT STADLER

Born in 1963. Chairman of the Board of Management of AUDI AG. A graduate in business administration, he joined Audi in 1990, working in Controlling for Marketing and Sales. In 1994 he was appointed Commercial Director of Volkswagen/Audi España S.A. in Barcelona. Rupert Stadler became Head of the Board of Management's Office for Volkswagen AG in 1997, and additionally Head of Group Product Planning starting in 2002. He joined the Board of Management of AUDI AG in 2003 and has been its Chairman since 2007. Stadler was also appointed to the Board of Management of Volkswagen AG in 2010. He lives in Ingolstadt with his wife Angelika and has three children.

It's questionable whether we'll manage that. But even if we do, we Germans aren't exactly thought of as risk-takers.

KEESE: Sadly, no. Even though we're the successors of pioneers who took big risks. Most car manufacturers started out by causing disruption when they took on horse-drawn carriages with their motorized versions. We need to reactivate that spirit of risk-taking.

Ideally before car manufacturers find themselves under attack. Mr. Keese, you write in your book that the Google Car could completely transform the automotive industry. Why is that?

KEESE: Because disruptive attacks generally lead to lower prices for services and products alike. That will also affect the automotive industry because owning and driving a car today is a very costly affair. In the future, the self-driving car won't sit around doing nothing for 95 percent of the time; it will be transporting other people around. That will noticeably reduce the cost of ownership. **STADLER:** In 2010 we launched the Audi Urban Future Initiative mainly to find solutions to traffic congestion in major cities. We have to be engaged in these solutions so that people will continue to buy cars and therefore individual mobility in the future.

How can the automotive industry keep making money and protect jobs in such a future, Mr. Stadler?

STADLER: Human-machine interaction will take on an entirely new form in the future. We will talk to our cars and give them commands. While our car drives us to our destination, we can busy ourselves with other matters. So the car will become a new living space that gives us time for entertainment, work or communication. The way we relate personally to this new living space offers scope for new business models.

Is that really a source of income for Audi?

STADLER: Absolutely, and that's why we have brought the mobility product of Audi shared fleet onto the market, for example. It gives companies the opportunity to provide Audi fleet automobiles for their employees for a fee, like car sharing. Reservations are organized via app. This enables us to reach entirely new customers and become part of a new business

model. Bear in mind that for some people, having their own car is not the best option because they are constantly traveling for work or have the problem of finding parking spaces in cities. All of our mobility services also meet the exceptional standards of a premium brand. A robust business case is always a prerequisite for our services. **KEESE:** The best option for the automotive industry is for it to identify and exploit the value-added streams of the future. That includes platforms that can also be used for advertising and entertainment. And that's where you can make money.

But extremely short innovation cycles are a hallmark of Silicon Valley. Things are much slower-moving in the car industry. Does that really go together?

STADLER: I have absolutely no doubt about that. We are bringing both worlds together and keeping certain features viable. Then the customer will always be up to date, giving us scope for new products, services and business. **KEESE:** My kids like playing FIFA 16. But once FIFA 17 appears on the market, FIFA 16 is old hat, an absolute disaster. So Dad always has to have the new FIFA available in his car.


Is that enough to keep Germany's flagship industry afloat, Mr. Stadler?

STADLER: The spread of Internet-based communication is bringing greater price transparency. We therefore expect that margins in classic sales will at least not rise. The value added is increasingly shifting to a car's phase of use. Based on our strong core business, that gives us scope to access new areas of business.

Mr. Keese, would the German premium car manufacturers' model for success work in California, too?

KEESE: Californians are experts in high-margin businesses that require little capital. We need to learn more in order to be prepared for the digital economy.



A full-page photograph of a large industrial hall with a high, vaulted metal ceiling and corrugated metal walls. Two men in dark suits and ties are walking towards the camera in the center of the frame. The man on the left is looking down at a small object in his hands, while the man on the right is gesturing with his hands as if in conversation. In the background, various industrial equipment, including a yellow forklift and a red scissor lift, are parked. A small sign with the letters "OST" is visible on the wall to the right. A blue rectangular box with a white 'X' is overlaid on the left side of the image, containing the quote.

**“All of our mobility
services also meet the
exceptional standards
of a premium brand.”**

Prof. Rupert Stadler

Isn't it a bit late for that? Companies such as Google are already all-powerful.

STADLER: Look, if you don't take on the competition, you've already lost. That's why we joined forces with BMW and Daimler to acquire the Nokia digital mapping and location business HERE. Our goal is to offer HERE industry-wide as an open platform. So we'll also be pressing ahead with the development of piloted driving. Car-to-X communication will make HERE a real-time map that constantly updates itself. The more communicators participate in it, the safer car driving will become. A build-up of traffic congestion, for example, will in the future be identified more precisely, and that can significantly reduce the risk of rear-end collisions.

But with HERE, you've primarily bought expertise.

STADLER: Yes, of course! That's how they do things in Silicon Valley, too. When an interesting company is up for grabs, people naturally also want its expertise. But that's the starting point for every platform idea. **KEESE:** Google quickly integrates many of the start-ups it acquires and takes on their top employees. That's also part of Valley culture.

That shows that Californians aren't afraid to change direction. There's another difference in mentality: In Silicon Valley, if a hero falls on his face he just gets up again. Here, if you fail you are dubbed a loser. We are held back by our mentality.

STADLER: It's deeply regrettable that we don't have that spirit in Europe. In the United States, universities network with industry, develop businesses and equip students with business acumen. We, too, need to strengthen that pioneering spirit in young people.

Germany plans to fight back by investing roughly €15 billion in research and development. Will that be enough?

KEESE: When it comes to innovation and education, half-measures are not nearly as effective as going all-in. Many Californian companies have changed the world on much less money. Besides, the money is simply being distributed the wrong way. And not just in Germany. As a result, Europe is trying to set up 28 Silicon Valleys instead of focusing on just one.

So the solution would be to put all the money in one pot. That doesn't exactly sound revolutionary.

STADLER: Because that's not the solution. You have to create an atmosphere of innovation, and that starts in the early years of a child's education. We have to keep pushing for such an atmosphere.

We have often failed to do that in the past. And now we are paying the price, in our failure to have mastered the technologies of the future such as biotechnology and mobile business.

KEESE: That view is too one-sided. You mustn't underestimate the impact of clusters. If you lose one, it's gone for generations. And we have lost quite a number of clusters, such as in household and entertainment electronics or the optics and computer industry. So it's high time we put a regional slant to our economic policies. **STADLER:** That's why we took the initiative with piloted driving and worked with politicians to establish the right framework. Entrepreneurs need to be a disruptive force for the political sphere.

But we've long been well behind the game, especially when it comes to the cluster of digital platforms such as Facebook, Spotify and Amazon. That plane has departed, and your notion of playing catch-up is a fantasy, Mr. Keesee.

KEESE: That's where you're wrong. There is no secret science to building a platform, but you have to create high information frequency on both sides of the market – that's what determines who emerges as market leader. It's obviously easier if you have plenty of money. All the more reason to overcome that German weakness in the field of venture capital.





“The best option for the automotive industry is for it to identify and exploit the value-added streams of the future.”

Christoph Keese

But you just said throwing money at a problem isn't the solution. And the network effect dictates that the benefits of a platform are directly proportional to the number of users and the volume of data. Surely you have to admit that American platforms are miles ahead in this power struggle because of their user numbers?

KEESE: But when clusters become too complex they break down. We're already seeing such effects in Silicon Valley. Labor is in short supply, the costs that businesses are facing are too high and investors are looking for other opportunities. **STADLER:** The important thing is to remain agile. Businesses need to develop new ideas. Five years ago we participated in the International Consumer Electronics Show in Las Vegas for the first time and presented our Audi models as mobile devices. Today we are drawing on a strategic cooperation with NVIDIA, a chip manufacturer from the games console industry. Without that alliance we could not have offered the virtual cockpit.

So you're saying that all you need to do is bring together the right constellation of people?

KEESE: Look at the film company Pixar. When the new head office was being designed, the then-boss Steve Jobs wasn't content just to have a communal canteen. He insisted on central restrooms

so that employees would be walking through the entire company a number of times a day. That way they meet colleagues from different departments. And that's the key to fostering creativity.

So all German companies should get on with installing giant central restrooms?

KEESE: It's simply that creativity has much to do with architectural concepts and paths. This is why corporate head offices will look radically different in the future.

Looking further into the future, what problems in individual mobility do we still need to address?

STADLER: Look at the traffic problems in megacities that are suffering from gridlock. The solution is piloted driving. In certain stop-and-go situations we offer time savings. The driver could hold a video conference with family or business partners, for example. People want to be mobile, and we can influence mobility.

But specifically when it comes to autonomous driving, the public perception is that the breakthrough will be achieved by less experienced companies such as Apple and Google.

STADLER: Google is testing sensor systems and camera technology, but that's still a far cry from the self-driving automobile



Follow the meeting between Prof. Rupert Stadler and Christoph Keese.



GLOBAL INNOVATION CAPITAL

Many of the world's most forward-looking, innovative and influential businesses have established bases in Silicon Valley. The southern rim of the bay between San Francisco and San José is home to Google, Apple, Facebook, Amazon, eBay and many other market leaders of the digital economy. Students from all continents are drawn there to attend Stanford University and frequently launch their own start-ups after graduating. The leading discipline of Silicon Valley's founders is disruptive innovation – using new ideas to abolish an existing market and then to reinvent it with their product. The manufacturing of physical products no longer plays any role in this world; the key trait of the market leaders is their expertise in data aggregation. This data is shared between users and providers on platforms.

In his German book "Silicon Valley – What we will be facing from the world's most powerful valley," Christoph Keese describes how the mechanisms in the valley of dreams work and what the key to success is for these Californian businesses and pioneers. But he also casts a critical eye over the working culture in Silicon Valley and calls for Germany to get actively involved in the debate about our future in the digital world.

as a self-contained system or platform. In 2017 we will be unveiling the first Audi with a top piloted speed of 60 kilometers per hour in the shape of the new A8. And obviously we are casting our tests far more broadly. I am convinced we will actively participate in shaping the smart cities of the future with the help of breakthrough technologies such as piloted parking and driving.

And what form might that active contribution take?

STADLER: We will definitely drive long distances electrically in the future. And the car will connect comprehensively with its surroundings. We should use traffic signal phases and swarm intelligence so that the car can process more data. We will see huge movement in that direction. **KEESE:** And people's attitudes towards mobility are changing. Tesla has already pulled off the cultural feat of delivering guilt-free pleasure. For high acceleration and high torque, you always had to pay the price of high fuel consumption. With Tesla you can suddenly have both extreme sportiness and a clear conscience. People are already thinking differently about mobility.

So we can wave goodbye to the traditional automobile manufacturer.

STADLER: Not if we can transform. In the future, a major portion of a car's added value will stem from its software. If we can bring more IT under our corporate umbrella and understand what makes the world's major cities tick, we will be at least as good as the guys in Silicon Valley.

Sounds like you are planning a radical rethink, and not just for the car manufacturers. Is our society ready for all that?

KEESE: Was society ready for the iPhone? Yes! Did society know it was ready? No! Society doesn't know what it's ready for. Innovators need to develop products that fit the times like a key fits a keyhole.

And who will be making the smart key for the car of the future, with which car makers can set the pace?

STADLER: We will remain a premium automobile manufacturer in the industry. But we will be forging many partnerships on that journey through time, including new stars from new regions, whether Silicon Valley or China. All the same, I'm convinced: The next big automotive innovation will be made in Germany. **KEESE:** I certainly hope so! For every technology worldwide, there is usually only one preeminent cluster. That's why we need to see political and economic commitment to keep Germany a powerhouse of automotive manufacturing and expertise. We will then automatically be based where the innovations are happening.

CHRISTOPH KEESE

Born in 1964. Executive Vice President of Axel Springer SE and responsible for the digitalization strategy of Axel Springer. As a freelance author, Keese has already written several works on the topic of innovation. In researching for his book "Silicon Valley – What we will be facing from the world's most powerful valley," Keese spent half a year living in Palo Alto, California, and interviewed sources ranging from start-up entrepreneurs to Internet giants.



Paolo climbs out of the car with a broad grin on his face. He has just blazed through the FAST Parcmotor racetrack near Barcelona at over 200 kilometers per hour. His driver: Robby, an Audi RS7 piloted driving concept. "We should stop driving ourselves," he says with a laugh. "Seriously, that was impressive. That needs to become reality. The sooner, the better!"

THINK. SHARE. DARE!

TEXT: Verena Vöth

02

PHOTOS: Anthony Lindsey, AUDI AG





//WHAT IS THE NEW ROLE
OF THE DRIVER?
THE USER?



A review: It is early September in California. At over 30 degrees Celsius, it is unusually hot for this time of year, but the temperatures match the heated discussion going on at The Battery in downtown San Francisco. In the Penthouse, with a view of the surrounding skyscrapers, an unconventional meeting is taking place: About 30 creative minds from Silicon Valley are sharing their thoughts about the future of piloted driving, in which the driver can at times hand over the task of driving to the car. The host: Audi Innovation Research, or AIR for short.

No dress code, last names or agendas – this meet-up asks participants things like: “What fascinates you about piloted driving?”, “Where do you see the added value for you personally?”, and “How will piloted driving change the relationship between the customer and the car?” Each person has a different answer to these questions. “We spend so much time sleeping. What would it be like if we were to use this time sensibly? If I lie down in my car to sleep and wake up the next day in a completely different place – like the Grand Canyon?” Jon asks. “And afterward it shows me what I missed,” Rachel adds. The car could also become the destination instead of just a means of transport, Mel thinks: “You could use it as a conference room that picks up the participants.” Paolo confides: “My wife and I decided not to have any kids. So what I think about is: Who is going to drive me around when I get old?”

DIRECT LINE TO THE COMPANY

AIR employee Jürgen Kufner sums up the motley crew of participants: “Here, experts from Yahoo and the Netflix streaming service meet with the curator of the Guggenheim Institute, the virtual reality specialists from Vrse and the creative director of Pixar’s animated movie Cars.” Some of them are enthusiastic

car owners, some of them do not enjoy driving because of the traffic, and others rely completely on carsharing. The interdisciplinary nature of the discussions makes them highly stimulating and especially valuable for AIR. Also participating are employees from AIR Peking, from Brand Development in Ingolstadt and from the Volkswagen Group’s Palo Alto-based Electronics Research Laboratory. As a consequence, new insights that emerge here are immediately interpreted for Audi and transmitted to the company.

A NEW DEFINITION OF PREMIUM

“It’s a fact that people are not rational creatures, but rather emotional ones,” Paolo says, explaining the procedure. “That’s why we are not talking about technology today. Technology is going to get there. What interests me is the environment of this new technology.” And this is where many of the guests see big potential to create value for customers. Lucy believes the same holds true for the connection between people and their cars: “If an Audi could pick you up and bring you to work, should it then be your Audi or just any Audi? I love my car because it is mine and I am familiar with it.” A piloted car should therefore be intelligent and also capable of getting to know its driver: “On the way to work it plays the playlist I was already listening to during breakfast in my apartment.” “It adapts its driving style to my own.” “It stops at the coffee shop where I always pick up my cappuccino” – the ideas bubble forth, thoughts and discussions take their course. “I like that Audi is already thinking today about the next few years,” Paolo says. “Long-term thinking allows companies to change the future. Audi is shaping, not just reacting.”

One thing is certain: In the future, in addition to the “hardware” – that is, the car itself – services, software and unique, emotional experiences will also be part of the offer. This depends on redefining the premium standard in the form of intelligence, time and experience. As a company, Audi has the decisive advantage of already having decades of experience producing high-quality cars that are desirable all over the world.



//WHAT ROLE WILL
THE HARDWARE PLAY?



//HOW WILL
THE USER
ENJOY 'DRIVING'?



//HOW WILL
THE USER BE
CONNECTED TO
THE CAR EMOTIONALLY?



//WHAT IS THE
ADDITIONAL VALUE
OF PILOTED DRIVING?



//HOW DO YOU
TRUST THE CAR?



//WHAT IS IT ABOUT
PILOTED
DRIVING THAT
EXCITES YOU?



AUDI INNOVATION RESEARCH

The interdisciplinary think tank AIR is an important component of the worldwide innovation network of Audi and has offices in Beijing and San Francisco. AIR Beijing regularly compiles market research analyses and, based on the results, has contributed significantly to the brand strategy for the Chinese market. The focal point of digitalization lies in San Francisco, the gateway to Silicon Valley: "We identify trends here and cooperate with start-up companies whose products could be interesting for Audi and that create value for our customers," says Boris Meiners, Head of Audi Brand Development. "We are driving the

digitalization of the automotive sector forward this way." Audi is demonstrating its presence this way locally – since it is crucial in Silicon Valley to not only answer the phone, but to knock on doors as well. "This way we are integrating the innovative power of Silicon Valley into our Audi network," adds Markus Auerbach, Head of AIR in San Francisco. In the long term, Audi Innovation Research wants to establish an innovation platform with experts from all over the world who can work with Audi in various projects.

www.audi.com/air/en.html

EXPERIENCING THE FUTURE TODAY

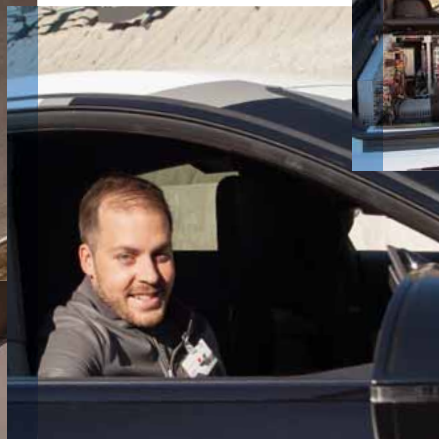
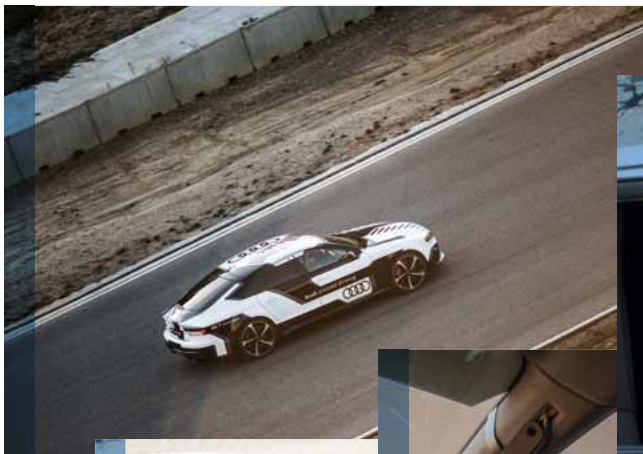
Seventy-two days later and almost 10,000 kilometers away: After the theoretical discussion at the meet-up, today some of the participants are experiencing what piloted driving really feels like. On the racetrack near Barcelona, Audi shows that this is no longer science fiction – it is reality. Jay is thrilled: "What I didn't expect is that the piloted cars drive very organically. As if they have their own personality. The driven lines deviate a tiny bit from each other despite identical programming, since the cars adapt to the



If you would like to get a taste of the kinds of driving adventure awaiting us in the future, you can get a first impression right now. Better buckle up tight. Click here to view the video.

current road conditions. It felt as if a human was driving." Albert is surprised as well: "I wouldn't have thought that I could take my eyes off the steering wheel so soon. You trust the car very quickly."

After the drive the discussion is rekindled. The ideas from the meet-up enter the next round, are refined and made more and more specific. Paolo is confident: "This is the future. It was impressive to already be able to experience that today."



A large crash test dummy, labeled 'B02' on its neck, is shown from the side, wearing a red shirt. It is positioned in a laboratory or crash test facility. In the background, a digital display shows 'FRONT OFFSET' and 'A4 SED. / AVAN'. A yellow and black hazard symbol is overlaid on the right side of the image.

“It’s a safe bet!”

TEXT: Jan Rentzow

What does a crash test dummy's work day look like? What does it do and what does it think of all the predictive driver assistance systems? Dummy H3-50 gives us an exclusive glimpse into one of the toughest jobs at Audi. An unusual interview before and after the crash test of the new Audi A4.

03



Dummies play an important role in vehicle development and frequently have to “risk their heads” to make vehicles even safer. At the Audi Vehicle Safety Research Center in Ingolstadt, we learn exactly what this entails. We have come to witness one of the last release crashes for the new Audi A4 Sedan. There are still a few minutes to go before the crash test and preparations are underway. On the visitor’s gallery, we meet Dummy H3-50, who has around one thousand crashes under his belt.

Dummy H3-50: It’s something special for me too, to experience a crash from this perspective. Normally I’m in the dummy lab waiting for my turn or sitting on the crash track in a test vehicle.

What role do you play in a crash?

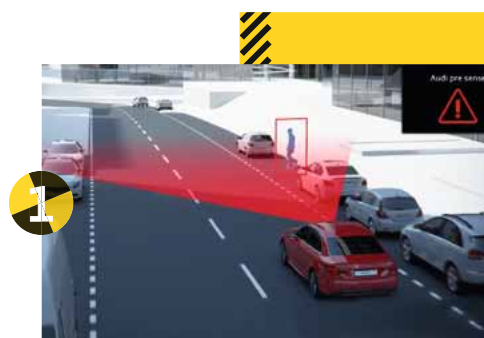
Dummy H3-50: I’m what is known as a Hybrid III 50th Percentile Male. At 78 kilograms, I weigh roughly the same as the average European male and am

1.75 meters tall. I also have around 60 sensitive data measuring points, for example on my head, neck, thorax, thighs and shins. These provide exact information about what happens to me during a crash. A precise analysis of the vehicle and measurements is performed after the test.

Will any of your colleagues be taking part in this crash?

Dummy H3-50: Yes, two of my colleagues are involved. The vehicle is currently being prepared in a so-called climate box. Our crashes are always conducted at a temperature of 20.6 to 22.0 degrees Celsius. The temperature is a specification to ensure optimal comparability of the measurements. At a higher temperature, the sensors on our bodies would deliver completely different results. Besides the 60 measuring points on the dummy, there are over 200 additional measuring points in or on the vehicle.

“I live for progress and the issue of safety.”



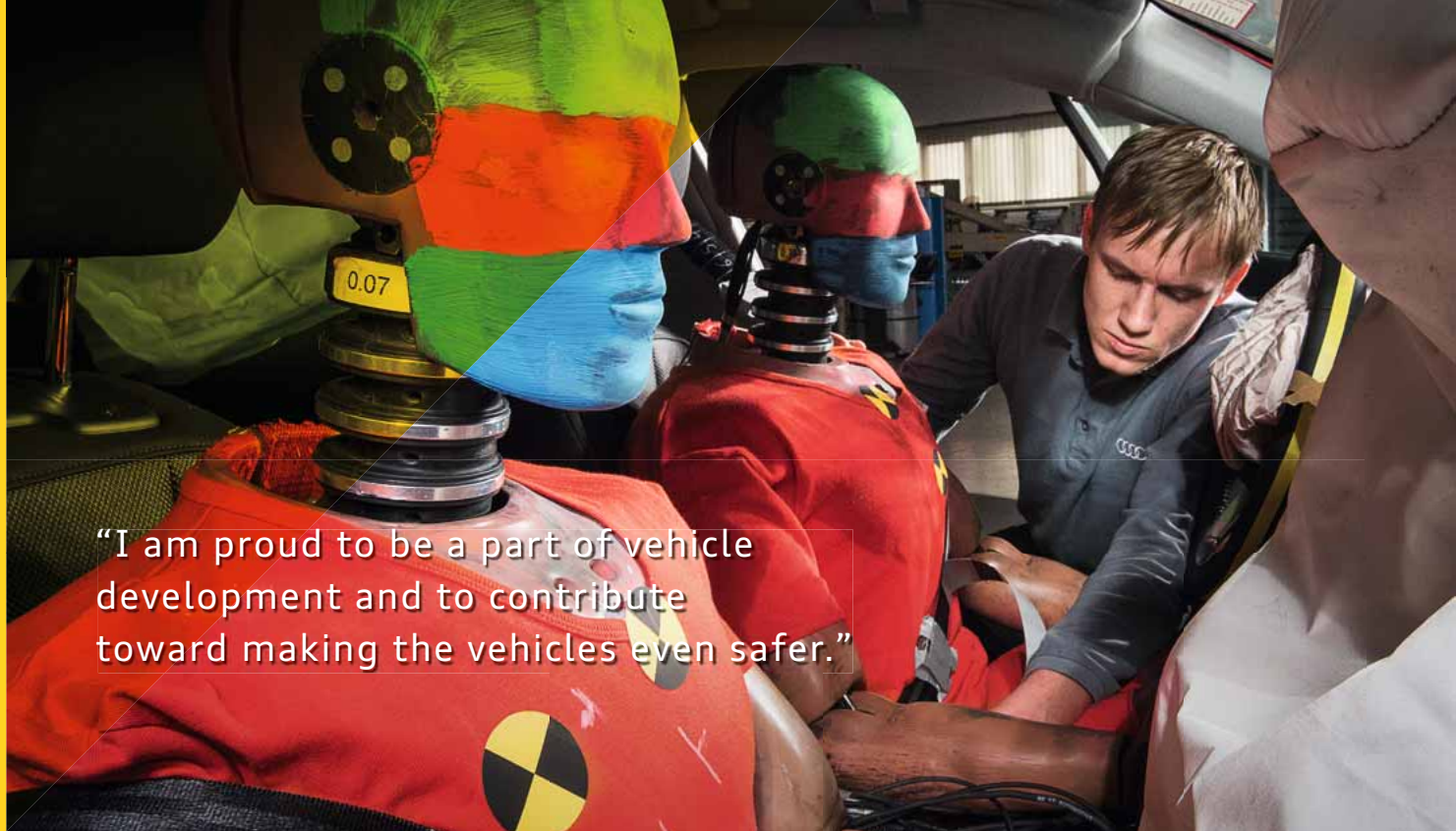
PROTECTIVE EYE: AUDI PRE SENSE CITY

With a front camera on the windshield, the system scans pedestrians and vehicles up to 100 meters away. In the event of an impending collision, the driver is warned according to a graduated concept – up to and including automatic braking, if necessary. Within system limits, collisions can thus be avoided at speeds up to 40 kilometers per hour, and at speeds up to 85 kilometers per hour the impact speed can be significantly reduced.

DOING A GOOD TURN: AUDI TURN ASSIST

This Audi innovation monitors oncoming traffic when turning within a speed range of between two and ten kilometers per hour. In the event of danger, turn assist brings the car to a complete stop. The system becomes active as soon as the driver uses the turn signal.





"I am proud to be a part of vehicle development and to contribute toward making the vehicles even safer."

What kind of crash will this be today?

Dummy H3-50: An A4 Sedan will drive into a special crash barrier, head-on, at 56 kilometers per hour. Imagine the tremendous forces acting on the vehicle and occupants. To dissipate this energy, the front end of the car deforms, absorbing as much energy as possible and thus protecting the passengers inside as far as possible. The crash is meticulously documented. We have six cameras in the car, and six more are permanently installed along the crash track. These record up to 10,000 images per second in HD quality. The crash takes place over a glass floor. There are cameras here as well that record the deformations of the floor pan. A precise analysis of the measurements and recordings is performed following the crash.

How many crash tests are conducted before an Audi A4 is launched on the market?

Dummy H3-50: There are about 100 tests from the first prototype to final release. A wide range of different types of tests are performed. Our engineers from Vehicle Safety Development are involved in the development process at a very early stage so that changes can be made, if necessary. Everything is tested virtually in simulation before the real-world tests in which we dummies have to risk

3



RED LIGHTS INDICATE DANGER: AUDI EXIT WARNING

The car is stopped, but other vehicles are approaching from behind. The system then warns the occupants when opening the doors. High-output LEDs light up red in what is assessed to be a dangerous situation.

our heads. We therefore contribute to the smoothest possible development progress from the very beginning.

The strip of lights at the crash track changes from green to red. A loud signal sounds.

Is that the start?

Dummy H3-50: Exactly. A traction device accelerates our A4 Sedan until it slams into the crash barrier at 56 kilometers per hour. And here it comes ... watch closely! Too bad about the beautiful A4. But it's a necessary step in order to thoroughly test our vehicles and make them even safer for our customers.

What will the dummy of the future look like?

Dummy H3-50: To get realistic measurements, the movements of the dummies must be as close to human as possible. The engineers call this "biofidelity." That's why dummies are under constant development. One of my new colleagues on the dummy team is THOR-M. Around 130 data sources on his body provide precise information about the loads that occurred at, for example, the head, thorax, pelvis and legs during the crash.

The Audi A4 sets new standards in its class with its wide choice of active driver assistance systems. It's equipped with cameras, ultrasound and radar sensors for safety and ride comfort. What do you think about the new safety systems?

Dummy H3-50: I think they're great! I live for progress and the issue of safety, and I'm pleased that we offer new as well as significantly updated systems in the new A4 – many of them as standard equipment. I'm proud to be a part of vehicle development and to contribute toward making the vehicles even safer. Audi pre sense city, for example, warns the driver of an impending collision and even initiates emergency braking if necessary.

For Audi pre sense city, several thousand hours and hundreds of thousands of kilometers were driven with a camera all around the world to imbue the vehicle with this tremendous intelligence. Added to this were several thousand test drives with dummies, that is, with pedestrian and automobile silhouettes. Have you ever simulated a pedestrian?

Dummy H3-50: No, we have a separate team of dummies made of a foam mix for that. These dummies have to behave as realistically as possible so that our cameras in the vehicle can learn to detect human movements. That's why in the future their legs will swing while walking or running.

And intelligent cars? Where will they lead us?

Dummy H3-50: I consider that to be a grand, wonderful process that has only just begun, even if we at Audi already have quite a lead. Our engineers are currently developing very effective tools for vehicle safety: Besides Audi pre sense city, we also have turn assist, which actively helps to prevent accidents while turning across lanes with oncoming traffic. There is also the rear cross-traffic assist, which warns of other cars when pulling out of a perpendicular parking spot, for example. Or an exit warning that informs all occupants before opening the doors if vehicles are approaching from the rear. And we are developing the traffic jam assist, which already can take over for the driver on the highway at speeds of up to 65 kilometers per hour and stay in lane while keeping up with the vehicle ahead. In the years ahead, we will be able to master a far greater range of traffic situations and even higher speeds with piloted functions, including in series-production vehicles. **It's a safe bet.**



THOR-M: the next-generation dummy for future frontal crash tests. Successor to the Dummy H3, he has up to 130 measuring points for measuring crash forces and effects. Both the thorax and pelvis have been improved. Total number of larger individual parts: roughly 300.

LEAVING PARKING SPOTS WITH CAUTION: AUDI REAR CROSS TRAFFIC ASSIST

Rear cross traffic assist warns the driver of approaching vehicles which it considers critical when slowly backing up, such as when pulling out of a perpendicular parking spot. Rear radar data are used to issue graduated warnings – visually, acoustically and via a warning jolt.





PHOTOS: Daniel Wollstein, AUDI AG

Fuel consumption and emission figures at the end of the Annual Report



04

BEAM ME UP, AUDI.

"That's one small step for a man, one giant leap for mankind."

Those were the words of Neil Armstrong when he became the first man to set foot on the moon nearly 50 years ago. Today's version would read: One small click for engineers, one giant thrill for customers. Audi is generating excitement not just with the new A4, but also with a special experience when buying a car. Even though adventure is routine for extreme athlete Kenny Belaey, his first experience today with the retail world of the future left him impressed.

TEXT: Claudia Rülke



“I WANT TO BE THE FIRST PERSON TO RIDE A BIKE ON THE MOON.”

Kenny Belaey is one of the best trial bikers in the world. The 33-year-old Belgian has already conquered innumerable peaks in over 25 countries on his bike. He has won the UCI Mountain Bike & Trials World Championships four times, is a six-time UCI Trials World Cup overall winner and has claimed three European titles.

In 2015, “the magician,” as his friends call him, rode his trial bike across an 18-meter slackline, 112 meters above a gorge – at an altitude of 2,700 meters. And that despite the fact he used to be afraid of heights. That was his greatest adventure so far. When asked what he will do next, he answers jokingly: “I want to be the first person to ride a bike on the moon.”

Fuel consumption and emission figures at the end of the Annual Report



To the left a crater glistens light gray in the sunshine. Next to that are large boulders, long sand dunes, and on the right is a dark spot – basalt. A lunar mare. A shooting star flashes across the sky. “Wow. Really unbelievable,” says Kenny Belaey.

The trial biker is experiencing something only a few before him have enjoyed: a walk on the moon without a space suit. The Audi VR experience offers customers the opportunity to use a virtual reality headset to configure their dream car at the dealership with a previously unknown realism.

So Kenny did not just come for a walk on the moon. He turns around – and there it is: the new Audi A4 Avant, caught in a beam of sunlight behind Kenny. “Can I get in, too?” the Belgian asks incredulously. But of course! The car door opens. Kenny ducks his head, although he really does not need to, and gets in. “That is so realistic!” The new virtual reality headset makes both things possible: discovering the available options for configuring the A4 and exploring the lunar landscape.

Before long Audi will be offering its customers this experience worldwide at selected Audi City locations and neighborhood dealerships. Thanks to the virtual reality headset, customers visiting these dealerships of the future can

conveniently configure their dream Audi – with the support of the sales consultant – and explore it in an environment of their choice. Current options include, for example, in front of the National Library in Paris, in a tunnel setting or on the moon. A separate display allows the dealer and people accompanying the customer to share the experience.

Audi thrills with its technology. This is demonstrated by both the Audi VR experience and the new A4 Avant. Kenny, sitting in this car on the moon, begins his configuration process. First he wants to see the Audi virtual cockpit. In next to no time, the large, attractive graphics of the all-digital instrument cluster appear behind the steering wheel.



"I WOULD BUY MY CAR EVEN FASTER THIS WAY
BECAUSE I WOULD ALSO REALLY KNOW WHAT TO EXPECT."

Kenny Belaey

"It's unbelievable. The quality is so good, I feel like I could touch it," the extreme athlete says in astonishment.

As with the interior of the car, the customer can also choose between a number of options when it comes to technical functions: Audi connect with LTE, Audi smartphone interface and a long list of assistance systems. He also selects an assistance package with predictive efficiency assistant and park assist. "For my wife," he jokes with a laugh.

Kenny now lowers his head to get a closer look at the MMI touch in the center

console. "I can even identify the exact material." The trial biker risks a look over his shoulder at the back seat. The black leather wrapped tautly around the seats can be seen in accurate detail. He blinks and they are covered in a Rotor Gray Leather/Alcantara combination. "Oh, yeah. That looks great." The Belgian is impressed with the realism. "The technology has huge potential. I can see every detail here, but also the overall look of the car. Much better than with conventional configurators. I would buy my car even faster this way, because I would then also really know what to expect and can simply look forward to it."

Kenny is happy with the interior of his new Audi A4 Avant. He gets out and walks around the car on the surface of the moon. "I would still like to ride a bike on the moon some day, but this preview experience is crazy," he admits.

Kenny now takes a moment to look at the A4 from the outside. He takes a step back. Initially Scuba Blue metallic, the Audi A4 Avant now gleams in the metallic colors Tango Red, Manhattan Gray and then, finally, in Scuba Blue again. The Belgian also changes the headlights and the wheels. "The Audi Matrix LED headlights make the car distinctive. Everyone



Three questions for:

Dr. Dietmar Voggenreiter

Marketing and Sales



How else will retail change in the future?

With technologies such as the Audi VR experience, we can show our fans even more impressively what the world of the Four Rings has to offer: more than 50 models in millions of color and equipment combinations. From these we can “virtually” build the exact Audi our customer is dreaming of. This new way of addressing customers will be much more closely tailored to individual needs and provides an entirely new buying experience.

Digitalization down to the customer – what does that mean for us?

We look at digitalization from the perspective of the perfect customer experience – from the initial contact with our brand through the entire useful life of our premium automobiles. Our objective is to create the simplest and most intuitive digital interface possible for Audi customers. This will be the future front end for a tailored portfolio of products, after sales and mobility services. The increasingly diverse world of Audi should also be made even clearer and more convenient to access for Audi customers.

Where can you experience the future of Audi today?

In Berlin, for example. Our latest Audi City is located there. Our digital showroom concept is the benchmark for the automotive industry. We will position Audi City even more intensively as a technological basis in the future in order to equip all dealerships with virtual technologies. As part of this, we are bringing the digital Customer Private Lounge and, as the next step, 3D modeling and the virtual reality headset to the dealership.

immediately knows: That’s an Audi.
I like that.”

After fully configuring his A4, Kenny takes off the virtual reality headset. He did not think he would get to the moon so soon. The extreme athlete grins. He puts the headset back on and laughs: “I like this world even better than the real one. If I had my way, I’d never take these goggles off. I wish I had a pair at home.”

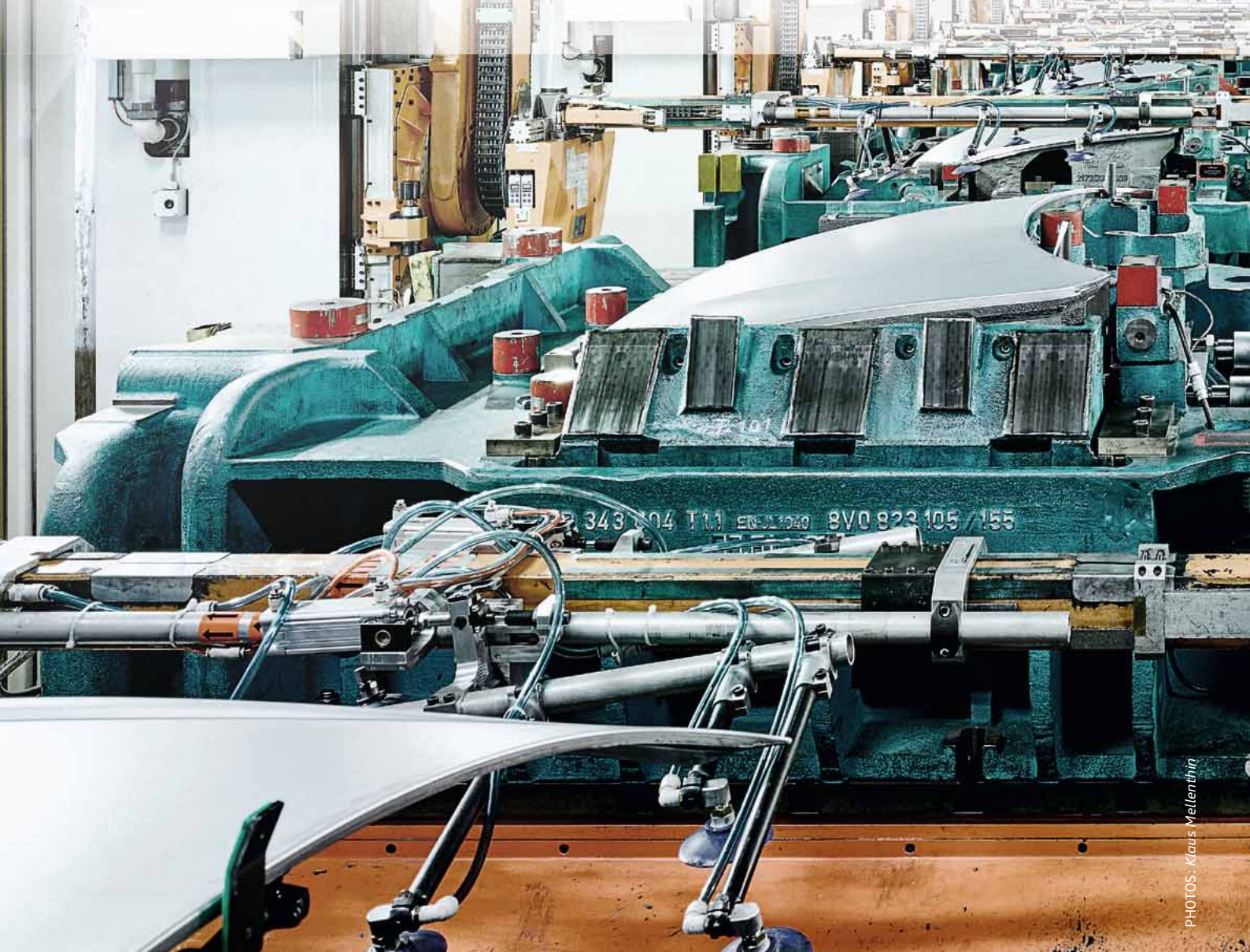


05

The transformers.

The future of production belongs to the Smart Factory. As an innovation driver, Audi Toolmaking plays an essential role here. This is where the tools and facilities are created for manufacturing the body parts of Audi models. The team has succeeded time and again in pushing the boundaries on what is technically feasible. A look behind the scenes at the example of the new Audi Q2.

TEXT: Kerrin Nausch



PHOTOS: Klaus Mellenhain

*The Audi Q2 is not yet available on the market.
It does not yet have Whole Vehicle Type Approval and is therefore not subject to Directive 1999/94/EC.*



THE GROUND VIBRATES. A rhythmic beat can be heard over the noise. The raw power of hundreds of tons of steel colliding, over and over again. Finally, the finished body parts slide out of the press line, glistening in a matte silver color. Flawless.

The unmistakable contours of Audi design are one way Audi customers can experience “Vorsprung durch Technik.” But how are these characteristically sharp edges and tight radii produced in the bodies of Audi cars? The Toolmaking division currently develops and builds special tools and equipment for manufacturing bodies at five sites located in Ingolstadt, Neckarsulm, Barcelona (Spain), Győr (Hungary) and Beijing (China). This expertise also benefits other brands of the Volkswagen Group.

The Audi Toolmaking team is setting new standards on the path to the Smart Factory, winning its fourth overall “Excellence in Production” award in 2015. Michael Breme, Head of Audi Toolmaking: **“In the future, we will be further networking systems, machines and people, and will be using new methods to develop even more flexible and precise tools.”**

01 // THE MILLING HEAD STREAKS BACK AND FORTH AT INCREDIBLE SPEED. A fine white powder fills the room. The form gradually takes on its contours. Curve after curve emerges from the styrofoam block. It has a light, almost delicate appearance, rather like an oversize leaf.

A long process must be completed before the sharp tornado line of the Audi Q2 can be produced in the side panel, for example, or the two design-defining “sizzlers” can be stamped into the highly sensitive and relatively brittle aluminum on the engine hood of the Audi A3 and TT. **Toolmaking is a core competency at**

Audi and covers the entire process chain of sheet metal production. Method planners in the Toolmaking division support each new design from the very first moment, since there are often details in the initial design sketches that will present new challenges for Toolmaking.

First of all, a styrofoam model is constructed which serves as a template for casting precisely fitting forming tools. An employee uses a milling machine to cut the form out of the polystyrene foam material with millimeter precision. It can take up to ten days to complete the model of a side panel frame tool for the new Audi Q2. In what is known as

the smoothing process, it gets a refractory coating, is dried and then lined with quartz sand. As soon as the sand is hardened, it guarantees the necessary stability for the casting process. Liquid iron is then poured through a system of pipes – as much as 20 metric tons of iron for large press tools such as those for side panel frames. In the process, the styrofoam model embedded in mold sand evaporates and the iron replaces it – the tool blank is complete.

In the future, Toolmaking will use new technologies such as the 3D sand printing method to produce the casting molds.



PHOTOS: Klaus Mellenthin

The Audi Q2 is not yet available on the market. It does not yet have Whole Vehicle Type Approval and is therefore not subject to Directive 1999/94/EC.



02 // FORWARD, BACK, FORWARD, BACK AGAIN. Relentlessly, the high-performance milling insert travels to every corner. Only diamonds are harder. Metal chips cover the gentle curves, and gradually build up. Another one-thousandth of a millimeter is cut – from an uneven surface here, a transition there. Everything that could get in the way must go.

Once the blank has been returned from the foundry to the Audi plant, its many curves and cut-outs make it plain to see – the ultra tool generation is bionic. In toolmaking, the forms and processes found in nature are replicated to boost the rigidity of the tools and cut the amount of material required. Weight can be reduced by as much as 20 percent compared with traditional tools.

In the lower tool part, for instance, these reductions can add up to as much as 1.4 metric tons. **This significantly cuts the amount of energy needed to operate the tools.**

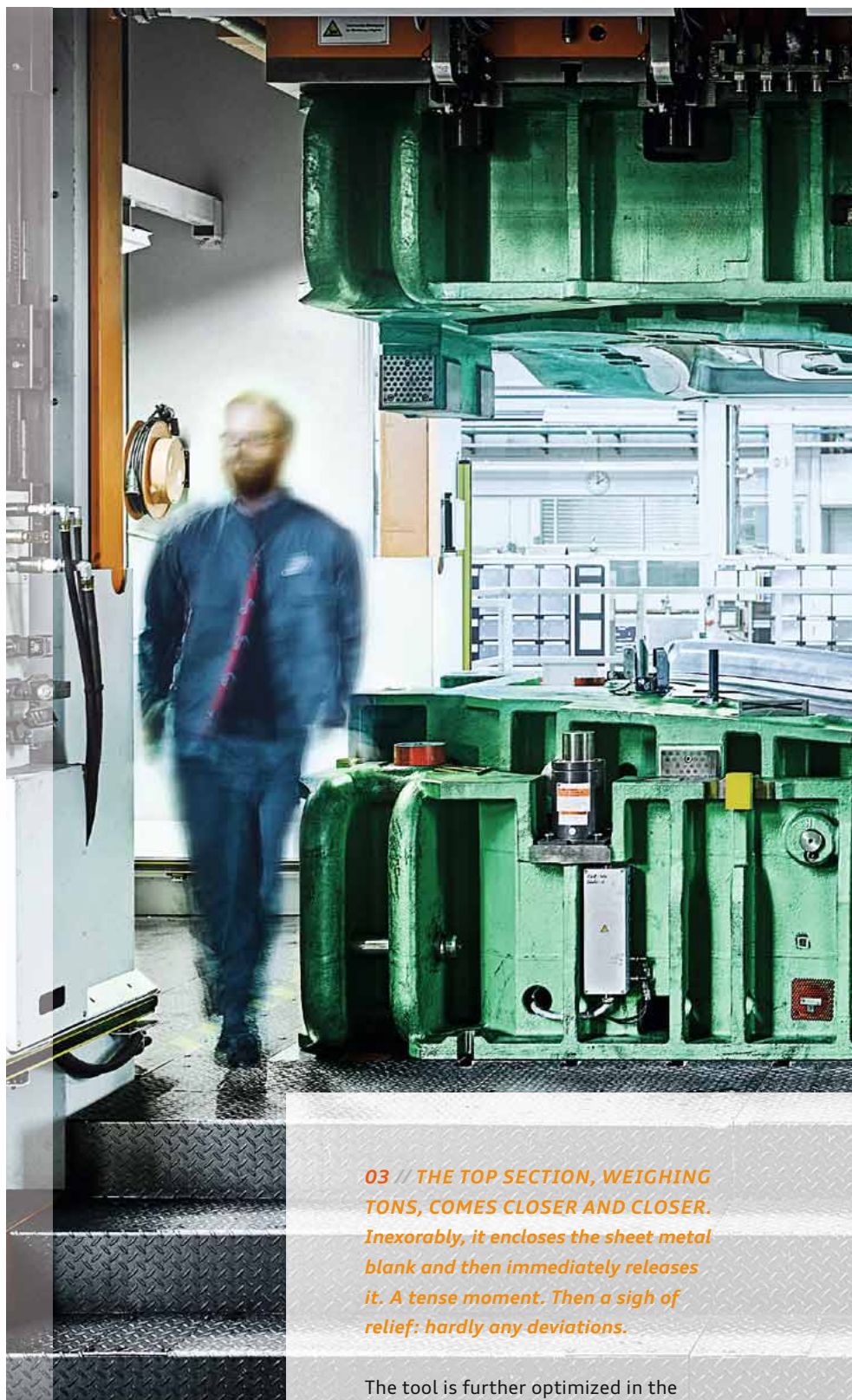
Now it is time to fine-tune the tool. Using a high-performance milling insert, the press tool is precisely reworked to eliminate even the tiniest rough spot and thus to **guarantee premium quality in the pressing process.**

Six of these tools – that is, six top and six lower sections, each weighing around 20 metric tons – are needed to produce an Audi Q2 fender from a flat metal blank. The goal of the toolmaking team is to continuously reduce the weight of the tools in order to support sustainable production.



IN ADDITION TO TOOLS, AUDI TOOL-MAKING ALSO DEVELOPS EQUIPMENT AND FACILITIES for the Audi Q2 production lines it shares with the A3 model family.

On the path toward the efficient Smart Factory, **human-robot cooperation** is becoming increasingly important. In the assembly area, robots work with people without extensive safety devices. So the Smart Factory is not devoid of people. In the case of the Audi Q2, these robots are already assisting workers at various stations.

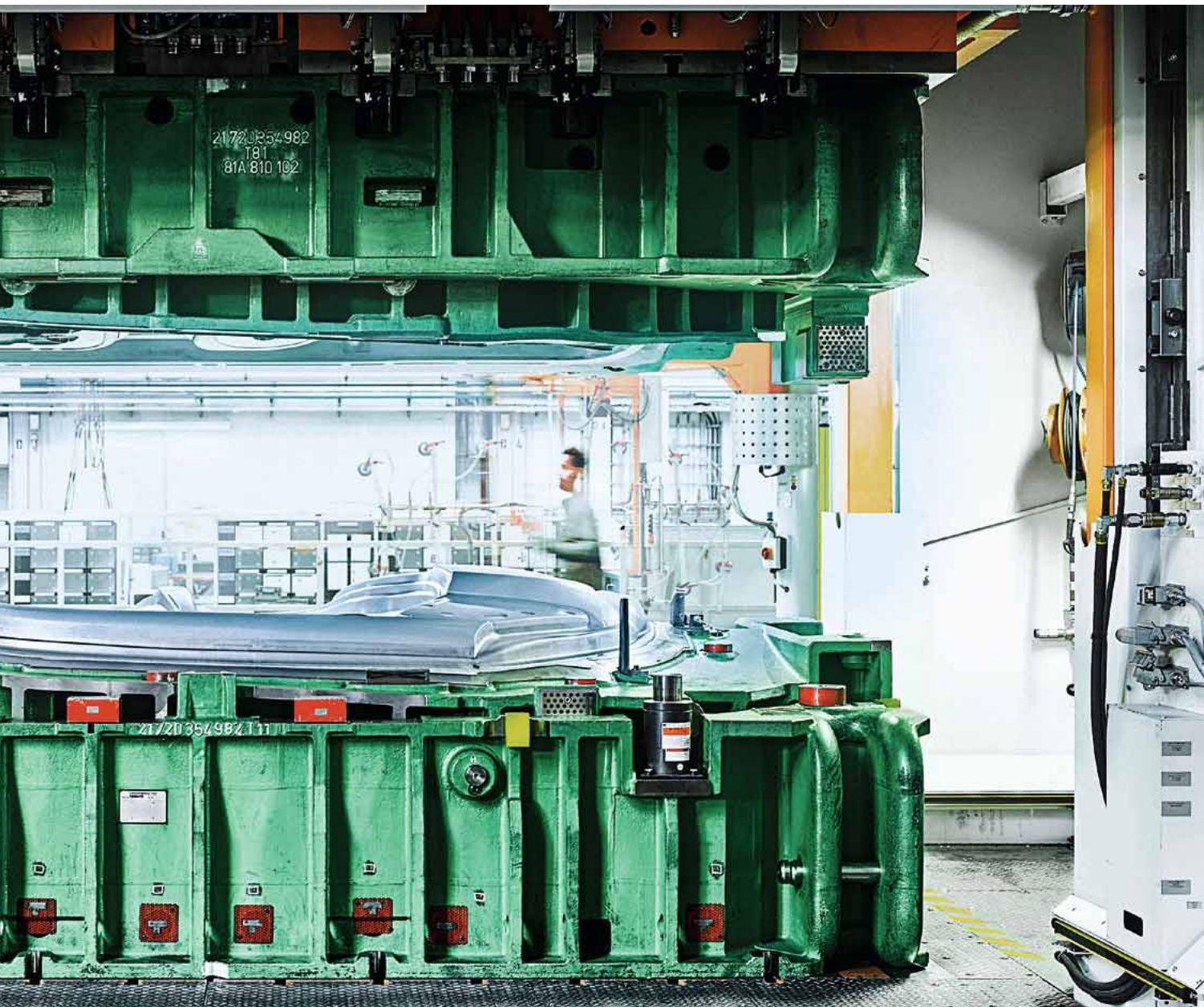


03 // THE TOP SECTION, WEIGHING TONS, COMES CLOSER AND CLOSER. Inexorably, it encloses the sheet metal blank and then immediately releases it. A tense moment. Then a sigh of relief: hardly any deviations.

The tool is further optimized in the work-in press. This process is known as “inking”: When two components are pressed together until the surfaces designed to make contact do so as fully as possible.

An employee coats the sheet metal part with a colored dye and places it in the lower tool cavity. When the tool

The Audi Q2 is not yet available on the market. It does not yet have Whole Vehicle Type Approval and is therefore not subject to Directive 1999/94/EC.



is closed, it leaves an imprint. Based on the quality of the imprint, an employee carefully adjusts things manually until everything has a positive contact. This is a prerequisite for the dimensional and surface precision of the sheet metal parts – to a hundredth of a millimeter over the entire life cycle of the model.

The tools are optimally prepared. In practice, however, forming of steel sheet and aluminum blanks in the press is subject to certain influencing parameters. This affects how the metal is drawn in at the so-called flange – or edge – which is necessary to stretch it over the die. If this occurs too slowly, the stress is

too great and small cracks can form, but if the sheet metal is drawn in too quickly, the part's stability could suffer.

It is precisely this challenge that is solved by the use of **intelligent tools**. They monitor the forming process with the help of numerous sensors. Laser sensors, for instance, make it possible to track metal flow in the flange area.

If deviations from the target value are found, the tool automatically adjusts the clamping forces in the tool. As a result, even the most challenging parts can be produced with a reliable process and **consistently high quality**.



04 // THE ROBOTS FOCUS INTENTLY AS THEY PASS ALONG THE SILVERY SIDE PANELS OF THE AUDI Q2.

Sensors scan the sharp line with millimeter precision. The prominent wheel arches and drawn-in flanks emphasize the unmistakable quattro design. Meticulous light sensors glide over the octagonal Singleframe of the new Audi compact SUV.

The quality of the finished Audi Q2 body parts is evaluated by **virtual assembly technology**. As duplex robot cells carry out optical measurement, the surface of the sheet metal part is scanned using

a contactless sensor. The resulting data is compared and evaluated in reference to CAD specifications.

The Audi Q2 is not the only car subjected to this inspection procedure, which is state of the art in the tool creation process. Audi Toolmaking has been using it in every vehicle project since 2015.

Like all activities at Audi Toolmaking, this is emblematic of the aim to design processes to be efficient, flexible, highly automated and capable of handling future needs. In the context of growing digitalization of the factory, Audi Toolmaking

will utilize **virtual technologies** more intensively in the future. Whether the project involves a 3D metal printer or intelligent tools that reduce material scrap and support sustainable production – on the way to the Smart Factory, Audi will increasingly push the boundaries on what is feasible and continue to make “**Vorsprung durch Technik**” possible.



PHOTOS: Klaus Mellenthin, Uli Weber

The Audi Q2 is not yet available on the market. It does not yet have Whole Vehicle Type Approval and is therefore not subject to Directive 1999/94/EC.



Three questions for:

Prof. Dr.-Ing. Hubert Walzl
Production



What role does environmental protection play in the Smart Factory?

Ecological responsibility is a fixed component of our production strategy – and therefore also of the Smart Factory at Audi. Our ambition is to produce clean cars in a 100 percent carbon-neutral factory in the near future. We are developing innovative solutions and using the latest technologies to achieve this goal.

How do you promote a culture of innovation?

Innovation is an important competitive factor, so lateral thinking is key. Ideas and developments from other industries provide the impetus for the technologies of tomorrow. That is why we practice an open culture of trust, always question the status quo and create space for creativity. To me, those are the fundamental ingredients of a successful culture of innovation.

Where can you experience the Audi future today?

We have already completed many of the stages on the path toward intelligent production. Many different visionary solutions are in use at our factories – whether they involve robots not protected by enclosures, intelligent tools or 3D printers. So the future is essentially already taking place in Audi Production today.

06

IN THE SPACE FACTORY.

Answering email while the car navigates
through the city's traffic. Arriving for
the meeting while the car parks itself.
Relaxing on the way back in your personal
space between the office and your home.
What sounds like science fiction is
becoming reality.

TEXT: Barbara Wege

ASSEMBLY ROW



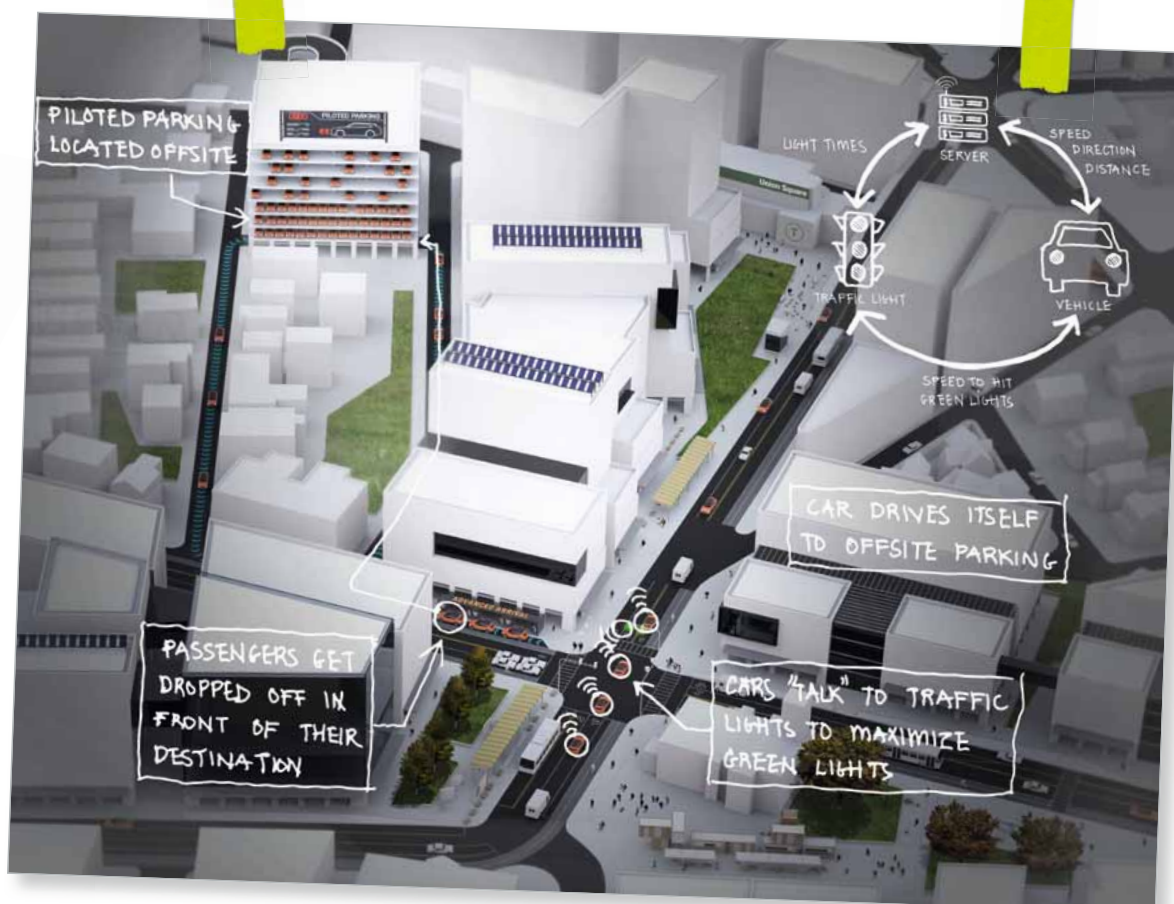
Somerville, just a couple of minutes by car from Boston, Massachusetts. With the vision in his head and the plan in his hand, Audi pre-development engineer Christian Feist stands at the large construction site in the new Assembly Row neighborhood. “Drivers could soon exit their car here and walk directly into the office. **In the meantime, their car would look for a parking space,**” he says.

Where the cranes and excavators are now working, a testing ground is being developed for the future of urban mobility. United States real estate developer Federal Realty Investment Trust (FRT) is building a neighborhood covering up to 12 blocks in Assembly Row. Four blocks have been completed and are already bustling with activity. More than 500 apartments, over 90,000 square meters of office space, a hotel and other businesses are to be added. In these surroundings, Audi and its project partner FRT are studying how piloted parking and intelligent car fleets can enrich the lives of the people who live here.

The future is urban. By the year 2050, up to 75 percent of the world’s population will live in cities. The booming region around Boston is emblematic of this development. Somerville is one part of that and is an ideal testing ground for learning how urban technologies and services can become a premium experience that fits seamlessly with the digital lifestyle of tomorrow’s customer. The percentage of Generation Y in Somerville is greater than in almost any other U.S. city. Harvard University, the Massachusetts Institute of Technology (MIT) and countless tech companies are attracting well-educated young employees. **“In Somerville you can already see what the trends of tomorrow will be,”** says Mayor Joseph A. Curtatone.

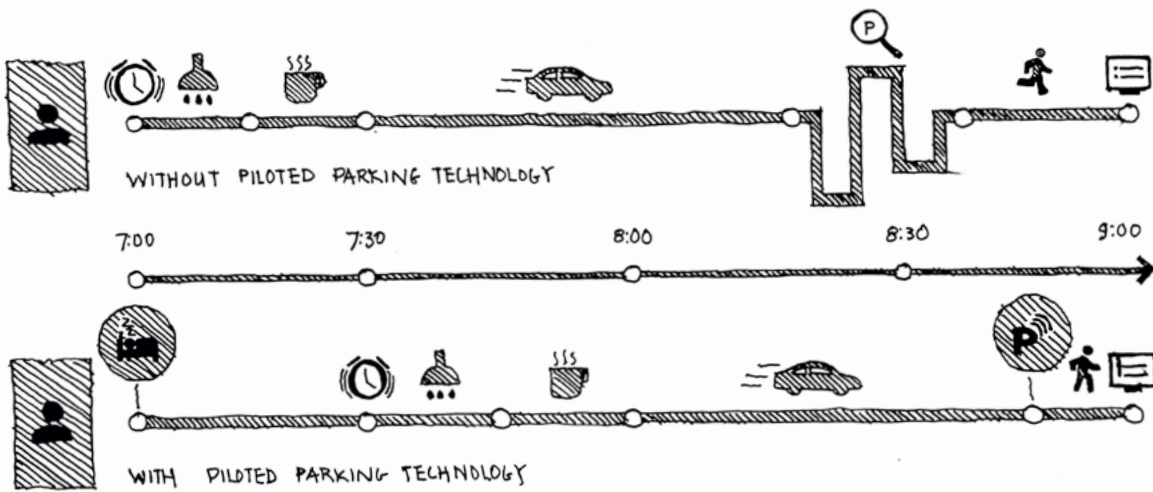
In Assembly Row, Audi and FRT are working toward a so-called Urban Future Partnership. Audi works together in these new partnerships with public and private business partners. The Urban Future Partnerships are a result of the Audi Urban Future Initiative, which the company has developed since 2010 as a way to advance interdisciplinary discourse about the future of mobility in cities. “We have learned that the breakthrough for innovative technologies in urban spaces succeeds more easily when we include the surrounding environment,” says Prof. Rupert Stadler, Chairman of the Board of Management of AUDI AG. “We call this context-driven innovation.”

When mobility functions seamlessly, it makes cities attractive. The companies and cities working together in Urban Future Partnerships therefore have a shared interest: **using intelligent mobility solutions to improve the local quality of life and working conditions for people.**



ADVANCED ARRIVAL EXPERIENCE

ENHANCED USER JOURNEY



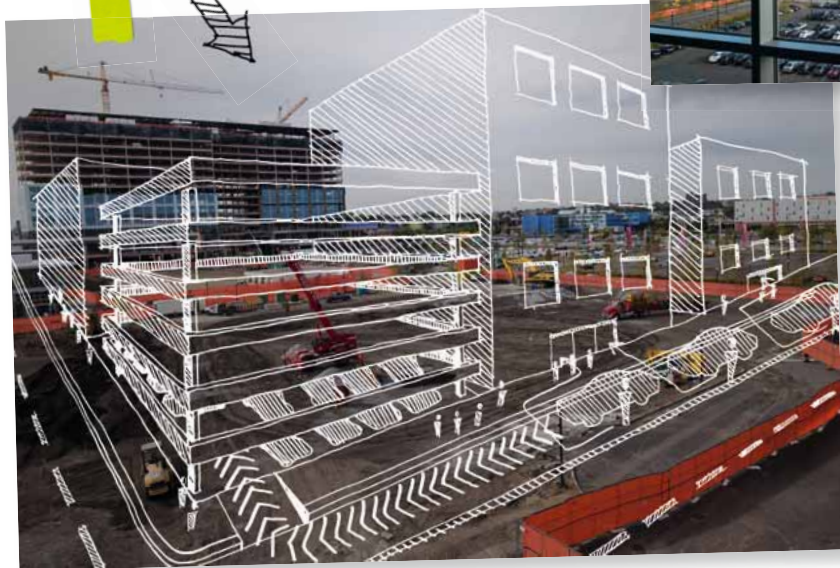
“WHEN CITIES AND BUSINESSES RECOGNIZE THEIR ECONOMIC VALUE, THERE IS GREATER MOTIVATION TO INVEST IN INTELLIGENT INFRASTRUCTURE OR A SMART CAR FLEET.”

Prof. Rupert Stadler



PASSENGERS GET DROPPED OFF IN FRONT OF THEIR DESTINATION

PILOTED PARKING



CAR DRIVES ITSELF TO PARKING GARAGE

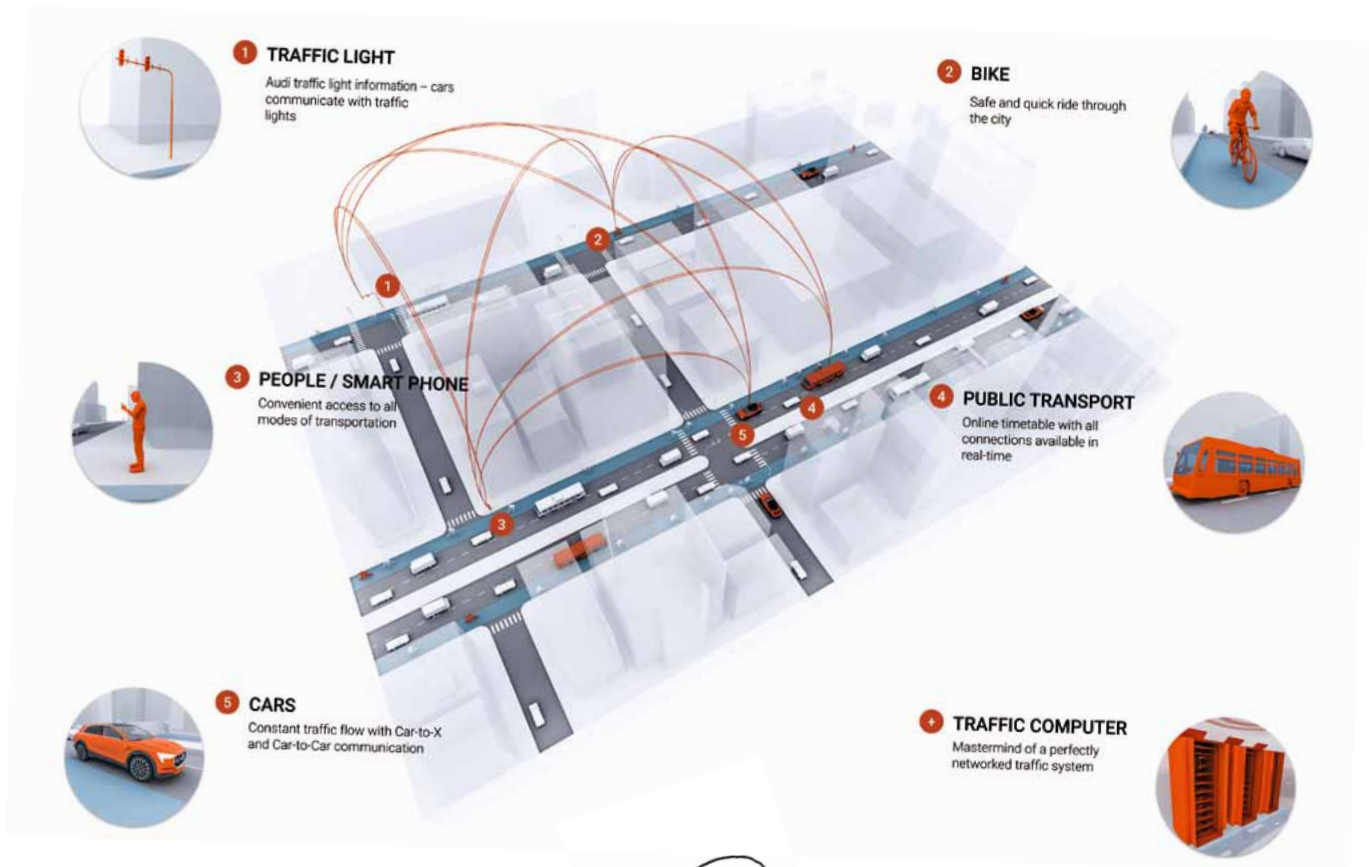


FRT is considering offering its customers in Assembly Row a fleet of piloted parking Audi cars. In working toward this goal, Audi is incorporating its technical know-how while FRT is providing its expertise in real estate development. “We are taking another step into the future,” says Audi engineer Christian Feist. He develops driver assistance systems in Ingolstadt at Audi Electronics Venture GmbH, a subsidiary of AUDI AG. “Up to now we have tested our technology in existing buildings. Now we can influence the architecture and get even more out of it,” Feist explains.

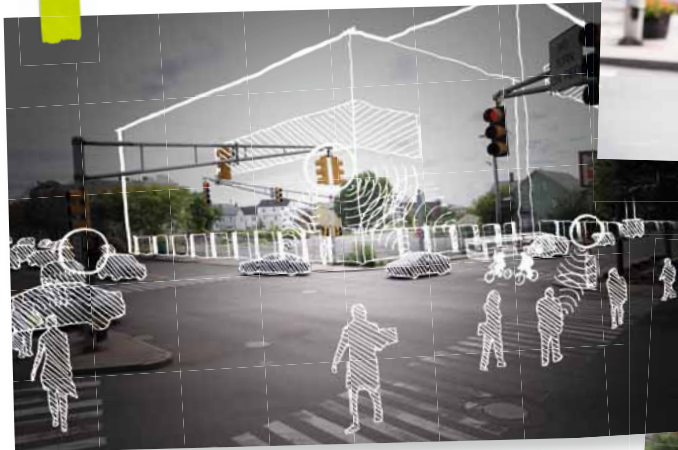
Smart technologies can help do things like give people more time and space – two very scarce resources in cities. With piloted parking, workers could gain up to 100 extra hours per year. That is more than four whole days. Audi calculates that cars use 30 percent less space since they can park closer together. **This turns time and space into a new currency.** “When cities and businesses recognize their economic value, there is greater motivation to invest in intelligent infrastructure or a smart car fleet,” Stadler emphasizes.

For the real estate developer FRT, the motivation is clear: “The municipal code and market demand require real estate developers in the United States to offer a fixed number of parking spaces per residential unit, hotel room, retail and office square footage. Structured parking, both above and below ground, is very costly, regardless of the location. This is often the primary driver of whether a project is financially viable,” says real estate developer Patrick McMahon, who leads the Assembly Row project at FRT. “If we can use piloted parking, we can provide the required number of parking spaces in a smaller area. We can

use the recaptured area to create more opportunities for residential, retail, office, public or green space development.” This makes the neighborhood much more attractive and offers people additional time to take advantage of what the area offers – whenever possible and without the hassle of trying to find parking. “Piloted parking is an exciting and progressive technology that aligns with our goal of **delivering an immersive environment for our customers,**” McMahon says. “With the potential benefit of significant cost savings to deliver more efficient and smaller parking facilities.”



ADAPTIVE FLOW INCREASES
THROUGHPUT OF INFRASTRUCTURE



CUSTOM APP ALLOWS
PEDESTRIANS TO
OPTIMIZE THEIR JOURNEY



COMMUNICATION WITH CITY
INFRASTRUCTURE ALLOWS
CARS TO MAXIMIZE GREEN
LIGHT TIME



“IN SOMERVILLE YOU
CAN ALREADY SEE
WHAT THE TRENDS OF
TOMORROW WILL BE.”

Joseph A. Curtatone



The second Urban Future Partnership in Somerville also aims to develop habitats where people enjoy living and working. Here, Audi is cooperating not with a private partner but with the city itself. Audi and representatives of Somerville are working on a mobility concept for the popular neighborhood around Union Square. Cars there are to be supplied with information about traffic light phases to improve traffic flow.

The Audi connect service traffic light information makes this possible.

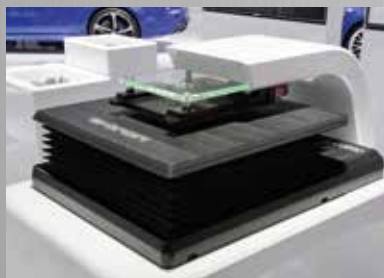
A display in the cockpit shows Audi drivers the ideal speed that will allow them to drive through the lights during green phases.

“Our vision is for traffic lights to be networked with cars, buses and the mobile devices of cyclists and pedestrians,” explains Michael Zweck of the Volkswagen Group’s Electronics Research Laboratory, a research and pre-development center in Silicon Valley. “Then traffic can be regulated so that everyone saves time.” Zweck advises city representatives on things such as the future technical requirements Somerville’s traffic lights will need to meet.

“We can learn so much from each other,” says Somerville’s Mayor Joseph A. Curtatone. **“When a company and a city work together to add value for the community, it’s fascinating.”** Then the car becomes a vehicle for freedom – as it always has been, yet with more potential than ever before.

AUDI WIRELESS CHARGING

Audi has developed a wireless charging station that easily and conveniently charges e-tron models. The technology is expected to be introduced in the market in 2017. A charging plate communicates wirelessly and automatically with the Audi e-tron when it comes within range. For proper positioning, the driver can see the precise location of the floor plate in the display. Through the electromagnetic induction field created between the car and the floor plate, the e-tron is charged immediately or at a selected time. Next step: With piloted parking, this is all performed via app.



AUDI SUPERMARKET OF THE FUTURE



On the way to the Smart Factory, Logistics employees in the future will no longer pick the items needed from the shelves – instead, the materials will come to them completely by themselves on intelligent, networked Automated Guided Vehicles. The goal: optimizing storage space and improving productivity and process reliability. Employees will benefit from improved ergonomics as well.

Audi is creating synergies in electric mobility. After they have been used in e-tron models, high-voltage batteries from the cars can be reused as a stationary and temporary way to store renewable energies. One pilot system is already in operation; plans call for further developments and possibilities for use. Applications include serving as peak power buffers and renewable supply for remote buildings. This allows the used batteries to serve a useful purpose in their second life, benefiting the environment and the economic efficiency of electric mobility.



2ND LIFE ENERGY STORAGE

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DIGITALIZATION. INTERNATIONALIZATION. ALTERNATIVE DRIVES
WITHOUT SACRIFICES. WE OFFER UNCONVENTIONAL ANSWERS.

Innovative by tradition.

TEXT: Peter Gaide

07

In the hallowed halls of Audi Tradition there is a subtle smell – call it a fragrance – of rubber tires and engine oil. Automotive legends fill the room – sleek classic cars side by side with racy motorsport icons and rally champions that have aged gracefully. In their midst, the shape of things to come: the technology demonstrator Audi RS7 piloted driving concept, nicknamed “Robby.” Axel Strotbek, Member of the Board of Management for Finance and Organization at AUDI AG, meets here with Dr. Elgar Fleisch, Professor of Technology Management at the University of St. Gallen and of Information Management at ETH Zurich. Their topic of discussion: What does “change through digitalization” mean for Audi?

PHOTO: Christian Vogel



“Digital products are services, and these will make up a much larger portion of the added value.”

Prof. Dr. Elgar Fleisch

Mr. Strotbek, these vehicles are an impressive testimony to how Audi has shaped the development of the automobile over recent decades. If we meet here again 20 years from now, what exhibits would we see added?

STROTBEEK: It's true that the success of Audi would not have been possible without the technological quantum leaps of the '80s and '90s: quattro drive, aluminum-based lightweight construction and TDI technology, to name but a few. If we aim to build on the Audi success story, there will be a lot riding on digitalization. It is a key factor in piloted driving and the customer relationships that we will keep developing in the future as a car manufacturer. Both aspects will play an increasingly important role in our future products and services.

All the same, the digital age is forcing companies to perform an increasingly delicate balancing act between traditional core business and new business models. How might they pull that off, Prof. Fleisch?

FLEISCH: A new-economy enterprise will always find it rather difficult to handle physical products. An old-economy enterprise, on the other hand, faces the challenge of incorporating the network-based mindset and approach of the Internet into its products and organization. The interesting question is how to bring the physical and digital worlds together without exposing customers to disruptions and disappointment. Because

digital products are services, and these will make up a much larger portion of the added value. It's vital to understand that and incorporate it into our company. This begins with research and development and leads to a lasting relationship with the customer.

How far has Audi come in embracing the need for cultural change, Mr. Strotbek?

STROTBEEK: First of all, it is important that we continue to build consistently impressive premium automobiles that delight customers. Beyond that, digitalization is not an end in itself for Audi; it represents an opportunity to provide customers with a seamless experience that encompasses both their vehicle and the wider world of the Audi brand. This entire process hinges on the “Audi ID” – a data key that sheds light on our entire relationship with the customer. Digitalization also means we are becoming faster and bolder at tapping into new business areas. The core requirement, which we take very seriously, is always: It has to be premium.

What does that mean specifically?

STROTBEEK: In the field of mobility we propose pilot projects to customers, for instance, and invite them to enter into dialogue with us so that we can refine new services. In San Francisco, for example, we launched Audi on demand a few months ago: Customers can order an exclusive model over their smartphone, for a time of their choice; it is then delivered to them and also picked up again if desired. In Germany we have rolled out Audi select, which allows customers to drive up to three different Audi models during one year at a fixed

PHOTOS: Christian Vogel





monthly, all-inclusive rate. In this way we are gradually developing and scaling up new, regional business models, in parallel with significant business indicators. Because long-term, the new business areas of course also have to satisfy our profitability standards.

FLEISCH: The Internet economy has given rise to the term minimum viable product, in other words, a prototype

that is intended to generate a maximum learning effect with minimum input.

The real art is enabling these projects to grow and flourish away from core day-to-day operations. It calls for the right blend of hunger to succeed, creativity, time and independence. And, very importantly, you also have to allow mistakes!

STROTBEEK: I completely agree. We need to see the new topics as small, quick

support vessels of the big mother ship. Some of them will be successful and others not, but even those occasional failures will prove a very valuable experience for us. That way, the whole organization learns.



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AXEL STROTBEEK

Born in 1964. Member of the Board of Management of AUDI AG with responsibility for Finance and Organization since 2007. He studied Industrial Engineering at the Universities of Karlsruhe and Linköping (Sweden). After earning his MBA at the University of Illinois at Chicago, he joined the Volkswagen Group as Board of Management Assistant for Controlling and Accounting in 1991. After holding various positions within the Group, Axel Strotbek served as Executive Vice President of the Volkswagen Group China in Beijing from 2004 to 2007. He is married with three children.



How deep does this “learning through digitalization” go at Audi?

STROTBEEK: Digitalization speeds up processes to the benefit of our customers. So flexibility and agility are the order of the day for us. Our response needs to be to create the backbone of an efficient, future-proof IT landscape into which all existing systems are integrated. That is the prerequisite for making complexity controllable. We will then create scope for addressing the topic of data analytics – how to identify connections whose existence we are still currently unaware of. And use them to identify new business models.

FLEISCH: Yes, that’s definitely a key part of exploiting the effects of the digital network economy. A company can learn from every piece of information and every transaction that customers request or conduct in the digital world; it can then

optimize its services, products and prices accordingly. Bit by bit, an increasingly accurate and ultimately even intelligent system capable of meeting a wide variety of customer expectations will take shape. Amazon is an impressive example of how to achieve that.

STROTBEEK: A fundamental receptiveness to cooperative ventures is also important – both globally and with regional partners. The joint takeover of the HERE platform in our quest for digitized mobility and our initiative with the Chinese IT company Baidu are compelling examples of this trend. If you maintain networks with other companies, you will often enjoy an advantage. The bigger the network, the broader the data basis and the greater the potential benefit for the customer. On top of that, customers expect us to create interfaces with other providers and systems. They

wish to use everyday items such as smart-phones and apps in their car as well.

You’ve just mentioned flexibility and agility. How are you equipping your own Finance and Organization division specifically for the challenges of the future?

STROTBEEK: We have launched a whole raft of measures and projects across all divisions to harmonize and accelerate operations and structures. These also span the Group’s entire Finance area, right down to the level of Audi production and sales companies. In essence it is about integrating Finance even more closely with the other divisions so that it can respond faster and more flexibly.

FLEISCH: There’s a saying often heard in this context that aptly summarizes the crux of the matter: “You can only manage what you can measure.” In other

words, the digital transformation is not only making it necessary to come up with new management methods, but is also resulting in the creation of new business models.

Can you explain more precisely what this means for Audi, Mr. Strotbek?

STROTBEEK: Take this example. One central question used to be: How much will we earn from a vehicle? But in the future, how we handle our customer relations long-term, and what the resulting business model is, will become increasingly important. In other words, new indicators – such as margin per customer – will come into focus. That will create a need for the appropriate tools for financial evaluation. The Finance department will increasingly have to step into the role of internal business partner and participate actively in the development of these business models from an early stage.

FLEISCH: In tomorrow's world, where we will be paying more attention than ever to mobility services, I will have to measure and manage things at a highly granular level, so that new business models can be refined faster and more situationally. And remember, we are always talking

about specific, regional customer groups. Just because something works in Beijing, you can't assume it will be well received in Berlin or Los Angeles; conditions and customer preferences vary from place to place. The diversity of these regional mobility marketplaces needs to be reflected in very effective analytics.

Finally, your personal opinion: What do you associate most closely with the buzzword "digitalization?"

FLEISCH: The issue that perhaps intrigues me the most is that people all over the world have an appetite for

European hardware products. There is exactly the same appetite worldwide for American IT services. Those two worlds are now converging, and I think it's extremely important for the captains of industry to take that really seriously. There is a great deal at stake for Europe. **STROTBEEK:** The opportunities afforded every day by digitalization are immense. But they obviously go hand in hand with major challenges. We are tackling them boldly and actively, and still delighting our customers with premium mobility in the digital age.


“Digitalization speeds up processes to the benefit of our customers. So flexibility and agility are the order of the day for us.”

Axel Strotbek



PROF. DR. ELGAR FLEISCH

Born in 1968. Professor of Technology Management at the University of St. Gallen and of Information Management at the ETH Zurich. Elgar Fleisch completed his studies in Business Informatics at the University of Vienna in 1993 with a dissertation on the topic of artificial intelligence. The focus of his research is on the convergence of the physical and digital worlds into an Internet of Things, and the implications of this phenomenon for the business world and society.



Sylvia Droll has a fairly extreme idea of what constitutes perfect weather for her work: blazing heat, bitter cold, pouring rain. After all, as Head of Materials Engineering in Audi Quality Assurance, she subjects every material, every component, every vehicle to a marathon of endurance testing. Ultrarunner Anne-Marie Flammersfeld also subjects herself time and again to these kinds of endurance tests. The two women are hiking in the Karwendel mountains in Austria. Between jagged rocks the path becomes rockier and more challenging with every step. It is a place where you also quickly realize where your limits are ...

DROLL: Our Audi models also have to scale new heights. Before we finally release a vehicle in Quality Assurance, it has to go through a wide range of tests, including weather conditions. For this we use secret sites in Africa and in the United States, where we expose new vehicles to the blazing sun for two summers. We test the effect heat has on the surfaces, the colors and the appearance. That is the most grueling test for plastic, paint and leather. But we also drive the cars in cold countries such as Russia in the testing phase. Or in Dubai, where sand, alongside the heat, is also a vehicle's main enemy. The aim is to ensure that all materials and models boast the same quality wherever they happen to be in the world.

FLAMMERSFELD: I'm familiar with the problem of different climatic conditions. In the "4 Deserts Race Series" I ran through the driest, windiest, hottest and coldest desert. I managed to prepare myself well for the race in Antarctica, since temperatures drop to minus 30 degrees Celsius where I live in St. Moritz in winter. But what about preparing myself for the Sahara? My solution: training on a stepper at 45 degrees Celsius in the sauna.

08

Hikes Peak.

TEXT: Stefanie Lang





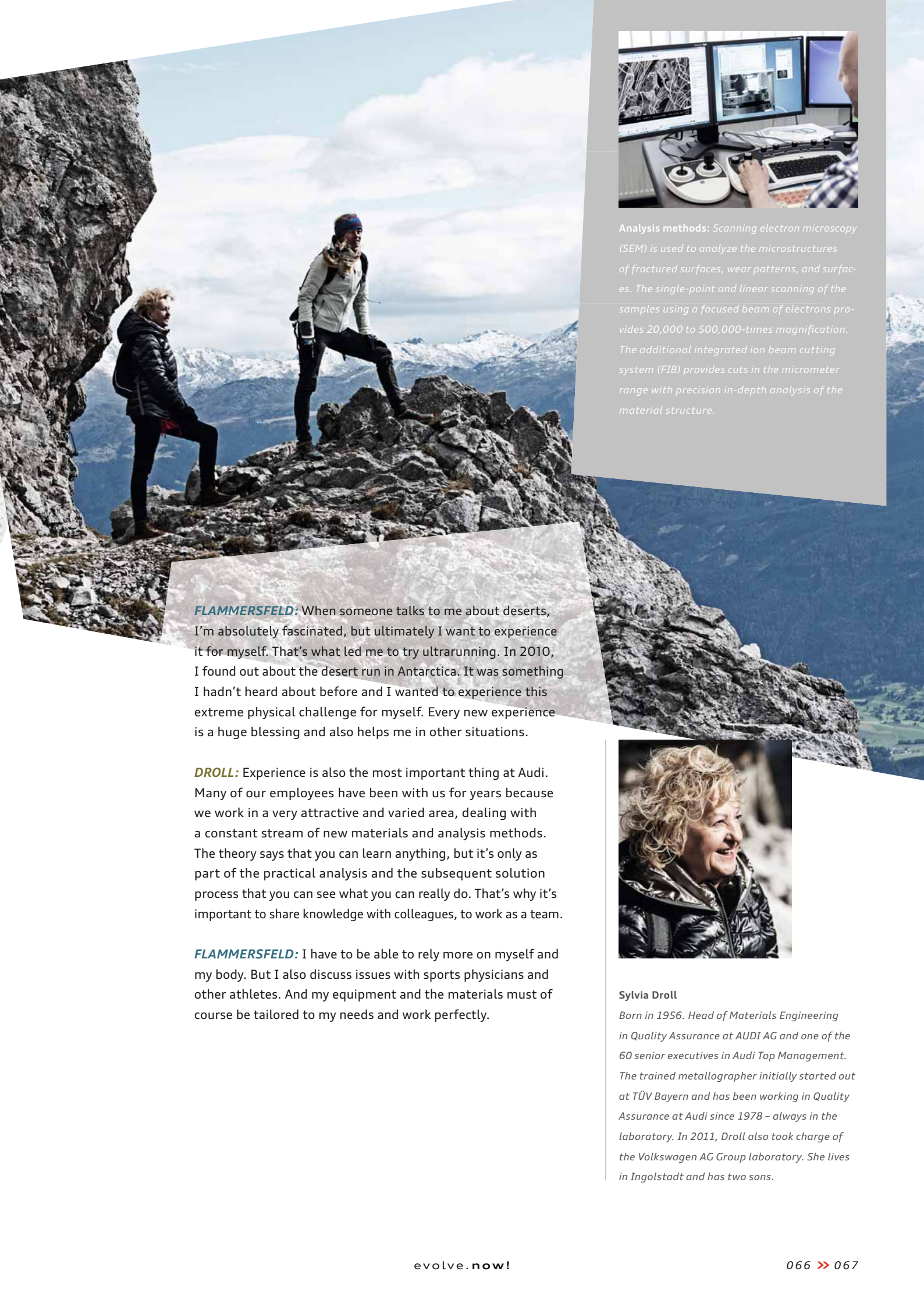
PHOTOS: Niels Schubert, AUDI AG

The real conditions in the deserts were of course totally different. But my body responds amazingly well to these extreme stresses, allowing me to become the first woman in the world to win all four races.

DROLL: We also simulate a lot of extreme situations in the Audi laboratory, such as with the INCA test. We implemented it as the standard at Audi 40 years ago and have been refining it constantly ever since. New technologies change the requirements for our cars. The new Q7 e-tron quattro, for example, has to drive through a water bath every day which is half a meter deep, in addition to the standard testing program. We can't allow even one drop of water to get through to the battery. In our laboratory we also simulate extreme material stresses, as this is the only way we can come up with long-term solutions. To ensure that customers can always rely on their Audi, we always need to know precisely how the vehicles behave.



INCA test: The Ingolstadt corrosion and aging test simulates 12 years of a car's life in 19 weeks: extreme humidity, heat and cold in climatic chambers; gravel, mud and salt on the test tracks – every Audi model is fully dismantled after the endurance test and checked for corrosion, aging and wear.



Analysis methods: Scanning electron microscopy (SEM) is used to analyze the microstructures of fractured surfaces, wear patterns, and surfaces. The single-point and linear scanning of the samples using a focused beam of electrons provides 20,000 to 500,000-times magnification. The additional integrated ion beam cutting system (FIB) provides cuts in the micrometer range with precision in-depth analysis of the material structure.

FLAMMERSFELD: When someone talks to me about deserts, I'm absolutely fascinated, but ultimately I want to experience it for myself. That's what led me to try ultrarunning. In 2010, I found out about the desert run in Antarctica. It was something I hadn't heard about before and I wanted to experience this extreme physical challenge for myself. Every new experience is a huge blessing and also helps me in other situations.

DROLL: Experience is also the most important thing at Audi. Many of our employees have been with us for years because we work in a very attractive and varied area, dealing with a constant stream of new materials and analysis methods. The theory says that you can learn anything, but it's only as part of the practical analysis and the subsequent solution process that you can see what you can really do. That's why it's important to share knowledge with colleagues, to work as a team.

FLAMMERSFELD: I have to be able to rely more on myself and my body. But I also discuss issues with sports physicians and other athletes. And my equipment and the materials must of course be tailored to my needs and work perfectly.



Sylvia Droll

Born in 1956. Head of Materials Engineering in Quality Assurance at AUDI AG and one of the 60 senior executives in Audi Top Management. The trained metallographer initially started out at TÜV Bayern and has been working in Quality Assurance at Audi since 1978 – always in the laboratory. In 2011, Droll also took charge of the Volkswagen AG Group laboratory. She lives in Ingolstadt and has two sons.



DROLL: Our customers also demand superb reliability and quality from our cars. And of course we also place the same demands on ourselves. We have firmly internalized the notion of quality and always strive for perfection. To do so you have to be meticulous and determined, and never give up. Passion is the only way to pull it off. When I sit in the car I see not just an attractive steering wheel, for instance, but in my mind's eye I also see the microstructure of the leather and I can feel the grain of the surface.

FLAMMERSFELD: You definitely need to have enthusiasm. I believe if you've got this fire inside, you can do anything – run 1,000 kilometers or become the next Picasso (*laughs*).

DROLL: And you have to be given the opportunity to do it. At Audi I was able to develop in my profession from a very early stage. It was always performance and personality that mattered there, and not gender. But the right balance is also important. I always managed to strike that balance with my sons and I've become a keen ice hockey fan through the two of them. You have to learn to concentrate on yourself and realize when you've reached your own limits. Then it's a question of stepping back for a while so you can recharge your batteries.

FLAMMERSFELD: That's right. It might sound like a paradox, but the body also needs constant breaks to improve when training to run.

Speaking of breaks: The first part of the hike is completed. Time to enjoy the fantastic view of the summit. As they gaze into the distance, the conversation turns to the future.

FLAMMERSFELD: Over the next few years I intend to climb the highest volcano on each of the world's continents – and to do so from the lowest point in the country. Next on the list is North America's highest volcano, the Citlaltépetl in Mexico, towering over 5,600 meters. To provide a bit of variety, I'd like

PHOTOS: Niels Schubert, AUDI AG



Anne-Marie Flammersfeld

Born in 1978. An ultrarunner and personal trainer. The graduate in sports science lives in St. Moritz, Switzerland, and in 2012 became the first woman in the world to win all four races in the "4 Deserts Race Series." This took her 250 kilometers in each race through the world's four most extreme deserts. In 2015, she ran up to the summit of Kilimanjaro at 5,895 meters in eight and a half hours – setting a world record in the process.

to complete a winter ascent with skiers. I constantly have to set myself new goals and challenges. What I learn along the way I try to pass on to other people in workshops and seminars. I hope my experiences encourage others to venture outside their comfort zone and to embark on something new, crazy or extreme.

DROLL: I'm really excited about how the future technologies and digitalization will change the car. The interior in particular will definitely become more futuristic, with large screens and touchpads instead of lots of small switches. This will then give rise to new geometric shapes, or material and color combinations. And that's where our Audi light laboratory, for instance, comes in. This is where we build a complete interior through to the luggage compartment and assess whether the colors match. First using scientific methods and measurement instruments – since even taste can be measured. Then with the trained eye of our employees. And always with a view to achieving the highest quality and perfection.



Light laboratory: Here the materials are tested especially for metamerism, which is the term for the varying perception of colors under different light conditions. The customer sees the car in the showroom light, but the colors have to look just as perfect and coordinated in daylight or at sunset. For that reason the materials scientists look at the interior under all lighting conditions. The challenge is to ensure that the colors of the different surfaces of the materials – leather, plastic, aluminum – work well together.



FIT FOR THE PREMIUM LEAGUE.

TEXT: Franziska Queling

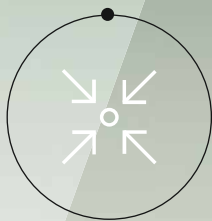
09

*Move out of your comfort zone, set new goals and push the boundaries – marathon runners are not the only ones who challenge themselves this way. Staying focused on the finishing line, maintaining a high level of performance and getting there ahead of the rest is also what Audi strives for when preparing for series production. In order to establish a basis for doing precisely this, **Audi Procurement works together with suppliers** from the earliest stages of vehicle development. Supported by bought-in parts management in Audi Procurement, suppliers get fit for the **series-production marathon**. The main aim is to provide all component items and innovations to series production on time and with the requisite high quality.*

To achieve premium quality, you need training – and a training schedule.

PHOTO: Fotolia

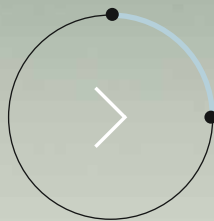
*The Audi Q2 is not yet available on the market.
It does not yet have Whole Vehicle Type Approval and is therefore not subject to Directive 1999/94/EC.*



Level ○○○○

CHECK MANUFACTURABILITY

The goal is to run a marathon. In sports, the trainer and marathon runner first get together to discuss what they want to achieve and what they have to offer. Training goal versus physical requirements. **In series production it is also about weighing options: concept versus technical feasibility.** This is how bought-in parts management at Audi Procurement works with suppliers to ensure the ideas from development and design are turned into reality. One example can be found in the interior of the new Audi Q2, which is a delight for customers. For the first time, Audi has integrated two different designs within a single application in the instrument panel – one for day, one for night. Implementing this idea posed a major challenge.



Level ●○○○

DISCUSS COMMITMENT

Once the goal and the associated requirements have been defined, the basic physical condition is checked. It provides the basis for achieving what you set out to do, and for getting right to the top. **Before things can get started, Audi Procurement checks the processes and existing equipment – the facilities, machinery and materials – of the suppliers and their subcontractors.** All these components create the basis for top quality, and do so with each and every individual part. Where the expectations coincide, a mutual commitment is made. Now everyone can work toward series production.



Level ●●○○

PRODUCE TOOLS

The decision has been made to train together to achieve the goal. Yet there is still a long way to go. In the next step the training aims to improve the athlete's long-distance performance. A marathon covers many miles. **When components are manufactured for cars, production has to run over many years.** Just like in sports, it takes a great deal of stamina on the production line. To ensure the high Audi quality standards over a model's entire lifecycle, Audi Procurement works together with Technical Development to support suppliers that produce special tools for Audi components – in terms of durability and complexity. Production of the headlight alone in the next Audi A5 requires tools for around 100 individual parts. The tools for the headlight's cover glass are particularly complicated, since several layers of synthetic glass are injected one on top of the other.



Level

TARGET/ACTUAL COMPARISON

This is where things get serious. The marathon runner is ready for the first test run, which reveals the level of performance they have achieved through training and what they still have to work on. **For the supplier, the production process is simulated. First with components in small quantities. These are then tested with regard to quality, which identifies potential for optimization. Efficient specialized on-site training addresses any possible weaknesses. That way on-schedule parts availability with optimum quality is ensured for each individual component. This also includes managing the supplier's own logistics chain. To produce the headlights of the next Audi A5, for instance, a large number of subcontractors have to be coordinated.**



Level

ADJUSTING CAPACITIES FOR SERIES PRODUCTION

A marathon always involves a huge strain on the body. The athlete must maintain a fast pace over long distances. For the runner this means another test run. **For the supplier it is the stress test. This time a large number of components are manufactured within a short space of time. To ensure that everything is ready in time for the start of series production, a trainer team from Audi checks whether the requisite output quantity can be produced in a defined time window with a high standard of quality. The Audi trainer team consists here of Procurement along with employees from Technical Development and Production as well as Quality Assurance. At present, for example, a team is working on the start of production of the new Audi Q5 in Mexico, which is scheduled for 2016.**

Three questions for:

Dr. Bernd Martens

Procurement



How do you ensure that suppliers are integrated when it comes to innovation?

We aim to be our suppliers' preferred customer so they come to us first with their innovative ideas. That's why we initiated "Future Automotive Supply Tracks" – FAST for short – in spring 2015. This is our attractive strategic supplier program. We share knowledge on technical concepts with our FAST partners right from the pre-development phase. That way we can be the first manufacturer to bring innovations to market together with our partners.

What challenges do you see in the future in Procurement?

Our industry is currently undergoing a massive transformation with issues such as digitalization and electric mobility. For us that means sourcing technologies, which to a certain extent first need to be developed. So early knowledge sharing with suppliers is becoming increasingly important. We also need new partners from totally different industries. Sustainability is also increasingly taking center stage and presenting us with a complex task. We want to ensure sustainability more comprehensively throughout the supply chain, right down to the raw material suppliers.

Where can you experience the Audi future today?

We are already creating and sourcing tomorrow's innovations today. In 2015, for instance, we signed a long-term cooperation agreement with LG Chem and Samsung SDI, and are receiving high-power cell modules from both partners. Based on these cells we are developing the battery for our first all-electric Audi series-production model. This SUV will be launched in 2018 and is set to offer customers a compelling combination of sportiness and range.



10

SHANG- HYBRID.

TEXT: Berthold Dörrich

PHOTOS: Algirdas Bakas



Despite all the euphoria, mega metropolises like Shanghai are still far from being smart cities. Steadily rising traffic volume and the associated environmental pollution demand intelligent mobility concepts. This makes Shanghai the ideal place to bring the new Audi Q7 e-tron 2.0 TFSI quattro plug-in hybrid together with a creative mind for modern urbanity, whose own vision has also just become built reality.





“As architects, engineers and designers, we are every bit as responsible for the sustainability of a building as a car manufacturer is for its automobiles.”

Robert Price, architect



We climb into the Audi Q7 e-tron quattro at Pudong Airport and the MMI Navigation plus takes over. It not only computes the fastest route to our meeting at the architecture firm Gensler, but also the optimal operating strategy for the nearly 50 kilometers to our destination. Fully charged, we could cover this distance purely on electric power – and back again after two-and-a-half hours connected to a power outlet. Right now our charge status is 50 percent. For the first route segment on the highway, the predictive efficiency assistant decides in favor of the 2.0 TFSI engine – with coasting and recuperation phases whenever possible, of course. But after we leave the elevated urban highway and descend via the distinctive spiral-shaped ramp at Huangpu River into the hustle and bustle of downtown, we cover the last few kilometers purely on electric power and therefore emission-free.

Nowhere else in the world do the contradictions of our modern, industrial society clash so unfiltered as in the seemingly endless growth of the metropolises of Asia. Hardly anywhere is the tension more apparent between the desire for growth, luxury, size and the demands of sustainable management. But this is also where creative minds understand this problematic paradox as a challenge to produce innovations that, thanks to intelligent technologies, are gradually becoming reality. A challenge that has been accepted not just by urban planners and architects, but by automobile manufacturers as well.

As an architect at Gensler, Robert Price lives in the future – at least as far as his thoughts and ideas are concerned. Something he designed many years ago is becoming reality today. One of the most important projects for him began nine years ago: a competition to design the new skyscraper in the Pudong financial district, the so-called Shanghai Tower. For a long time it was unclear how high the building was going to be. What was clear from the outset, however, was that environmental and sustainability aspects would play a central role. And thus came into being what, at 632 meters, has turned out to be the second-tallest building in the world today. Robert Price believes this is one aspect his job has in common with that of automobile designers and development engineers: “You have to conceive things today that will not become reality for many years. Parameters often change along the way, of course. New technologies no one had even thought about at the beginning become available. Statutory requirements

force you to rethink and adapt the original idea.” This makes it important to know the essential aspects from the very beginning. Efficiency and sustainability were two such aspects for the construction of the Shanghai Tower as well as for the development of the Audi Q7 e-tron quattro. Exceptional design was another.

“The form of the Shanghai Tower is eye-catching. We were confident that we would also be able to construct the building that way. But only the latest technologies in 3D modeling and materials enabled us to realize the building exactly as initially planned,” explains Price. “These enable us to adapt the forms of a building much better to environmental factors such as the wind and sun, and thus make them more efficient from the beginning.”





The twisted, organically inspired form of the Shanghai Tower is intriguing. But the intelligent ideas implemented in the building are what make it truly special. The entire building functions similar to a thermos bottle. The architects wrapped the structural core – which houses offices, a hotel, restaurants and a shopping mall – with a glass envelope on long spokes. The shape was optimized in wind tunnel tests for low wind resistance. The less resistance a building offers the wind, the less steel and concrete have to be used. This alone saved over 30 percent in construction materials. Aerodynamics and intelligent lightweight construction – both also familiar aspects of automotive engineering, where the Audi Q7 e-tron quattro sets milestones in its class.

One other positive effect of the tower design is that the actual building is wrapped in a temperature-equalizing envelope that not only reduces energy consumption, but also improves air quality inside. Indoor gardens on multiple

levels additionally produce fresh air. “Ensuring good air quality in buildings with the lowest possible use of energy will be a major issue in the future,” says Price. Parallels in the Audi Q7 e-tron quattro are the intelligent use of waste heat from the electric drive for the car’s climate control by way of the standard heat pump as well as the optional double-pane glazing.

The efficient combination of motor and battery technology, recuperation and intelligent energy management in the Audi Q7 e-tron quattro corresponds to the numerous technologies in an intelligent building that can be used to generate electricity, reduce water consumption and optimize the influence of the sun. Wind turbines on the top of Shanghai Tower generate enough electricity for the lighting that makes the building almost as unmistakable on the city’s night skyline as the Matrix LED headlights make an Audi Q7 e-tron quattro in traffic.





Three questions for:

Dr.-Ing. Stefan Knirsch

Technical Development



“As architects, engineers and designers, we are every bit as responsible for the sustainability of a building as a car manufacturer is for its automobiles,” Price concludes at the end of our talk. “And that without sacrifice in terms of aesthetics or quality of life.” The new Audi Q7 e-tron quattro also performs this same balancing act. The plug-in hybrid combines the advantages of a combustion engine with those of an all-electric drive system, impressing with its efficiency without compromising sportiness or ride comfort. And not just in Shanghai.



ANOTHER NEW ONE FOR CHINA.

The Audi A6L e-tron was developed specially for the Chinese market and is based on the long-wheelbase version of the A6. The highly efficient parallel hybrid drive system comprises a 2.0 TFSI with an output of 155 kW (211 hp) and a 91 kW electric motor, consumes on average just 2.2 liters of fuel and enables electric driving at speeds up to 135 kilometers per hour. Its total range is 880 kilometers, 50 kilometers of which can be driven on electric power only.

How will the future of mobility look?

The future of mobility is efficient and sustainable, digital and connected. Individual mobility and public transportation will merge; self-learning, piloted driving and parking cars will communicate with each other and with the traffic infrastructure.

Audi customers expect sportiness from their cars, yet at the same time high efficiency. How do you do that?

Audi has long balanced these seemingly opposite aspects, which are among the core competencies of Technical Development: Classic combustion engines, electrified drive trains, synthetic fuels plus intelligent lightweight construction and optimized aerodynamics – with this broad portfolio of efficiency technologies we are well positioned. We uncover new potential with every innovation.

Where can you experience the Audi future today?

The future of Audi is part of our present. It is spawned in the minds of our more than 10,000 development engineers, who create “Vorsprung durch Technik” every day, all around the world. The second I get into an Audi, I get a sense of how the premium driving experience of the future will look: technically sophisticated, comfortable and at the same time sporty and highly emotional.



11



WELCOME TO AUDI MÉXICO!



BIENVENIDOS A AUDI MÉXICO!

San José Chiapa in Mexico. Nearly 10,000 kilometers as the crow flies from Audi headquarters in Ingolstadt. This is where the future is being created: Starting in 2016, the new Audi Q5 will be built here in one of the most modern automobile plants in North America. By superbly qualified employees. For the whole world.

TEXT: Philipp Meier



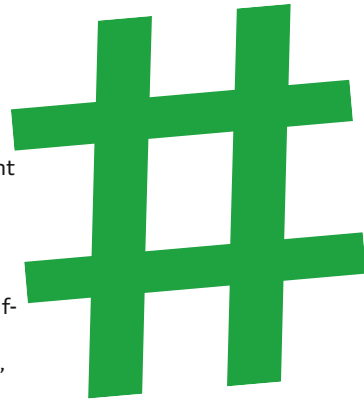
Until now, many of the 5,000 residents of San José Chiapa had to commute to jobs in bigger neighboring cities. But since Audi started building here, everything has changed. The small city is growing along with the plant – and attracting more and more people from all over Mexico.

And no wonder, with Audi México generating new prospects for the region and its people. By the time production begins, 3,800 jobs will have been created at the new plant. And the number of jobs in the direct and indirect economic environment is expected to climb as high as 20,000 in the coming years.

Over 200,000 people have applied for jobs at Audi so far – a result of a major personnel marketing campaign tailored specifically for Mexico. “We started with the workforce expansion back when everything here was still in the greenfield stage,” says Mattias Rust, Head of Human Resources at Audi México. “Starting from square one like that is a major challenge, but also an opportunity. We are very deliberately taking new approaches in the search for talent, to tap into the great potential of good applicants in the area.” This strategy includes, for example, the social media campaign #pasionyperfeccion – a big success that has attracted millions of clicks online. Audi México is using the campaign to respond very directly to all questions about working at Audi and about the new plant. Many of these inquiries are submitted to Javier Valadez, an Audi social media expert, at #AskJavier. Applicants focus particularly on the broad spectrum of development opportunities and career prospects. To anyone who wants to become part of the big Audi family, Javier recommends: “**Be genuine and do what you do with passion and perfection.**”

In Mexico too, Audi aims to discover talented young employees as early as possible and then retain them. That is why the company jointly created the EMA scholarship program together with Volkswagen de México and the German Academic Exchange Service (DAAD). EMA stands for “Estudiantes Mexicanos en Alemania” and consists of 18 months of education and training, including a six-month internship at Volkswagen de México or Audi México, continuous German language instruction and six months of studies at a German university, concluding with a six-month vocational training program at Audi in Germany. The program’s objective is to prepare the young people for possible employment at Audi México. The first 19 scholarship winners have already succeeded in attaining that goal.

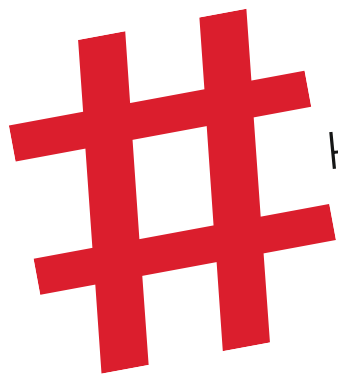
But that is not all: Last year Audi became the first company in the country to organize a Girls’ Day. Inspired by similar events held in Germany, the concept called for giving Mexican school-girls interested in technology an opportunity to tour the plant and gain insights into engineering and technical vocations. It was a great success and planning for the next Girls’ Day has already begun. All the efforts have proved a big hit: **Audi is now already at the top of employer rankings in Mexico – before production has even kicked off.**



HOW CAN
I BECOME
PART OF
AUDI MÉXICO?

AUDI MÉXICO?
PARTE DE
FORMAR
¿CÓMO PUEDO?

The new plant in San José Chiapa is an important element for the future of the Audi global production network. By the end of this year, about 3,800 Audi employees will be producing the new Audi Q5 there.



HOW IS AUDI MÉXICO TRAINING ITS EMPLOYEES?

¿CÓMO CAPACITA AUDI MÉXICO A SUS EMPLEADOS?

Premium quality requires a highly qualified team. An important element here is the dual education model, which Audi is also establishing in Mexico. *In 2015, there were more than 300 apprentices in five vocations – around 25 percent of them women.*

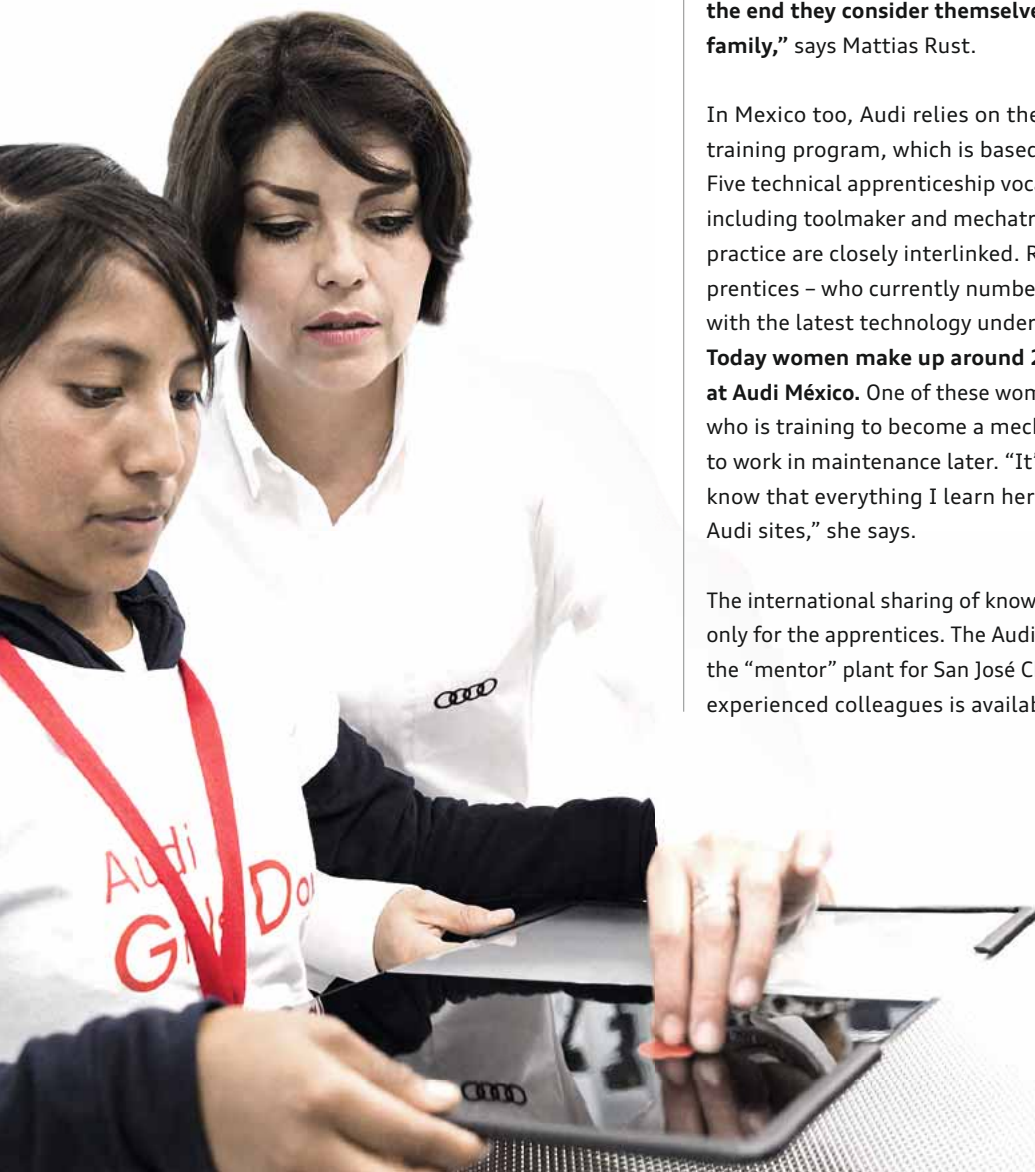
Audi México has so far recruited about 2,000 new local employees – and provided them with comprehensive training.

After all, the “made by Audi” seal of quality is a pledge that is made around the world. So each new employee first completes a six-week “onboarding” program at the Training Center. In this 20,000 square meter facility, a collaborative project with the University of Puebla, more than 50 trainers and instructors are teaching the employees and selected suppliers. The center offers nearly 500 training paths, depending on specialty areas. During onboarding, the new employees find out what really makes Audi tick. They are given insight into products and technologies, are trained to master important basic skills, and sharpen their eye for quality. Then the Audi employees begin specialized training activities tailored to their individual profiles, including on-the-job programs, which can last up to 24 months. **“We feel it’s important that the employees not only receive the best training in their fields, but also that in the end they consider themselves part of the worldwide Audi family,”** says Mattias Rust.

In Mexico too, Audi relies on the proven dual vocational training program, which is based on the German model. Five technical apprenticeship vocations are currently offered – including toolmaker and mechatronics technician. Theory and practice are closely interlinked. Right from the start, the apprentices – who currently number over 300 – learn how to work with the latest technology under real workplace conditions.

Today women make up around 25 percent of the apprentices at Audi México. One of these women is Maricruz Alarcón Torres, who is training to become a mechatronics technician and wants to work in maintenance later. “It’s very motivating for me to know that everything I learn here is also taught at the other Audi sites,” she says.

The international sharing of knowledge plays a key role, and not only for the apprentices. The Audi plant in Ingolstadt serves as the “mentor” plant for San José Chiapa. This means support from experienced colleagues is available at all levels and in all





functions. In the meantime, more than 750 Mexican specialists have been sent to the main Audi plants in Germany, where there is considerable experience in production start-ups, to receive specialized training for their future responsibilities in Mexico. There they were able to rely on experienced Audi employees for personal support. That is how Salvador Vargas Botello from the Start-up and Analysis Center at Audi México encountered his mentor Gideon Stuckmann in Ingolstadt: “Thanks to Gideon, I learned a lot of new things about the Audi production standards in Germany. Now I’m applying this knowledge here in San José Chiapa, and also passing it on to my colleagues, of course.” And it is a two-way street: To date, about 460 specialists from Germany have supported the employees in Mexico, to ensure production gets off to a smooth start. Both sides are still benefiting from the resulting contacts, which enable uncomplicated sharing of experience and knowledge.

Premium quality also requires that all suppliers engage in a perfect interplay with Audi México. In all, around 180 partner companies are involved in the production of the new Audi Q5. To ensure the prompt and demand-based supply of material through short transport distances, many of the suppliers have moved close to the new Audi plant in San José Chiapa. “We want to source as much as possible from the local value chain and are delighted so many suppliers are following us to this region,” says Arturo Achard Carretero, Head of Project Procurement at Audi México. “We work with our suppliers as partners and help them to develop their production.” **This is already having a positive effect on employment in the region.** Audi is not the only one hiring people there – suppliers are too. In the spirit of constructive cooperation, Audi is even supporting selected individuals interested in working for its partner companies.

The education provided at the Audi Training Center is consistently based on real-world practices.

This is where the values that define Audi are imparted, basic skills are taught, and the perception of quality is sharpened.

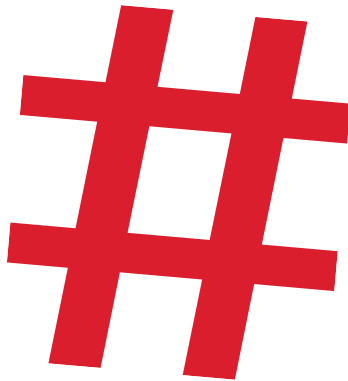


HOW DOES AUDI MÉXICO ENSURE QUALITY?

ASEGURAR LA CALIDAD?
AUDI MÉXICO PARA
¿QUÉ HACE?

WHAT MAKES THE
NEW AUDI PLANT
SO INNOVATIVE?

¿QUÉ HACE QUE LA NUEVA
PLANTA DE AUDI SEA
TAN INNOVADORA?



Ultramodern automobile production is the heart of this industrial microcosm. And the combined technological expertise of the entire Audi Group can be found here.

The **press shop** features an extra-large press line. This enables flexible, fast processing of steel and aluminum. In the **body shop**, high-performance robots place even the smallest weld seams with great precision and impressive energy efficiency. The **paint shop** uses the latest processes and is among the most eco-friendly facilities of its kind in the world. Limestone powder is used here as a natural binder to neutralize the mist generated during the painting process. The process results in energy savings of up to 60 percent. The **assembly line** also sets an example for the industry: In the hall, which covers 120,000 square meters, excellent workplace ergonomics have been standard from day one. Ricardo Jahir Picazo Treviño has been

working with the new systems for a year. "My colleagues and I are super motivated because something very special is taking shape here right now. And my family shares my enthusiasm for the career opportunities and the possibilities I have at Audi."

With the 12th production location for Audi models worldwide, the company is consistently moving internationalization forward – efficient, networked and with a qualified team. In the future, up to 150,000 units of the new Audi Q5 are to be produced here annually. And San José Chiapa will grow accordingly: The Mexican government and Audi are jointly planning a new city district in direct proximity to the plant. Alfons Dintner, CEO of Audi México, sums up: "The new Audi site is setting standards. Worldwide. That will mean further benefits for the entire region in the future."

PHOTOS: AUDI AG, Uli Weber



Press shop

Body shop

Paint shop



Three questions for:

Prof. h. c. Thomas Sigi
Human Resources



What opportunities does internationalization present?

With the cultural diversity of more than 100 countries, our team combines tremendous know-how and the creativity needed to continue our global growth. For this, the roughly 85,000 Audi employees worldwide are creating a competence network by sharing knowledge and benefiting from experience gained at the various locations.

What challenges do Audi employees need to be prepared for?

Tomorrow nothing will be the same as yesterday: Technologies are changing, the pace of innovation is accelerating and the development cycles are becoming shorter and shorter. So for our employees, lifelong learning has been more than just a buzzword for a long time. With tailored training programs offered by Audi Akademie, we are inspiring them to stay curious and giving them the skills and knowledge needed for the next step into the future of mobility.

Where can you experience the Audi future today?

For that I would suggest having a look in our training center. Together with our approximately 2,500 apprentices, we are moving in the direction of the digital factory of tomorrow. We are continually developing our training and education programs for the young Generation Z and are one of the first automakers to use tablet computers for this, allowing the young people to independently generate and call up learning content. This involves the use of learning nuggets with multimedia content, for example, to promote self-organized and informal learning.



Audi is the first premium automaker to build a complete plant in Mexico – from the press shop to the body shop and from the paint shop to the assembly line.



Assembly

12

EF

Is the Audi e-tron quattro concept a practical electric car or actually a sporty SUV? The concept car presented at the 2015 International Motor Show (IAA) reconciles what may sound as different as black and white – and provides an insight into the first all-electric Audi in series production, which will be rolled out to customers from 2018.

TEXT: *Timo Pape*



PHOTOS: AUDI AG

CITIZENMENT

EFFICIENCY



The entire energy management system for the e-tron quattro concept is configured for maximum efficiency. The electric SUV consequently boasts a range of more than 500 kilometers – completely emission-free. The aerodynamic body shape as well as the powerful lithium-ion battery are equally responsible for this impressive figure. An intelligent drive management system controls the interplay between the three electric motors as appropriate for the situation.

Thanks to its high torque of more than 800 newton meters, the e-tron quattro concept accelerates from 0 to 100 km/h in just 4.6 seconds. The quattro drivetrain, dynamic all-wheel steering as well as optimum torque distribution of maximum driving dynamics and stability. The battery is ideally placed between the axles, thus providing a low center of gravity.

X3

AERODYN

The aerodynamic body shape of the e-tron quattro concept, which the aerodynamics engineers and designers have developed in close collaboration in the wind tunnel, sets a new benchmark in the SUV segment with a drag coefficient of 0.25. Cameras replace the exterior mirrors in order to minimize drag. Movable aerodynamics elements and door handles recessed into the bodywork have the same goal. The air suspension, which features controlled damping, lowers the body at higher speeds to further reduce drag. The underfloor of the concept study is also completely closed and optimized with microstructures.



PHOTOS: AUDI AG

Audi is presenting the new design language of its e-tron models with the e-tron quattro concept. At the same time, traditional design characteristics are being carefully honed. These include the octagonal Singleframe, which is a characteristic feature on the brand's Q models, and the striking shoulder line that forms blister contours above the wheels – an expression of the Audi quattro DNA.

SC

AMICS



AESTHETI

REVOLUTION

The e-tron quattro concept is brimming with innovations – that much is clear at a glance. With the combination of Matrix, LED, laser and OLED technologies, Audi is also taking lighting technology to the next level in the concept car. At the same time, the electric SUV is equipped with everything that Audi has developed for piloted driving. And not least, the powerful battery can be charged using contactless induction.





*Experience here
the interior highlights
of the Audi e-tron
quattro concept.*



EVOLUTION

Audi is synonymous with a fusion of progressive design, emotion and technological expertise. This DNA runs through the entire car. In the interior, the e-tron quattro concept offers superb comfort, progressive forms and a wide range of Audi connect features with LTE. The high-quality craftsmanship and the dynamic driving experience – two characteristics that Audi customers have come to appreciate over the years – are perfectly executed in the concept car.

FUEL FOR THOUGHT.

TEXT: Stephanie Huber

13

They could change the world: synthetic fuels. After all, the key ingredients needed to produce them – sun, wind, water and CO₂ – are available in abundance. So how does this work? A visit to the scientists and inventors behind Audi e-fuels – the creative minds of the start-ups that, by joining forces with Audi, want to bring the energy revolution into the car.

Today I am meeting a man at Audi who has sustainability in his job title: Reiner Mangold – Head of Sustainable Product Development. But what does that mean in practical terms for a car guy? “In our case, it’s about ideas that have a long-term, all-encompassing character and help actively toward climate protection.” Mangold is in search of ways to complement electric mobility. “We need bold solutions that look at more than just the local CO₂ emissions per kilometer driven and that will address emissions over the entire life of a vehicle.” He wants to see the Audi fleet running on an alternative to fossil fuels one day. These are called Audi e-fuels: Audi e-gas, “e-benzin” and e-diesel. They are all renewable, synthetic fuels and therefore entirely independent of mineral oil. These e-fuels capture as much CO₂ during their production as they release again when burned. They can be used in all conventional combustion engines, and no separate, dedicated infrastructure is needed. “With Audi e-fuels we create a win-win situation,” remarks Mangold. High time for me to discover the creative minds behind Audi e-fuels.

HOW DO WE MAKE AUDI E-GAS? WITH WIND.

I head down a gravel track between cornfields and woods on the edge of a small town with a population of 10,000 in the German state of Lower Saxony, and there it looms ahead of me: the Audi e-gas plant in Werlte. This is where around 1,000 metric tons of Audi e-gas are produced each year – using green power. Enough to enable 1,500 Audi g-tron drivers to cover 15,000 climate-neutral kilometers a year, which adds up to a total of 22.5 million carbon-neutral kilometers each year.

For this, 2,800 metric tons of CO₂ are captured temporarily – the amount absorbed by about 200,000 beech trees in one year. So how does it all work?

Gregor Waldstein, one of the pioneers of the Audi e-gas project, is there to explain it to me today and tells me what inspired him in the first place: wind turbines.

“I kept wondering: What happens to the power from wind farms if supply exceeds demand?” His appetite for innovation whetted, he searched for and found researchers who had already spent many years investigating how to store large amounts of renewable energy. Together they founded the company ETOGAS and put their ideas into practice: using green power for electrolysis. This process breaks down water into oxygen and hydrogen.

In a further stage, CO₂ is added to the hydrogen. The result: synthetic methane – Audi e-gas. This can then be stored in the existing natural gas network. The gas is then used as fuel in an Audi g-tron or converted into green electricity, as needed.




Gregor Waldstein // ETOGAS


Pick-up point in Leipzig. Marc Delcourt has arranged to collect me there. Today, the microbiologist and head of the French start-up company Global Bioenergies S.A. will be showing me where he would like to produce Audi "e-benzin," the fuel of the future for efficient gasoline engines. We drive 30 kilometers west to Leuna. This is where the first demonstration plant for Audi "e-benzin" is to be set up in the near future. "The capacity here will make it possible to produce 100 metric tons of Audi 'e-benzin' a year," Delcourt says. Impressive, but why isn't he going straight in with a plant that can make ten or fifty times as much renewable gasoline? He shows me a test tube containing a slightly cloudy liquid. "Our little helpers aren't predictable machines, so we need to scale up our process for larger volumes step by step," Delcourt explains. By little helpers, he means bacteria. I can't see them because they are only a few micrometers in size. They are nevertheless the key to Audi "e-benzin." When fed with sugar they become miniature isobutene gas-producing factories. The plan for the future is to replace sugar with CO₂ as the carbon source. Reacting isobutene on a special catalyst and adding hydrogen produces liquid isooctane. And Audi "e-benzin" is ready.

Marc Delcourt // Global Bioenergies S.A.





***HOW DO WE MAKE
AUDI “E-BENZIN”?
WITH BACTERIA.***



***HOW DO WE MAKE
AUDI E-DIESEL?
WITH SUNLIGHT.***



Hobbs, New Mexico. This is where my trip through the world of Audi e-fuels ends. And it certainly feels as if I have reached the end of the world. I drove through the immense emptiness of the American Southwest. The tires of my car throw up clouds of dust, the sun beats down mercilessly on an almost-deserted landscape. The only feature of this barren vista are its oil rigs. Then suddenly the research facility operated by the Massachusetts biotech company Joule Unlimited appears in front of me. One of the start-up's masterminds is process engineer Brian Baynes: "With the help of sunlight, we can produce high-quality fuels from waste such as CO₂ and effluent." He is aided by microorganisms that perform a photosynthesis process of a different kind. They produce liquid fuels such as e-ethanol or e-diesel. And apart from water, they only need sunlight and CO₂ to do so – all of which are plentiful in Hobbs. The small town enjoys an average of 300 days of sunshine a year. The CO₂ can come from factory fumes or be removed from the ambient air. There is no shortage of water either because the bacteria are content with effluent, saltwater or brackish water. For its next move, Joule Unlimited wants to demonstrate that this brilliant idea is suitable for use on an industrial scale.

Brian Baynes // Joule Unlimited



MOBILE LEARNING

Audi has launched the 2015 training year digitally: In September, a total of 752 young people began their training in Ingolstadt and Neckarsulm. Audi is introducing digital and mobile learning in 16 vocations. Car mechatronics technicians, for example, learn how to handle high-voltage equipment with the aid of instructional units on tablet computers. Learning takes place individually or in small groups – networked internationally and independent of their locations.



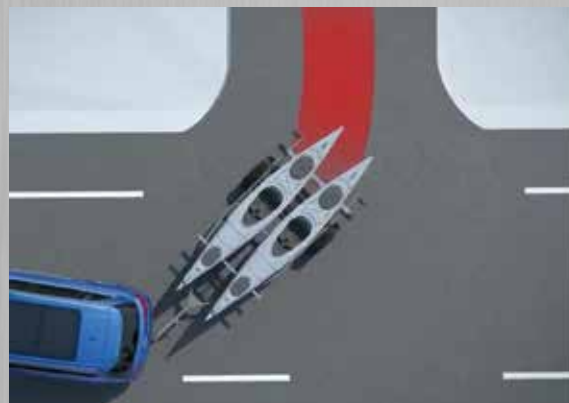
AUDI CONNECT mySERVICE

New additions to the portfolio of online services from Audi: With myService, for example, it is even easier to arrange a service appointment. For this, the car sends service-related data to the service partner two weeks before an upcoming appointment for maintenance. The customer specifies the service partner in advance in the myAudi portal. The service center can then contact the customer to arrange the upcoming appointment. myService also includes online roadside assistance and an automatic emergency call in the case of a collision, determining the location by GPS and transmitting information about the number of occupants.



In the new Audi Q7, anyone needing to reverse with a trailer can relax and let the optional assistant maneuver automatically. Simply engage reverse and slowly apply the gas pedal. The driver can use the rotary/push-button control of the MMI to variably set the angle to which the trailer should be driven. The image from the rearview camera on the MMI monitor shows lines that serve as a guide. Trailer assist turns the steering wheel and guides the trailer along the selected course with stability. The driver steers via the MMI.

AUDI Q7 TRAILER ASSIST



per 03 fo rm. now!

DRIVING PLEASURE IN EVERY MOMENT. PROMOTING YOUNG
TALENT IN MOTORSPORTS. ITALIAN PASSION. WE SET PULSES
RACING - ON TWO WHEELS AND FOUR.

HUNTER

IN THE NIGHT.

TEXT: AUDI AG

14

Swiftly and confidently, the new Audi R8 makes its way through the night – the fastest and most powerful series-production Audi ever. The muscular V10 mid-engine with an output of 449 kW (610 hp) delivers the right propulsive power, while the super-sporty chassis with new quattro drive ensures excellent roadholding. Together with its laser spot headlights, this car makes every nighttime drive an experience for the senses.



PHOTO: Tobias Sagmeister



Brilliant light cuts through
the dark of the night.



Born in Le Mans, built for the street. In its extremely sporty performance mode, the new R8 puts a smile on my face during the nighttime sprint. The seven-speed S tronic dual-clutch transmission shifts incredibly quickly, and the comprehensively refined quattro drive system distributes drive torque ideally between the front and rear wheels. I step on the gas. This must be the feeling race car drivers experience when they are pressed back into their seats at full speed.

Assisted by the new laser spot headlights, I also have a great view of everything even at high speed, and see obstacles long before reaching them. The laser spot actually doubles the lighting range of the Audi LED headlights, automatically giving me the right response at lightning speed and in tune with traffic and weather conditions. Even in curves. It is a milestone in night vision and safety.

And it performs without blinding oncoming vehicles or those driving ahead, since these are immediately recognized by an in-

PHOTO: Tobias Sagmeister



telligent camera sensor system. The combination of LED headlights, high-beam assist and the new laser spot increases safety. Thanks to the long-range laser spot, I can recognize all potential hazards – from wild animals crossing the highway or a poorly protected expressway to people or animals alongside the road.

The first Audi headlights with laser spot made their debut in 2014 on the Audi R18 e-tron quattro that won the 24 Hours of Le Mans. It was a truly visionary achievement. The Audi drivers

were thrilled because they could see the vehicles ahead much sooner during passing maneuvers. Intensive lighting research, which has a long tradition at Audi, enabled nearly simultaneous introduction of the laser spot in series-production models as well. Audi Technical Development has one of the largest drive-in light tunnels in Europe, which was specially built for such research purposes. The innovations created there now impress customers on the road as well.

I drive into a bend lined with trees, then a straight stretch of road appears in front of me again. The hunt through the night reveals the breathtaking range of the laser. And thanks to its optimally attuned drivetrain and chassis technologies, paired with the lightweight chassis made of aluminum and carbon, I experience a feeling in the new R8 that is closer to genuine car racing than ever before. All the more so since around 50 percent of the street version is identical to the Audi R8 LMS, the successful GT race car. This stroke of engineering genius is clearly discernible when driving – every time I apply the accelerator pedal and in any driving situation. I have a constant feeling of safety, even if I don't know what to expect beyond the next curve.

Winding, hilly routes alternate with arrow-straight sections where I can accelerate again. The cleverly engineered chassis of the R8 with electrically controlled dampers adapts to every type of road surface. Together with the quattro drive and a low vehicle center of gravity, it ensures high driving stability – during fast and winding maneuvers as well.

“We swear by this light because it lets us recognize obstacles just that bit sooner. And that is absolutely crucial at high speed.”

Filipe Albuquerque, Audi race car driver.
*Driver in the Audi R18 e-tron quattro with laser spot,
Le Mans 2015*

The brakes grip immediately on my command before the corner, and the sound of the V10 engine echoes through the solitude of the night. I get goosebumps all over. I feel like a hunter in the night, although stealth is hardly possible in this rocket. But the driving pleasure could not possibly be more intense. Even as the first rays of sunlight on the horizon announce the start of a new day, I keep driving until it is bright daylight.



PHOTOS: Tobias Sagmeister, AUDI AG



THE FUTURE ILLUMINATED BY OLED

Audi Matrix LED, laser spot and now the new Matrix OLED: The brand with the Four Rings is consistently developing its lighting expertise. Organic Light Emitting Diode technology, or OLED, provides a homogeneous light of a new standard. It offers variable dimming, does not cast any hard shadows and requires no light conductors or reflectors. This makes it lightweight, efficient and versatile to use. In addition, the organic semiconductor material can be applied to surfaces in thin layers that are just micrometers thick.

Presented in the Audi e-tron quattro concept at the 2015 International Motor Show (IAA) in Frankfurt, this futuristic lighting from Audi will soon be available in series-production cars.

MILESTONES IN AUDI LIGHTING EXPERTISE

2004	LED daytime running lights on the Audi A8
2008	All-LED headlights on the Audi R8
2010	Navigation-controlled headlight pattern distribution, previously controlled by steering wheel angle, on the Audi A8
2012	Dynamic turn signals on the Audi R8
2013	Matrix LED headlights, software replaces mechanisms on the Audi A8
2014	Laser spot on the Audi R8 LMX
2015	Laser spot on the new Audi R8



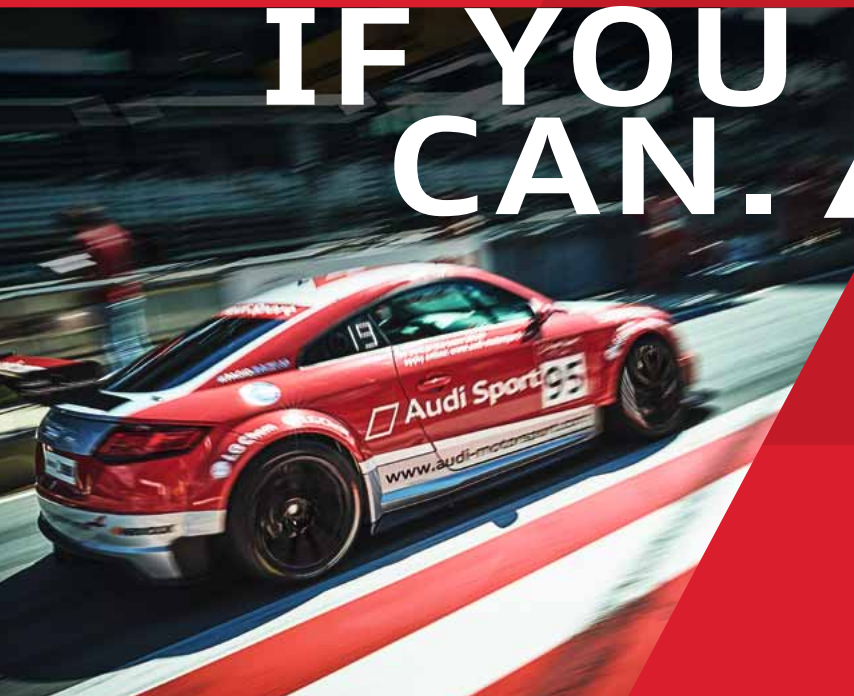
CATCH ME IF YOU CAN.

TEXT: Bernd Huesmann

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Watch the highlights of the 2015 Audi Sport TT Cup here.



Friday morning, 8 a.m. at the Red Bull Ring in Spielberg, Austria. The young Audi Sport TT Cup drivers walk the track with their coaches Markus Winkelhock and Marco Werner.

The loudest sounds are still coming from the birds accompanying us on our tour of the track. In a few hours, however, the roar of the engines and the smell of gasoline will be in the air. In one of the race cars will be Mikaela, who is walking beside me and explaining her driving technique:

// This curve is very important. Because it goes uphill, you have to have a lot of speed, otherwise you will be passed before the corner. And you have to exit it as fast as possible. That may sound easy, but when you come shooting up at over 200 kilometers per hour, the corner comes up on you really fast. //

Mikaela Åhlin-Kottulinsky from Sweden has done it. Not just taken the bend faster than others, but qualified for the new Audi Sport TT Cup.

The separate race series for the Audi TT offers the perfect environment for young talent in motorsport to develop. They are comprehensively supported and challenged by Audi. After all, the drivers not only have to impress with their skills on the racetrack, but also with their personality in public.

The best 18 drivers from 13 countries were chosen from 165 applicants during a two-day casting call for racers in December 2014. In 2015, the Audi Sport TT Cup drivers took to the track a total of 12 times on six DTM weekends.

Audi has racing in its genes. That is why the declared goal is to develop young drivers from its own ranks rather than simply bring in professionals from outside. Markus Winkelhock has been a professional race driver for 17 years.



“You have to show that you can drive, that you can fight and you want to win. But it is also important to be present in the media and a popular figure in the social web.”

Mikaela Åhlin-Kottulinsky



He knows what he is talking about: // It was different when I was starting out. If you had enough sponsors, you drove. If you didn't have any, you didn't drive. There wasn't the support from the manufacturer like there is now with the Audi Sport TT Cup. The package is great: a state-of-the-art race car, support from a coach, mechanics and support off the track. Everything a professional racer would also get. //

The driver becomes part of the large Audi family. Drivers who perform well here can make it to a higher class, maybe even all the way to the DTM or Le Mans. But the road is a long one.

Even though all of them have already spent a lot of time on the track, being really good is hard work, as Mikaela knows all too well: // We talk about what the ideal line is. But out on the track, you're on your own. The smallest mistake can cost you a good finish. That means full concentration. The coaches give you important tips, of course. If the track isn't completely dry, for example, you have to really heat up the tires to have good grip. And you have to heat them up as evenly as possible, because if the rear tires aren't warm enough it can quickly lead to oversteer. After all, this automobile is a real race car! //



The speedy “driving school car” has more power than one would suspect. Thanks to lightweight construction, the race version of the new TT weighs just 1,125 kilograms – 313 less than the series-production model. When the 228 kW (310 hp) output is cut loose, there is only one direction: forward.

And to ensure that all of the power is delivered to the asphalt, there is a button on the steering wheel for optimal traction: Position 1: dry surface, new tires, lots of grip. Position 2: worn tires, little grip. Position 3: wet. Thanks to this button, there is still an impressive amount of grip even without well-heated slicks.

Ideal conditions for being very fast. But faster than the others? That depends entirely on driving ability, because in the Audi Sport TT Cup the cars are identical from a technical aspect.

For example, any driver can use the push-to-pass button. At the push of a button on the steering wheel, engine output can be temporarily boosted by 22 kW (30 hp) for passing maneuvers. Depending on starting position, this extra power can be called on up to 15 times. And the key is to use it at the right place.

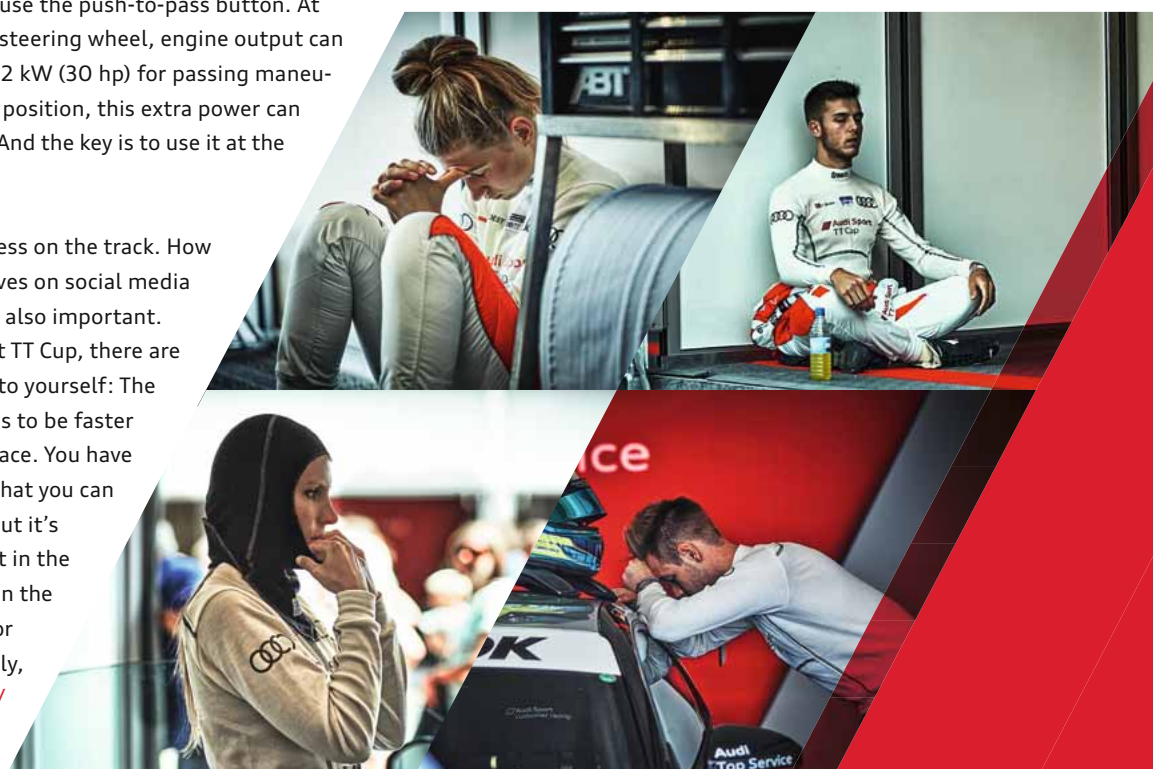
But it is not enough to impress on the track. How the drivers present themselves on social media platforms on the Internet is also important. Mikaela: // In the Audi Sport TT Cup, there are two ways to draw attention to yourself: The most important, of course, is to be faster than the others during the race. You have to show that you can drive, that you can fight and you want to win. But it's also important to be present in the media and a popular figure in the social web. The best thing for you and your career, naturally, is to impress in both areas. //

During the rest of our walk, other questions occur: Are there any special preparations for racing? And what is the greatest challenge posed by the Audi Sport TT Cup?

Mikaela: // You're actually always preparing and constantly working to get better. This is my second year in touring car racing. Before that, I only drove a modified series-production vehicle.

The TT cup, on the other hand, is a race car that has been specially built and prepared for this series. It's the fastest car that I have ever driven on the track. It has a lot of power. And brakes that react really quickly. Adapting yourself to that is the greatest challenge. //

Our walk around the Red Bull Ring is almost at an end. But it is just the beginning for the young drivers. Practice, mental training, fitness. Racing is a high-performance sport. If you want to race in a higher class next season, you have to have a burning passion for your sport – and be a fighter. As we turn into the pit lane, Mikaela says: // We are like a family, we stick together and discuss every corner. But when you are sitting in your car on the starting grid, you have to block that out entirely. At that point only one thing matters: winning. //



Saturday afternoon, 3 p.m. The light changes to green. Mikaela floors the accelerator. The race car's tires claw the asphalt. The TT cup follows every turn of the wheel with absolute precision, driving as if on rails. It is virtually glued to the road. Now the driver's only thought is how to pass the car ahead. 200, 150, 100 meters – and there is the next corner.



Swapping the ski slope for the race track: Ski racers Felix Neureuther, Marcel Hirscher and Aksel Lund Svindal rode along during the Audi Sport TT Cup in Spielberg. Discover here what the skiers shared with the young race drivers.

ASIAN RACING FEVER.

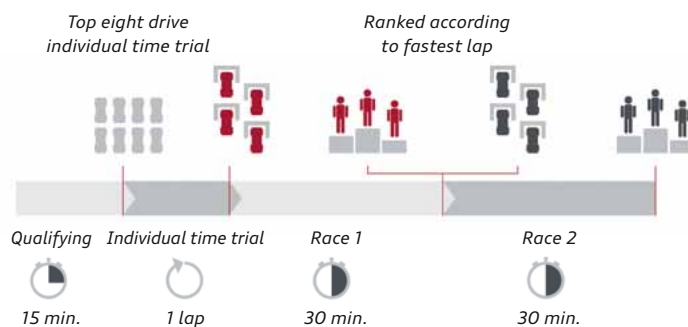
2016 race calendar

- May 14–15 Shanghai (China)
- July 16–17 Buriram (Thailand)
- August Malaysia
- September 10–11 Yeongam (South Korea)
- October 8–9 Penbay (Taiwan)
- October/November China



Here you will find
finale highlights of the
2015 Audi R8 LMS Cup
in Shanghai.

Race format



Titles



Driver



Amateur



Team



Four Rings Trophy



In 2015, the fourth round of the Audi R8 LMS Cup held the Asian racing world in suspense, with a gripping finale and spirited scenes.

Sixth race weekend. Last race. **Grand finale in Shanghai.** The rules are tough: Series leader Alex Yoong has to face his competitors carrying an additional 50 kilograms of weight. He falls back to sixth place. But in the end that is good enough for Yoong, who drives for the Audi TEDA Racing Team. The former Formula 1 driver edges his Chinese rival Cheng Congfu by a single point in the overall standings to claim his second title after 2014.

The brand with the Four Rings has enthralled fans in Asia with the dramatic racing moments offered by the **Audi R8 LMS Cup**. The Cup debuted in China in 2012 and is now present throughout Asia. In 2015, the finale was held for the first time in conjunction with the FIA World Endurance Championship (WEC), making the competition even more widely known. And 2016 promises to remain exciting thanks to the redesigned Audi R8 LMS, which sets standards with its high crash safety and lightweight construction.



Radical, fascinating and without compromise. With this vision, Ferruccio Lamborghini founded his manufacturing facility for supercars. Concept cars are a medium for projecting future visions. They are superlatives on four wheels and act as inspiration, predictions and signs of things to come. Three Lamborghini studies offer a glimpse of the future.

THE BULL TAKES THE FUTURE BY STORM

BULL'S-EYE.

TEXT: Dorothea Joos

16

SESTO ELEMENTO //
A STATEMENT IN
LIGHTWEIGHT
CONSTRUCTION.
A DECLARATION OF
LOVE FOR OPTIMAL
POWER-TO-WEIGHT
RATIO. TESTIMONY
TO CARBON EXPERTISE
AT THE HIGHEST
LEVEL. THAT IS THE
SESTO ELEMENTO.
AROUND 80 PERCENT
OF ITS FRAME AND
NEARLY ALL OF ITS
ADD-ON PARTS ARE
MADE FROM CARBON.
ITS NAME IS ALSO
DERIVED FROM THE
INNOVATIVE MATERI-
AL, AS CARBON IS
THE SIXTH ELEMENT IN
THE PERIODIC TABLE.



Performance starts for a Lamborghini where it ends for most other cars. Above the 300 kilometers per hour mark the notion of “top speed” therefore ceases to have any meaning. It is all about defining new boundaries.

The Sesto Elemento together with the V10 engine and permanent all-wheel drive weighs just 999 kilograms. A vehicle that scales new heights. Extreme, minimalist, form follows function in its purest guise. In just 2.5 seconds it catapults from 0 to 100 km/h. Its secret lies in the outstanding power-to-weight ratio of 1.75 kilograms per horsepower. A statement of consistent lightweight construction and a paradigm shift.

“The supercar of the future is no longer defined solely by the top speed,” explains Research and Development Director Maurizio Reggiani. “What counts is power-to-weight ratio, handling and performance.” The calculation is simple: Lightweight construction plus high performance equals extreme driving pleasure.

Carbon is what guarantees the radical diet’s success. For many years, the extremely solid, stiff and yet lightweight material was the preserve of racing cars. More than 30 years ago, prototypes for the chassis of the Lamborghini Countach were made of carbon-fiber-reinforced polymer (CFRP). “Anyone can use carbon. Using it intelligently is what makes the difference,” Reggiani says.

Forged Composite® is one such intelligent solution from the Lamborghini in-house development laboratory for carbon. Stronger than titanium, more economical than conventional CFRP – such properties make Forged Composite® a unique material for the future of car manufacturing. It was used for the monocoque on the Sesto Elemento. Tried and tested in the concept car, the engineers from Sant’Agata Bolognese will also be using this technology for volume-production components.

“The Sesto Elemento is the prelude to a new era of lightweight construction,” explains Reggiani. “Every future Lamborghini will breathe the spirit of this concept car.”



CARBON KING

ASTERION LPI 910-4 // WITH TAURUS BEING THE ZODIAC SIGN OF COMPANY FOUNDER FERDINANDO LAMBORGHINI, THE BULL HAS ALWAYS BEEN SYNONYMOUS WITH SUPERCARS MADE IN SANT'AGATA BOLOGNESE. NUMEROUS MODELS HAVE TAKEN THEIR NAME FROM FAMOUS SPANISH FIGHTING BULLS. ASTERION IS DERIVED FROM THE BIRTH NAME OF THE MYTHICAL MINOTAUR. IT IS A HYBRID FIGURE: HALF MAN, HALF BULL. THE LAMBORGHINI ASTERION IS ALSO A SYMBOLIC CROSS-BREED. A COMBINATION OF HYBRID TECHNOLOGY AND COMBUSTION ENGINE – OF THE HUMAN INTELLECT AND THE BULL'S RAW POWER.

Goosebumps. Adrenaline pumping through the veins. A heightened sense of anticipation. Your finger hovers above the red start button in the center console. A quick push is all it takes to bring the bull to life. The angry sound of a naturally aspirated Lamborghini engine is replaced by deafening silence.

But with a short tap on the gas pedal, the Asterion leaves you in no doubt that this really is a thoroughbred Lamborghini. The sheer force of the acceleration hurls your body into the seat and twists the corners of your mouth into an ecstatic smile in response to this explosion of power. The Asterion is pure emotion instead of emissions. The first Lamborghini with a plug-in hybrid.



E-BULL

"Reconciling hybridization and sportiness – we couldn't resist the challenge," explains Research and Development Director Maurizio Reggiani. "A Lamborghini has sportiness in its genes. The way to the future lies in transforming and hybridizing this essential DNA."

In all-electric mode, the Asterion technology demonstrator is capable of up to 50 kilometers, making it ideal for an urban setting. "It resolves the apparent contradiction between sportiness and CO₂ emissions, and adopts a radically new approach to the use of hybrid technology for building sports cars," says Reggiani. To this end, the Italians have combined a V10 engine with three electric motors. The result: 910 horsepower.

Nonetheless, the Asterion is more of a cruiser than a supercar, says Reggiani. Its design exudes sensuality. Lots of curves, seamless transitions from surface to surface instead of aggressive edges. A brother in the spirit of the legendary Lamborghini Miura, a homage to the brand history.



URUS //
UNTAMED AND
POWERFUL: THE AUR-
OCHS (URUS) IS THE
POWERFULLY BUILT
ANCESTOR OF DOMES-
TIC CATTLE AND IS
CLOSELY RELATED TO
SPANISH FIGHTING
BULLS. THIS WILD OX
HAD A SHOULDER
HEIGHT OF ALMOST
TWO METERS – THE
EPITOME OF POWER
AND FEROCITY.
AND THEREFORE THE
IDEAL CHOICE OF
NAME.

Is a Lamborghini something for special moments? Certain kinds of roads? Grand entrances? Yes – and no. “The Lamborghini Urus is a game changer,” says Research and Development Director Maurizio Reggiani. Four seats, a high-performance engine and, despite being relatively flat at 1.66 meters high, unmistakably an SUV. Is it really a Lamborghini?

The interior of the concept car features impressive comfort. Easy access, ample space, smooth, sumptuous leather seats. Like a perfectly tailored made-to-measure Italian suit – close-fitting yet comfortable. The exterior is trimmed for aerodynamics. Touchpads instead of door handles, cameras instead of exterior mirrors. Hard edges and sharp lines – just as you would expect from a Lamborghini.



"The Urus is an extreme interpretation of the SUV idea," Maurizio Reggiani explains. Sporty, comfortable, eco-friendly. Despite having a 4.0-liter twin-turbo engine with an output of more than 440 kW (600 hp), one development aim is to achieve low CO₂ figures using lightweight technology and the option of using hybrid technology. Driving pleasure is also a top priority for the Urus. "When we move into the SUV segment, we will be redefining it from scratch," says Reggiani.

Lamborghini aims to conquer the steadily growing market of the luxury SUV with the new series-production model based on the Urus. A Lamborghini as the main car. A supercar that customers can enjoy with their friends and family.

Lamborghini will begin building the SUV for daily use in Sant'Agata Bolognese in 2018, creating a total of 500 new jobs in the process. The plant will virtually double in size to accommodate the third model line alongside the Aventador and Huracán. And the sales figures should also double with the SUV model – from the previous 3,000 to 6,000 cars a year.

"A new era is dawning for us with the Urus," says Research and Development Director Maurizio Reggiani. "It shows just how close vision and future are at Lamborghini."

GAME CHANGER





READY TO 17 SCRAMBLE.

Built for the future with the heritage of the 1960s: Ducati has revived the legendary Scrambler – and with it, an entire world, which now also satisfies the yearning of bikers who are passionate about more than just racing. The yearning for freedom and individuality. We find out what it feels like to ride a Scrambler Icon from someone who knows: Sarah Lahalih. Free spirit, motorbike expert – and ardent Scrambler fan.

TEXT: *Sarah Lahalih*





Freedom is more than
a feeling for me.
It's my attitude toward life.



Everything in my life revolves around motorcycles – and has for over 20 years. From the very first time I rode a motorcycle I just knew it was the thing for me. A lot has happened since then. I set up a motorcycle school in Chicago, trained soldiers on two wheels for the American military and taught celebrities and famous sportspeople how to ride a motorcycle. I'm now living in Los Angeles, where I do a lot of stunt work for the major Hollywood film productions and TV.

Everyone is always talking about the feeling of freedom that we bikers have when we're riding. But to be honest, it's much more than just a feeling. It's my attitude toward life. You're right up close to your environment. You've got to be fully focused all the time – because you never know what's around the next corner. Nowhere are the boundaries between risk, sheer happiness and absolute freedom closer to each other than on a motorcycle. **But you can only ride at your best if you're at one with your machine.**

The Ducati Scrambler makes it so easy for you because it's just the right size for most riders to cope with. But that's not the only reason why I'm a Scrambler fan. **Virtually all motorcycle riders that I know are just like me, out-and-out individualists.** And the Ducati Scrambler with its timeless post-heritage design offers the perfect base for customizing it exactly the way you want it.

But how does it feel, this absolute freedom? It's something you can't describe. You need to experience it. That's why I'm going to take you on a trip with me to visit my very own freedom hotspots. Just you, me and the Ducati Scrambler Icon.

Let's kick off at my favorite café. The perfect place to meet up with friends for a cappuccino or a smoothie before we head off on a motorcycle tour. It's in the Arts District, one of the rougher but also one of the most popular districts of Los Angeles. The blend of industrial architecture and creative scene simply puts you in a good mood.



Sometimes freedom
is simply wind in your face
and plenty of horsepower under the saddle.



Helmet on, climb onto the saddle and head out of town. We're off to Malibu. **The farther we get from the city, the broader the smile on my face.** Because we're going to Corral Canyon, my favorite place to switch off from the daily routine and reflect on life.

Curve after curve, the Ducati Scrambler Icon takes me higher and higher. I'm perfectly comfortable because the wide handlebars allow me to adopt a relaxed riding posture. I enjoy the wind in my face and notice how I slowly start to relax. Mile after mile toward the top, the route gives us some fantastic views of the Pacific.

We're almost there. I personally feel best on the mountain at the point where the paved road ends and a gravel track starts. There's not even a cell phone signal here – and you can almost grasp the freedom.

The Scrambler brought me here with no effort whatsoever. With an unladen weight of around 170 kilograms it's very light and, thanks to the low center of gravity and the low seat, incredibly maneuverable. **That's why for me it's just as fun to ride off-road as it is on.**

Back to civilization. Having cleared my head, it's time to slowly head back toward downtown Los Angeles. We don't take just any old road, but one of the world's most famous: Mulholland Drive. Full of winding bends, it offers a breathtaking view of the city skyline. I've often wondered whether that was the reason it was one of the acknowledged favorite routes of legendary actor Steve McQueen.

My Scrambler and its 55 kW (75 hp) V2 engine certainly feel right at home negotiating the hairpin corners. I accelerate and feel quite sure: If the King of Cool and acknowledged Scrambler aficionado McQueen could experience it, he'd go for the Ducati.



The Scrambler is a perfect blend of traditional and contemporary. **And it combines the best of two worlds: post-heritage style and state-of-the-art technology.** It has all the technical refinements, including upside-down forks, aluminum wheels, central suspension strut and radially mounted front brake calipers. Despite the retro look, it is up to date with LED lights, LCD instruments and a USB connection under the seat.

To allow every biker to put together their own unique model, the Scrambler comes in four versions and styles: Urban Enduro, Full Throttle, Classic and Icon. A big selection of accessories makes it just as individual as its owner: side panels in chrome, matte black or carbon. A host of solutions for the front fenders, upper license plate holder, a low-set Termignoni slip-on exhaust, vintage-style grips, spoked wheels, four seat variants, and much, much more.

A great trip is now coming to an end. I've been out on the road on the Scrambler Icon for 12 hours straight. But thanks to the upright riding position and the comfortable seat, it hasn't taken it out of me at all. **What a day!** Actually, I'd have liked to keep on riding. That's what we'll do on our next trip together with the Ducati Scrambler – always in search of freedom.



Take a look here at how Sarah Lahalih presents the four different Scrambler models.





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