



Audi

2012 Annual Report



Audi Group Key Figures

		2012	2011	Change in %
Production				
Automotive segment	Cars ¹⁾	1,469,205	1,302,981	12.8
	Engines	1,916,604	1,884,157	1.7
Motorcycles segment	Motorcycles ²⁾	15,734	–	–
Deliveries to customers				
Automotive segment	Cars	1,634,312	1,512,014	8.1
Audi brand	Cars	1,455,123	1,302,659	11.7
Germany	Cars	263,163	254,011	3.6
Outside Germany	Cars	1,191,960	1,048,648	13.7
Lamborghini brand	Cars	2,083	1,602	30.0
Other Volkswagen Group brands	Cars	177,106	207,753	– 14.8
Motorcycles segment	Motorcycles ²⁾	16,786	–	–
Ducati brand	Motorcycles ²⁾	16,786	–	–
Workforce	Average	67,231	62,806	7.0
Revenue	EUR million	48,771	44,096	10.6
EBITDA ³⁾	EUR million	7,297	7,141	2.2
Operating profit	EUR million	5,380	5,348	0.6
Profit before tax	EUR million	5,956	6,041	– 1.4
Profit after tax	EUR million	4,353	4,440	– 2.0
Operating return on sales	Percent	11.0	12.1	
Return on sales before tax	Percent	12.2	13.7	
Return on investment	Percent	30.9	35.4	
Total capital investments ⁴⁾	EUR million	6,416	2,970	116.0
Capitalized development costs	EUR million	923	596	54.9
Depreciation and amortization	EUR million	1,937	1,793	8.0
Cash flow from operating activities	EUR million	6,144	6,295	– 2.4
Balance sheet total (Dec. 31)	EUR million	40,425	37,019	9.2
Equity ratio (Dec. 31)	Percent	37.2	34.9	

1) Including vehicles manufactured in China by the FAW-Volkswagen Automotive Company, Ltd., Changchun, joint venture since January 1, 2012.

333,465 (216,053) vehicles were manufactured by the joint venture in the 2012 fiscal year. The previous year's figure has been adjusted for ease of comparison.

2) Since acquisition of the Ducati Group in July 2012

3) EBITDA = operating profit + balance from impairment losses (reversals) on property, plant and equipment, capitalized development costs, leased assets, goodwill and long-term investments as per the Cash Flow Statement

4) In 2012 including the acquisition of interests in Volkswagen Group Services S.A., Brussels (Belgium), and in DUCATI MOTOR HOLDING S.P.A., Bologna (Italy)





*Dear Readers,
Dear Shareholders,*

Passion – what does that mean to you personally? Obviously we don't often come across such an emotionally charged word in business life. But at Audi it is part of our standard vocabulary, every day and all over the world.

For us, passion is the driving force behind our every action. Pure passion for cars – that is what spurs us on to achieve top performance on our way to becoming the number one premium manufacturer.

The notable success of the 2012 fiscal year demonstrates how effectively the Audi Group's over 68,000 employees managed to share their enthusiasm with every one of our customers. For that reason, we have chosen the motto "My Audi – Pure passion" for this Annual Report.

2012 will go down in the history of the Company as a year of significant growth and major successes – and also as a year of important strategic decisions.

We have become even more global, more innovative and more sustainable. We have ventured into the premium end of the motorcycle market through the acquisition of Ducati, the tradition-steeped manufacturer of fascinating, iconic motorcycles. And we have chosen San José Chiapa as the site of a new production location in Mexico. On top of that, we

are extending our existing production network in China, India and Hungary. Equally, we have demonstrated our commitment to our German locations by investing further in them.

Our product range attracted more customers worldwide than ever before and helped Audi to a new sales record of over 1.45 million automobiles.

We are firmly convinced that anyone who believes so passionately in their company while exercising the virtues of commercial prudence will also be able to handle difficult times.

Passion breeds success and motivates in various ways. I hope that you will find the 2012 Annual Report an inspiring read and that the spark of our passion will ignite your enthusiasm, too.

I wish you an enjoyable read.

Prof. Rupert Stadler
Chairman of the Board of Management



Prof. Dr. Dr. h. c. mult. Martin Winterkorn
Chairman of the Supervisory Board

*Ladies and Gentlemen,
Dear Shareholders,*

Global economic growth lost momentum in 2012. Many industrial nations in particular found themselves facing major economic challenges, while most emerging economies enjoyed relatively robust growth rates. Despite only moderate economic growth, worldwide sales of automobiles exhibited a steady upward trend – with dynamic demand in the United States, China and Russia acting as the principal driver.

The Audi brand delighted its customers with an extensive product range in the past fiscal year. 2012 saw the addition of attractive models such as the new-generation A3 and the compact five-door A1 Sportback. The year under review also brought major decisions concerning the strategic expansion of the Company. For example, Audi has revived its tradition as a motorcycle manufacturer through the takeover of the Italian brand Ducati. In constructing a new automotive plant in San José Chiapa (Mexico) where the successor to the Audi Q5 will be built from 2016, the Audi Group is also making the brand more international.

In 2012, the Audi brand delivered over 1.45 million vehicles worldwide – an increase of 11.7 percent on the previous year. Meanwhile the Audi Group further increased its revenue and achieved an operating profit on a par with the previous year's high level – despite higher spending on new products and technologies, the expansion of the manufacturing infrastructure and an intensive competitive environment. The Supervisory Board takes this opportunity to thank the management, the employees' elected representatives and the

workforce for everything they did to make this outstanding achievement possible.

The Board of Management gave the Supervisory Board regular, up-to-date and comprehensive accounts of its actions; decisions of fundamental importance to the Company were discussed in depth by the Board of Management and Supervisory Board. The Supervisory Board considered the economic framework and the Company's business progress as well as its risk management and risk situation at ordinary quarterly meetings and by means of regular oral and written reports from the Board of Management, and consulted the Board of Management closely on these matters. At its meetings the Supervisory Board also discussed Audi's growth prospects in individual major markets such as the United States, China, India and Russia. In connection with the brand essence "Vorsprung durch Technik," the Supervisory Board was briefed at length on central areas of innovation such as lightweight construction and electric mobility. Other subject areas discussed were human resources issues with the focus on global assignments and the slowing demand in the major sales regions in the second half of the year. In approving the human resources, financial and investment plans, the Supervisory Board confirmed the Board of Management's strategic decisions and thus gave its backing to Audi's goal of becoming the world's leading premium brand. At its fourth ordinary meeting during the past fiscal year, the Supervisory Board approved the content of the annual Declaration of Compliance pursuant to Section 161 of the German Stock Corporation Act (AktG).

The Supervisory Board met for two extraordinary meetings in 2012. At those meetings it approved the further streamlining of retail business within the Volkswagen Group, the construction of a plant in Mexico, the acquisition of all shares in DUCATI MOTOR HOLDING S.P.A and personnel changes on the Board of Management.

All Supervisory Board members were present at more than half of the meetings. The average attendance rate in the past fiscal year was 95.8 percent. The members of the Presiding Committee held full consultations before each meeting. The Negotiating Committee did not need to be convened in 2012.

There were the following changes on the Supervisory Board during the past fiscal year: With the close of the 123rd Annual General Meeting, Dr. Bruno Adelt and Dr. Franz-Josef Paefgen both left their positions on the Supervisory Board at their own request. Dr. Adelt had been on the Board for more than 15 years, and Dr. Paefgen for ten years. The opinions and judgments of both these members were always valued by the Board. The Supervisory Board is deeply grateful and indebted to both gentlemen for their contribution to the work of the Supervisory Board of AUDI AG.

On the recommendation of the Supervisory Board, last year's Annual General Meeting elected Secretary of State Dr. phil. Christine Hawighorst, Head of the State Chancellery of Lower Saxony, and Dr. Wolfgang Porsche, Chairman of the Supervisory Board of Porsche Automobil Holding SE and Chairman of the Supervisory Board of Dr. Ing. h. c. F. Porsche AG, as the successors to Dr. Adelt and Dr. Paefgen respectively for the remainder of their terms of office. Those terms of office end with this year's Annual General Meeting.

The Audit Committee met once per quarter in the past fiscal year. At its meetings, the committee considered the Annual and Consolidated Financial Statements for 2011 as well as other topics such as risk management and compliance work. The Audit Committee moreover scrutinized the 2012 Interim Financial Report prior to its publication and discussed its contents with the Board of Management and representatives of the auditing firm. The Audit Committee in addition advised on the independence of the auditor, the findings of additional audits commissioned and the current situation at the end of 2012.

Upon the proposal of the Supervisory Board, the Annual General Meeting of AUDI AG appointed PricewaterhouseCoopers Aktiengesellschaft Wirtschaftsprüfungsgesellschaft as auditor of the accounts for the 2012 fiscal year. The Supervisory Board awarded the audit assignment to the auditing firm after its election. The auditor of the accounts confirmed the Annual Financial Statements of AUDI AG and the Consolidated Financial Statements of the Audi Group, as well as the Management Reports for AUDI AG and the Audi Group for the 2012 fiscal year, and in each case issued its unqualified certification.

The members of the Audit Committee and Supervisory Board received the documentation for the Annual and Consolidated Financial Statements, together with the corresponding audit reports by the auditors, well in advance of their meeting

“More than any other motorcycle manufacturer, Ducati embodies those features that are at the very core of Audi's DNA: courage, passion, responsibility and the will to succeed.”

Prof. Dr. Dr. h. c. mult. Martin Winterkorn

on February 21, 2013. The auditing firm's representatives explained the key findings of their audit in detail at the meetings of the Audit Committee and Supervisory Board, and then answered queries from both bodies. According to information supplied by the auditing firm, there were no circumstances that might give cause for concern about the auditors' partiality.

Following examination of the audit documents received and in-depth discussions with the auditors' representatives, and based on its own conclusions, the Audit Committee recommended to the Supervisory Board that the Annual and Consolidated Financial Statements each be signed off. After appropriate discussions, the Supervisory Board accepted this recommendation and signed off the Annual and Consolidated Financial Statements prepared by the Board of Management. The Annual Financial Statements are thus established.

There were the following personnel changes on the Company's Board of Management during the past fiscal year, principally as a result of the reorganization of responsibilities within the Volkswagen Group: Ulf Berkenhagen, Michael Dick and Peter Schwarzenbauer left the Board of Management of AUDI AG with effect from August 31, 2012. The Supervisory Board would like to thank them for their contribution. The Supervisory Board appointed Wolfgang Dürheimer, with responsibility for the “Technical Development” Division, Dr. Bernd Martens, with responsibility for the “Procurement” Division, and Luca de Meo, with responsibility for the “Marketing and Sales” Division, as new members of the Board of Management of AUDI AG, in each case with effect from September 1, 2012.

The Board of Management has suitably taken account of the economic environment and future challenges when making its plans. Equipped with an attractive model range and innovative drive and mobility concepts, the Company will push ahead methodically with its current course of growth.


The Supervisory Board will continue to assist the Board of Management constructively with implementing this growth strategy.

Ingolstadt, February 21, 2013



Prof. Dr. Dr. h. c. mult. Martin Winterkorn
Chairman of the Supervisory Board




 **Prof. Rupert Stadler**
Chairman of the Board of Management




 **Luca de Meo**
Marketing and Sales



 **Dr. Bernd Martens**
Procurement




 **Dr. Frank Dreves**
Production




 **Wolfgang Dürheimer**
Technical Development



 **Prof. h. c. Thomas Sigi**
Human Resources



 **Axel Strotbek**
Finance and Organization

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Online

Annual Report online

The Audi 2012 Annual Report is a multimedia experience. Simply use your iPhone®, iPad®, Android smartphone or Android tablet, Windows 8 or visit the Audi website to access a wealth of entertaining and informative content.

Website

Every Annual Report article as well as many additional highlights such as interviews, sound files, photo galleries and videos are available on our website. Experience how production operates like clockwork at the Ingolstadt plant, how customers at Audi City London configure their Audi vehicles virtually on large monitors and look over the shoulders of the Audi modelers as they craft the Audi models of tomorrow. All of that awaits you at www.audi.com/ar2012.

Apps



The Annual Report to go: Simply download our app to your iPhone®, iPad®, Android smartphone or tablet for Android or Windows 8 – and navigate through the exciting content.



Even more Audi online: As well as the Audi Annual Report, you can also find the **Audi magazine** and other apps from the Audi brand (www.audi.com/apps).

QR code



You will see a **Quick Response code** (QR code) at the end of every Annual Report article. If an app which can read QR codes is installed on your smartphone, then you can access additional content for some articles in a matter of seconds – particularly videos. Simply open your QR app, scan the QR code and enjoy the content (connection charges as per mobile device contract).



Keep informed while on the go: The Audi 2012 Annual Report is available as an app for iPhone®, Android smartphones, iPad® and tablets and, for the first time, Windows 8.



Multimedia experience: The apps for smartphones and tablets allow you to access exclusive video material, for example of Eva Padberg in Paris.

Digital highlights



Experience videos and an exclusive track from Viktoria Tolstoy's concert at the Audi Forum Neckarsulm. This Swedish musician presents extracts from her album "Letters to Herbie," featuring her very own interpretations of pieces by jazz legend Herbie Hancock – one of her great role models.



How does an Audi take shape? Join us on a virtual tour of the Audi production plant in Ingolstadt. 360-degree panoramic views and a host of videos will provide you with detailed insights into how an Audi is built – from the press shop through to final inspection.



Navigate the highlights of the multimedia Audi Annual Report. A version of the Multi Media Interface (MMI) customized for iPad® enables you to discover new possibilities more quickly, easily and conveniently than ever before.

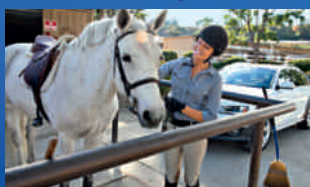
Around the world with Audi



Dennis Wong

Vancouver +++ Canada +++

49° 15' North, 123° 6' West +++



Jackie Lefave

Los Angeles +++ USA +++

34° 3' North, 118° 15' West +++



Teresa Lopez

Santa Ana +++ Mexico +++

30° 32' North, 111° 7' West +++



Paulo Armani

Salvador da Bahia +++ Brazil +++

12° 59' South, 38° 31' West +++



Hormatollah M. Lamine

Tangier +++ Morocco +++

35° 47' North, 5° 49' West +++



Jesús Arroyo Fernández

Granada +++ Spain +++

37° 11' North, 3° 36' West +++

The photo expedition presents Audi customers and employees from Vancouver to Melbourne – and shows the passion people have for the four rings all over the world. Follow us on this journey through the Audi universe!



Maximilian So
Hong Kong +++ China +++
22° 16' North, 114° 8' East +++



Johannes Hendrikz
Cape Town +++ South Africa +++
33° 55' South, 18° 25' East +++



Ekaterina Stalmakova
St. Petersburg +++ Russia +++
59° 56' North, 30° 16' East +++



S. P. Balasubramanian
Mumbai +++ India +++
18° 58' North, 72° 50' East +++



Danielle Braniff
Melbourne +++ Australia +++
37° 48' South, 144° 57' East +++

My Audi

Maximilian So

Hong Kong, China

As a hotel manager, I deal with people from all over the world every day. Even if they come to Hong Kong for just a short stay, I want them to feel comfortable in our hotel. Everyone has a different definition of home and comfort. For me, they are both linked – my home zone starts in my car. My Audi is also my living room.



Hong Kong

My Audi

Danielle Braniff and Gabrielle Kiely

Melbourne, Australia

Danielle: I love my Audi TTS because it is pure driving fun. I enjoy driving to our beautiful beaches or the city's hottest bars with my friend and colleague Gabrielle from the Audi Center Melbourne. I find Audi to be a terrific brand – and a terrific employer. Gabrielle: Audi sets the standard for high-quality sportiness and advanced technology. I have a real passion for Audi because its visions and innovations make it such a fascinating company. To me, Audi is simply exciting.

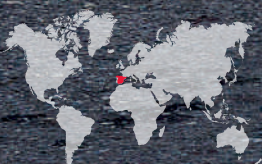


Melbourne

My Audi

Jesús Arroyo Fernández
Granada, Spain

I'm really quite demanding when I'm buying any new product – and all the more so when I'm buying a car, of course. The Audi A3 has far exceeded my expectations. It's ideal for city traffic, but also for long drives. And its safety and assistance systems have already served me well once in a dangerous situation on a bad road. Of course, I much prefer driving where there is the kind of incredible view we have here at the world-famous Alhambra. The photo says it all: For me, Audi means pleasure.



Granada



Cape Town

17

My Audi

Johannes Hendrikz
Cape Town, South Africa

Good design excites me. On top of that, the A3 Cabriolet handles the road really well. I remember one trip from Cape Town to Namibia: My Audi was the secret star of that vacation; my girlfriend and I had never traveled so comfortably. For me, Audi means comfort.

My Audi

Ekaterina Stalmakova
St. Petersburg,
Russia

When I start my Audi A4, it thrills me every time I'm able to step on the gas. People who are not as crazy about their cars would say it's chic and modern. But it awakens the passion in me. My daughter and I feel so at home in this car. For me, Audi means zest for life!



St. Petersburg



My Audi

Subramanian Panchapakesan Balasubramanian

Mumbai, India

A few years ago I rode as a passenger in an Audi A8 in Germany. That's when I made up my mind: If I ever buy a sedan, then only an Audi! Now it's an A6 3.0 quattro – an absolute head-turner. I'll never forget the first time I drove my family out for dinner in it. The girls enjoyed it, but my wife simply loved it. Audi – for me, it's a dream come true.



Mumbai

My Audi

Jackie Lefave

Los Angeles, USA

My two favorite means of transportation are both white: my horse and my A4 allroad quattro. The Audi has so much power that I can easily handle many hindrances in traffic. It's just the way I like it: sporty, agile and elegant. For me, Audi means dynamics.



Los Angeles

My Audi

Hormatollah Mohamed Lamine

Tangier, Morocco

My daughters consider our Q5 to be an extension of their playroom, which I'm not always happy about. But on our trips and excursions together I don't mind turning a blind eye. Audi stands for quality.

Tangier

My Audi

Teresa Lopez

Santa Ana, Mexico

I'm a romantic and I love the beautiful things in life: parties with friends, evenings with lots of music. My A5 Cabriolet reminds me of many experiences I've had with people who are important to me. As a result, Audi also shapes my attitude to life.

Santa Ana



My Audi

Paulo Armani

Salvador da Bahia, Brazil

When I'm driving in my A1 and traveling, for instance, with my family along the beaches near our city, many people turn and watch the car go by. I have to admit, I enjoy that a lot! In my eyes, Audi achieves the perfect balance between performance and luxury. The best part of my A1? That's the cockpit, where high tech and design are perfectly combined. For me, Audi is a brand without comparison.



Salvador da Bahia

My Audi

Dennis Wong

Vancouver, Canada

What I especially like about my TTS Roadster is its efficiency and its outstanding handling, even in city traffic. And I love the special combination of the Scuba Blue metallic color with the Madras Brown Baseball Optic Leather. I open the roof, put my favorite music on – and then I'm off for a drive along the Pacific Coast and over the Sea to Sky Highway to the Whistler ski resort and to Blackcomb Peak. There's nothing that compares to a sundown in the mountains with a view of the ocean. For me, Audi means individuality.



Vancouver

Defined by perfection: » Customers at Audi City London configure the smallest details of their Audi cars virtually on large display screens. » The modelers at the Audi Model Studio convert design sketches into three-dimensional figures. » And race engineer Leena Gade has led Audi racing drivers to victory at Le Mans for the second time.



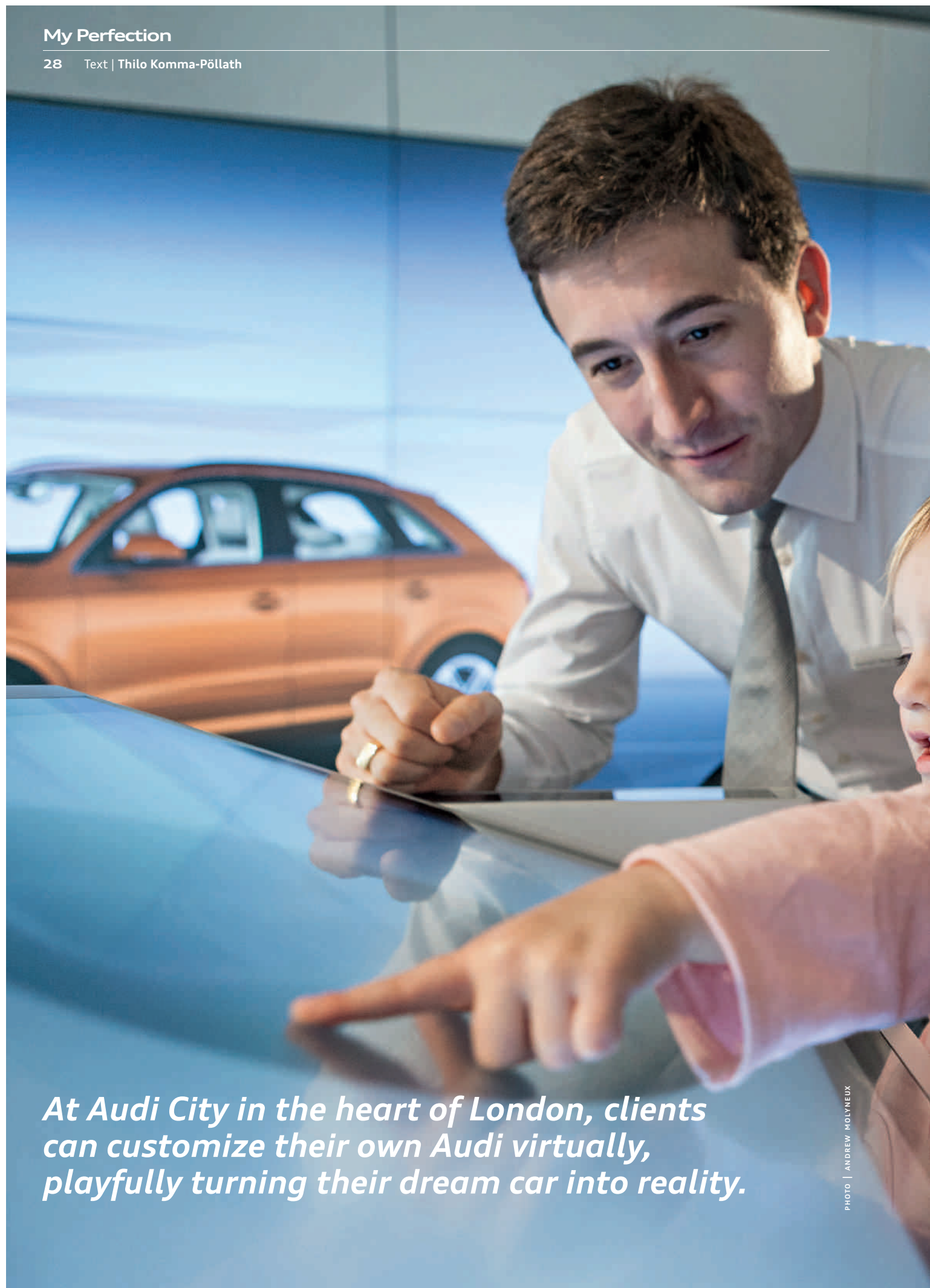
My Perfection



precise

individual

innovative



At Audi City in the heart of London, clients can customize their own Audi virtually, playfully turning their dream car into reality.

Audi City London

A showroom for the senses

If it's really true that more and more often it is the wife who decides which car her husband is to buy, then Oliver Smith will need to take a back seat today. Not that he wouldn't fancy the 412 kW (560 hp) R8 GT Spyder in Suzuka Gray metallic, which his two-year old daughter Amber immediately clambered into. Quite the contrary. But Oliver came to Audi City with his wife Natasha to pick out a family car offering more space for Amber and maybe soon for her sibling-to-be, too. And he has pretty much made up his mind in favor of an Audi Q3. Oliver, a carpenter based in Chelmsford, northeast of London, had previously endured a nerve-racking odyssey

through traditional car dealerships. "Buying a new car can be fairly frustrating," says Smith. "They swamp you with brochures, driving between dealerships takes a lot of time, and in the end you'll still be unsure whether you're picking the right model."

Audi City should spare him this fate. The showroom directly opposite the venerable The Ritz London hotel is the car dealership of the future. This first cyberstore in automobile history has hardly any cars in it. Instead, Oliver Smith can use video walls 12 square meters in size, so-called powerwalls, to digitally configure and study each of the over 40 Audi models in full size. First, his image is captured on camera as he stands in front of the

"What they find here is that they can visualize what they configured beforehand on the Internet, and do so with an unprecedented level of detail." Oliver Smith, too, uses the touchscreens in front of the powerwalls to configure his dream car down to the last detail himself. What looks like an outsize tablet PC lets him select his preferred parameters with the swipe of a finger: Besides a Samoa Orange metallic paint finish, what he wants is a 155 kW (211 hp) TFSI engine, 19-inch wheels and an Alcantara/leather trim in Titanium Gray. More than three million configuration options are available for each of the over 40 Audi models. To work through all of them would take 44 years, says Nogues. Oliver



Relaxed car shopping: At Audi City London, customer adviser Romain Nogues welcomes Natasha and Oliver Smith with their daughter Amber.

powerwall, then he is logged into the menu navigation. And immediately Smith is ready to take the Q3 for a spin on the screen, with the car's TFSI engine forcefully making itself heard via the 40,000 watt sound system. One step to the left, and the car swivels around its own axis. The couple is clearly impressed at watching its dream car come alive. "People buy all kinds of things online today. Clothing, shoes, TVs. So why not cars, too?" says Natasha. "I was skeptical at first, but the technology won me over. If Oliver agrees, we'll buy the car."

"Our customers come in with a pretty clear idea of what they want," says Romain Nogues, one of the Customer Relationship Managers at Audi City.

Smith is done with his Q3 in less than 20 minutes – then he pushes the configured car from the touchscreen onto the powerwall using three fingers. "It is a magic moment when a customer sees their car in full size for the first time, with all the features they have chosen," says Nogues. "I call it the 'Minority Report' moment: a look into the future, like in that famous science-fiction movie."

To Head of Business Jim Leckie, Audi City is the biggest playground imaginable for his customers – whether it's the 72-year-old lady from The Ritz or the stylish banker in his early 30s. "This technology impresses everyone as it perfectly imparts the Audi brand's emotions to customers," says

PHOTOS | ANDREW MOLYNEUX

Leckie. Sven Schuwirth, Head of Sales and Brand Development at AUDI AG, concurs: "Audi City fuses the virtual and the real world into one. What we do is to transfer the brand in an emotional way directly into our customers' lives." Jim Leckie has figures to back this up: Since opening in July 2012, Audi City has sold 65 percent more cars year on year than the former Audi Forum London, many of them going to first-time customers. For clients wishing to test-drive an Audi, Leckie's staff will provide the required model within 24 hours.

"Audi City is a success story," says Leckie, who sees his philosophy about the relationship between staff and customers as confirmed. "We do not



The Audi Key
stores all the data
of the dream car.



Intuitive
touchscreen:
Romain Nogues
guides the
Smiths through
every step of
the virtual
configuration
(top left). As
her parents
examine color
and material
samples (left),
little Amber
breaks for tea
(top center).



Heading for the finish (below): In the Customer Private Lounge, the Smiths sign the contract for the Q3 with Romain Nogues (left) and Paul Weir (2nd from left), Senior Sales Executive at Audi City London.



PHOTOS | AUDI AG (1); ANDREW MOLYNEUX (3)

pressure anyone to buy a car. What we are aiming for is to establish a friendly long-term relationship, not short-term sales success. We want our customers to enjoy the brand. If they want to, they can spend all day playing around on our touchscreens.”

Fittingly, Leckie has chosen a quote from writer George Bernard Shaw as the motto for the Audi City experience: “We don’t stop playing because we grow old, we grow old because we stop playing.” In this spirit, Leckie stresses that he makes sure any staff he hires has the right attitude. Amit Sood is a case in point. A native of India, he spent eight years at Apple as an IT manager. He does not have a classic automobile background, says Sood, adding that he doesn’t need one, either. His job is to help customers on their way into the virtual car world even though they

may find the experience unfamiliar at first. “This technology provides all the information anyone will need. My job is interactive education, not persuasion.” Audi and Apple – might the two companies be more alike than one might think? Sood sees one main common point: “Both companies have the vision of always being one step ahead of others.”

In the meantime, Oliver and Natasha have made up their mind and decided they want to buy their dream car here and now. Romain Nogues escorts them to the Customer Private Lounge to sign the contract. He hands over the Audi Key to Senior Sales Executive Paul Weir. This holds the data on the Q3; nobody is given a classic brochure here anymore. Weir calls up the configuration from the Audi Key onto his screen, then reaches behind him for material and

color samples. Do the colors look as they did on screen? Might Oliver and Natasha want to make any last-minute changes? The four of them confer one more time and determine all the details. “This final conversation shows that our relationship with the customer is a mutual one aimed at jointly achieving the best possible outcome,” says Weir. As Oliver signs the purchase contract, Romain Nogues mentions that the Q3 is Audi City’s bestselling car. Its combination of design and functionality makes it ideal for a metropolis such as London. The Smiths seem to see it exactly that way, too. ◀◀



Audi City: Experience the possibilities of interactive vehicle configuration.

A friendly goodbye from the Audi City: Romain Nogues accompanies the Smiths to the door.



Perfectly shaped

A steady hand, an eye for detail and the unwavering will for precision: These traits characterize the clay modelers who take the ideas of the designers and CAD modelers and bring them into the third dimension.





Is the line correct? The work on the clay model demands absolute concentration from modeler Joachim Müller (left).

Everything must be just right: Some details have to be revised again and again (top right). The modelers confer regularly with the Audi designers as they work (bottom left).

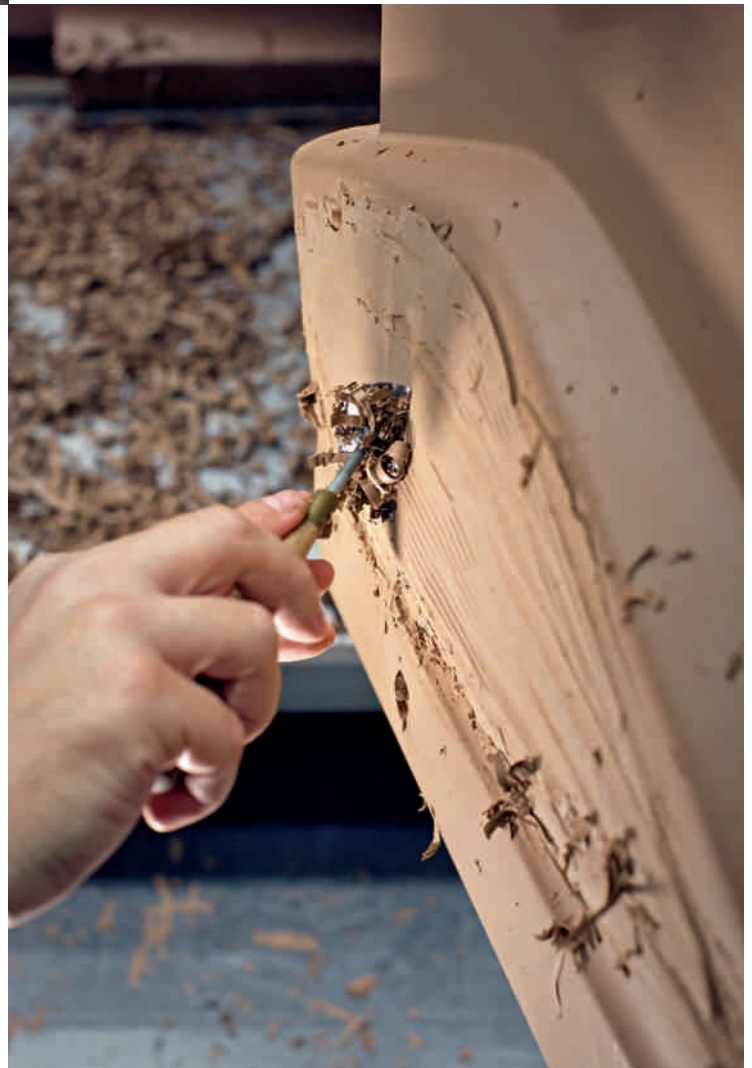
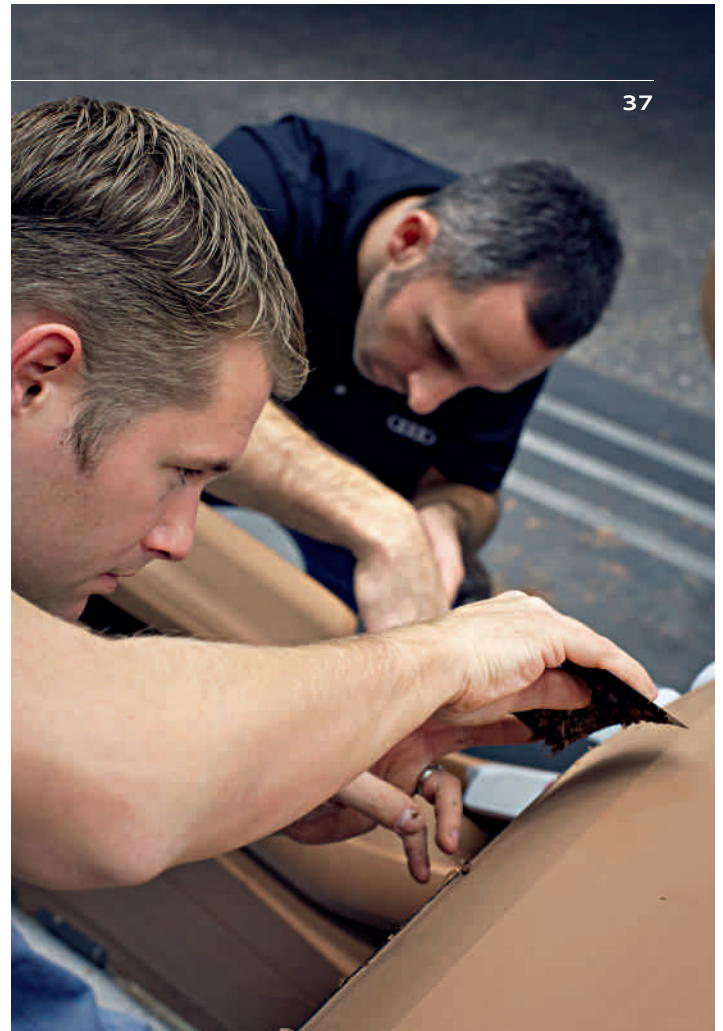
Light brown surfaces and taut lines. The vehicle in the hall looks at first glance almost like a chocolate car that has been removed from its packaging. But with the dimensions of the Audi crosslane coupé concept study corresponding to those of a midsize car – around 4.20 meters long, almost 1.90 meters wide and 1.50 meters tall – it is too big for that. But that is not the only perplexing thing at the Audi Model Studio in Ingolstadt. Instead of the computer workstations and high-tech equipment you would expect to see, you find handicraft. Fine handicraft, to be precise. The room seems almost like an artist's studio. But the people working here are ahead of the times – years ahead, in fact.

This is true for Andreas Sommer, for example, who like his colleague Thomas Walther works on the interior of future models. They are currently giving a dashboard a shape which is not seen in any current Audi, but could be in the future. Next door Joachim Müller and Volker Ried are working on larger surfaces as they shape the exterior. All four work with modeling knives and wire loops, delicate spatulas, planes and seam rollers. In other words, with tools that have been around for centuries – and that in an industry that revolves around high-tech and future technologies.

Sommer and his colleagues are involved from the very beginning of every new Audi model. Long before a drivable prototype is built, they form a 1:1-scale model out of industrial clay, a special plastiline comprising primarily wax, paraffin oil and micro-fine glass beads. It looks like a clay sculpture. There is a reason for the clay's special brown color: It is better than any other shade for enabling the designers and modelers to assess the harmony of the surfaces, lines, transitions and other forms.

And forms are the central focus here. Sommer, Walther and their colleagues are clay modelers. The designation denotes particular skills that these specialists have acquired over the years. "To a certain extent it's learning by doing, since nearly all of us come from some other field," explains Sommer. He originally worked in the porcelain industry, where he trained as a ceramics modeler. Walther was originally a model builder; other modelers are trained carpenters or even dental technicians. What they all have in common is a talent for handicraft, attention to detail, the will for precision, the endurance associated with this and, last but not least, a trained eye for aesthetics.

Designers supply the first draft models, and CAD simulations already give the viewer a pretty precise idea of how the finished vehicle might





A practiced team: Interior specialists Andreas Sommer (left) and Thomas Walther work on a cockpit concept at the Audi Model Studio.



look. But it is only with the clay model that sketches and plans take on true three-dimensionality and the shapes, proportions and effects of lighting can be assessed realistically. "We give the idea a physical form, we make it tangible," is how Müller describes the special aspect of his work. He considers himself a technical artist. "With sketch modeling, in particular, you only have a few sketches available to you initially. You need a feel for shapes – and imagination, of course."

The initial work goes something like this: A framework of wood panels is mounted on a metal rack and covered with polyurethane foam, which is then shaped to resemble a car. Now comes the first of two layers of clay, which should not be more than 30 millimeters thick to prevent cracking. Prior to application, the clay mixture is heated in an oven to between 60 and 65 degrees Celsius, where it is most pliable. After the second layer of clay is applied – which is done by hand in several hours of intensive labor – the clay must then cool down to room temperature. Only then does it have the ideal consistency for the work of the clay modelers.

The great advantage of the industrial clay is that it is an organic material.





Finishing touches to the front end:
Volker Ried (left) and Joachim Müller
refine every detail to the very end.

It doesn't harden like normal clay, but rather can be heated again and again using an industrial dryer and remodeled. "This enables us to make corrections quickly and easily at any time," says Müller. The creation of the model is a process of constant changes in which the modelers and designers work in close collaboration from beginning to end. "We are in constant dialogue," adds Müller. "Tomorrow we may find a solution that is better than one we like today."

The exterior model is covered with between 500 kilograms and one metric ton of industrial clay. Four modelers spend two to three days working on it before the model takes on its initial, rough shape – despite the fact that they only model one side of the vehicle. This is then covered in measuring

points and scanned millimeter by millimeter via the photogrammetry process. The data are used to program a milling machine that creates a complete mirror image of the shape on the unprocessed side of the model overnight.

Sommer says that modeling is the best part of his job, "partly because it comes with a certain amount of creative freedom. We can contribute our own ideas, even if it is just a matter of tiny details. But you take especially great pride in these. You can then stand in front of the finished vehicle and say there is a little bit of me in there." Exterior specialist Ried is also familiar with this triumph. "It is a special moment, particularly when an area was complicated and you spent a lot of time experimenting with it. The front

fenders, for example, are a challenge. The concave and convex surfaces that meet there must be shaped in such a way that it looks homogeneous yet at the same time dynamic."

"Sometimes you get stuck. You model different variants, but none of them really fit," says Müller when describing the effort of his daily work. "In these cases, I like to come in on a Saturday because I am alone here and can tinker in peace. I usually also find a solution, and these are special moments for me."

These are surpassed only by the feeling that occurs when a model receives an enthusiastic response at a presentation following weeks of hard work. "By then at the latest you know that the sweat and overtime were worth it," says Müller, who has often experienced this. Until then, however, the clay modelers work behind the scenes, and generally on multiple pieces at the same time. Four, five or more clay models are created and refined step-by-step on the way to a new Audi. In the end, the final model is shaped inside and out so that visually it is almost indistinguishable from a real vehicle. Windows, radiator grille, instruments, even remote-controlled headlights perfect the illusion. The modelers report that at one presentation this has resulted in someone trying to open a door and ending up with the handle in their hand. In a way this is also a testament to the perfection down to the finest detail – a characteristic feature of all Audi models.

There is an average of two years between the initial idea and the decision whether a clay model will become a production vehicle. "That sounds like a long time," says Sommer in deep concentration as he draws a spatula through the modeling clay at the center console. "But what applies to fine wine also applies to our work: It needs time to mature." <<



Visit to the Audi Model
Studio: Experience the clay
modelers at work.



Dr. Bernd Martens

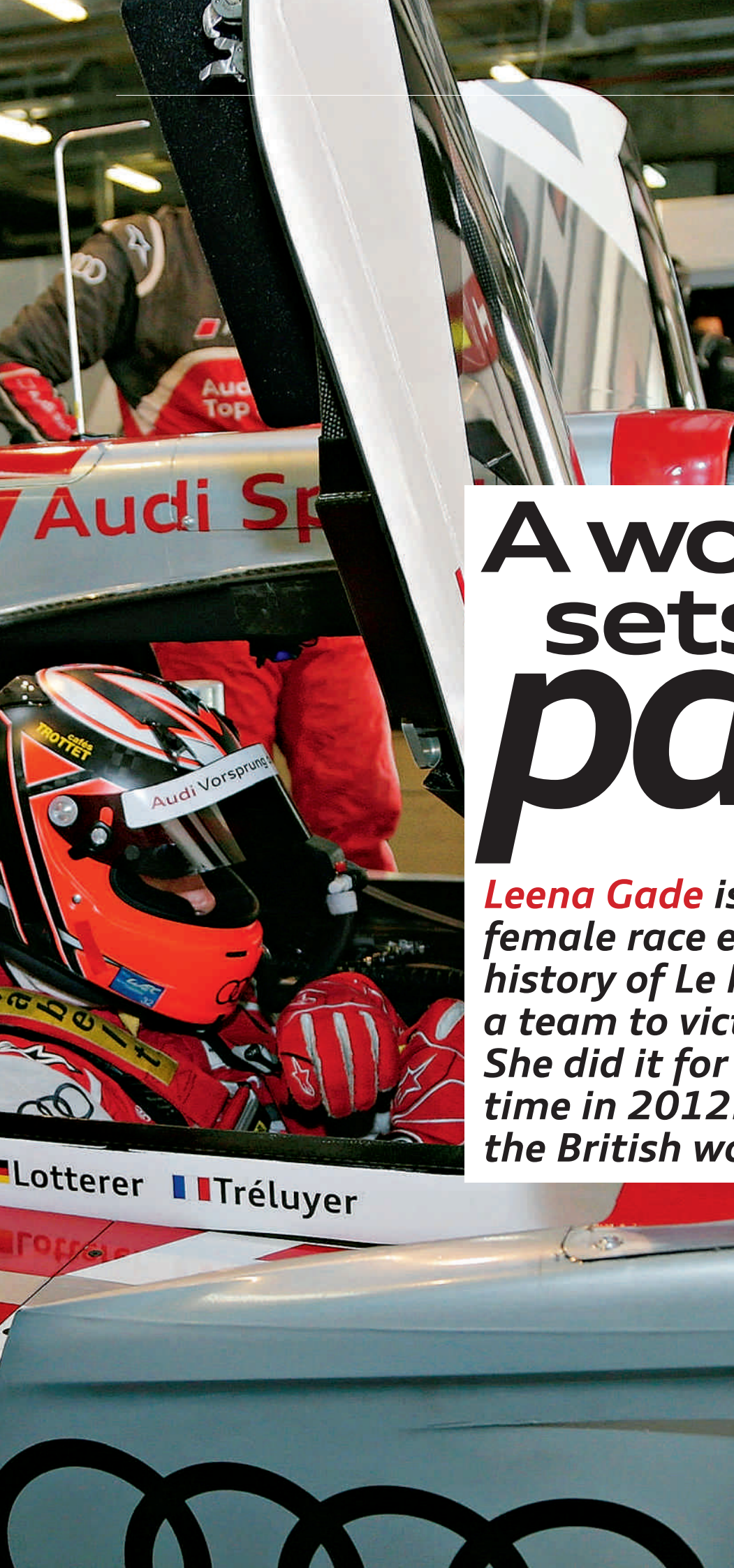
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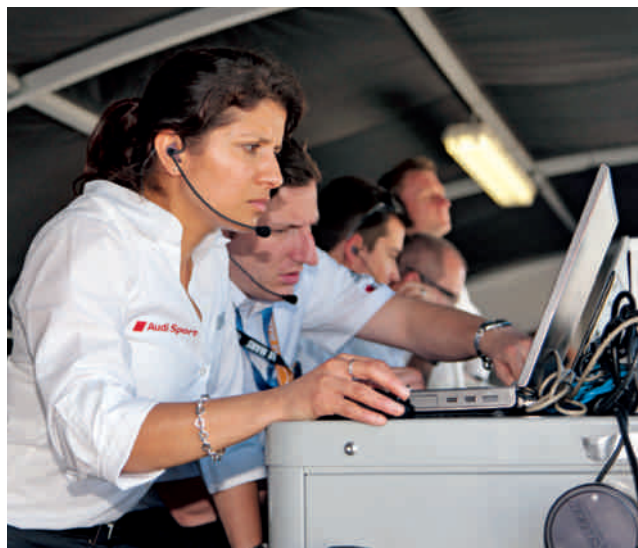
A woman sets the *pace*

***Leena Gade** is the first female race engineer in the history of Le Mans to lead a team to victory – for Audi. She did it for the second time in 2012. What drives the British woman?*



“A few years ago I would never have dreamed that I would be working with such a high-tech vehicle.”

Leena Gade with reference to the Audi R18 e-tron quattro, the winning car at Le Mans in 2012.



Running the team on a laptop: Leena Gade monitors the performance of “her” boys at the 12 Hours of Sebring race in March 2012.

Technology and passion – a difficult pairing. Is it permissible for engineers to allow passion into their work? What should be used to determine processes – feelings? Or shouldn't it rather be straight facts based on scientific principles that tip the scales?

Anyone who watches Leena Gade go about her work quickly comes to the opposite conclusion. Sound engineering expertise is the prerequisite for good work. Passion is the driving force.

On race weekends, she spends hour after hour in deep concentration in the Audi command post: for practice, for

qualifying and during the endurance races. And she doesn't lose focus in the intervals between, either. She questions her drivers Marcel Fässler, André Lotterer and Benoît Tréluyer in depth about how the Audi R18 e-tron quattro is driving. She plans workflows, talks with other engineers, instructs the mechanics, gives feedback to her drivers, looks after every detail. There seems to be 36 hours in her day, not 24.

But that is only one side of her work. In the past, Gade worked out and about for Audi primarily on race weekends. Since 2012, she has lived in Ingolstadt and is closely involved with the Audi Sport test team when not at a race. That is a fundamental difference from the position of a race engineer, who concentrates primarily on the season's events. “Now I have an influence on the development of a race car from very early in the creation process. That requires a lot of understanding and empathy,” she says.

The 37-year-old British woman who comes across as very modest and grounded, almost seems to be a bit astonished at where life has taken her. “The Audi R18 e-tron quattro is an incredibly complex car. A few years ago, I would never have dreamed that I would be working with such a high-tech vehicle,” she says with respect when describing the eleventh Le Mans-winning Audi. Until 2008 she was involved in a race series in which all participants drive identical cars – no comparison with the first hybrid race car from Audi. For the last five years, she has placed her engineering expertise at the disposal of Audi.



Total commitment for the No. 1 Audi:
Leena Gade is constantly thinking about how to get the optimum out of the Audi R18 e-tron quattro, whether on the track in Bahrain (top left), at Le Mans (bottom left) or at Silverstone (bottom right).



Successful foursome: Leena Gade with the Le Mans winners Marcel Fässler, André Lotterer (standing, from left) and Benoît Tréluyer.

“Our passion for racing and the Audi brand is the deciding factor for our continuous success.”

Leena Gade on the decisive element for Audi’s racing triumphs

“I certainly planned on assuming higher-level responsibility at some point during my career. It just happened sooner than expected,” says Gade about the turn in her career that means above all one thing: much more work than previously. Not only does she travel to the eight races of the FIA World Endurance Championship (FIA WEC), which since 2012 have been held in North and South America, Europe, the Middle East and Eastern Asia to determine the FIA endurance world champion. She also pours a lot of work into all the testing that takes place on various continents. When asked how many days and weekends she spends on the road for Audi, she replies, “It is better if I don’t even begin to count.”

But that is the rhythm of her life. “The ratio of speed to relaxation is 70:30,” she figures.

Adrenaline aside, you can sense Gade’s enthusiasm for working in one of the most fascinating disciplines in racing. A discipline where she just played a major role in its latest milestones: first hybrid race car; first victory for a hybrid in the 24 Hours of Le Mans, which has been held since 1923; first title in the FIA WEC World Championship for endurance racing, which was first held in 2012.

Does perfectionism help to master the complex tasks her job demands from her? “I wish I were a perfectionist – but I’m not,” admits Gade. “Otherwise I would have to keep lists of the

things I notice. There is another word that better describes my attitude: I am obsessed.”

Gade leads her team through race weekends. As the race engineer responsible for the No. 1 Audi R18 e-tron quattro, she is the crew’s lynchpin. The drivers, the mechanics and technicians of the Audi Sport Team Joest plus the responsible parties at Audi Sport all provide her with information, technical recommendations and strategic suggestions. And they rely on the decisions that Gade then makes. The things the Audi racing designers in Ingolstadt and Neckarsulm have concocted are reviewed, adjusted and retuned again and again until they are perfect. And they have to improvise constantly, of course. Rain? Repairs? Tire damage? Penalty? Race stopped; safety car on the track? There are more pitfalls in racing than in any literary plot.

Despite all of the precision essential for a technical sport, Gade offers this surprising self-assessment: “I am 50 percent engineer and 50 percent psychologist. The drivers trust my decisions. The same applies to the other engineers who work with me and to the mechanics who take care of the car. You have to be very sensitive when dealing with people.” Nobody in racing expects to be asked politely to get to work, of course. On the contrary: Everyone knows exactly what has to be done, even under the constantly high time pressure and the tremendous corporate and media expectations that everyone in this world is subject to.

And yet an element of the unexpected remains. With a bit of luck, perfect performance leads to victory. Conversely, however, bad luck can obliterate the work of dozens of people in a matter of seconds. This special form of powerlessness must be a nightmare for engineers. “Each team prepares as well as possible for a race,” says Gade. “But our passion for racing and the Audi brand is the deciding factor for our continuous success.” <<



Electrifying moments: The video shows the highlights of the 24 Hours of Le Mans.

In brief

Honors for Rupert Stadler



RECOGNITION

The Association of German Magazine Publishers (VDZ) presented Prof. Rupert Stadler, Chairman of

the Board of Management of AUDI AG, with the "Golden Victoria for the Entrepreneur of the Year" (VDZ press release, October 19, 2012). Back in May, WirtschaftsWoche had named Stadler "CEO of the Year" (issue 21/2012, p. 72 ff.). The performance of the CEOs of the 115 largest publically-traded companies in Germany was scrutinized.

A1 Sportback launched on the market

SMALL CAR Audi expanded its portfolio in 2012 with the A1 Sportback. The five-door version of the compact Audi offers more comfortable access to the rear and somewhat more headroom. The optional contrasting paint for the roof gives the Sportback an eye-catching look.

Audi models win prizes

AWARDS Audi models took first place in two categories in the voting for "The best cars of 2012" by the readers of auto motor und sport magazine: the A1 in the Small Car



Audi A6 honored with the red dot award



DESIGN PRIZE Its design showcases the aesthetics of technology. Audi has received the coveted red dot award (www.red-dot.org/2791.html) for the outstanding design and styling of the Audi A6. Wolfgang Egger, Head of Audi Group Design: "The award validates our design language and recognizes our pursuit of the ultimate craftsmanlike quality and precision."

Construction starts on new driving experience center



GROUNDBREAKING Audi is building a driving experience center for customers and the new Audi Sport competence center in Neuburg an der Donau. A dynamic driving area, a handling track and an off-road area for traversing and steep-gradient driving are being created for the Audi driving experience center on a 47-hectare site. In the future, the Audi Sport engineers and mechanics will develop race cars and organize race entries throughout the world in Neuburg.

Short Facts

3rd



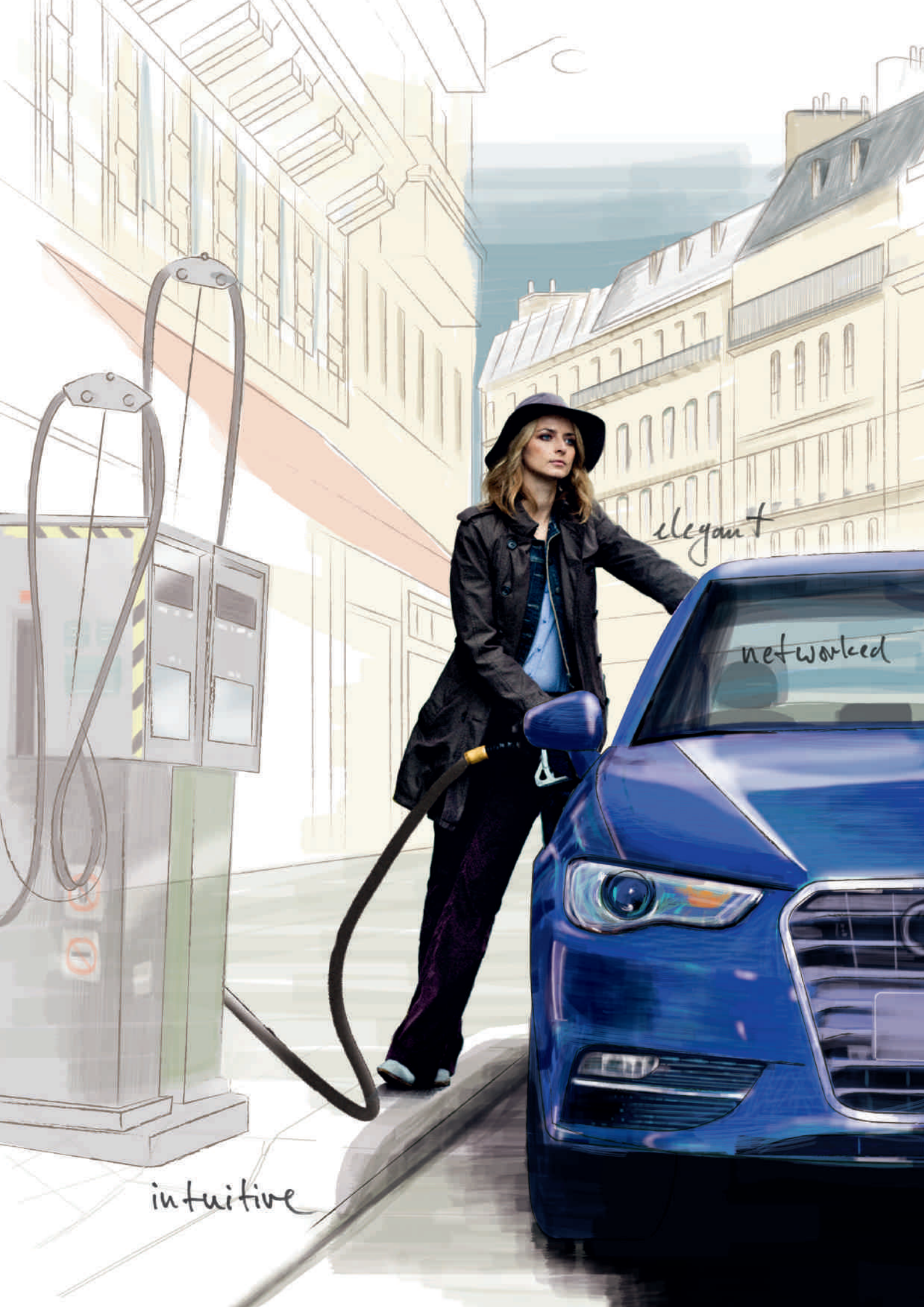
The Audi 2.5 TFSI engine has been named "International Engine of the Year" in the 2.0 to 2.5-liter category by a jury of 76 international motoring journalists for the third year in a row (www.ukipme.com/engineoftheyear/2_25.php#2).

category and the A4/A5 in the Midsize Car category (issue 4/2012, p. 128 ff.). The readers of ADAC Motorwelt chose the Q3 as Germany's favorite car and thus the winner of the "Gelber Engel" award in the Automobile category

(issue 2/2012, p. 26 ff.). And in the U.S. customer satisfaction survey J. D. Power APEAL, the A8 took top spot in the Large Premium Car segment (<http://autos.jdpower.com/ratings/performance.htm>).

They have their own perspective: »» Top model Eva Padberg discovers Paris in the Audi A3 Sportback. »» Mark Wigley and Rupert Stadler get together to outline urban visions. »» Employees at the Audi Lightweight Design Center in their unceasing quest for new solutions. »» And the architects who are planning the cities of the future as part of the Audi Urban Future Initiative.

My View



elegant

networked

intuitive





Eva's day in *Paris*

A day off in the French metropolis is a rare luxury for a very busy top model such as Eva Padberg. So she chose a knowledgeable companion to help her make the most of her day: the Audi A3 Sportback with MMI Navigation plus and Audi connect.



Relaxing break: Eva Padberg drinking tea in one of the Bastille neighborhood's charming cafés. The model then picks up her car key to continue her very own "Tour de Paris."





A magnificent home to art and culture, the Grand Palais is impossible to overlook – once you have found it, that is. But Eva Padberg easily finds her way through the French capital thanks to MMI Navigation plus and Audi connect.



A restful moment: Eva Padberg in her Audi A3 Sportback. But as a pedestrian you need to be quick when confronted with heavy traffic on the boulevard.



A suitable companion at night, as well: top model Padberg in evening wear at the Place Dauphine.

Eva Padberg has traveled the world. She has modeled for major campaigns and famous brands for years. She has worked with the industry's best photographers. Padberg helps charitable organizations such as UNICEF. She is also a welcome guest at galas and international events. Eva Padberg has jetted around the world umpteen times in her career. Surely this top model is intimately familiar with the world capital of fashion: Paris. Or is she?

"When I'm in Paris, I generally have to rush – from a photo shoot to a video shoot, for example. There's nothing relaxing about it. I rarely have time to really explore the city and enjoy its ambiance," says the 33-year-old. She therefore set aside an entire day during her latest trip to Paris to spend with a friend who knows the French metropolis like the back of his hand – and wants to show Padberg the best places away from catwalks and photo studios. Eva Padberg waits for him at Place de la Concorde. She is eager to get started and explore the city. But then the Paris insider has to cancel at the last minute.

"Tant pis!" as a French person would say. "What a pity!" concurs Eva Padberg. Yet she is unruffled as she has an ace up her sleeve: an Audi A3 Sportback. Thanks to its MMI Navigation plus and Audi connect services, it knows its way around Paris every bit as well as the friend who couldn't come. What's the best route to shops selling the latest

fashions? Where is there an inspiring exhibition? Where was that wonderful little restaurant which Eva Padberg once visited but whose name escapes her? The Audi A3 Sportback's MMI, which now features a touch-sensitive control known as the touchwheel, has all the answers.

And that will prove handy right away! As soon as she gets in, Eva Padberg writes Rue Étienne Marcel with her finger on the touchwheel's surface. The MMI transcribes her handwriting into capital letters on the screen and, within seconds, the navigation system calculates the best route. And just like that, the top model is taking the shortest route to the street that is home to one designer shop and boutique after another.

But it would be a mistake to assume that Eva Padberg is headed for the prominent couturiers. She prefers to browse the elegant smaller shops, as to her a unique style is more important than big-name labels. Her quest is rewarded: a beautiful vintage dress and a pair of shoes. Padberg then yearns for a place nearby to relax after the hustle and bustle of shopping in the Les Halles neighborhood. The MMI once again comes to the rescue when the point-of-interest search function recommends Square Jean XXIII. Eva Padberg uses Google Street View™ to scout out the scene and deems it perfect. Situated on the Seine river island Île de la Cité, Square Jean XXIII is a small, idyllic park tucked away behind Notre Dame. This park affords



An ideal way to end the day: Eva Padberg on her way to her favorite restaurant. And that wraps up a day's work for her tour guide with the four rings.

visitors a view of the famous cathedral as well as a chance to catch their breath. Paris explorer Padberg decides to treat herself to a short break here before returning to the city's large boulevards in her Audi that afternoon. Her next destination is the Grand Palais. A majestic structure built for the 1900 World Fair, it is now one of the city's major museums.

And it was Audi connect that inspired the model to go there. More specifically, it was the new City Events function. This online event guide provides information on attractions such as concerts, theatrical performances and artistic events in a given region. One such exhibition is an extensive retrospective at the Grand Palais devoted to the American realist Edward Hopper. "I admire Hopper's work. Thanks to the MMI, I can drive there right now to see many of his original pieces," says Eva Padberg with a smile. Before she drives to Grand Palais, she polishes up her knowledge of the painter with a bit of reading. And it is the MMI and Audi connect that make this possible.

Eva Padberg shows no sign of slowing down as evening approaches.

The Audi A3 Sportback's MMI supplies Eva Padberg with suggestions on where to go shopping, a recommendation for an exhibition and the address of this great little restaurant.



That is no surprise, as she is looking forward to good food in a great atmosphere. There is just one hitch. Though Padberg used her smart-phone to take a photo of her favorite restaurant on a previous visit, she does not know its name. She once again turns to Audi connect, which saves the day with its Picturebook Navigation, another new feature. Eva Padberg transmits the picture – and its embedded GPS data – to something known as the Picture Box. A moment later, the screen displays her favorite restaurant as the destination. “Place Dauphine, of course!” she remembers. As she arrives in her Audi A3 Sportback at this triangular plaza near Pont Neuf, street lights are bathing the sandstone facades in a romantic light. Is she lonely without a companion? “Definitely not!” replies Eva Padberg, grinning. She locks the car and walks toward the restaurant. She declines to tell us whether she is meeting somebody for dinner. “Not even Audi connect could tell you!” she shouts out to us. Tant pis, Madame Padberg! Either way, the MMI also reliably guided her to her last destination on her day in Paris. <<



Out and about with
Eva Padberg: Join the top
model as she tours Paris.

How the Multi Media Interface (MMI) works

MMI Navigation plus with MMI touch and additional Audi connect services ensure that onboard connectivity is better than ever.



Superb screen

When the MMI operating system starts up, the high-resolution screen automatically emerges from the instrument panel and then tilts slightly toward the driver. In the top-of-the-line version, MMI Navigation plus, the screen measures seven inches diagonally; the magnesium housing is a mere 11 millimeters thick.



Intuitive input

Thanks to the touchwheel, the MMI in the Audi A3 features an innovative means of operation. A single component, the touchwheel combines the conventional rotary pushbutton with MMI touch. The control knob boasts a touch-sensitive surface that recognizes letters and numbers that are written with the finger.



Overview via Google services

Audi navigation with Google Earth™ mapping service ensures that you can find your way around, anywhere. The map display offers a realistic impression of a route zoomed to within 30 meters. And Google Street View™ delivers a 360-degree panoramic view of a destination prior to embarking on the journey.



Photos as destinations

Picturebook
Navigation allows you to store as a destination any photo linked with GPS position data. Private photos can be used, as can images from Google Street View™ or other online sources.



Everything at a glance

The control menu of the MMI Navigation plus in the Audi A3 is clear and straightforward. It grants access to telephone functions, the navigation system, radio and media center. Audi connect services are combined in a menu of their own.

A close-up portrait of a middle-aged man with short, wavy grey hair and light brown eyes. He is wearing black-rimmed glasses, a white dress shirt, a red patterned tie, and a dark suit jacket. He has a slight smile and is looking directly at the camera. The background is a plain, light grey.

The *city advocates*



Audi and Columbia University are looking ahead to the year 2050. Prof. Rupert Stadler (left), Chairman of the Board of Management of AUDI AG, and urban planning expert Prof. Mark Wigley on cities and the mobility of the future.

A house with a garden near Church Street on Long Island, outside of New York. It sounds like the American dream, but there are some problems with the idyll. The daily drive to work or into the heart of the Big Apple isn't just long, it's also nerve-racking. The highways are bustling with compact cars, light trucks and pickups with large engines. Traffic in metropolitan areas is extremely dense. The solution is a familiar one: multi-lane roads, often hours of stop-and-go traffic and a large thermos or cup of coffee on the way in to the office. Isn't there another way? Are there any ideas as to how the mobility needs of Americans can be organized better and more efficiently?

Professors Mark Wigley and Rupert Stadler are both hard at work on concepts for livable metropolitan areas of the future. As Dean of Columbia University's Graduate School of Architecture, Planning and Preservation in New York, Wigley is one of the forward thinkers of the American architectural scene. His focus is on ideas for tomorrow's urban living. Rupert Stadler, Chairman of the Board of Management of AUDI AG, would like to ensure the individual mobility of his customers far into the future. Mobility that is also fun.

Rupert Stadler knows what he is talking about. Three years ago, Audi launched the Audi Urban Future Initiative, a project delivering innovative ideas and concepts addressing gridlock, lack of space and pollution. "It may seem unusual at first for a carmaker to be pondering the future of cities and urban structures. But we have to start looking beyond the horizon of our own product world," says the Audi CEO.



"The networking of people and mobility systems is becoming increasingly important. It is only a matter of time before cars, buildings and roads communicate with one another." Prof. Rupert Stadler

More people already live in cities than in rural areas. "If I walk 100 meters in the countryside, I'll bump into one, maybe two people," says Professor Wigley in describing the situation. "But in a city, hundreds of people throng past me, thousands drive by and countless more are in the buildings above me." These numbers are expected to increase dramatically. In 2030, more than 60 percent of the world's population will live in metropolitan areas with more than eight million residents.

And by 2050, the world's population is expected to reach nine billion. In Asia alone, the number of cities with at least one million residents will triple to roughly 650.

Today's cities are already overcrowded, however, resulting in a lot of wasted time. "In São Paulo, commuters spend on average 30 days a year stuck in traffic. That is time that could be put to better use," says Stadler. "Even in London, I'd rather take the Tube than drive." The average speed on the streets

of the British capital is just 16 kilometers per hour. That is roughly as fast as with a horse-drawn carriage 100 years ago.

Urban planning and architecture expert Wigley therefore considers the most important task to be to define a common thread for the road to the future. On what logical basis should the cities of tomorrow be organized? How might functioning mobility look? What benefits can be derived from new networking possibilities, and how might the relationship between “owning” and “using” change? What role can the automobile play here, and how might it be intelligently embedded into its environment?

Professor Wigley has a surprising answer. “I have the feeling that rather than becoming less important, the automobile will play an even more important role.” However, the new functions and uses of the automobile have not yet been defined. “Cities will become denser. And greater density also means a greater need for mobility,” he says. “The car of the future might simply be a living space that moves. Perhaps in the future, cars and buildings will not only communicate with one another, but even switch roles.”

Rupert Stadler has very concrete ideas about the first steps here. For him the keyword is “piloted driving,” and Audi is in pole position with the development of this technology. Test vehicles with innovative traffic jam

assistants enabling the cars to drive fully automatically at speeds up to 60 kilometers per hour are already using public roads in Nevada, for example. “I also like to talk about ‘computing while commuting,’” adds the Audi CEO. “This means making efficient use of your time in a completely connected car that drives itself, i.e. writing e-mails, scheduling appointments or making conference calls.” The assistance systems of tomorrow not only support the driver in key ways, they also enhance safety.

The car of tomorrow can also find its own parking space – the driver just has to leave it at the entrance to the parking garage. Garage Parking Pilot is what Audi calls this new technology currently undergoing testing. “This enables us to give a little quality of life back to our customers,” says Stadler.

But the horizon extends far beyond that. To firm up ideas for the more distant future of mobility in metropolitan areas, the brand with the four rings last year tendered the second Audi



Professor Mark Wigley

The native of New Zealand is an architect, author and one of the pioneers of deconstructivism. Wigley has taught at Columbia University since 2004. He has overall responsibility for the Experiments in Motion project, which is part of the Audi Urban Future Initiative.



Animated discussion:
Professors Rupert
Stadler and Mark Wigley
talk in Ingolstadt.

Urban Future Award. Participants in the competition are tasked with designing concepts for mobility and urban living. Mark Wigley is taken with this idea. He considers the networking of people and mobility systems to be tremendously important. "If you look at the world's large cities, mobility is becoming increasingly diverse and complex. Our lives do not run in a straight line from A to B.

Today the car is essentially one of many different overlapping mobility systems," he explains "These systems just aren't networked."

The university dean and the CEO agree that networking and communication, not just between people but also between things, are two of the critical keywords for the future. Cars, buildings and roads must be able to

communicate with one another in the future. This intelligent networking can bring the fun back into everyday mobility.

Mark Wigley believes that this digital world presents the opportunity to establish new trends and lifestyles. "Today anyone wanting to learn, to progress, to shape things has to share and cooperate. These are megatrends, and one could even say that the city is a machine for both. In the city of the future, we therefore have to consider buildings and cars to be shared parts of the infrastructure, perhaps even the most important elements of a new, dynamic system." Dynamic in this case means variable, diverse and shared. A system for sharing, in which no longer ownership but rather intelligent and convenient access is the key.

This is also the philosophy followed by the team from Höweler + Yoon Architecture in winning the 2012 Audi Urban Future Award. They studied the region between Boston and Washington – a chain of cities along the American East Coast with 50 million residents and New York at its center, connected primarily by the I-95 highway. "One of the architects' ideas was 'Last Mile Car' – a car sharing system for the last five to ten kilometers to home," explains Stadler. "The idea behind it is that people would only use their cars for the last part of the trip, thus avoiding

city traffic." In other words, the car would only be used in the outskirts of cities. Other mobility systems would be used in the crowded urban center. To do this, the infrastructure has to be intelligently networked, with optimized connections, individual destinations and also a high level of convenience.

Initial proposals have been defined, but the questions regarding the future of urban mobility have by no means been answered. A huge task for the automobile industry, architecture and science. "That's why Columbia University is so interested in working with Audi to find the answers," says the dean, who is looking forward to continuing the dialogue and the start

"In the city of the future, we have to consider buildings and vehicles as part of the basic infrastructure." Prof. Mark Wigley

of joint projects. "I find this symbiosis of a carmaker's technical expertise and the philosophical contemplation of a university to be extremely exciting."

Together with Columbia University, Audi is taking up the challenge of reshaping a world in transition. "We still don't know exactly what this future will look like," says Stadler, "but I am certain that we will experience cities as an intelligent, connected and learning system." <<



Dialogue on the future: video of the discussion between Rupert Stadler and Mark Wigley.

Every gram counts:
The body of the
Audi TT ultra concept
represents the future
of Audi lightweight
construction.

The ultra

vision

Taking lightweight construction to the next dimension: The Audi TT ultra concept technology platform embodies Audi's intelligent composite construction in its ideal form. But the Audi lightweight construction strategy already pays off in series production, too – each new model should be lighter than its predecessor.

Lightweight construction can be reduced to a succinct formula: Less is more. Audi has an excellent grasp of this art. “Our engineers don’t consider lightweight construction to be a compulsory task; it is much more a part of the Audi DNA,” explains Dr.-Ing. Lutz-Eike Elend, Head of the Audi Lightweight Design Center in Neckarsulm. “We have a long tradition of lightweight construction extending back to racing in the 1930s.” The principle back then was no different than it is today. Components must be developed so that they fulfill the required function at the lowest possible weight.

The Audi TT ultra concept embodies the visionary expression of this classic Audi maxim down to the last detail. At just 163 kilograms, its body is a prime example of systematic lightweight construction. An additional 43 kilograms of weight have been trimmed compared with the already lightweight body of the production Audi TT.

The secret is intelligent composite construction. The steel components in the rear section have been largely replaced by lighter aluminum, and many structural components are made of carbon-fiber-reinforced polymer (CFRP). “With the Audi TT ultra concept, we want to demonstrate what is possible with the technologies of today, tomorrow and beyond,” says Heinz Hollerweger, Head of Total Vehicle Development at AUDI AG. “One goal was to drop below the magic threshold of 1,000 kilograms total weight.”

The engineers were therefore not content to put just the body on a diet. They also made changes to the chassis, drive system, electrical system, onboard electronics and interior equipment. This trimmed another 260 kilograms compared with the current production model, or more than 20 percent of the original weight. “The Audi TT ultra concept represents the cutting edge of lightweight construction,” says Peter Fromm, Head of Body Development at AUDI AG. “It includes technologies at varying degrees of maturity. Some are borrowed from the current production series; other elements anticipate future models.”

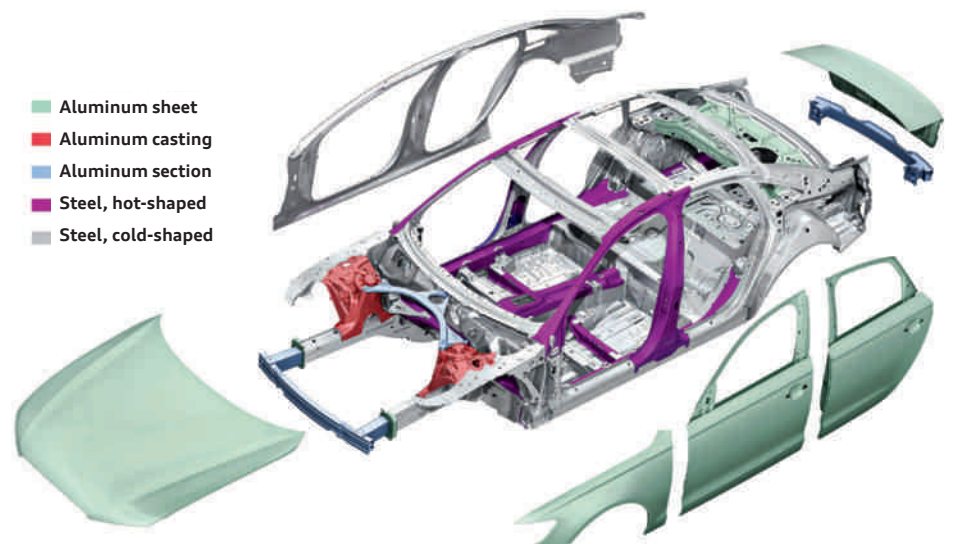
The technology platform also showcases lightweight technologies whose use in production vehicles lies far in the future. Instead of a heavy lead battery, there is a modern lithium-ion battery on board. The liners in the interior made of premium, high-gloss, exposed CFRP are reminiscent of Audi racing cars. “The greatest aspiration is to take high-end technologies that are initially reserved for racing and refine them to the point that they are suitable for high-volume production,” says Elend.

The results were obvious to the developers of the Audi TT ultra concept during the first test drives. “The low vehicle weight led to very good handling and outstanding performance,” reports Hollerweger. And that with much greater efficiency, as evidenced by the approximately 20 percent reduction in fuel consumption and correspondingly lower CO₂ emissions. “Furthermore, Audi ultra can also help to achieve improved emergency handling and shorter stopping distances.”

Many of the technologies showcased in the Audi TT ultra concept will be used in future Audi production vehicles across the entire model lineup. But the ultra lightweight construction strategy is already paying dividends for today’s customers. Depending on the version, the Audi A6 is up to 80 kilograms lighter than its predecessor. “What applies to the rest of our models also applies to the Audi A6: Every gram counts,” says Audi developer Fromm. “Each component is placed on the scale and improved.” The results are lower consumption and greater dynamics.

Previously it was almost a law of nature in carmaking that each model gained weight from generation to generation – an upshot of added comfort and safety or the integration of alternative drive systems. And this weight gain was not without consequences. The Audi developers refer to “secondary effects”: More weight requires greater engine power in order to keep performance constant. This leads to heavier-duty gearboxes and

The ultra concept in series production: the Audi A6





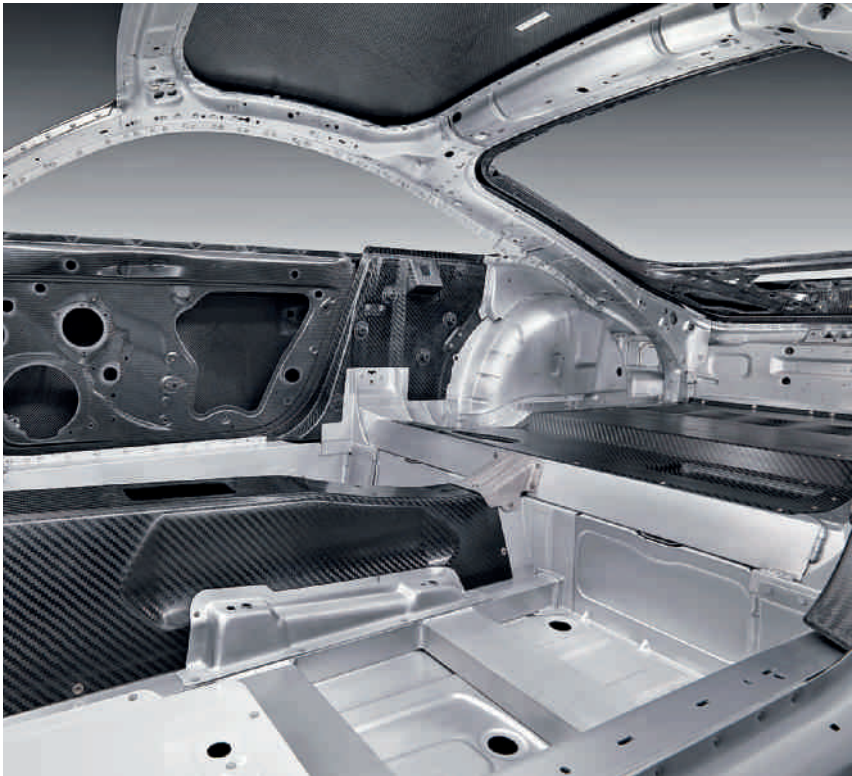
Steel, aluminum, CFRP: The body of the Audi TT ultra concept represents the ideal combination of the materials according to the ultra principle.

The body's steel-aluminum composite construction helps to reverse the weight spiral. It weighs around 15 percent less than comparable all-steel constructions. More than one-fifth of the body is made of aluminum, including the doors, engine hood, rear hatch and multiple cross-members and cross-bars. Hot-shaped, high-end steels also make up a large portion of the body. They are heated to nearly 1,000 degrees Celsius in a continuous furnace and then shaped in a water-cooled pressing tool at around 200 degrees Celsius. The change in temperature imparts the material with tremendous tensile strength

despite its relatively low weight. The hot-shaped steels are used at the transition from the front end to the cabin, in the A- and B-pillars and as floor bracings. Joining technologies such as bonding, punch riveting or clinching – a technique which enables two pieces of sheet metal to be joined without additional components – are used in order to attach the materials together precisely and without corrosion.



Pioneers of lightweight construction at Audi: Peter Fromm, Head of Body Development (top left), Heinz Hollerweger, Head of Total Vehicle Development (top right) and Dr.-Ing. Lutz-Eike Elend, Head of the Audi Lightweight Design Center.



Perfectly combined: The newest joining technologies are used in the multimaterial body of the Audi TT ultra concept.

brakes and a larger fuel tank, which further increase the weight and the process starts all over again.

Audi's response: Each new model is lighter than its predecessor. A weighty challenge for the developers at the Audi Lightweight Design Center in Neckarsulm, which was established in 1994. Here all of the departments required for the development of new lightweight technologies work together under one roof. That begins with design engineering and extends through functional layout and planning to quality assurance. "And this benefits us with Audi ultra, in particular," explains Elend, who has headed the Audi Lightweight Design Center since 2010.

For Audi, ultra means using the right amount of the right material in the

right place. "The continuous competition among materials determines the composition of the material matrix," explains Dr. Karl Durst, one of the Lightweight Design Center's developers. Besides high- and ultra-high-strength steels, Audi also uses aluminum, magnesium and CFRP in its multimaterial construction without focusing on a certain material. Elend sees this as a strategic advantage. "This accelerates the development of various material technologies. After all, competition is good for business."

At the start of each new ultra development, we perform a detailed investigation of the materials available. The results are input into an analysis algorithm used to assign the optimal material for each component. "We

know the strengths and weaknesses of the different lightweight materials," explains Durst, who developed the analysis algorithm. "Factors represent these in a scientifically derived computational model."

That sounds complicated, but the basic idea is simple. The goal of the intelligent mix is the most economically sensible lightweight construction solution for the respective car segment. The carbon footprint of the respective material and ecology are also considered, however, as this is the only way to achieve sustainable mobility. More energy is required for the production of aluminum and CFRP than for steel, for example. This is considered in the design.

The high art of carmaking when it comes to series production is the joining of the various materials. The conventional methods proven over decades often cannot be used or lead to corrosion at the points where the materials meet. Some materials cannot be welded together – they must be riveted, bonded or bolted. Audi has repeatedly broken new ground here and developed new joining technologies for many possible material combinations: self-tapping screws, semi-hollow punch rivets, new adhesives. According to Elend, they are the key to the ultra lightweight construction strategy because their use is now "fully automated, reliable and economical."

The Audi TT ultra concept is also a spearhead in ultra lightweight construction in this regard. According to Hollerweger, "production-ready solutions" to the technological challenges of multimaterial construction have also been found. The overall goal of the creators of the dynamic technology platform was to make "ultra lightweight construction come alive." With a total weight of under 1,000 kilograms, they have done that quite impressively. <<



The ultra concept in series production: The Audi A6 sets new standards.



Wolfgang Dürheimer

Member of the Board of Management for Technical Development

Develop – and win – with passion

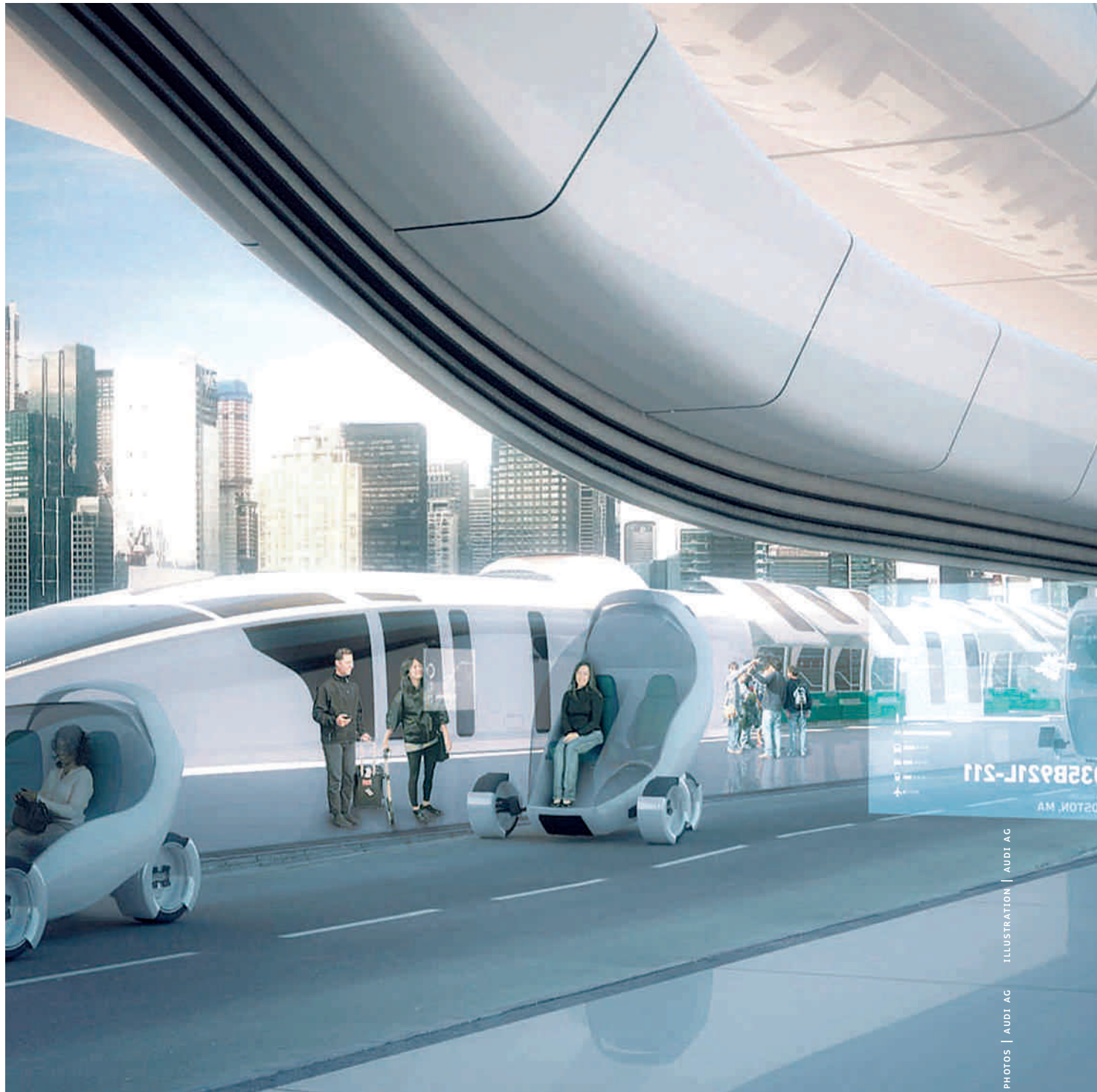


“You have to try the impossible to achieve the possible.” I embraced this idea from Hermann Hesse a long time ago, and it drives us developers to peak performance day in and day out. With our passion and courage, we are pushing the limits of what’s possible: with conventional drives, with the Audi e-tron with its focus on plug-in hybrids, with Audi ultra with an emphasis on the lightweight multimaterial mix and with Audi connect with infotainment and assistance systems that support drivers without denying them control. We are a strong team pursuing its goals with ambition, discipline and a passion for winning. These principles from racing apply in particular to Technical Development. The result is highly efficient, emotionally appealing and technically advanced automobiles that give us a decisive lead.

Audi Urban Future Award

Mission: Future

Germany's highest endowed prize for architecture has been awarded in the city where Europe and Asia meet: Istanbul. Five architectural firms were invited to compete for the second Audi Urban Future Award with their urban planning solutions for the year 2030.





Visionary elegance: the plan by Höweler + Yoon that was honored with the Audi Urban Future Award. The prize was presented in the Turkish metropolis of Istanbul (above).



A prizewinner in the spotlight: Eric Höweler (left) with Prof. Rupert Stadler, Chairman of the Board of Management of AUDI AG.

Dynamic, chaotic, magnificent Istanbul! One of the most heavily populated cities in the world welcomes new arrivals with a maze of express highways and skyscrapers, with pulsating vibrancy, but also with heavy street traffic. On the drive from the airport to downtown, the visitor gets a first glimpse at what makes mobility a central issue here: Movement is soon disrupted; at the bridge over the Bosphorus the car is brought to a complete standstill. The view of the strait where Europe and Asia meet is stunning – but at this point it also becomes clear how traffic shapes the day-to-day life of a megacity.

Mobility is the essence of the city – it's most basic, elemental requirement. It represents quality of life, communication and development. The more people living in megacities – by 2030 it is likely to be 70 percent of the world population – the more urgent it becomes to improve urban mobility.

“We have to understand the city in order to construct the mobility of the future,” says Prof. Rupert Stadler, Chairman of the Board of Management of AUDI AG. This is what prompted Audi to launch the Audi Urban Future Initiative – with research projects, workshops and the Audi Urban Future Award, which is presented every two years. The architecture prize was awarded for the first time in 2010 and went to Berlin architect Jürgen Mayer H.

Five architectural firms from five major cities were invited to participate in the latest edition of the Audi Urban Future Award, with prize money of 100,000 euros. There could be no more fitting location for the award ceremony and exhibit of the designs than Istanbul. The results of the competition were exhibited in October 2012 in the Hasköy Spinning Factory. The nominated firms from Boston/ Washington, Istanbul, Mumbai, the Pearl River Delta and São Paulo were to deal with urban planning issues in their region while incorporating societal

Visions for metropolitan areas

The concepts from the other four competitors

How can urban mobility develop in the congested areas of India, China, Turkey and Brazil? In addition to the winning architects at Höweler + Yoon, four other contestants also submitted fascinating concepts.

CRIT, Mumbai



Rupali Gupte and Prasad Shetty (from left) created "Being Nicely Messy,"

a planning guide for a mobility system in Mumbai that incorporates aspects such as migration and urban renovation in addition to transportation routes.

NODE, Pearl River Delta



Doreen Heng Liu wants to relieve the traffic burden endured by the 42 million resi-

dents of China's Pearl River Delta. Her plan calls for separating the flows of goods and people: By running logistics underground, street capacity above ground can be reclaimed for people.

Superpool, Istanbul



Selva Gürdoğan and Gregers Tang Thomsen (from right) designed the "Park" trans-

port system. In the future this will give residents of Istanbul the chance to decide on communal use of public spaces through a social media tool.

Urban-Think Tank, São Paulo



Hubert Klumpner (left) and Alfredo Brillembourg developed "Urban Parangolé," a

system that provides for innovative mobility concepts along three-dimensional corridors – such as cable cars.



The jury for the Audi Urban Future Award: Jürgen Mayer H., Diana Barco, Harish Hande (front row, from left), Christian Gärtner, Prof. Rupert Stadler, Yeşim Ustaoglu, Adam Greenfield (second row, from left), John Thackara, Wang Lu (third row, from left).

and social dimensions. "The visions demonstrate that we should view developments in the megacities as an opportunity," says Nadine Endress from Audi Brand and Sales Development. Endress is on the Audi Insight Team that incorporates external input into the company. "The architects have shown how mobility can function in densely populated centers in the future, for example by intelligently combining various means of transport or the development of transport hubs."

In 2012 the prize went to Boston-based architects Eric Höweler and J. Meejin Yoon. Their design came especially close to the intentions underlying the Audi Urban Future Award: The competition is meant to identify ways that the development of major cities will impact forms of mobility and how individual means of transportation will be integrated into the transport network of the future. The approach taken by Höweler and Yoon considers these issues. They developed a thoroughly mobile society for the densely populated Boston/Washington region (known as "BosWash"), where about 50 million people live. Their "Shareway" concept combines a main

traffic artery with individual transport and a mobility platform on the Internet. The core idea is to share cars as well as real estate in 2030 as community property, rather than individual property. "Our plan is an optimistic vision that counters the American dream of having your own home and car in the suburbs with an updated version," says Höweler.

"In our view, this plan incorporated the objective most concretely and offers high potential for implementation," explained design theorist and Jury Chairman John Thackara. Prof. Rupert Stadler offered his assessment: "The winning proposal is a document that sets out what is required for cities of the future. This city dossier will be a specific set of instructions on how to plan or remodel a metropolitan region, in order to tackle increasing density problems." Audi will work with the architects to implement some of the ideas as part of a pilot project. <<



Be inspired by the mobility concepts of the future.

In brief



Top employer among young job-seekers

CAREERS Audi claims yet another double victory: Graduates in engineering and business administration have again selected the Ingolstadt company as Germany's most attractive employer. This was the result of surveys performed by consulting institutes trendence ("trendence Graduate Barometer," April 20, 2012) and Universum ("The Universum German Student Survey," April 30, 2012). The number of new hires demonstrates Audi's attractiveness as an employer. More than 2,200 experts and specialists were brought on board in 2012.

A pioneer in the compact class

LIGHTWEIGHT CONSTRUCTION

Audi demonstrates its technical expertise once again with the A3 and A3 Sportback models. Lightweight construction enables these new premium compact cars to feature extraordinarily low weights. The A3 1.4 TFSI weighs 1,175 kilograms – one of the lightest in this class! This also explains why its fuel consumption is 12 percent lower on average than that of its predecessor.



Stakeholder forum discussed

RESPONSIBILITY Corporate responsibility is the focus of the Audi Stakeholder Forum. In four groups, Audi experts discuss the transformation of mobility with representatives from businesses as well as from civic, environmental and aid organizations. Prof. h. c. Thomas Sigi, Member of the Board of Management of AUDI AG for Human Resources, stressed to the participants: "Companies are an important part of society. This is why we strive in all important decisions for balance between social responsibility, environment and economy. We do this through open interaction with the public, our employees and our other stakeholders."

Short Facts

139,310

Audi of America reported a new sales record for 2012: Thanks to high demand above all for luxury-class models like the A7, 139,310 cars were delivered in the United States.



Audi promotes integration

COMMITMENT Together with German Chancellor and patron Dr. Angela Merkel, AUDI AG and other supporters of the "startsocial" competition honor exemplary initiatives. Dr. Peter F. Tropschuh, Head of Corporate Responsibility at AUDI AG, presented a prize to the Hamburg project "Switch – around the world in 4 days," which brings together children from extremely different backgrounds.

Their passion drives them: »» Fans of the motorcycle brand Ducati meet for World Ducati Week. »» Audi employees craft cars with the highest quality standards. »» International artists perform at the anniversary gala as part of Audi's cultural sponsorship.

P My Passion



sophisticated

motivated

flexible

»»La Rossa««

Festival of the *Reds*

Things are crazy on the Adriatic coast. Every two years, tens of thousands of enthusiasts the world over pour in for World Ducati Week – a four-day festival celebrating their love of the Italian motorcycle brand.





Absurd acceleration, then daring drifts: The drag races attract visitors to World Ducati Week like magic. Fans can barely contain their excitement when the riders perform their stunts.



The air shimmers over the Misano World Circuit near Rimini. Thousands of Ducati motorcycles are parked tightly spaced along the race track in a line stretching almost to the horizon. Their owners have come to World Ducati Week to spend four unforgettable days among kindred spirits, to talk shop and engage in heated discussions to an accompaniment of roaring two-cylinder engines and booming club sounds. As if it weren't already hot enough this June weekend. Many Ducatisti therefore drift repeatedly into the range of the water cannons mounted on a pedestal among the motorcycles and spraying what is intended to be a refreshing fog

of droplets over the area. But there is one thing the water cannot hope to cool off: the passion of the fans for La Rossa, the iconic Italian motorcycle brand the 65,000 people have come to the Adriatic coast to honor.

Some of them have traversed continents on their journey to Misano Adriatico. Sundeep "Sunny" Gajjar from India, for example. He climbed onto the saddle of a Ducati Multistrada in Dubai and spent a month riding to Italy. Or Paolo Pirozzi, who must have gasoline – red, of course – flowing through his veins. Ducati is the only brand of motorcycle he has ever owned. "There are motorcycles, and then there is Ducati," says the Neapolitan, neatly summarizing his philosophy. "Take the

After crossing the finish line for the drag races, the riders perform daring drifts and turn their tires into white rubber dust.

rattling dry clutch, for instance – its sound is music to my ears. It is the music of my life, the beat of the drum to which I move." He recently rode around the world on a Ducati Multistrada. "Around the World in 80 DOC" was the motto for his trip. Pirozzi's goal was to visit 80 Desmo Owners Clubs all over the world. He was on the road for a year, finding lodging with Ducati fans in Moscow, Melbourne and Miami. But he also spent many lonely nights in his tent, was stuck in the jungle of Panama for several days and in China had to take an extra test for a motorcycle license before he was allowed to continue his journey.

Pirozzi is a small legend in the Ducati universe, but the true idols of the Ducatisti are the professional Ducati riders who compete for the World Championship on the world's race tracks. Men like the American MotoGP rider Nicky Hayden and the Spaniard Carlos Checa, the 2011 World Champion in the Superbike class. Their autograph sessions are like audiences. Large clusters of fans endure hours in the heat for the chance to exchange a few words with the stars or get their names scribbled on a helmet or a poster. After the small talk, Hayden, Checa and half a dozen other riders put on a spectacular show: They hop onto Ducati Diavel for drag races. The distance is 400 meters. The singular objective of the head-to-head races is to accelerate the 119 kW (162 hp) machines as quickly as possible. The tension felt by the riders before the start could be cut with a knife. But their playful side comes out once they



Scenes from Misano Adriatico: Ducati fans at an autograph session (top left), one of the youngest fans (top right), a Ducati polished to a bright shine for the WDW (right).





Snapshots: Demonstration ride on the race track (top), world traveler Paolo Pirozzi (bottom left), evening cavalcade (bottom right).

cross the finish line. They thrill the crowd with daring drifts, draw black donuts on the asphalt with their bikes and pulverize their tires into white rubber dust.

One of the favorite tricks of many Ducatisti is the wheelie, in other words, to lift the front wheel off the ground while driving. Not everyone can do this, but visitors can practice wheelies on a simulator at the Ducati Germany stand. The rear wheel of a Ducati Monster is fixed and a steel cable secures the front wheel to prevent the rider from being

thrown off if the machine suddenly bucks. Ducati employee Michael Threin is there to help and reveals the secret of how to work the clutch and accelerator in order to pull a wheelie. Several novices succeed with Threin's help.

At the Misano World Circuit, gasoline-fueled action and a relaxed, informal atmosphere are not contradictory. While some take the opportunity to do a few test laps on the new Ducati Panigale superbike, others expand their knowledge of the tradition-rich brand at the Heritage Galaxy experience. Or they

admire some of the most beautiful motorcycles ever built at the Ducati Vintage Contest. But the four Audi R8 models provided by Audi driving experience as race taxis are also a powerful draw. Many Ducatisti leap at the chance to experience a few minutes of race feeling in the sports car. The rides are completely booked up. Neither Ducati CEO Gabriele Del Torchio nor Alexandra Casagrande, a member of the DOC Ducati Club Linz, can pass up this opportunity. She climbs into the R8 with shining eyes and climbs out again with weak knees two laps later. "Unbelievable," is all she can say.

New highlights await each evening at World Ducati Week. On Friday evening, the Speed Show held at a sand track in Misano Adriatico built just for this event thrills the spectators. There, stunt riders on Ducati Diavel with spiked tires throw up the sand in meter-high rooster tails. When the races are over, the enthusiastic spectators on their own motorcycles fill the night with the rhythmic sounds of revving engines. This evening, the region trembles at the power of the engines; 24 hours later it is the thunder of guitars. Saturday evening in Riccione, the Ducati All Stars rattle the windows of the buildings lining the Piazzale Roma to the joy of thousands of rock fans.

The four Audi R8 models turning laps on the race track are not the only indication that Ducati is soon to change owners this summer. Ducati CEO Gabriele Del Torchio tells the press that he is looking forward to joining Audi. It is not the first change of ownership in the history of Ducati. But Del Torchio says that the brand has never felt itself to be in such good hands as now. He expects there to be at least one new model per year in the future and ensures that "Ducati will lose none of its passion and red conviction." The assembled media representatives applaud spontaneously when they hear this, which certainly is not the norm for a press conference. «



Action and lush sound:
Experience all this in the video of
the four-day Ducatisti meet.

The origins of the *desmodromic* legend

Around 1,200 employees produce six Ducati model series at the main plant in Bologna.

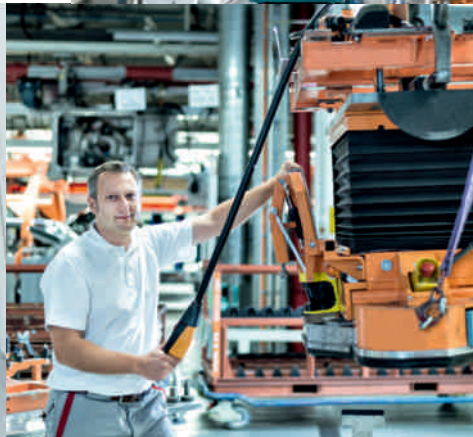
Ducati has been building motorcycles for over 65 years, and the name Ducati has epitomized particularly sporty motorcycles with unique technology since at least the mid-1980s. This also marks the start of a steady stream of victories on the race track. Ducati introduced the Monster in 1993, and the 916 established the brand's superbike tradition in 1994. At present, some 1,200 employees build six model series in modern production facilities at the company's headquarters in the Borgo Panigale neighborhood of Bologna. Ducati sells its motorcycles in more than 80 countries around the world. The tradition-steeped brand was acquired by the Audi Group in July 2012 and delivered 16,786 motorcycles between then and the close of the fiscal year.

The enthusiasm of Ducati owners around the world is not due solely to the high performance of the two-cylinder engines, however. The Ducatisti's passionate reverence of their brand also has to do with the desmodromic valve (desmo dromos is Greek for "controlled motion"). Refined by Ducati in the 1950s, this special valve control system does not use a spring to close the valve as in conventional engines. Instead there are two cam-actuated rocker arms per valve. One arm opens the valve, the other closes it. This prevents valve flutter at very high revs, thus making the engine particularly reliable. This is also the reason for a "Duc's" typical sound: a heartbeat unlike that of any other motorcycle. Yet another thing that Ducati drivers simply adore about their machines. <<



Inseparably linked with Ducati: the desmodromic valve (top) – a component of every motorcycle produced at the plant in Borgo Panigale.



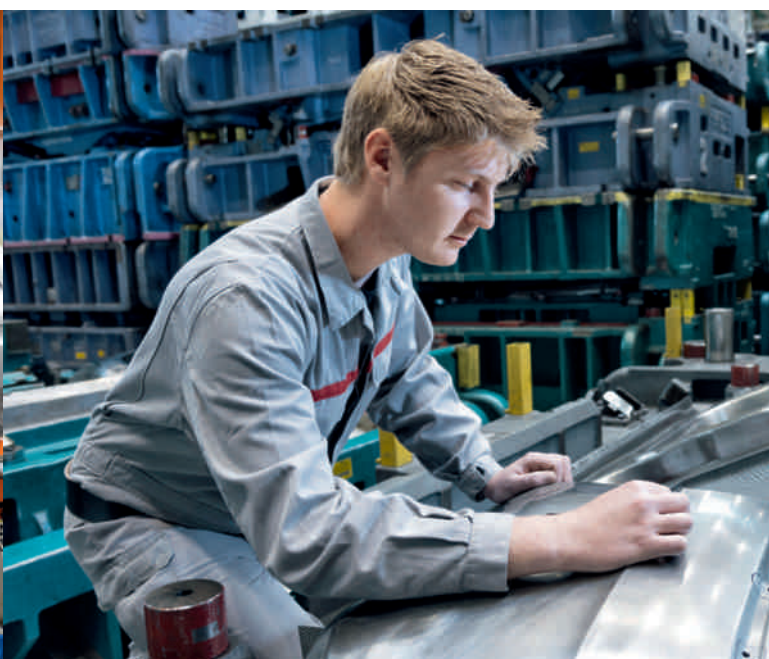


The fascination of carmaking





How does an Audi take shape? With meticulous planning, ultra-modern production technologies and employees who give top priority to quality every time – as a visit to the Ingolstadt plant shows.



It's early morning, and the Audi plant in Ingolstadt is unexpectedly quiet – at least for people who still think car manufacturing is a hectic, deafening business and who have probably never seen a modern automobile plant from the inside.

The first surprise is in the press shop, when visitors see steel sheet being delivered – currently the most important material used in Audi car production. Every day, the Ingolstadt plant processes 1,700 tons of it to make 530,000 individual stampings. But the sheet metal, which arrives as man-high coils, is first allowed to recover from its journey. It is unrolled and suspended over looping pits as much as 12 meters deep, so that it can “relax” before processing starts.

The press shop is also where the factory tour begins. On this particular morning, visitor guide Sabine Mayer has welcomed rather more than two dozen guests. In the next two hours they will be given a close-up of how Ingolstadt builds more than 2,500 A3, A4, A5, and Q5 models every day. They will see in detail how this mighty complex runs, with the two assembly lines for the A4, A5 and Q5 models and their derivatives as examples.

The first evidence of production work in progress is at one of the 18 press lines. This is where the sheet metal blanks that have previously been trimmed to size are shaped by mechanical presses, as tall as the average house. Up to 16 times a minute, they exert a force equivalent to 70,000 kilonewtons on the blanks placed inside them. If scarcely

any of this enormous force can be felt it is because each press rests on giant shock absorbers that cushion the impact almost completely.

The press shop is a key production area, where the dimensions of all the body sections are determined with great accuracy, so that all the subsequent stages can take place at the same high quality standard. How does Marco Reischl, a group spokesperson in the press shop, sum up the demands he has to satisfy in his job? “The art is to produce consistently high quality, while continually optimizing the processes and performing ongoing maintenance.” The participants are clearly impressed by what they see. Judith Jankowiak, a student who is touring the plant with her partner Andreas Frode, marvels: “It’s not just the sheer precision that’s

Teamwork in an 88-second cycle: All the production processes come together in the final assembly area. The add-on parts arrive at the line just before they are installed.





The day's final stations: interactive entertainment for the smallest visitors (above), final inspection for the completed cars (below).



system that helps to identify the parts selections that belong together. Each selection is then conveyed to the correct final assembly work station according to a carefully planned transport schedule.

Now comes the final assembly stage where everything the car needs is attached or installed. The assembly lines are governed by the "pull" principle: The sequence of bodies is determined by the sequence in which customers' orders are received by the plant. The employees at all work stations operate according to an 88-second cycle, which means that parts and systems have to arrive at their installation points in a well-planned sequence. Two to three hours before their installation, the data carrier on the body initiates the specific customer order, but the logistics employees only deliver the components needed to complete the car to the assembly line a few minutes before they have to be installed.

The respective employees first remove the doors, for easier access to the interior. Assembly work is planned systematically according to ergonomic principles: The bins holding the materials are located at a comfortable working height; our employees use hydraulic lifting aids to install heavy assemblies, while wooden floors absorb movement and help prevent back injuries. When she installs the roof module, Simone Rehm moves inside the car on an ergonomic assembly seat (the "EMS"). This young member

of the assembly team declares: "The EMS makes the job so much easier. I don't have to climb in and out of the car all the time, and I can avoid strain on my knees and back."

While her colleagues continue to add the interior features of the car at their respective work stations, the engine, axles, shock absorbers and transmission are put together simultaneously to form the chassis. Then the big moment arrives: the "marriage," when the body and chassis are joined. Here, the employees have to make more than 50 threaded connections. Then the 88-second cycle takes over once more: Battery, front-end module, wheels and interior trim are added, after which the doors are reintroduced to the assembly line and attached to the body again. A robot adds fuel to the tank once the car has been lowered onto its wheels for the first time. But is it finished? Not yet by any means. Not until the quality assurance employees have subjected it to the ultimate tough test that no Audi can avoid: the final inspection. A vibration test on the roller rig is followed by electronic checks, a leak test and the final quality assurance inspection in the light tunnel.

Sabine Mayer and her guests are now back at reception and everyone is visibly thrilled, the many new experiences having left a lasting impression. Judith Jankowiak: "We had no real conception of how cars are made. It's all the more impressive when you see how the individual work stages fit together so smoothly." Her boyfriend Andreas Frode reaches a similar conclusion: "Your feelings toward the car are quite different when you see for yourself how much close attention and technical effort goes into every detail. But there's no sense of stress – you could even say it's relaxed!" That's no surprise you could say: Almost the first thing we saw was the sheet steel coils being unrolled to allow them to "relax." <<



Virtual factory tour: Employees explain how an Audi takes shape.

PHOTOS | STEFAN-WARTER.COM (3); JIM RAKETE



Impressions from the production shop: Sabine Wittmann checks the strength of the body-in-white spot welds with an ultrasonic device (top left). Factory tour guide Sabine Mayer explains how a car's body is built (top right). Simone Rehm uses the ergonomic assembly seat when installing the roof module (below, center).



fascinating. I always associated a car plant with pools of oil, dirt and lots of noise – but here it couldn't be more different."

The pleasant surprise that many visitors experience in the press shop usually continues when they reach the body shop. Sabine Mayer can scarcely refrain from laughing when she sees how completely her guests are taken by surprise. "This is where many of them realize for the first time what "high-tech" really means in car manufacturing." More than 1,600 welding and bonding robots are in action here, assembling up to 320 components that go into a car's body. The key stage in the process, where the substructure and internal side panels are combined with the outer skin of the body, is known as "framing." "This calls for accuracy down to a few hundredths of a millimeter," Sabine Mayer explains, "especially when the side panel frame is joined to the roof. But thanks to our Plasmatron brazing process, we can produce "zero-joint gaps," and don't need the molding along the roof seam that many carmakers still have to use."

Such accurate methods have to be accompanied by very strict quality control. In the ultrasonic test zone, production mechanic Sabine Wittmann performs random tests on bodies-in-white taken from various models' production lines. "I scan the spot welds with the head of the ultrasonic tester, to make sure that they are strong enough," she explains. Every single day, the quality and strength of approximately 5,000 weld spots is checked for all A4, A5 and Q5 models.

After the doors, engine hoods and trunk lids have been added to the body with millimeter precision, a surface finish is applied. Only bodies with flawless finishes are transported to their next destination, the paint shop. Here, they are plunged into an immersion bath of basecoat, 40 meters long. Group leader Arnold Edler explains how this machine works: "The contents of the immersion bath are electrically charged at 380 volts. This attracts the paint onto the body – even into very small cavities that would otherwise be difficult to reach." After this "dip coating," the filler, topcoat and a clear lacquer are added one after the other, using

high-speed rotary heads that atomize the paint into a fine spray. Electricity is at work here too, as application mechanic Mario Sikorski explains: "We use a 70,000 volt electrostatic process. The paint is attracted so strongly onto the body surfaces that effectively no spray losses can occur." Since each body is accompanied by a data carrier with details of the paint finish the customer has ordered, the automatic machines can identify the required color and switch over to it within only ten seconds. After spraying, the bodies are dried in a kind of oven for 30 minutes before being transferred to a storage and sorting unit that holds 800 bodies.

By now, factory tour guide Sabine Mayer and her group have reached the "supermarket." Here, dozens of employees load material bins with the parts needed on the final assembly lines. This work calls for a high level of concentration. "Every center console in a car needs 120 components, and these can be combined in up to 480 different ways," says Melanie Sandbichler, who loads the part bins for this particular assembly. Melanie and her colleagues are aided by a color visualization

High pressure painting: The spray heads that apply the paint to the body rotate at up to 45,000 revolutions per minute.

PHOTO | STEFAN-WARTER.COM

How an Audi takes shape

The whole process starts with sheet metal. By the end, a complete new Audi has taken shape. The Ingolstadt plant employs more than 35,000 people. They work three shifts and build more than 2,500 A3, A4, A5, and Q5 cars every day.

1 Stamping and Press Shop



Coils
Galvanized sheet steel for the bodies is delivered as coils weighing up to 35 tons.

Blank
Suitable shapes are stamped out of the two-dimensional blanks before they enter the press.

Press shop
The plant's 18 press lines process 1,700 tons of sheet steel every day, and produce 530,000 individual elements.

Steps 1 to 6
On the **press line** the blanks are shaped into finished body elements in a series of work stages and at pressures of approximately 70,000 kilonewtons.

2 Body Shop

Driverless transport systems move the stamped-out blanks to the press shop.

Press tools

Direct store for stampings

Moving stampings to the body shop.

Welding tongs

Platform
Robots with welding tongs first join the front and rear floors and wheel arches so that the substructure begins to take shape.

Framing
In a clamping frame, the substructure is first joined to the internal side panels before the exterior side panels and roof frame are added. Altogether, more than 1,600 robots are used in the body shop.

Laser and ultrasonic testing
The body dimensions are checked by laser sensors and the strength of the spot welds is checked by non-destructive ultrasonic means.

3 Paint Shop

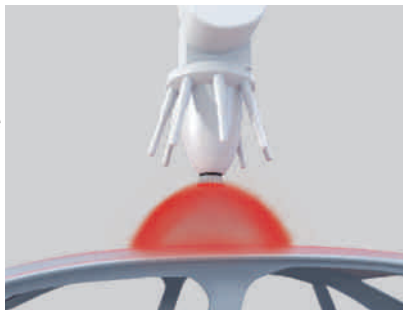
Paint coating
The paint coating is one tenth of a millimeter thick, no more than a human hair. After a zinc phosphate layer that increases paint adhesion and protects the body against corrosion, about 4.5 kilograms of topcoat are applied. Water-based paints with a low proportion of solvents are used.



After the body is degreased and its doors, hood and trunk lid are attached, conveyors then move it to the paint shop.

Basecoat
The basecoat is applied by dip coating. The body is immersed in a vat of paint, and rotates around its transverse axis. The vat is electrically charged; the positively charged paint particles are attracted onto the negatively charged sheet metal, and cover all the surfaces uniformly.

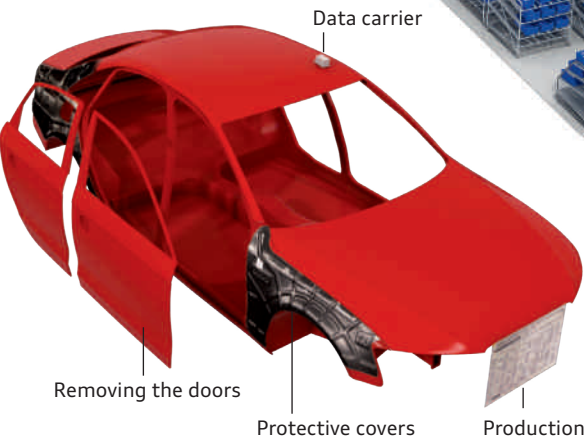
High-speed rotary bell sprayer
The spray heads on the painting robots rotate at up to 45,000 revolutions per minute to atomize the paint. The finger-like projections have a positive, the body a negative electrical charge. This attracts the paint to the body, which is grounded, and avoids losses due to overspraying.



Drying the body
After each coat of paint the bodies are dried in special ovens at temperatures up to 185 degrees.

Filler, topcoat and clear lacquer
Robots distribute the paint layers uniformly over the body at high pressure. Their nozzles can be switched over to a different color within ten seconds.

Preparing for assembly
Before further items are added to the body, the doors are removed and various protective covers and the data carriers attached.



Removing the doors

Protective covers

Production order

4 Final Assembly

Wiring harness
Final assembly starts with the installation of the wiring harness and all the necessary cables.



After pre-assembly on the ground floor, these items are brought up by elevator to the assembly area.

Ergonomic assembly seat (EMS)
The EMS makes assembly work on the interior of the car much easier. The employee gets into the seat, which then moves to a convenient point inside. Items of equipment can then be installed safely and quickly.

Installing the driver's area
The pre-assembled dash panel, the heating and the pedal assembly are brought to the assembly point. Like other items of considerable weight, a hoist lifts them into the car.

Ready for delivery!
The vehicles are then loaded onto trains or trucks for delivery to Audi customers, or they can choose to collect their car from the plant.



Pre-assembly
As the car begins to take shape on the assembly line, the suspension, driver's cockpit and various other components are being pre-assembled on the ground floor. They will be moved to the assembly line at precisely the right moment. Here, for instance, the doors have their windows, locks and airbags added.

Chassis assembly

After the engine, transmission, gear shift, exhaust system and fuel tank have been installed, the chassis is complete.

Chassis assembly takes place parallel to the main assembly line.



The "marriage"

This is where the body and chassis come together and are joined using more than 50 threaded connections.



Front-end module

The front-end pre-assembly includes the headlights, the cooling system and also the crash module.



Interior trim

The wheels and bumpers come next, then the interior trim and seats. Finally, the doors are re-attached.



5 Testing



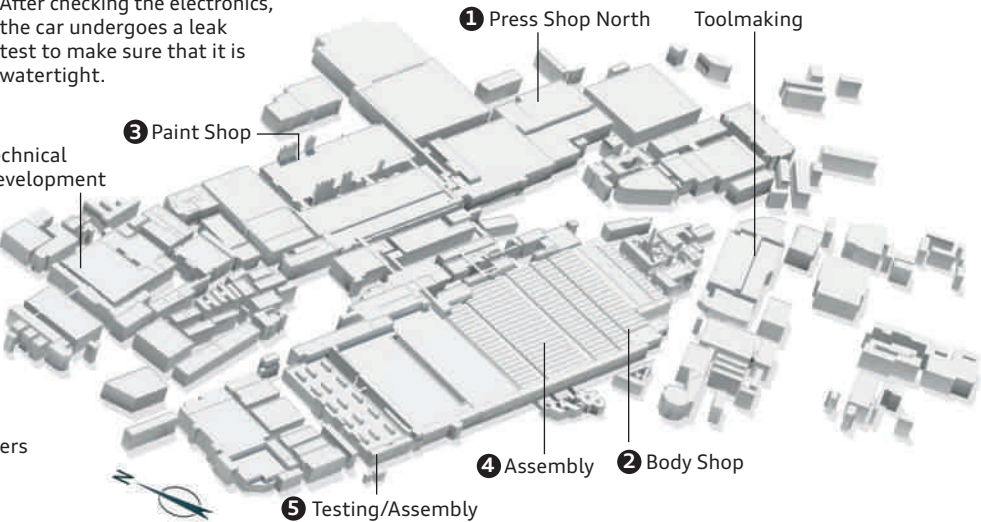
Roller test rig

After the engine has been started for the first time, the car's behavior on various types of surface is checked.

Leak testing
After checking the electronics, the car undergoes a leak test to make sure that it is watertight.

Final inspection
Now we come to "check-point 8," the final inspection, where the quality assurance teams give the car a last careful check. Their experience allows them to detect even the slightest shortcomings.

AUDI AG - Ingolstadt plant
The main location occupies a site area of 2.7 million square meters - roughly equal to the Principality of Monaco.



1 Press Shop North
2 Body Shop
3 Paint Shop
4 Assembly
5 Testing/Assembly
Toolmaking
Technical Development



Dr. Frank Dreves

Member of the Board of Management for Production

Pure passion in production



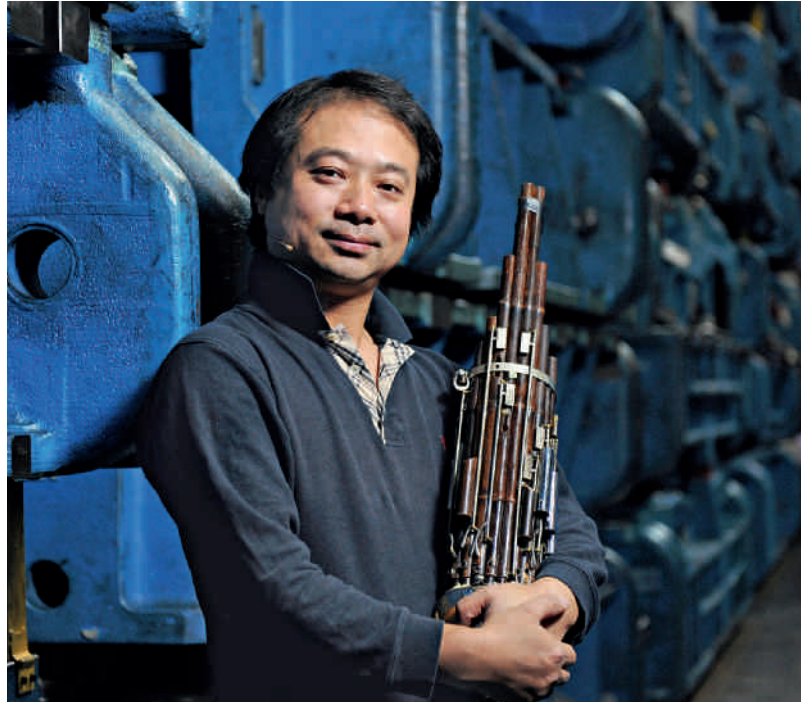
More than 1.46 million cars produced in 2012 – once again a production record for Audi, achieved by our workforces at nine production locations throughout the world. But statistics don't tell the whole story: For me, there is more behind this figure – more than 1.46 million times pure passion. The desire for top performance and perfection is a renewed incentive every day. With dedication and creative ideas we improve our manufacturing processes wherever we can, and make them even more efficient. Visit any of our locations and you will meet people who are always willing to go a step further than might be expected of them. We fully identify with what we do and with the four rings. Audi is in our blood. This is what I mean by pure passion in production; it's there, and it's boundless.

Grand musical gala: To celebrate "50 Years of Culture at Audi," a number of VIP guests joined together with Audi employees in Ingolstadt to experience a spectacular jubilee festival featuring a host of artists.

Culture in the press shop

Starring on the piano: Olga Scheps captivated gala guests with her musicality – and charm.

The renowned artists who thrilled the audience included jazz trumpeter Till Brönner (below), multipercussionist Martin Grubinger (bottom right) and sheng soloist Wu Wei (top right). The virtuoso Chinese mouth organ player believes “cultural sponsorship is the way forward, because music brings together people of different cultures.”



“We wanted to create a symbiosis between the technical location and the stagecraft so that we could use lighting elements to narrate a fabulous story. It really worked!”

Katharina Wagner, Director of the Bayreuth Festival, on the gala



Getting in the swing: The Audi Philharmonic Wind Orchestra opened the jubilee evening with a performance of Leonard Bernstein's Overture to "Candide."

Hall N58 on the AUDI AG factory site in Ingolstadt has never seen anything like it: The heavy press tools that each day process 500 metric tons of steel and aluminum for the manufacture of various Audi models have given way to a stage with grand piano and elaborate lighting technology. Giant pipes, containers and switchgear provide a striking backdrop to the cultural spectacle – an exciting platform for performances by more than 150 artists from all over the world.

Among them is Olga Scheps, the 27-year-old pianist from Cologne with Russian roots. When she starts playing Brahms, the guests – including the many Audi employees who won a ticket in the ballot – listen spellbound. Just a few moments ago, the talented musician earned thundering applause from the audience for her rendition of Rachmaninoff accompanied by the

Audi Philharmonic Wind Orchestra. As the final note of her solo piece fades away, presenter Ulrich Meyer pays tribute to the orchestra. Its 60 or so musicians are really the people celebrating on this occasion, which Director Katharina Wagner has put together as her "birthday present to Audi." Because when the Philharmonic Wind Orchestra started out in 1962, it launched a tradition that is the reason behind the evening's celebrations: "50 Years of Culture at Audi."

Much has changed over the past five decades. Under the umbrella term "ArtExperience," Audi supports numerous cultural institutions – regional ones such as the RockPop Festivals in Ingolstadt and Neckarsulm, national ones such as the Bavarian State Opera, and international ones such as the Salzburg Festival. Audi's aim is to make art and culture accessible to all, whether employees, customers or the general

public. The carmaker is steadily widening this commitment. Ventures that span boundaries – creative and geographical alike – are expressly encouraged.

Precisely that is evident in this evening's program: The Chinese virtuoso musician Wu Wei plays the sheng, a wind instrument made from 37 bamboo pipes, from which he produces up to 20 different notes at the same time. By way of a contrast, the Georgian Chamber Orchestra and the Audi Youth Choir Academy perform a Bach cantata.

Moving on to Hungary, the Ballet Company of Győr produces a rousing interpretation of music by the legendary rock band Queen. After the main course of the dinner, jazz trumpeter Till Brönner delights the guests with an inspiring medley. The highlight of a musical tour around the world comes when Austrian percussionist Martin Grubinger plays a furiously fast Japanese composition on the marimbaphone, an instrument resembling the xylophone. The man has hall N58 rocking!

Once the applause has died down, guests and artists concur that this has been a fantastic evening – in the most unconventional of settings! Overnight, the press shop is restored to its primary function. But the sounds of this grand cultural tour reverberate on. <<



Gala dinner: 500 guests took their places at the elegantly decorated tables.



Salzburg, Bayreuth, Bavarian State Opera: Audi is a reliable partner for cultural events.

In brief

Premiere for Q5 and SQ5 TDI

INTRODUCTION In revising the Q5, Audi has sharpened the profile of its performance SUV and improved one of its best-selling models in a variety of respects. The new top-of-the-range model – the SQ5 TDI – celebrated its debut at the 24 Hours of Le Mans in June. Three-time Le Mans winner Marco Werner was not the only one to be delighted. And no wonder: The SQ5 TDI is powered by a 3.0 V6 diesel biturbo developing 230 kW (313 hp), but averages just 7.2 liters of fuel per 100 km.



Audi stands for sportiness

SURVEY The Audi brand is perceived as the brand with the sportiest image. The trade journal AUTO ZEITUNG asked its readers which brands they associate with successful motorsport (issue 9/2012, p. 51). Top spot, with 58.7 percent of the vote, went to Audi.



Missing Silver Arrow returns to Germany

CAR LEGEND Audi managed to buy back an Auto Union Type D Dual Compressor racing car built in 1939 (front). That was the year in which the Auto Union Grand Prix car was a leading contender in competitive racing in Europe. After the war, there was just one known surviving Auto Union racing car in the whole of Western Europe. All others were believed to have been lost – until American collector Paul Karassik tracked down the remains of two racing cars in the former USSR in the late 1970s and had them reconstructed. The recently purchased Type D means that three out of the five original Auto Union Silver Arrow cars now belong to AUDI AG.

Audi triumph on the Nürburgring

ENDURANCE RACE Capricious weather, tough competition, bitter setbacks, but rewarded with victory in the end: After a roller-coaster of emotions, Audi secured its first ever overall victory in the 24 Hours race at the Nürburgring. The two quartets of drivers even clinched a one-two win in the Audi R8 LMS ultra in the 40th-anniversary race of this classic, set in the Eifel region of Germany. Audi can boast an impressive track record in endurance races in 2012. On top of its successes on the Nürburgring and at Le Mans, the brand also won the 24 Hours races at Spa and Zolder.

Audi becomes partner of Chelsea FC

ALLIANCE There has been a top-ranking addition to the Audi soccer family: AUDI AG has sealed a partnership with a London club steeped in tradition – Chelsea FC. Audi is now involved in four of Europe's top clubs: Along with Chelsea FC, these are FC Bayern Munich, FC Barcelona and Real Madrid C.F.

Short Facts

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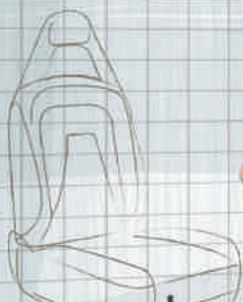
apprentices and participants of combined study/training programs started their working life at Audi in 2012.



New experiences expand horizons: >> Axel Strotbek and Dr. Werner Brandt talk about the challenges of globalization and increasing connectivity.

>> Audi employees who contribute time and effort to social projects produce lasting changes in the lives of other people. >> When Audi designers discuss vehicle studies with trend-conscious consumers, they open up prospects for the mobility of tomorrow.

My Experience



sustainable

visionary

progressive





»» Development
is what drives our industry **««**



Axel Strotbek (left), Member of the Board of Management for Finance and Organization at AUDI AG, and Dr. Werner Brandt, Chief Financial Officer of SAP AG, discuss opportunities and risks in a turbulent global economy, special customer wishes and the car as a mobile terminal device on wheels.



“Vorsprung durch Technik needs to be continually advanced if it is to remain just as successful in the future.” Axel Strotbek

Axel Strotbek: I’m delighted we’re able to meet here at our Neckarsulm plant, in the production shop where we build our R8 sports car. I think this is quite an impressive illustration of our “Vorsprung durch Technik” motto and our ambition to build the best cars in the world.

Dr. Werner Brandt: I’m a real car enthusiast. I have a fascination for everything to do with mobility and speed – as a private individual, but also in my

PHOTOS | ENNO KAPITZA



Dr. Werner Brandt

is a member of the Executive Board and Global Managing Board and Chief Financial Officer of SAP AG. He is in charge of all financial activities as well as the administration of the German company. SAP is the world's largest supplier of business software.

**Exchanging ideas:
Dr. Werner Brandt
and Axel Strotbek
discuss future trends
in their industries.**

professional capacity at SAP. These days, companies have to handle huge volumes of data that only have any value if they can be processed in real time, wherever you are – mobility and speed are the top priority today. Our HANA in-memory technology can process millions of pieces of information in a matter of seconds, up to 100,000 times faster than before. We can also provide an infrastructure for exchanging this information on the move. Employees of companies

all over the world send 1.8 billion text messages over SAP servers every day.

Strotbek: Mobility and speed – those two words encapsulate what today's global economy is all about. There can rarely have been a time of such dramatic, fast-moving change. It's becoming more and more difficult to make reliable forecasts. I view that as a major challenge. On the one hand there are critical markets, for instance here in Europe. On the other hand there are markets that offer opportunities, such as in Asia and South America. In Audi's opinion the opportunities balance out the risks. Do you view your industry similarly?

Dr. Brandt: I have to admit Europe is very much dominated by uncertainty. As well as the sovereign debt crisis, we have a banking crisis on our hands. In my opinion it is exacerbated by a crisis spreading throughout the entire economy, at least in the countries experiencing problems – and it has been triggered by a lack of competitiveness of those countries' major enterprises. As a result, Europe is expected to show only slight overall economic growth in 2013 compared with 2012. On the other hand, worldwide growth is running at some three percent, driven mainly by the emerging markets and newly industrialized countries. North America's performance is roughly the average for industrial nations, at 1.5 percent. Much will depend on the BRIC countries, but also on the emerging markets in Latin America and Asia – SAP is focusing very strongly on those markets.

Strotbek: We can echo that. We are also placing the focus on growth markets. China is already our biggest single market worldwide, with over 400,000 vehicles sold each year. We are in the process of building a new plant there with a capacity of 200,000 units, and will soon be ramping up our capacity in China to 700,000 cars annually. But we are also expanding

capacity in Europe, and from 2016 we will have a new manufacturing location in North America. From then on, all Q5 models sold worldwide will be built in Mexico. That's a huge step for us in internationalization, and obviously a challenge to keep our flows of currency and goods in equilibrium.

Dr. Brandt: We believe the emerging countries are not just markets to sell our products – we are also able to recruit highly talented people there. As a globally active company with 20,000 of our 64,000 employees working in development, an international, diverse pool of talent is extremely important. We have 14 strategic development locations – Bangalore in India is already the second-biggest after Germany, then come Palo Alto, Shanghai and São Leopoldo in Brazil. In other words, we use talented people all over the world to develop our software in a way that fulfills the needs of our customers in each individual region, thus generating maximum added value for our customers.

Strotbek: We're very familiar with that challenge of satisfying the specific preferences of a rapidly growing customer base in places such as China and North America. We run design and development centers in each of those regions, mainly so that we can identify changing market trends rapidly. In our target markets we've also set up what we call product clinics, where we present new models, designs and technologies to selected or potential customers at a very early stage of the development process. That way, we very quickly obtain feedback that we can then act on in the product development process.

Dr. Brandt: That's very interesting. Are you able to identify typical regional or national differences?

Strotbek: In Europe, the people who buy our large models usually drive



“Design thinking speeds up our development cycles and boosts customer satisfaction, because the user is closely involved in the development process.” Dr. Werner Brandt

them themselves, so driver assistance systems are especially important. In China, those customers normally have a chauffeur. So they are more interested in how comfortable the rear compartment is. One option we offer them is business class seats like those you'd find on an aircraft, that you can recline electrically. The entertainment options are obviously very important, too: video, TV, hotspots for the computer, smartphones and consoles. In the United States, on the other hand, our customers really appreciate ease of operation, plus the very sophisticated, wide-ranging features of our assistance systems.

Dr. Brandt: That's yet more clear evidence of how customer requirements are changing. In our industry, as well as optimized processes customers nowadays want to be able to evaluate business-relevant data and initiate processes whenever they wish and wherever they are. Our innovations make that possible. In an effort

to develop optimum solutions for our customers, for some time now we have been using what is called the design thinking method. Interdisciplinary teams observe the user's needs and develop solutions hand in hand with them so as to build, test and improve prototypes to the point where they are operational. This approach speeds up our development cycles and boosts customer satisfaction, because the user is closely involved in the development process.

Strotbek: I firmly believe anyway that development is what drives our industry. In 2011 we spent around 2.8 billion euros on development, and the figure was more than 3.4 billion euros in 2012. That dynamic growth underlines how important this activity is to us. “Vorsprung durch Technik” needs to be continually advanced if it is to remain just as successful in the future. We achieve this with our effective team and by working in partnership with a large number of outstandingly well-qualified service

providers. We even go so far as to integrate some of them when we want to build their expertise into the development processes for our core technologies.

Dr. Brandt: Our industry does something similar. At SAP we have what we call our partner ecosystem, which spans partners from the hardware, technology and implementation areas. In our experience, when we recruit one employee, that creates ten new jobs throughout our ecosystem worldwide.

Strotbek: That's interesting, because it illustrates very well how economic systems and also major corporations are deeply interconnected on a global scale.

Dr. Brandt: I think interconnection is one of the key ideas here, and the prerequisite of future viability. Connectivity is becoming ever more important. Our world is more connected than ever. Against the

backdrop of internationalization, how connected a company is will also critically determine how competitive it is. We address that issue through our Ariba network, which has over 800,000 member companies. But this issue isn't limited to companies; connectivity applies to people and machines, too. There are already more mobile terminal devices on the planet than people. And let's be honest, from a professional perspective a car is nothing other than a mobile terminal device on wheels.

Strotbek: Yes, I think that's a valid point of view. In its early days the car was already a form of communication in that it got people from A to B, and so enabled them to talk to other people. Each one of our vehicles is now an intelligent communication system in its own right. So not only can Audi drivers be permanently online when they are in their car, and use navigation systems, Twitter®, Facebook® and Google®, have their e-mails read out or dictate them. That is just one aspect of the digitalization of the automobile. The next step will be piloted driving. In other words, cars that drive themselves. All the driver has to do is enter the destination. We have just become the first car manufacturer in the world to secure a permit to trial piloted driving in the U.S. State of Nevada. We will now find out in practice how the system works.

Dr. Brandt: We are involved in a permanent exchange of ideas with your industry on the topic of connected cars. We participate in the development of intelligent connectivity and are helping vehicles to communicate directly with each other. One benefit of this machine-2-machine communication, for example, is that a car automatically brakes before a bend because other cars have warned it that there's a tailback coming up. Finding a parking space is another example. Studies have shown that about 30 percent of all congestion in urban areas is

caused by drivers looking for a parking space. If the system knows where the vacant parking spaces are, it can guide drivers straight to them. And with the vehicle becoming increasingly a mobile terminal device, it will soon be able to submit a sales representative's travel expenses claim automatically and – linked to the company's IT network – allow the driver to process work assignments while out and about. Those are visions for the future that combine technology and mobility.

Strotbek: Many of those applications already exist today, so in our industry the future has already begun. But just like you, we are always thinking

“Each one of our vehicles is an intelligent communication system. But that is just one aspect of the digitalization of the automobile. The next step will be piloted driving.” Axel Strotbek

ahead. At the moment, for example, we are developing mobility concepts for the megacities of the future, hand in hand with architects and urban planners. Anyone who has ever sat in a traffic jam in Shanghai, Beijing or São Paulo knows just how important such proposals are. Those are important markets for us, and we have to respond with utterly new concepts if we want people to continue enjoying living and driving there – and of course, buying our cars. <<



Find out more:
Axel Strotbek on the development of the Audi Group.

Small talk next to a supercar: Axel Strotbek and Dr. Werner Brandt in the R8 Lounge of the Neckarsulm plant.







Whether it is community projects near Audi sites or contributing to non-profit projects abroad, Audi fulfills its social responsibility worldwide. And Audi employees always have their role to play in supporting these projects.

Voluntary good deeds

Audi Volunteer Days

Combining a commitment to helping others with Audi expertise: This was the goal of the Volunteer Days in Ingolstadt and Neckarsulm. A total of just under 600 Audi volunteers completed 73 projects, entailing everything from manual labor to community services.

The “Audi Volunteers” initiative provides AUDI AG employees with opportunities to perform volunteer work on community projects. On the first-ever Audi Volunteer Day in June 2012, 330 helpers from all divisions at Audi’s Ingolstadt site volunteered for a full day on a remarkable variety of projects. As would be the case several weeks later at Volunteer Day in Neckarsulm, Audi provided organizational assistance and logistical support. Based largely on suggestions from Audi staff, 150 organizations were contacted during the planning stage in Ingolstadt und Neckarsulm. In the end, 73 projects met the criteria for implementation.

In one project, Audi volunteers set up a herb garden for the Alzheimer Society in Ingolstadt. The residents use the fresh herbs not only for cooking, but also for various aromatherapy purposes. “Several weeks after the Volunteer Day, I returned to show the project to my family. It was nice to chat at length with the people there, and to see that they enjoy the herbs and use them regularly,” says Frank Pfeffer from the

development department for Body Electronics in Ingolstadt.

Helpers on the “Dream of a Lifetime” project at Neckarsulm’s Volunteer Day treated disabled people and their family members to excursions in Audi vehicles. It was a special experience for all involved. “We were able to bring true joy to people often overlooked in our society,” explains project mentor Thomas Degenhard, who works in VIP Relations at Audi. Other “Audi Volunteers” spent the day repairing a hut in a vineyard near Neckarsulm. It will serve as a tool shed for a school whose students help run the vineyard under the supervision of teachers. “This will save the school time and energy, as the tools will be securely stored here on site instead of having to haul them here time and again,” emphasizes project mentor Jörg Spindler. Though building materials had been prepared, the Audi volunteers nevertheless had to apply a lot of expertise, commitment and work as a dedicated team to transform a mere frame into a tool shed.

“It is the dedication of our staff and their willingness to aid others that



Audi Volunteer Day in Ingolstadt

Helping others is its own reward: 330 Audi employees took part in Volunteer Day in Ingolstadt, which kicked off the "Audi Volunteers" initiative in June 2012.

makes such days of action possible. And they impressively demonstrated just how eager they are to help," says Dr. Gunther Bös, Head of Social Responsibility at AUDI AG.

Projects such as Volunteer Days in Ingolstadt and Neckarsulm help create special memories and realize long-term change for the better. As such, they exemplify Audi's corporate citizenship. After all, the company not only stages days of action near Audi sites, but also acts as a corporate citizen around the world.

And the variety of pursuits is remarkable. Audi employees ran at the "24 Hours of Audi" benefit event in 2011

and raised some 150,000 euros for a children's charity. Ingolstadt has been a UNICEF Child Friendly City since summer 2012. This same year, Audi donated 100,000 euros to this world organization that fights for children's rights. For several years, Audi has been funding the "Attitudes" project in Spain to promote children's road-safety awareness. Some 400,000 young participants have already learned about road safety at over 4,000 schools and in community centers. In the United States and Australia, children and adolescents are the focus of commitment, as well. In the United States, Audi especially supports the

"Best Buddies" organization, which strives to improve the integration of disabled people in society. Furthermore, Audi Driving Dreams aids a UNICEF educational program in China via funds and campaigns.

"Audi plays an active role in society by overseeing community projects relevant to respective sites and regions," sums up Dr. Gunther Bös. "And we will devote a lot of energy to expanding our commitments in future!" <<



Here you can find out more about Audi's projects and social commitment.



Prof. h. c. Thomas Sigi

Member of the Board of Management for Human Resources

Responsibility does not end at the factory gates



The innovations that give Audi the decisive lead originate in the minds of our staff. If people are to play an active role and contribute their ideas, they must be held in high esteem and know just how crucial their work is to their company's success. It is therefore especially important to me that people behave responsibly toward one another, appreciate each other and respect each other's needs. Along these lines, we help employees establish a harmonious work/family balance through childcare services and flexible working-time models. After all, at Audi responsibility does not end at the factory gates. All of our sites are thus committed to environmental protection and community projects as well as the promotion of culture and sports. We approach our duty to society in the same way as our day-to-day HR work: We focus on the individual.

If you're designing cars today, you have to know what the people of tomorrow will want in terms of mobility. In a special market research program, Audi identifies future trends early on.

Looking ahead

Already on the test bed today:
visions of individual Audi designers
for tomorrow's mobility.



On this day, the future of the automobile is not being debated behind the gates of large plants, but rather at a small agency in Munich. There's a surfboard propped up against the door and a soccer table next to the espresso machine. Other than this, the creative minds at gravity design agency have cleared out their premises. Nothing should divert the observers' gazes and thoughts from the objects located on chest-high platforms: four vehicle studies by young Audi designers who have made their individual visions of the Audi of the future into reality – as 1:4 scale models, at least. Two women and three men then study the models. They silently move from design to design, jotting things down here and there on yellow adhesive notes. Their faces reveal nothing.

"I wonder what they'll have to say," whispers designer Juan Carlos Huerta Martinez to a colleague. The Spaniard doesn't take his eyes off the man in the blue jacket who is currently examining his quattro PowerSpace, a high-capacity sedan with large wing doors. The design is meant to combine the driving pleasure of a sporty Audi with the roominess of a van. "Just because you have a family doesn't mean your car shouldn't be fun to drive," says Huerta Martinez, explaining his concept. But will they understand it? Today's the day to find out.

It takes a lot of time to develop a car – and a lot of money to build it. That's one reason why there is scarcely a market as well researched as the car market. Cockpit layout, glove box

styling, turn signal design – there are surveys and studies on just about every detail of a vehicle. Audi alone requests feedback from car drivers in 70 to 80 studies each year. On the way to production readiness, new models pass through so-called car clinics, in which they are analyzed and discussed down to the smallest detail by test persons. The information gleaned from the clinics is incorporated into further product design. By the time an Audi car is launched on the market, its creators already have a precise idea of the emotions and associations it will evoke.

Juan Carlos Huerta Martinez's glass quattro PowerSpace is far from market-ready; even further removed are the more futuristic designs of his colleagues. Take, for instance, the buggy-like Audi quattrix whose cockpit rotates along the longitudinal axis. It can jump and, "like a cat, always lands on all fours," explains its creator Elmar Reich. Or the ultra-flat vehicle by Björn Wehrli, which with its fully faired wheels resembles a catamaran. Its propulsion comes not from an engine, but from the wind, which is caught in a swiveling airfoil. "Perhaps the car races of 2040 will take place with this type of 80 km/h Speed-sailor – with a zero carbon footprint," says the designer, describing his vision.

By now it's clear that we're not talking about Audi innovations for the year 2014. This is also not your average market research session – it's called a "trend receiver" analysis. Here, based on personal visions of the Audi designers, a select group of people with vision get together to reflect on what the mobility of the future could look like. These are visions that could become

reality years or even decades from now – or perhaps never.

"When the timeline to market relevance is particularly long or the questions are extremely complex, conventional market research reaches its limits," explains Dr. Rupert Hofmann, who develops the trend receiver studies for Audi. The participants he enlists for this differ from those of a market-representative study. These are not specifically automobile experts, but rather individuals selected based on specific themes, who perceive changes early on and are good at discerning the potential of new concepts. They are people from a whole range of industries, but all have one thing in common: They are exceptionally curious, have connections in a range of contexts and enthusiastically observe what it is that drives people and what things are changing.

These experts hold nothing back. "I bet you couldn't hold a teleconference in it," Bernd Blumoser quips dryly in reference to Elmar Reich's buggy. Blumoser, who is responsible for Corporate Technology for Open Innovation and Ideas Competitions at a large firm, voices an opinion that illustrates just how different requirements for vehicles can be. "Drivers will have to have a certain amount of skill to control the Speed-sailor – they won't be able to rely on the assistance system to handle that," jokes Birgit Schaldecker, innovation manager at a high-tech textile manufacturer, referring to Wehrli's design. On the other hand, she says, thinking aloud, technologies are already being developed for



Eager anticipation: Four young Audi designers (left) present their visions of the future, which are then debated intensely in a group meeting with the trend receivers (right).





Lively discussions: The trend receivers don't judge every idea exactly the same way as the designers. But their feedback often provides new impetus.



motorsport today that will one day be used in everyday driving. "And we are not going to stop thinking about the future in the future either."

Then designer Markus Klug enters the contest with his Audi Grid, a sports car with two separate cockpits. Its main attraction: landing flaps of sorts in the wheel wells that lift when the car is on the verge of fishtailing. "They provide a warning as soon as things get dicey. The car trains the driver, instead of taking responsibility away from him," Klug explains the concept, which is intended above all to convey driving pleasure. Surprisingly, this elicits the strongest reactions from the women in the group. "A car that communicates with me. Like a horse that pricks up his ears and tightens his muscles before breaking into a gallop," says

an enthusiastic Birgit Schaldecker. In the design language of the Audi Grid, by contrast, she sees very little in the way of communication. "I would have expected something a bit more subtle," says the innovation manager.

As the discussion intensifies, Claus Potthoff is listening in the background. "This feedback is very important for our work," says the Head of Design Strategy/Communication at AUDI AG. With collaborative projects such as these, involving market research and design, it's not so much about evaluating individual models as it is about getting outside feedback on new ideas. "Design mustn't be created in an ivory tower. Only if we continually ground ourselves can we build cars for people." But people sometimes see things differently than the designers, as Juan Carlos

Huerta Martinez must admit: Although the teardrop form of his quattro PowerSpace certainly does elicit enthusiasm – there is even mention of the word "art" – none of the trend receivers see a family car in it, despite the integrated ski and bicycle tunnel. "For me, it's more a vehicle for the business sector," says Dr. Jan Oliver Schwarz, who works in the Corporate Development division of a large insurance company. Surprisingly, the vehicle study elicits completely different associations than first assumed. But then this is precisely how it provides the desired impetus. <<



See here how the Audi quattro concept showcar is created.

In brief



Award for Audi's "green train"

SUSTAINABILITY October 2012 saw the start of carbon-free rail transportation for new cars between the Audi site in Neckarsulm and the North Sea port of Emden. Audi's transport partner is DB Schenker Rail. In using the "green train" Audi avoids emissions of 3,420 metric tons of carbon dioxide per year. AUDI AG has already been using a carbon-neutral train for traffic to Emden since 2010. In recognition of this achievement the Company was chosen as winner of the "Logistics Sustainability Award 2012" by the German and Austrian Logistics Associations. "AUDI AG has played a pioneering role in automotive logistics through its use of eco-electricity for freight traffic from Ingolstadt," concluded the jury. Audi was the first company to use trains running on eco-electricity. Overall, more than 70 percent of vehicles produced by Audi are forwarded to their destination by rail, 36 percent of which take trains using renewable power.

Commitment for UNICEF

DONATIONS Ingolstadt is "UNICEF Child Friendly City 2012/13" and will be raising money for the children's rights world organization for a one-year period. Audi apprentices built a donation meter for Ingolstadt City Hall to display the running total raised. AUDI AG started the ball rolling with an initial donation of 100,000 euros.

Audi connect at the CeBIT

INFOTAINMENT For the first time ever, Audi had its own stand at the CeBIT, one of the most important events in the digital world, to present solutions for mobile IT applications. The spotlight was on connectivity. Audi connect brackets together all functions that link the driver with the Internet, the car and the environment.

Short Facts



5,000

Users of the smartphone app Audi music stream can pick up more than 5,000 Internet radio stations in their vehicle.

Safety awards for the A3

SAFETY The Audi A3 has won four separate "Euro NCAP advanced" awards for innovative safety systems. In addition, the A3 was presented with the "Reward 2012" for Audi pre sense front plus. It also received the top rating of five stars for its passive crash safety (www.euroncap.com/rewards/audi_pre_sense_front_plus.aspx).





R8 e-tron: pure dynamics!

ELECTRIC VEHICLES Markus Winkelhock powered the Audi R8 e-tron, the all-electric high-performance sports car, around the 20.8 kilometer long Nordschleife of the Nürburgring in just 8:09.099 minutes. The R8 e-tron's two electric motors give the car a combined power output of 280 kW (381 hp). "This run was a unique experience for me," declared driver Winkelhock. "The torque that the R8 e-tron's electric motors unleash in propelling it uphill beats anything I've ever experienced – not least because they make barely a sound. An entirely new experience!"

Always striving for a new goal: » Racing driver Rahel Frey and former Olympic ski champion Hilde Gerg compete in the snow – first on skis and then in an Audi SQ5 TDI. » A live performance in front of an enthusiastic audience – nothing brings more joy to jazz singer Viktoria Tolstoy. » Lamborghini employee Giorgio Sanna not only tests each new model – he also lives by the values of the legendary Italian car brand.

My Inspiration



emotional

sporty

dedicated

Duel *in the snow*

Audi factory driver Rahel Frey and former Olympic ski champion Hilde Gerg go head-to-head in an unconventional competition: First they go down the slope on skis – and then in the new Audi SQ5 TDI!



PHOTOS | STEFANSCHUETZ.COM



Down to the valley
with top technology:
Skiing sensation
Hilde Gerg carves
tight turns on skis;
factory driver Rahel
Frey dances around
the slalom gates in
the Audi SQ5 TDI.



Impressions from Saalbach-Hinterglemm: Rahel Frey (left) tests the slopes, the two competitors on the chairlift (above) and just before the start of the first run (below).



PHOTOS | STEFAN SCHUETZ.COM

This is one of those idyllic days for skiing. Since morning, the sun has been peeking through the wispy clouds on the “Turmwiese,” one of the most beautiful ski slopes in Saalbach-Hinterglemm. Perfect conditions for carrying out a special sort of duel.

Waiting to start at an altitude of 1,200 meters are a black and a dark blue SQ5 TDI. Standing next to the SUVs are two athletes whose quest is to continually explore new boundaries: Audi factory driver Rahel Frey, 27, who is currently one of the fastest women race car drivers in Europe, and Hilde Gerg, 37, Olympic slalom champion at the 1998 Olympics in Nagano and an Audi brand ambassador. They checked out the course in the morning, and now they await the start signal of an unconventional slalom race: The first run will be on skis, the second in the new Audi SQ5 TDI with 230 kW (313 hp) of power. The tense anticipation of the two competitors is perceptible: “I might be Swiss and can ski, but I’m much better on a snowboard,” says Rahel Frey. “Going down the ski slope in a car – that is an entirely new challenge for me,” states Hilde Gerg, who found fame in her ten years of professional skiing as “Wild Hilde.”

The first run: Rahel Frey wears her car racing helmet and Halti skiwear from the Audi collection. Ideally equipped, she takes up the challenge, but senses that she’s a bit out of her league in this part of the race. “My plan is: Don’t fall, keep the gap small, and if necessary just shoot straight down the hill!” Then the competition starts. The two racers are off with a strong push and immediately go into an aerodynamic racing tuck. The slope is not too steep, but thanks to her excellent technique, Hilde Gerg carves

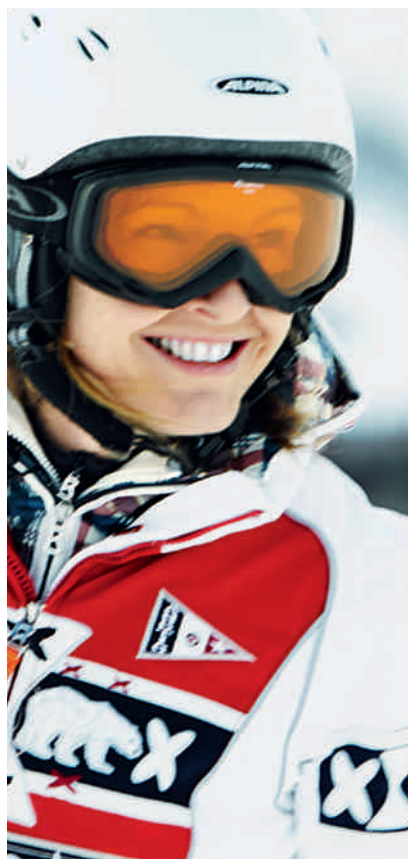


Ski boots instead of race overalls: The Swiss national Rahel Frey drives for Audi and is currently considered one of the fastest women race car drivers in Europe.

through the gates with tighter turns than her competitor. “Incredible – Gerg still skis just like she did at the height of her career!” says Fritz Steger, vice-president of the local ski club, at the finish area. Steger laid out the course, and he knows Hilde Gerg well: 11 years ago she won back-to-back downhill victories at Saalbach-Hinterglemm within 48 hours, and Steger’s father was the one who awarded her the victory medals.

Now Gerg rushes down the course at high speed and finishes a full two seconds ahead of Frey. “Does it still look like skiing?” teases Gerg, as though she wasn’t exactly sure. Rahel Frey is also satisfied with her ski run, but the gap is bugging her a bit, because she did not make any obvious skiing errors. “I am amazed at the speed Hilde reaches, especially through the turns! But I will make up that time in the car,” predicts Frey confidently.

The second run: Now, just as the two Audi SQ5 TDI cars are making their slalom debut, the sun gradually softens the snow on the slope. “Can I brake quickly down at the finish?” Hilde Gerg asks Saalbach veteran Sepp Haider, instructor for Audi driving experience and former rally race driver. “Definitely,” he replies, “but if the rear of the car starts to overtake the front, you must quickly back off on the brakes.” Haider, who was a ski instructor before he became a race car driver, leans over to speak to Gerg in her car and explains how to maneuver the SUV quickly and securely through the gates. Taking the offroad vehicle down the ski slope is like skiing in deep snow under difficult conditions. “What



Audi brand ambassador with Olympic Gold: During her racing career, Hilde Gerg stirred up the competition as “Wild Hilde.”



Audi alpine: the SQ5 TDI in its element.

counts here too are the correct swing, an ideal line and getting the material to glide – that’s why Hilde can grasp this right away,” is Haider’s estimation.

Moments after the start, the two SQ5 TDI SUVs are already making their way around the gates in spectacular fashion. Sepp Haider recommended that the drivers switch the stability control system to the offroad mode, so that they could make use of slip in the turns. The SQ5 TDI cars dance down the slope as though this were their natural habitat. Dozens of curious onlookers have gathered along the slope, and they can hardly believe what they are seeing – how powerfully and elegantly the two vehicles move over the snow. Rahel Frey wins this run with a full gate lead. “Driving a car with over 300 hp in the snow is an incredible feeling. The handling of the SQ5 TDI is super,” exclaims Frey at the finish. “But the warmer it gets, the more you need a feel for it. I’m sure you’re familiar with that from ski racing too, Hilde.” Gerg is

considered an excellent driver – and it is apparent in her expression that she expected a better result. She says: “On skis I can control my speed directly by my technique and body positioning. In the car, there’s an accelerator pedal in between – that in itself is a big difference.”

It is early afternoon, but the surrounding mountains are already casting long shadows over the slope. Frey and Gerg high-five each other at the finish and embrace. “And who won?” asks the Audi factory driver with an impish grin. “A tie!” answers the ski racer, still impressed by the experience of her slalom on four wheels. “Although that is unheard of in both of our sports.” An exceptional result for an exceptional race. <<



Dance on the slope: Experience the race between the two sport stars in spectacular pictures.



Happy faces: Hilde Gerg and Rahel Frey at the end of an exciting day of racing.




Luca de Meo

Member of the Board of Management for Marketing and Sales

“Vorsprung” starts anew every day



Long before I came to Audi, the German word “Vorsprung” held a special fascination for me. Because it says in a single word what makes a brand into a strong brand. What Audi stands for. For the dynamics of permanent motion, because “Vorsprung” is not a passive state. For the resolve to keep making a leap forward. For the ability to look ahead and to recognize what will be important to people – tomorrow and into the future, in over 100 countries around the globe. “Vorsprung” is packed with infinite passion. It is the drive with which we at Audi work on new solutions that make life easier. It is what people notice when they come into contact with Audi: at the steering wheel, at a dealership, on the web. And at millions of other places.



A powerful voice and an unbridled passion for experimentation. For Swedish Viktoria Tolstoy, every concert is a new adventure. She thrills the audience at the Audi Forum Neckarsulm with her passion for music.

»» Jazz, to me, means
freedom ««



The Audi Forum Neckarsulm is transformed into a jazz club for Viktoria Tolstoy's concert.



A singer's work day: Viktoria Tolstoy arriving in Neckarsulm and during the sound check (top), with her band before the concert and on stage in the evening (bottom).



It's just 15 minutes before she goes on stage, but Viktoria Tolstoy doesn't look nervous at all. On the contrary. The singer is sitting nonchalantly on the couch in her dressing room, laughing at a story her pianist is telling while typing a text message on her phone. Then she quickly touches up her lipstick – and it's time to go on stage. In the exclusive atmosphere of the Audi Forum Neckarsulm, some 300 guests are waiting in the beautifully illuminated ellipse for the Swede to enter. This summer evening, Viktoria Tolstoy is presenting her album "Letters to Herbie," a very personal interpretation of songs by one of her main role models – jazz legend Herbie Hancock.

"Welcome to the Audi Forum," says the blond singer in the polka dot dress

as she greets her audience. Her charm and easy-going manner immediately captivate the audience. She kicks off the evening with the ballad "Trust Me." Tolstoy's voice is velvety soft, yet powerful – crystal clear, yet intense. She is in perfect harmony with the repertoire of Hancock cover songs and her own – such as the tribute "Letters to Herbie," which she sings with the same ease and finesse as she does Hancock's funky classic, "I Thought It Was You." Though the band uses style elements taken from rock, folk and classic, they always remain true to the central theme – jazz. "Jazz is my foundation. It's what I base my music on," is how Viktoria Tolstoy described her credo that afternoon sometime between the sound check and performance. "Jazz, to me, means freedom –

especially the freedom to improvise. That's what makes every concert an adventure for me."

The love of experimentation and sheer joy of music tonight is not limited to the woman at the microphone. Viktoria Tolstoy always gives her quartet room to improvise – whether it's the virtuosic piano playing of Jacob Karlzon, rock riffs of guitarist Krister Jonsson and bass player Mattias Svensson or an elaborate solo by drummer Rasmus Kihlberg, who is married to Tolstoy. "No two performances are ever alike – that's also the reason why I sing. Plus, being in front of an audience is pure bliss," as Tolstoy describes her love for the stage.

Viktoria Tolstoy's longing for artistic expression began in the cradle. But more than that, it's a family tradition.

Her great-great grandfather was the Russian writer Leo Tolstoy, whose surname Viktoria adopted at the beginning of her career using the internationally recognized “y.” Her father is the well-known Swedish jazz pianist and vibraphonist Erik Kjellberg. “As a child, I woke up to music in the morning and fell asleep to it at night. We sang and played music every day,” says the 38-year-old. By the time she was four years old, she was already determined to become a singer. The pivotal moment of her career came at 16. “My father had me sing Billie Holiday’s “Lover Man.” Then he put on a version by Ella Fitzgerald and the song sounded completely different! I was fascinated by how jazz allowed you to experiment with your voice – and the decision was taken.”

Born near Stockholm, the musician released her first album “Smile, Love and Spice” in 1994 without ever having had a single singing lesson and garnered immediate recognition from renowned Swedish jazz musicians when she debuted at 20. Two years later, she even made it to the top of the Swedish charts with the more pop-oriented album “För Älskad (Too Loved),” becoming a star overnight.

She gives the first hint of her Russian heritage on the album “White Russian,” Viktoria Tolstoy’s self-proclaimed favorite. She recorded it in 1997 for the famous label Blue Note together with her mentor, the late jazz-legend Esbjörn Svensson. “I’ve been preoccupied with my family background since I was a child. When I was 13, I went with my family to visit Leo Tolstoy’s house for the first

time. I’ve been there five times since. It’s a very special feeling being related to him,” says the singer. Her great grandfather, Leo Tolstoy’s son, who suffered from a neurological disorder, went to Sweden to see a specialist for treatment at the end of the 19th century and fell head over heels in love with the doctor’s daughter. After they were married, he stayed on in Sweden. “A classic love story right out of a Tolstoy novel,” says Viktoria. To prepare for the album “My Russian Soul” a few years ago, she took an intense look at the music history of Russia – in her own way, of course. She interpreted classics by Rachmaninoff and Tchaikovsky’s “Swan Lake” as well as film soundtracks from modern Russian composers and even traditional folk songs – all of them embraced in jazz arrangements.



Scandinavian vocal wonder: Viktoria Tolstoy never had a singing lesson – she inherited her talent from her father, a famous Swedish jazz musician, and got her stage name from her great-great grandfather Leo Tolstoy.

Viktoria Tolstoy readily admits that she might have benefited from the reputation of her famous ancestor. However, the secret of this Swede’s success, who has been one of the top Scandinavian jazz performers for a long time now, is her rousing performances. Every minute of her two-hour appearance at the Audi Forum proved that the singer is still just as passionate about her music now as she was in the beginning. No wonder the enthralled audience would only let Viktoria Tolstoy leave the stage after she had given several encores. <<



Viktoria Tolstoy talks about her love of music and jazz legend Herbie Hancock.



Family photo:
Lamborghini's
head test driver
Giorgio Sanna
leans against
the Aventador
Roadster. His two
other favorites:
Countach (rear)
and Miura.

PHOTO | WOLFGANG

Trio *with* 36 *cylinders*

To celebrate the 50th anniversary of the first Lamborghini sports car, head test driver Giorgio Sanna takes the legendary Miura and Countach out of the museum to meet the new Aventador Roadster.





As if glued to the road:
the Aventador Roadster.

In the fifty years since the first sports car rolled out of former tractor builder Ferruccio Lamborghini's new factory in 1963, it hasn't always been an easy ride for Lamborghini, says Giorgio Sanna. But, as the car manufacturer's head test driver stresses, the company has always been spurred on by the passion of its employees and fans. He then describes the brand using an appropriate figure of speech: "We are on a steady upward trajectory today here at Lamborghini – and heaven knows our sports cars are strong and powerful enough to master any uphill climb," he says with a mischievous smile.

Giorgio Sanna is actually a matter-of-fact sort of person. But when the conversation turns to his favorites, he begins to rave: "Lamborghini is a dream brand in the international automotive industry. Having undergone various upheavals over the years, its core values remain emotionally unchanged." This comes from the man who lives out the values of the sports car manufacturer



More air! Increasing power requires larger air intakes on the Miura, Countach and Aventador (from above).



himself. Brand ambassador, head test driver, developer and race car driver – he is all of these. Sanna also channels his energy and enthusiasm into making sure that every new model becomes a Lamborghini in the tradition of the legendary company founder and automotive designer. The 37-year-old does this by "taming" the sports cars, so to speak, thereby ensuring through his work that the big, fast cars from Sant'Agata Bolognese can still be contained, despite their unruly power and temperament.

When racing driver Giorgio Sanna followed the call to Lamborghini in 2001, he encountered a legend among test drivers: Valentino Balboni. "Nothing escapes his notice," says Sanna, referring to Balboni's precision. For 40 years, he tweaked each new Lamborghini until it was perfect. While he had every respect for his predecessor, Giorgio Sanna quickly forged a reputation in his own right. In his dream job at Lamborghini, however, he applies the same high standards as Balboni.

Countless Lamborghini friends envy the man because he gets to drive exhilarating sports cars on test tracks and racetracks – and is even paid to do so.

In commemoration of the past 50 years, Giorgio Sanna himself drives three milestones in the company's history to the center of the little town of Sant'Agata Bolognese. Alongside the new Aventador Roadster are two models whose home is normally the factory museum: Sanna selects a yellow version SV Miura from the early 1970s because it was the first of the company's sports cars to be optimized by Balboni. Created by designer Marcello Gandini, the Miura was one of the fastest sports cars of its time – and, at just 1.05 meters in height, was also one of the flattest.

The Miura is propelled by a roaring V12 engine located behind the seats. But unusually, it was installed transversely rather than longitudinally, allowing the 5-speed transmission to be connected directly. This exceptionally compact engine-transmission unit provides an ideal center-of-gravity position – and an inimitable sound. The

3.9-liter powerplant develops its 283 kW (385 hp) just a few centimeters behind the driver. He hears everything: the voracious opening of the throttle and the dancing valves, accompanied by the powerful trumpeting of the exhaust system. With the vehicle weighing just under 1,200 kilograms, the engine has an easy time of it. But the driver must fight to find the ideal line: The Miura tends to oversteer and requires forceful countersteering. Only a professional like Sanna can calmly recount, even while cornering at speed, what else makes the Miura special: "It was hand-built and is an exceptionally high-quality product."

The second legend from the factory museum is a silver 1988 Countach. Lamborghini built the tapered successor to the Miura for 16 years. One reason why Giorgio Sanna selected this model is because of its scissor doors. First introduced on the Countach, they are now part of the Lamborghini tradition, along with the extremely flat windshield, and the razor-sharp body design.

The powerplant in the Countach



50 years of Lamborghini

In 2013 the cult brand is celebrating the 50th anniversary of the first Lamborghini sports car – the 350 GT. The highlight of the festivities is a 1,200 kilometer jubilee tour that will pass through the most beautiful regions of Northern Italy from May 7 to 11, 2013. Admirers of the brand from all around the world will bring their cars to Milan, where the tour will begin. Passing through the stylish seaside resort of Forte dei Marmi, the route will cross the vineyards of Tuscany and the Maremma nature reserve and then continue on to Rome before heading back north. The procession will traverse the magical Strada dei Sette Ponti (Seven Bridges Road) before crossing the Tuscan mountain passes. Via the Futa and Raticosa passes, the route will then lead to Bologna. The tour will wrap up with a gala dinner at the Lamborghini headquarters in Sant'Agata Bolognese. More information on the anniversary can be found on the website www.lamborghini50.com.



Classic sports car design: the inside of the Miura with gate shifting and large dials.



Giorgio Sanna at the rear of the Countach: The 1988 model still has a futuristic appearance.



Closely related: 45 years separate Miura and Aventador. Both are real eye-catchers.

also has 12 cylinders. With its 5.2-liter engine that harnesses 335 kW (455 hp) output, Lamborghini ushered in a new era. The extremely long first-gear ratio transforms starting into an art form. If, like Sanna, you are able to go easy on the throttle, you can achieve a wheelspin start and use first gear even while taking curves at high speed – the gear ratio allows the car to exit them at speeds up to over 100 kilometers per hour.

Completing the trio is the current top-of-the-range Lamborghini model, which the manufacturer introduced into its fabled 12-cylinder club in 2011. The Aventador puts everything else in the shade: The LP700-4 with a carbon-fiber-reinforced monocoque provides lightweight construction modeled on Formula One cars. Its 515 kW (700 hp) output is transmitted to all four wheels, boosting its already breathtaking driving dynamics still further. And the Aventador Roadster combines this dynamism with the experience of open-

top driving. Never before has it been easier to handle a Lamborghini, provided the driver doesn't ignore the electronic assistance systems. "Always look in the direction you want to go," advises Sanna, smiling. "Especially when the back of the Aventador starts fishtailing!"

After a thrilling demonstration, Giorgio Sanna drives the roadster into Sant'Agata Bolognese at a leisurely pace, parks up and gently closes the car door. Allowing his gaze to wander over the three sports car icons gathered for the family photo, he reiterates what it is that has kept the brand going for 50 years: "We live and breathe these cars. We are attached to each and every Lamborghini." <<



A brand of passion celebrates its anniversary: Discover more about 50 years of Lamborghini.

In brief

New Audi factory in Mexico

LOCATION A new Audi plant is being built in San José Chiapa, in the Mexican state of Puebla. "With this location, we will be able to expand our activities in the American markets," says Prof. Rupert Stadler, Chairman of the Board of Management of AUDI AG (below right, with Rafael Moreno Valle Rosas, Governor of Puebla). Production will begin in 2016.



Powerful: A6 allroad quattro

POWER PACKAGE The Audi A6 allroad quattro celebrated its premiere with the 3.0 TDI engine, which delivers 230 kW (313 hp) thanks to twin turbocharging. Compared with its predecessor, the performance of the six-cylinder engine has improved, while consumption and, consequently, emissions have decreased by up to 20 percent.



"Doors open!" in Ingolstadt for knowledge-hungry kids

YOUTH On the public holiday that commemorates German reunification, the crowds flocked to Audi in Ingolstadt: Over 5,000 children and parents experienced the fascination of cars with child-friendly presentations at the "Doors Open Day" – an initiative of the "Sendung mit der Maus" television program. On this occasion, the otherwise closed doors of the Design department and the wind tunnel, among others, were opened to the young fans.

Support for Olympic athletes

SPONSORSHIP During the 2012 Olympic Games in London, Audi provided 60 vehicles to the German team, including four electrically driven A1 e-tron cars. The German House in London included an Audi Lounge in which participants and visitors could meet. Audi will continue to sponsor German Olympic and Paralympic athletes in the future: The partnership with the German Olympic Sports Confederation (DOSB) and the National Paralympic Committee Germany (DBS) has been extended until 2016.

Strong team: Audi and FIS

SKIING Audi has been actively involved in skiing for almost three decades – and will continue this association for at least the next five years. The Company has agreed to continue its partnership with the International Ski Federation (FIS) until 2017. This means that the FIS World Cup will continue to take place under the Audi banner in the years to come. The quattro drive system, which provides added dynamics and driving safety, will have a chance to showcase its strengths on wintry terrain too. The presentation of brand and technology at the World Cup has made Audi and quattro something of an institution among winter sports enthusiasts.

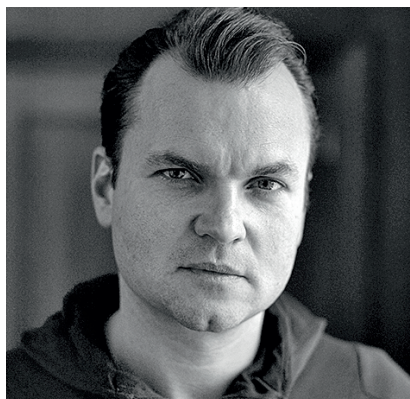
Short Facts

100

The Le Mans winner R18 e-tron quattro with hybrid drive provided 100 percent reliability in the 2012 season, with not a single breakdown.



Authors and team



Thilo Komma-Pöllath

Author, Munich

This freelance writer from the Upper Palatinate region contributes regularly to weekly German publications such as the *Süddeutsche Zeitung Magazin* and *Frankfurter Allgemeine Sonntagszeitung*. Since specializing in sports and travel in journalism school, he has focused on interviewing athletes, musicians and actors. His next major project as a journalist? Touring Alaska in a recreational vehicle with his daughter Carlotta.



Andrea von Treuenfeld

Author, Berlin

After working for many years as a columnist, correspondent and editor-in-chief, this freelance journalist now primarily writes biographies and reports on cultural events. The cultural gala in Ingolstadt gave her the chance to combine the two. "Experiencing the artists on stage and then chatting about their life with them over dinner – that was extremely interesting."



Steve Herud

Photographer, Berlin

John Tenner

Producer, Malaga

Herud (right) and Tenner (large picture, left) traveled around the world to portray Audi enthusiasts and their vehicles. They not only had to adapt to each country's idiosyncrasies, but also occasionally persuade shy people to pose for the camera. Thanks to the well-traveled producer's language and people skills, the Berlin photographer succeeded in capturing moments that reflect the passion for Audi on every continent. This was also made possible because the people portrayed – such as Australian Ian Fankhanel (large picture, right) – supported the project particularly enthusiastically. Many thanks to the global Audi community!





Jürgen Zöllter

Author, Fischach

This freelance journalist from Fischach, Bavaria, writes features and reports on people and their cars – with a focus on high-performance vehicles. “I’ve driven every luxury model made in the past 25 years.” He also writes about motorcycles and historic race cars. It will therefore come as no great surprise to hear that Jürgen Zöllter has a racing license.



Manfred Jarisch and Ulrike Myrzik

Photographers, Munich

These two have been collaborating since 1993. They specialize in features, portraits, architecture and design. “Every new job presents new challenges. One-size-fits-all solutions do not exist. That means our work is always exciting.” What else do they want to photograph? “The list is endless. The tallest towers, the oldest trees, fog, the ocean, our son Josef. And Hollywood star Jack Nicholson!”



Christian Eisenberg

Illustrator, Hamburg

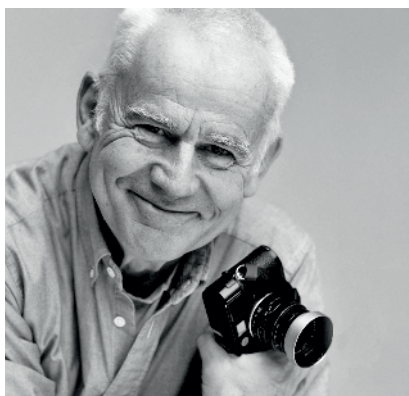
His specialty? Detailed 3D portrayals. His mission? To identify the core meaning of something and represent it in such an entertaining manner that people will understand it at once. But this illustrator feels that graphic expertise is only half the story: “You also need a lot of patience and excellent concentration to navigate three-dimensional realities.”



Arne Gottmann

Author, Hamburg

This journalist and test driver is happiest with a steering wheel in his hands. He has devoted himself to anything with wheels for some 20 years. But he did not mind being a passenger while exploring Paris with Eva Padberg: “That made the French capital twice as nice!”



Jim Rakete

Photographer, Berlin

Since his youth, Jim Rakete has set out with his camera to capture that unmistakable look in a person’s expression on their first encounter. He is currently preparing the exhibition of a film and photo series about actresses who portray characters that they should never have been allowed to play.

Audi sets the course for further growth

The vision is very clear-cut: As “Audi – the premium brand,” the Company wants to become the world leader in delighting customers. In pursuit of that vision, excellent products and a unique world of discovery will continue to captivate people. The decisions that were made in the past fiscal year paved the way for the further strategic expansion of the Audi Group. For example, Audi has revived its time-honored tradition as a motorcycle manufacturer through the takeover of the Italian brand

Ducati. Like Audi, Ducati possesses considerable expertise in lightweight construction and high-performance engines, and is noted for its emotionally charged design idiom. In acquiring Ducati, the Audi Group has further raised its profile and now embodies sportiness, innovation, passion and a consistent premium philosophy more strongly than ever.

However, 2012 also brought major economic challenges. There was a marked slowdown in global economic growth as the year progressed. In addition, many passenger car markets

proved intensely competitive. Amid this difficult environment, the Audi Group’s continuing expansion of its worldwide manufacturing network is an unmistakable declaration of its strength. Thus the successor to the current Audi Q5 is scheduled to go into production at a new plant in San José Chiapa, Central Mexico, from 2016. At the Hungarian site Győr, on the other hand, construction work is nearing completion: A new derivative model of the A3 family will be built on the new production line there from summer 2013. There are also plans



PHOTO | AUDI AG

67,231

Employees

The Audi Group employed an average of 67,231 people worldwide in 2012 – an increase of more than 4,400 compared with the previous year. This growth in the workforce came from the recruitment of more experts for the lightweight construction and electric mobility areas of expertise, and above all from the expansion of our production network and the acquisition of participating interests.

1,455,123

Deliveries of the Audi brand

1,455,123 cars of the Audi brand were delivered to customers worldwide in the past fiscal year; that is 11.7 percent more than in the previous year. The biggest drivers of demand were the new A1 Sportback and Q3 models, as well as the Q5, A6 and A8 model series.

EUR 48.8 billion

Revenue

A dynamic sales performance in the past fiscal year saw the Audi Group increase its revenue by 10.6 percent to EUR 48.8 billion.

EUR 5.4 billion

Operating profit

Despite a challenging economic environment and higher expenditure on new products and technologies as well as significant advance payments towards the expansion of manufacturing structures, the Audi Group achieved a slightly higher operating profit compared with the previous year, taking it to a best-ever level of EUR 5.4 billion.

11.0%

Operating return on sales

An operating return on sales of 11.0 percent meant the Audi Group was again well ahead of its strategic target corridor of eight to ten percent.

30.9 %

Return on investment

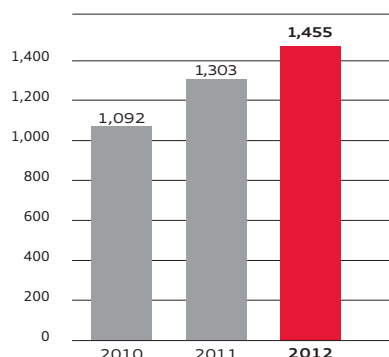
With a return on investment of 30.9 percent in the past fiscal year, the Audi Group was again one of the world's most profitable vehicle manufacturers.

EUR 11 billion

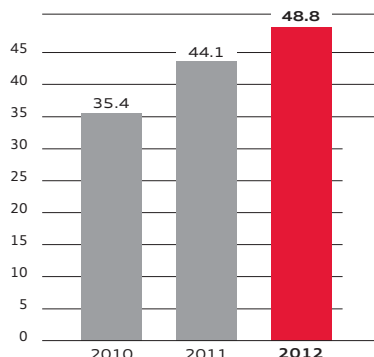
Capital investments

The Audi Group continues to invest strongly in the future. It has plans for total capital investments amounting to around EUR 11 billion by 2015. The focus will be on the development of new products and technologies. The Company will also continue to expand its international production network.

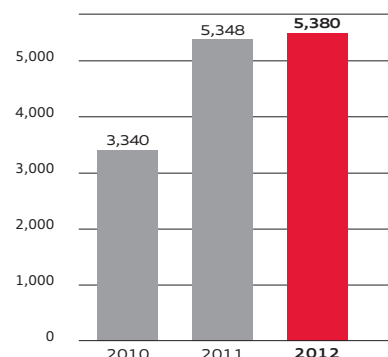
Deliveries
of Audi vehicles (thousand)



Revenue
(EUR billion)



Operating profit
(EUR million)



to build another A3 model at the new Foshan plant, in Southern China, which is currently being constructed by the Chinese joint venture FAW-Volkswagen Automotive Company, Ltd.

Dynamic corporate development is also generating demand for extra capacity at the Ingolstadt and Neckarsulm locations. One measure designed to ease the pressure on the Ingolstadt plant is the creation of a new facility in Münchsmünster, which will accommodate a new production line for form-hardened body components, a press shop and an aluminum pressure die-casting foundry. Since 2012 Neckarsulm has been home to the new engine testing center, the most innovative and efficient engine test facility in the Company. The common objective of all investment measures is to permanently safeguard and increase the innovativeness and competitiveness of the German plants.

As part of its long-term product initiative, Audi again introduced a large number of new products onto the markets in 2012. For example, the A1 car line gained a five-door version in the shape of the Audi A1 Sportback, which affords more headroom in the rear, provides easier access and – thanks to innovative efficiency technologies – has low fuel consumption. Since late summer 2012,

the new A3 has been the benchmark in its segment, with its extensive range of infotainment and driver assistance systems, a sporty, progressive design and pioneering lightweight construction. We have widened the Audi brand's hybrid portfolio with the addition of the A6 hybrid full-size sedan and the A8 hybrid luxury sedan.

The newly introduced models already stimulated demand in 2012. Thanks to the attractive, sporty product portfolio, over 1.45 million Audi brand vehicles were delivered to customers worldwide in the past fiscal year. That represents an increase of 11.7 percent – or more than 150,000 automobiles – within the space of just one year.

The dynamic sales growth meant that the Audi Group's revenue rose by 10.6 percent to EUR 48.8 billion. The operating profit just topped the previous year's figure at EUR 5.4 billion, despite higher expenditure on new products and technologies and significant advance payments towards the expansion of the worldwide production network. The operating return on sales of 11.0 percent was again above the long-term target corridor of eight to ten percent and comes as further evidence of the Company's sustained high profitability.

The past fiscal year was yet another important milestone for Audi along the road to becoming the world's leading

premium brand. The Company plans to remain steadfastly on that path in the future. Its intention is therefore to achieve the 2015 target of over 1.5 million deliveries worldwide of cars of the brand with the four rings even earlier than that date. The broad, attractive product range, to which a large number of new models and derivative versions will be added in 2013, will be used as a springboard to increasing our market shares and further improving our strong competitive position in the premium car segment.

To implement the growth strategy, an ambitious investment program has been launched. As well as expanding worldwide production and sales structures, the plan focuses above all on adding to the product and technology portfolio. The main emphasis is on the strategic core competences electric mobility (Audi e-tron), lightweight construction (Audi ultra) and connectivity (Audi connect). In addition, the Audi Group is fully committed to the ongoing development and optimization of efficient combustion engines. All in all, the Audi Group intends to invest a sum of around EUR 11 billion over the next three years with a view to taking "Vorsprung durch Technik" to the next level and becoming the world's leading premium brand. <<

2013 Financial Calendar

Quarterly Report, 1st quarter
April 30, 2013

Annual General Meeting
May 16, 2013
Audi Forum Neckarsulm

Interim Financial Report
August 2, 2013

Quarterly Report, 3rd quarter
November 4, 2013

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