

PORSCHE

CAMPUS

Summer
semester
issue
2019



GO FOR IT

BOLD APPROACHES
TO BUSINESS

OPENINGS. OPPORTUNITIES. CAREERS.

08-29 FOCUS

Nothing ventured, nothing gained:

Trying new approaches, pursuing creative ideas, taking roads less traveled—being different leads to success not only in art.

See the Porsche Art Book from Christophorus Edition on pages 36–37 of this magazine



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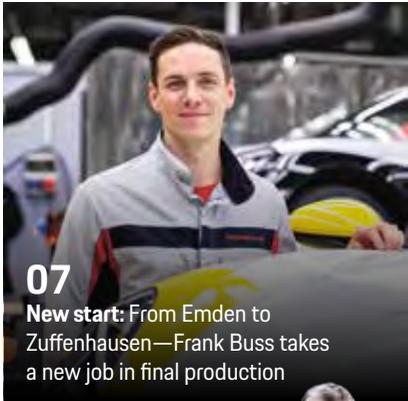
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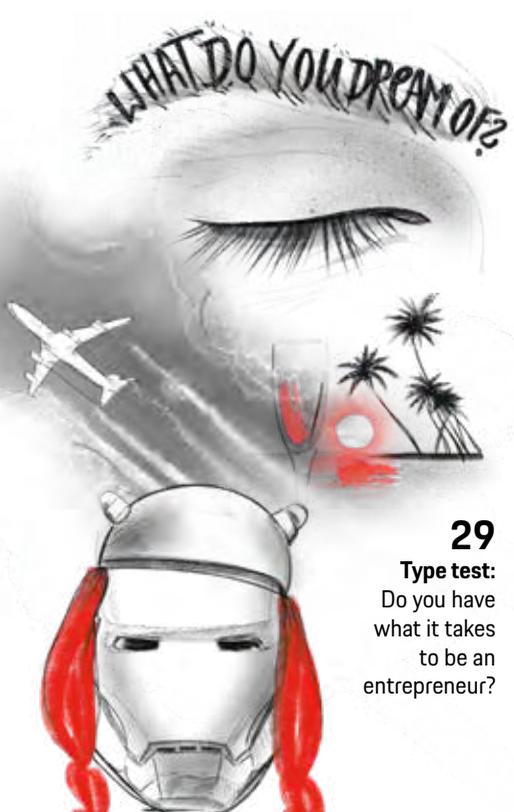
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PERSPECTIVES

A PORSCHE TOUR THROUGH THAILAND

A passion for Porsche is celebrated around the globe, not only in Europe and America. Southeast Asia has a vibrant community as well. It comes together in Bangkok every year for a classic Porsche gathering like the established events in Europe. This one was launched in 2016 by Sihabutr Xoomsai, executive editor of *GT Porsche Thailand* magazine. For him it is a matter of the heart, because he loves sharing his enthusiasm for Porsche with others. In 2018, Stefan Bogner, a photographer and publisher of *Curves* magazine, set off on a road trip through northern Thailand with a group of Porsche fans. That led to a fascinating series of images like these.

Photo: Stefan Bogner/Curves magazine



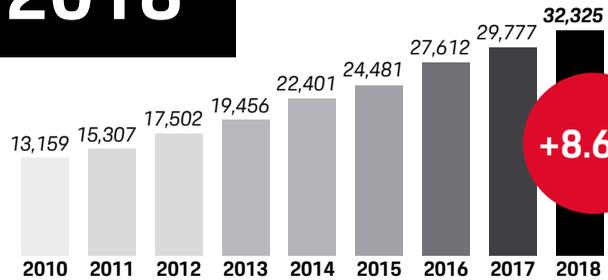
2018



New milestone: more than

30,000

employees



More than

2,500

new jobs

0.7%



fluctuation



160,000

applications

650



contracts
made permanent

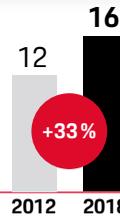
» 80%

leadership positions
filled internally

NUMBER OF EMPLOYEES

JOB ENGINE TAYCAN

The number of employees at Porsche continues to grow, along with greater electrification of the company's cars. At the end of 2018 Porsche employed a total of 32,325 people—2,548 more than the year before. And growth is continuing. The company is hiring more than 1,500 skilled workers just to produce the Taycan and its derivative the Taycan Cross Turismo, the first electric sports cars from Zuffenhausen. Since 2012, Porsche has more than doubled the size of its workforce. Now more than 50 percent of its employees are from Generation Y (born between 1980 and 1995) or even later. A major aim continues to be raising the proportion of women. In 2012 women made up 12 percent of the workforce but now account for 16 percent. The 2018 employee engagement survey shows how satisfied the employees are with their work: 94 percent consider the sports-car maker to be an attractive employer.



Percentage of **women**

21%

Women
among promotions



Women
among new hires

21%



"The overall development shows that we are also a very interesting employer for women."

Andreas Haffner, Member of the Executive Board, Human Resources and Social Affairs since 2015

1,500

new jobs for the
Taycan and its derivative
the Taycan Cross Turismo

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Photo: Sabina Paries

FRANK BUSS'S FIRST DAY OF WORK
AS A PRODUCTION ASSEMBLY SPECIALIST

“THE STANDARDS HERE ARE VERY HIGH!”

Frank, until recently you were working for Volkswagen in Emden. Now you're at Porsche in Zuffenhausen. What's your first impression of the people here in Swabia?

Oh, they're very open-hearted and friendly. Where I come from, we would nod and say “Morning” and that was considered a real conversation. People only showed their warmth later. My first impression is that things are more informal here, especially at Porsche.

That sounds good. Actually, you came here because jobs were cut at the plant in Emden.

That's right. I was really hit by that at first. But then I got an incredibly interesting offer to work on the first electric Porsche. Taking the job meant moving 700 kilometers from home and giving up my house and garden with its apple tree, but otherwise I'd be unemployed or have an unfulfilling job. There's nothing like this in my home region of East Frisia.

Frank Buss (32), a heating and air-conditioning technician, joined Porsche in February, where he works as an assembly specialist, responsible for the final touches.

What does your family say about it?

My girlfriend still finds it a little difficult; after all, she has a big family. My parents advised me to take the job. There are career opportunities at Porsche, and I can develop my skills and prospects. I'm an only child and am close to my family. But my parents are retired—they don't know the region of Swabia very well and are looking forward to enjoying a vacation here soon.

Have you found a place to live yet?

Oh, that's a tough subject! Southern Germany is really a different world. At home in the north, a house with 180 square meters and a yard would cost around €250,000. Here in Stuttgart you would barely get a two-room apartment for that. But now I've found something outside the city. And I'm used to commuting.

How was your first day at work?

Great. My co-workers gave me a very nice welcome. There were a couple of confusing moments due to our different dialects, but that was quickly cleared up with a few questions. Although I'm experienced in this field, I was a little nervous because the standards and quality here are on a higher level. Porsche is an employer with a very clear idea of both the company itself and its product.

What are your responsibilities?

I'm starting out with the current line of sports cars before I switch to the Taycan. I'm responsible for the assembly line and any final corrections. That means I examine every single car for any possible defect, however small. The final touches, so to speak.

Are you happy that you took this step?

Absolutely! And if my girlfriend now joins me I'll be able to say with a clear conscience that it was the right decision. So far, everything has gone like clockwork. Having a secure job gives me peace of mind. And the fact that I've landed at Porsche makes it all even better.

Interview Jo Berlien

LISTEN TO AMY!

"I would move to Mars." This statement says everything about Amy Wilkinson. She is always ready to explore new frontiers. And point the way for others.

Amy Wilkinson is not your ordinary business consultant. Born in Hong Kong, she has lived in Spain, Mexico, Argentina, and Brazil. She studied sociology and launched a socially responsible art export project. She was a senior policy advisor at the White House under George W. Bush, teaches at the Stanford Graduate School of Business, and founded the Ingenuity management consultancy. A storybook career, in other words.

And yes, she has also written a book. *The Creator's Code* does not rehash the usual business strategies, however. Instead, Amy interviewed 200 business founders, including some of the big fish like the people behind Airbnb, PayPal, eBay, Dropbox, Tesla, Zipcar, and LinkedIn, and asked them to describe their strategies. She then distilled "six essential skills of extraordinary entrepreneurs."

1. Find the gap

Extraordinary entrepreneurs spot opportunities that others don't. Where is the gap, the unmet need, the new potential? They combine different concepts and business ideas from completely different fields to embark upon new paths.

2. Drive for daylight

Race-car drivers don't focus on the road. If they look left or right they'll hit the rails. Extraordinary entrepreneurs focus on the future. They stay on track, scan the margins, and don't indulge in nostalgia but keep moving at high speed to set the pace in rapidly changing markets.

3. Fly the OODA loop

Extraordinary entrepreneurs are constantly adjusting their assumptions. They use OODA loops—observing, orienting, deciding, and acting in rapid succession—to move quickly from one decision to the next. They master fast-cycle iterations to outstrip less agile competitors in short periods of time.

Amy Wilkinson

is a lecturer at the Stanford Graduate School of Business, which has trained many a mover and shaker in Silicon Valley. She has also worked for J.P. Morgan Bank on mergers and acquisitions, and at the White House. She grew up near Seattle, studied sociology and management, and currently lives in San Francisco.



www.amywilkinson.com



4. Fail wisely

Extraordinary entrepreneurs understand that many small mistakes are not only inevitable but also help prevent catastrophic failures. Developing a confident approach to mistakes hones the ability to turn setbacks into successes.

5. Network minds

Professional forums, both online and offline, harness intellectual potential and cognitive diversity. Extraordinary entrepreneurs foster flash teams, promote contests and games, and work together with people who would otherwise never have come together.

6. Gift small goods

Extraordinary entrepreneurs help others, exchange information, and create new opportunities for colleagues. A friendly approach is the basis for building relationships. In a globalized world, winning means cooperating.

“Don’t look for money, look for customers!”

Amy, if I have a great idea but no seed money, loans, or financial support from my parents, how can I find capital?

By having an initial product—a test product—that customers will pay for. Don’t look for money, look for customers! Crowdfunding is one way to get money. Join forces with a partner whom you trust and who has already founded something. It’s important to have a shared vision, along with strengths that complement each other.

How can I get over the fear of failure?

In my interview with Elon Musk, he says that he anticipates that failure will happen but believes that his work is too important to let fear of failure get in his way. If you believe your work is important enough, then you’ll keep doing it, even if there’s some fear involved.

Have you ever dreamt of having a brilliant idea that makes the world a better place?

Yes. I want to help people think and act in entrepreneurial ways. I want to help them become more effective so they can reach their goals. That’s where I’m applying my talents—to helping others become strong and effective.

What do you associate with the Porsche brand?

For me, Porsche stands for beauty and performance. As an American, I have a lot of respect for the German car industry. And Porsche stands out as a first-rate product. I associate high levels of integrity and quality with the sports-car maker. A Porsche is an inspiring product and a lifestyle brand.

Photo: Michael Wagner

ACCELERATED EFFECTS

Porsche is an innovative company that invests specifically in ideas and young founders. The sports-car maker is thereby actively promoting the digital transformation.

Time for transformation. "If we want to keep building on our success over the past years, we have to change ourselves in fundamental ways," says Lutz Meschke, Member of the Porsche Executive Board for Finance and IT. The company is therefore working with start-ups in a number of different ways. As Meschke explains, "Porsche has always been one of the main forces behind innovations in the automotive industry. Innovations in the past have been largely driven by technology and closely related to our traditional core areas of expertise. Some of the changes needed now are further removed from our current core expertise, which is why we need to build a strong ecosystem with expert partners." Porsche has now developed a broad set of different partnerships with start-ups, tailored to reflect the young businesses' respective levels of maturity.

The sports-car maker started working with the HHL Leipzig Graduate School of Management back in 2016. In a topic-focused partnership with SpinLab, the accelerator at the Leipzig business school, Porsche has been enabling young scientists to work on their own ideas and develop them to the point where they can go onto the market.

Since 2018 the APX accelerator, a joint project by Axel Springer and Porsche Digital, has been supporting start-ups in the early stages of their activities and accelerating their development. This can also apply to new companies founded outside the automotive sector that address the lifestyles of different target groups.

As part of the "Startup Autobahn" innovation platform in Stuttgart, the sports-car maker is working with Daimler, Deutsche Post DHL, HP Enterprise, DXC Technology, ZF, BASF, and many other partners. This platform supports more mature start-ups with existing technologies and products. In just two years, Startup Autobahn appeared out of nowhere to become Europe's largest innovation platform.

CHOOSING PARTNERS

Some of the start-ups Porsche is working with:

ARTIFICIAL INTELLIGENCE

Artificial intelligence in the mobility sector is Anagog's main field of work. This company programs software that evaluates customer behavior in certain contexts. That enables improvements in areas such as intelligent parking options. The company's technology is currently being used in more than one hundred apps worldwide. Porsche Digital GmbH owns a minority share of Anagog.

- ★ 2010
- 📍 Tel Aviv, Israel
- 🔗 Artificial intelligence
- 🌐 www.anagog.com

EXEMPLARY ELECTRONIC WASTE DISPOSAL

Binee has developed a system for recycling old electric devices. Targeted recycling is designed to reduce the disposal of raw materials. The Porsche site in Leipzig offers employees a recycling service for their cell phones and other small electronic devices, which helps preserve the environment.

- ★ 2015
- 📍 Leipzig, Germany
- ♻️ Recycling
- 🌐 www.binee.com

Photo: Dominik Tryba



What it looks like when Axel Springer and Porsche join forces: Work space at APX in Berlin

Since February of 2017, Porsche has completed around forty projects with start-ups from around the world. About one-third of them are being developed further for serial production. Their results include technologies for the Taycan, the first purely electric Porsche, as well as company processes and logistics.

Porsche Ventures invests successfully in future-oriented technologies such as electric drive systems from Rimac, holographic AR head-up display systems from WayRay, and artificial intelligence from Anagog. The focus is not only on what Porsche itself can use, but also on strategic investment in future technologies, new business models, and entrepreneurial teams.

Start-ups are developing future-oriented topics with high levels of energy and technical expertise, but also with low levels of bureaucracy. Their culture explicitly allows for admitting that some attempts are unfruitful and that new attempts need to be made, along the lines of "things are only impossible until they're not."

Just the process of working together with start-ups can have an accelerating effect. This can happen, for example, when specialized departments at Porsche come up with initial ideas for developments they would like to see in the future. People then look around to see whether a start-up may have already launched the corresponding technology, and if so, whether it can be adapted for the purpose at hand or used to shorten the road to creating an innovative product.

Christian Knörle, a project manager working on the company-wide innovation team, is one of those who considers start-ups a positive driving force not only in the lineups described above. Other projects might also benefit from the spirit behind a culture that not only tolerates but actively welcomes mistakes. Or one that is resolutely customer-oriented. "We're interested in new technologies and business models," he emphasizes. "At the same time, we're also excited to see the determination and speed that start-ups show despite all the obstacles they face."

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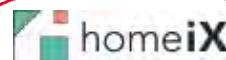
Joint project

HIGH MOBILITY

Car makers have a clear idea of what vehicles will be like in the future—computers on wheels. The Berlin-based High Mobility start-up offers developers a platform and tools that make it easier for manufacturers to develop software for connected cars. Porsche supports the development of this innovation platform.



- ★ 2013
- 📍 Berlin, Germany
- 🔗 Software
- 🌐 www.company.high-mobility.com



SMART LIVING

Connecting cars with homes—that is the focus of the home-iX start-up. This company, of which Porsche Digital GmbH owns a 10 percent share, was founded by two former Porsche employees. The expertise behind home-iX is expected to produce concrete solutions for connecting homes, vehicles, mobile end devices, and digital assistants.

- ★ 2016
- 📍 Stuttgart, Germany
- 🔗 Digital connectivity
- 🌐 www.home-ix.com

Part ownership

01/2019

READY, SET, BUSINESS!

Start-ups are changing the world. But what exactly is a start-up?
And how are they different from other companies?

What goes into a successful start-up? A great idea, a great product, a great team, and a great way of putting the idea into practice. And will that give us the equivalent of Facebook? Not quite. Because a fifth variable comes into play: luck—in any possible order of magnitude. This is the view of Sam Altman, president of the California-based founder center “Y Combinator” and one of the visionaries in Silicon Valley. His conclusion: “There are much easier ways of getting rich.”

Yet start-ups are booming. Sometimes they are praised so much that one wonders how traditional industries will be able to succeed at all anymore. Facebook, Google, Amazon—these are all former start-ups. Just like Apple and Microsoft. And Porsche. Porsche? That’s right, Porsche!

Small businesses were obviously being founded long before the term “start-up” became popular. Their success depended on a

number of different factors. The wave of small businesses founded in the German state of Baden-Württemberg more than a century ago had to do with the fact that the area did not have many large companies offering secure jobs, in contrast to the booming

PORSCHE



A wooden house in the Austrian town of Gmünd: Ferry Porsche put his sports-car vision into practice here in 1947

(Ferry Porsche, right, in 1959 with his son Ferdinand Alexander)



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SMARTPHONE-BASED REWARDS

Miles, of which Porsche Digital owns a share, was the world's first company to offer a reward program for mobility regardless of the type of travel—whether by car, rail, or on foot. The Miles platform uses artificial intelligence to understand and anticipate customer needs.

- ★ 2016
- 📍 San Jose, California
- 📍 Mobility reward program
- 🌐 www.getmiles.com



WORLDWIDE ROADSIDE ASSISTANCE

Porsche Ventures is investing in artificial intelligence and has acquired a share of Urgent.ly. This U.S.-based company supports roadside assistance services in North America, Europe, and Asia. Drivers, service providers, and manufacturers can use a geolocalization platform in real time to coordinate assistance. More than 50 percent of roadside service providers in the United States already use this platform.

- ★ 2011
- 📍 Vienna, Virginia, USA
- 📍 Roadside assistance
- 🌐 www.geturgently.com

01/2019

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Part ownership

Part ownership



Photo: turtix/shutterstock

Crist Drive in Palo Alto, California: Steve Jobs (right) and Steve Wozniak founded the global company Apple in this garage

Ruhr District with its coal plants and steel works. Some people therefore wanted to improve their lives themselves.

Start-ups can always be found where there are few jobs and not much industry but many eager entrepreneurs. This explains why one tends to find more innovative companies in Tel Aviv than in Switzerland, where good and well-paid jobs are the rule. But that is just one side of the phenomenon. The modern start-up scene developed in a part of the world that has long been prosperous—namely, California. Or to be precise, at Stanford University, located near Palo Alto and around 60 kilometers south of San Francisco. The key factor here is the mindset. Students at many European or German universities receive a solid education—but

what they do after graduation is usually only of marginal interest to their professors.

At Stanford, that has always been different. Its objective is “to qualify students for personal success and direct usefulness in life” (Stanford University, 1885). It would appear that many people have taken the objective of qualifying students for “personal success” and “direct usefulness in life” to heart. Without Stanford University, Silicon Valley probably would not have come into being. Moreover, the computer technology that has been rapidly developing for half a century now has also been fertile ground for high rates of progress.

However, in order to be truly successful, yet another variable has to be taken into ac-

count. That variable is the customer, who can be difficult to calculate. To quote Sam Altman again, “You can’t create a market that doesn’t want to exist.” A start-up’s idea for a product has to excite at least one customer. Even if that one customer is the start-up’s founder. Like Ferry Porsche, who couldn’t find the sports car he wanted, so he set about building one himself. By extension, Mark Zuckerberg couldn’t find the right platform to date women, so he founded Facebook.

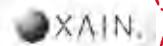
In both of these cases the respective market was very modest. In post-war Germany of the 1950s, hardly anyone was thinking about driving sports cars. And Mark Zuckerberg’s potential users were his fellow students at Harvard University, who were not very digi- >

Part ownership

AUGMENTED REALITY

The WayRay start-up develops and produces holographic head-up displays and wants to integrate virtual objects into the driving experience by means of augmented reality. The company has also developed a technology that enables digital services to be visualized directly on windshields. Porsche is investing the equivalent of around €69 million into this company.

- ★ 2012
- 📍 Zurich, Switzerland
- 📍 Augmented Reality
- 🌐 www.wayray.com



BLOCKCHAIN APPLICATIONS

The Xain start-up in Berlin specializes in cybersecurity and blockchain technology. In a joint project with Xain, Porsche is the first car maker to test the process in cars. It enables on-board transactions to be safe, fast, transparent, and forgery-proof. The company won the first Porsche innovation contest in 2017.

- ★ 2014
- 📍 Berlin, Germany
- 📍 Blockchain applications
- 🌐 www.xain.io

Joint project

tally connected at the time. What these two entrepreneurs shared was the unbridled desire to create something new and to be successful at it. However, not all societies value the associated risks as much as Silicon Valley does. In some places, people who give up secure jobs are only pitied. And if those individuals who strike off on their own fail with their enterprises, they are subject to no end of criticism. In that type of environment with its abundance of caution, many start-ups will not be founded in the first place. After all, there are more than enough counterarguments: no time, no money, no support from the boss. Let alone respect from one's colleagues.

The mindset that enabled the California brand of start-up culture to spread throughout the world takes precisely the opposite approach. You cannot be successful unless you leave the safe haven of a company or don't even start working there. And if you don't reach your goal, at least you've given it a try and learned something in the process. Failure is part of business. More than that—failure is helpful, at least if one is willing to draw the right conclusions from having failed.

Precisely this mindset is prevalent in the United States, but also in China and in Tel Aviv. Without this inner drive, Elon Musk would probably never have brought a Tesla onto the market. There is only one direction—forward. This way of thinking means that failure will not be associated with losing face. Another factor of crucial importance is

the team. Mark only wanted to employ people at Facebook whom he would also enjoy spending his free time with. Especially at the

known to change overnight. Yahoo, Google, Apple, and Facebook were essentially by-products of what their founders originally envisioned.

It's important to make a distinction here. The idea is one thing, but putting it into practice, or at least having a precise plan for doing so, is even more important. And it certainly doesn't hurt to have expert knowledge. "One of your goals has to be becoming an expert in your field," explains Andora Cheung, founder of the Homejoy cleaning service and now active at Y Combinator. She warns against building a product you wouldn't want to use yourself, pointing to her own experience as a deterrent. She initially failed with the idea of setting up a service that connects clients with therapists.



**Los Altos again:
Mark Zuckerberg
working on
a precursor to
Facebook in
January of 2005**



**Pure start-up spirit:
Larry Page and
Sergey Brin (right)
in 1998 at the
Google server room
in Mountain View,
California**



beginning, every team has to survive turbulent times together. The chemistry therefore has to work perfectly, as Sam Altman also emphasizes. Many start-ups have failed as a result of unfavorable internal dynamics.

The conventional notion that the customer is king is also of relevance to start-ups. If customers say they will support a start-up but would like to see some modifications to the main idea, business models have been

Doubt is also every bit as much a part of the business. Google founders Larry Page and Sergey Brin wanted to sell their search engine for a million dollars during the development process. But they couldn't find a buyer. So the young team simply kept going. Today Google has left other search engines behind, is one of the most valuable brands in the world, and has expanded its original business model.

Speed takes precedence over exclusivity. Start-ups seldom worry about patents. They focus on getting their product onto the market in a usable form as soon as possible. Many

investors do not insist on exclusive rights to an application. After all, if multiple customers want to use a development, this raises the level of business success and accelerates actual product usability.

Ever more traditional companies in the modern world are living side by side with start-ups. A successful relationship here can be compared to a successful flirt. If a new girl-

friend or boyfriend calls, you don't keep them waiting before calling back. Letting a week go by will not leave the best impression. Especially given the fact that start-ups move in an entirely different dimension of time than industrial companies. An appointment in three months? This would elicit bafflement at best from a start-up. In that period of time, its product could take on a completely new form.

And to dispense with one stereotype, many people involved in start-ups do not sit around at Starbucks waiting for good ideas. Their schedules are usually very full. They need to both start and leave meetings on time. They provide ideas and products, but tend to view themselves more as partners than suppliers of traditional companies, even if there is still a long way to go before actually getting hitched. If that is even the goal.

LEADERSHIP LABS

GOOD LEADERSHIP

Start-ups provide Porsche with critical impetus and ideas for new business fields. In this context, leadership culture involves connecting start-up elements to the mature Porsche culture. For instance, to adapt in even better ways in the future to a fast-moving, dynamic, and digitalized environment with new competitors.

To this end, Porsche is now organizing what it calls leadership labs: a type of workshop for management personnel. These leadership labs emphasize how crucial it is to focus on leadership during times of change—so crucial, in fact, that Leadership & Culture is a focal part of the company's Strategy 2025. The labs are based on the Porsche Code, the new shared understanding of leadership developed by Porsche employees for Porsche employees.

During the one-and-a-half-day workshops, more than 1,500 management personnel fill the Porsche Code with life. Their objective is to then move forward and shape this understanding of leadership with the Porsche team—and live it together.

The focus is on "entrepreneurial and future-oriented leadership," "integrity and co-determination," and "in-

novation-based and agile leadership and diversity." In addition to the Porsche Code, which was developed in-house, outside input was involved as well—for example, from St. Gallen University. The labs are supplemented by motivational speeches and programs. Management personnel can also exchange ideas on digital platforms.



**Agile cooking:
Learning through
cooking together**

UNEXPLORED POTENTIAL

Every Porsche employee has the potential to come up with brilliant ideas. Around 3,000 such ideas are submitted to the Porsche Idea Management program (PIDM) every year, assessed—and in the best cases—rewarded as well. Creativity is an invaluable resource and important part of the company’s culture.

Ideas just appear. Unsolicited. Unplanned. Suddenly they’re there. We need to pursue the good ones. Because good ideas are extremely valuable. The more developed, the better. The most brilliant ideas tend to be simple but effective. Like the one from Mustafa Kockaya,

who joined Porsche in 2011. At the sports-car plant in Stuttgart-Zuffenhausen, he works in an all-round capacity in body assembly. He is responsible for testing headlight flashers at station 94. It’s not a visual inspection, but rather a systems test. Sound exciting? It’s more like a single step done at this station as part of the obligatory overall testing process.

Mustafa walks back and forth countless times from the rear of each car to its electronic vehicle ID card, which digitally documents every assembly step. Five meters back and forth with confirmation in between. Then the next car. When he sees that his col-

leagues at station 84 are performing a similar test by remote control, something sparks in his mind. “I immediately realized that we could do the headlight flasher test that way too,” he recalls. A standard remote control device was quickly obtained, and was easy to program because only one signal was needed to start it. And all of a sudden there it was: an idea that could be assessed by the Porsche Idea Management program and one that has since been rewarded as well.

By using remote control for this step, Mustafa and his colleagues no longer have to spend time walking to and fro, which means they end up saving production time.

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Just press a button: Mustafa Kockaya had the superb idea of using remote control to start the headlight flasher test

There is no such thing as a bad idea, but there are objective criteria such as feasibility studies that can assess their actual value. PIDM does this together with the relevant specialized department. Since 1994 PIDM has been a leadership tool and a set part of the company's culture. Brilliant ideas pay off. Around 3,000 of them are submitted every year. Often they consist of small changes that lead to wide-ranging improvements. "Unique and innovative ideas are as crucial to further developing our company as the efficient and smoothly connected processes that we ensure," says Dirk Wille, director of process optimization and idea management.

To assess the positive effects of an idea, all available information is examined and the benefit for Porsche is confirmed by the PIDM committees. If a proposal is selected as "Idea of the Month" on the basis of its degree of innovation and creativity, cost-benefit ratio, role and contribution of the submitter, and its external effects and visibility, the submitter receives not only a gift certificate for the Driver's Selection shop but also the corresponding recognition in various Porsche communications channels.

Another example of how important the resources in the minds of Porsche employees

can be comes from Bekir Köse. A facility maintenance specialist, he took a close look at the paint shop. The application process for the Lizard Green single-tone paint presents problems. In contrast to many other paints without special effects that are applied to car bodies in a single step, Lizard Green requires two such steps. "Two steps made it hard to achieve precisely the same paint thickness," says Bekir. If the second coat is too thick, the water from the aqueous base coat cannot escape in the desired way during the drying process. The main problem here is the formation of pinholes in the paint. Bekir spent a lot of time thinking about this problem. He tinkered with the system, adapted the robot program, ran tests, and documented them. Little by little, he approached the goal of enabling this paint to be applied in a single step. "We kept measuring and testing the thickness to see whether the idea could be used in serial production," he says. It worked—and offers all kinds of benefits. It saves paint, lowers wear on the facilities, and considerably reduces paint defects. "Ultimately, it also benefits the environment," notes Bekir.

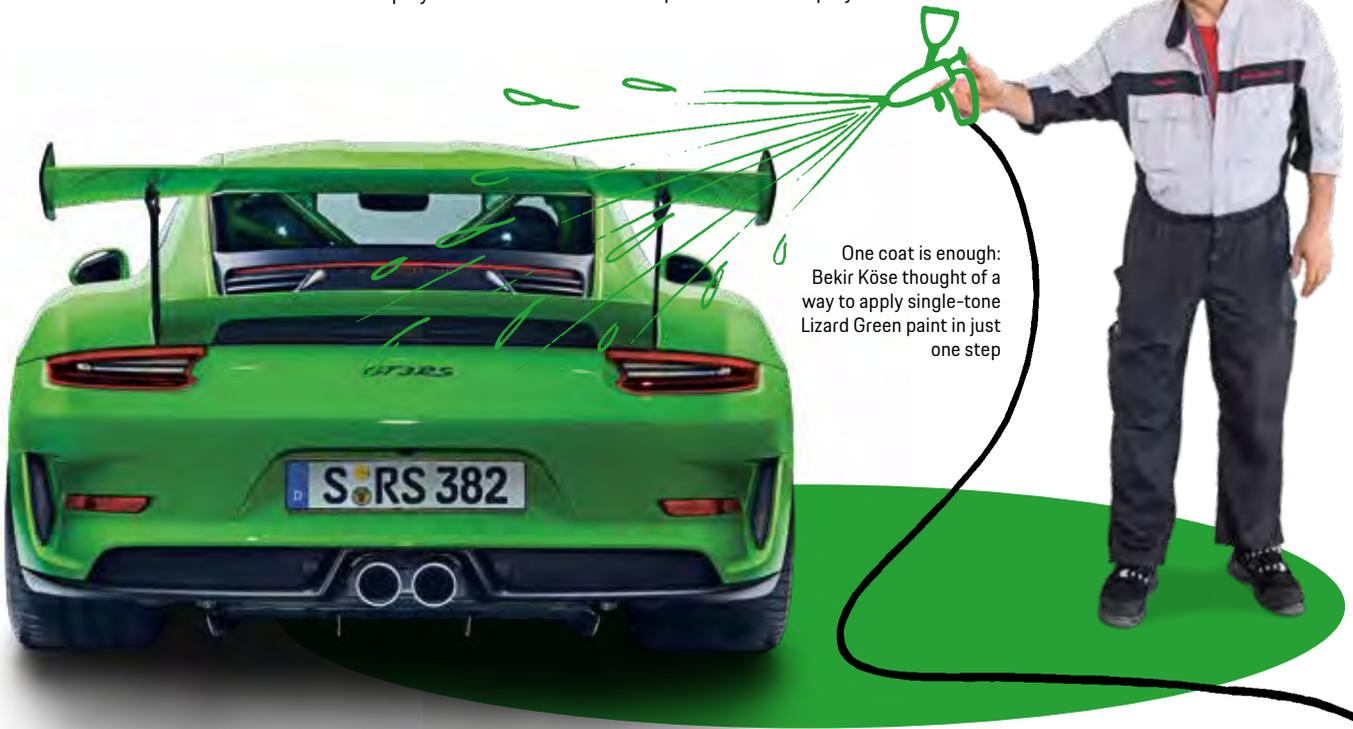
Solving the paint problem is just one of many examples that demonstrate the high level of creative potential in employees'

ideas. Spotting problems, tackling them, and taking a practical entrepreneurial approach to solving them pays off not only for the employees who submit their ideas. According to a survey by the German Institute of Business Administration (dib), the 290 responding companies alone saved a grand total of €1.49 billion last year from their idea management programs. Any way you look at it, there's no doubt about it—excellent ideas from employees are as important as ever!

Text Michael Thiem



CAMPUS



One coat is enough: Bekir Köse thought of a way to apply single-tone Lizard Green paint in just one step

STRATEGY

ALWAYS A MOVE AHEAD

How exactly do Porsche's head strategist and his team develop the future course of the company? Dr. Jochen Breckner gives some insight into his visionary job.

Jochen Breckner depends on inspiration, creativity, and strength of will for his strategic moves

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In 2039, China will overtake the United States as the world's greatest economic power. The economist John Hawksworth made this prediction back in 2006. For that matter, India might overtake the U.S. by 2039 as well. That is just twenty years from now. "Time passes very quickly," says Dr. Jochen Breckner. "You have to determine some parts of your course early on." He stands with one foot in the future, testing the ground for Porsche in his role as the company's head strategist. The forty-two-year-old doesn't know exactly what 2039 will bring, either, of course. "You can glean some idea from history, but it's hard to see into the future, even with analytics."

Each car is a product planned for the future. It takes five or six years to develop these plans. And another six or seven before the car actually goes onto the market. So what is needed is a general idea of what the market will be wanting in five to twelve years.

To do that, you have to monitor trends and the market itself, or in other words, do product strategy work. Relevant instruments include SWOT analyses (strengths, weaknesses, opportunities, threats) to determine company positions and develop business

strategies, and PESTLE (political, economic, sociological, technical, and legal change), which takes factors like legislation, taxation, and regulations governing competition into account. Above all, you need people who are good at analytic thinking, and strategists who can draw inferences from data, facts, and figures. Creativity is also important when it comes to spotting opportunities. Also the

"If Porsche had based its decisions solely on data, facts, and figures, it wouldn't be as successful as it is today."

ability to bring people together into networks and balance their different interests—and ultimately, to make a decision and put it firmly into practice.

At Porsche, strategists work in different parts of the company. "It wouldn't be correct to say that we only develop our strategy at headquarters," says Breckner. But the strings are pulled at the general secretariat and the corporate development office, which means by Breckner and his staff.

Strategy means more than simply holding meetings and agreeing on targets, along the lines of "good that we've discussed that, now let's get back to business!" It has much more to do with having a clear vision right from the start: an idea of how the company will continue to develop within a set period of time. As Breckner explains, "You define the vision that constitutes your target, and then answer the question of how to get there. Defining the milestones is actually the more intensive part of the work." Interim targets are built on data, facts, and figures, which makes progress measurable. If these supports were neglected and people simply pursued the overall target, they would run the risk of making the wrong decisions.

Certainly it is better to work with this type of strategy instead of a rigid five-year plan. "We regularly ask ourselves the following questions: does our target still make sense? Should we adjust it? Should we change course? What new knowledge and developments make adjustments necessary?"

Breckner was the head of the controlling division when he initiated the Results Program 2025 together with Executive Board Chairman Oliver Blume and Jürgen ›



911 Carrera GTS: Fuel consumption, urban: 12.9–11.2 l/100 km, highway: 7.4–7.3 l/100 km, combined: 9.4–8.8 l/100 km; CO₂ emissions (combined): 212–201 g/km
911 Carrera GTS Cabriolet: Fuel consumption, urban: 12.9–11.2 l/100 km, highway: 7.5–7.3 l/100 km, combined: 9.4–8.8 l/100 km; CO₂ emissions (combined): 214–202 g/km

Rittersberger, who was the head strategist at the time. That program supplements the current Strategy 2025. Porsche has since been making substantial investments in electric mobility and hiring more people in this field, including around 1,500 to produce the Taycan. The material costs for electric cars are also higher.

So the targets include acquiring new business fields, using synergies, and reducing costs. The course (or one of them) consists of fostering an entrepreneurial approach at the company. Eight fields of action have been defined, and working groups are drawing up proposals. Or as Breckner explains, "It was clear from the trends that we would endan-

ger our high level of economic success if we didn't act. We are able to do this from a position of strength."

In 2013, Porsche was discussing a strategy for electric mobility, and Breckner was involved as a controller. In late 2019 the first electric Porsche—the Taycan—will roll from the production line. "We're a little late with this development, but we haven't been sleeping through the trend. It doesn't matter whether you're an early mover or a fast follower—both of these strategies can be successful. I'm convinced that when it comes out, the Taycan will be superior to the competition in its technology, product design, and overall concept."

In fact, the strategist inside Jochen Breckner never sleeps. He is constantly thinking about highly automated driving, market developments, and decarbonization (minimizing greenhouse gas emissions). His opinion here: "The idea that Porsche would stop making cars for private ownership is not going to happen. That's out of the question as far as I'm concerned."

But back to the future. In 2039, the first generation of the Taycan will almost be a classic. We'll all be twenty years older and asking ourselves whether our own personal strategies have produced results—like whether we have achieved our goals.

Text Jo Berlien



Photos: Sabina Peiries



Dr. Jochen Breckner

1977 born in Stuttgart

1997–2002

University of Stuttgart;
degree in technically oriented
Business Administration

2000

Internship, Porsche Controlling

2002–2004

Doctoral Candidate,
joins Porsche Controlling

2008–2010

Assistant to the Executive Board

2010–2012

Controlling Department Head,
Subsidiaries

2012–2017

Vice President Product
Controlling, Porsche Development
Center Weissach

2017–2018

Vice President Controlling

Since September 2018

Vice President General Secretary
and Organizational Development



LASER-SHARP IDEAS

Innovative production methods offer major advantages that will be of benefit above all to customers. A look at what some of these future-oriented technologies can do.

Work with wood, and you'll get sawdust. Work with metal, and you'll get sparks. As new production methods move into the world's factory halls, sparks will still be flying, although there may be fewer of them when lasers play a more dominant role in production processes, taking the place of hot raw substances or hardened materials. The lasers are applied to metal or plastic powder—micrometer by micrometer—to build layer upon layer, which are then fused to create the finished products.

This is one of the principles behind additive manufacturing—also known informally as 3D printing—which is on its way to turning the ideas of the digital world into real-life products. Additively manufactured complex components can now be produced as a single piece, instead of

being assembled from eighty individual parts. And shape is no longer a limiting factor. On the contrary. Structures based on nature might lead to more effective ways of designing cooling systems in products like battery packs or fuel cells. Which, despite much smaller volumes, now feature degrees of efficiency twice those of their traditionally manufactured counterparts.

Additively manufactured tools offer a multitude of advantages. First of all, thanks to their precisely calculated and manufactured parameters, they are more durable. Next, thanks to the fact that they are made of a single material, they are easier to recycle at the end of their life spans. Moreover, they can considerably reduce the weight of automotive components, which in turn helps car makers lower fuel consumption and greenhouse gas emissions.

DIRECT LASER DEPOSITION AND POWDER BED FUSION PROCESSES

A direct laser deposition process feeds metal powder to a nozzle via a gas flow. The nozzle focuses on the same point as a laser beam, which melts the powder. The production head, consisting of the nozzle and laser, can be maneuvered along up to five axes. In the powder bed fusion process, a laser

selectively melts metal powder on a bed and builds the component layer by layer in thicknesses of twenty to one hundred micrometers. Nearly any conceivable shape can be produced in this way. Both of these processes are promising technologies, especially for making tools and assembly aids. ›



Photos: Matthias Hesiauer, DMG MORI

CAMPUS

Examples from Porsche Production 4.0



AR QUALITY VISUALIZATION

Augmented reality (AR) technologies from Porsche Production 4.0 are already supporting quality management processes.

Deviations from specified degrees of perfection can be quickly and reliably viewed on a tablet. The app allows component information to be visualized right on the vehicle by superimposing a CAD image

on a real image. Employees can view reports and measurement readings for the car and record deviations right in the CAD model. The information is immediately saved in a central database, which allows the testing process to be streamed to any partner in real time. That saves time and money—and improves the quality.

CAR INFORMATION

RIGHT AT HAND



Fast, simple, digital—all this is promised by the WORKERBASE smartwatch, which lets employees access vehicle data. Where is a particular car on the factory grounds? What special features should be noted? This type of information often used to be printed out and carried around. The digital version now lets many processes be streamlined, networked, and optimized. Plans therefore call for continuously expanding the applications for this smartwatch at production facilities. A pilot project at Zuffenhausen's production department will soon be underway.



MAXIMUM FLEXIBILITY WITH AGV

Porsche will use what is known as flexi-line technology to produce the Taycan. Instead of giving its production line a rigid mechanical structure, it will work with an automated guided vehicle (AGV) system. This combines the advantages of a classic assembly flow principle with benefits in terms of flexibility and adaptability. Porsche is the first car maker to use AGV in a continuous flow system. The greater degree of flexibility will enable the company to respond even faster to market fluctuations in the future. This too is an example of the production philosophy at Porsche.



DIGITAL PRODUCT QUALITY ASSURANCE

Digital assistance systems play a key role in car-body production. They are especially important given the ever more complex metalworking processes in the automotive industry. The car-body planning department and the Porsche Werkzeugbau GmbH toolmaking company serve as a center of expertise for metal component and car-body production. They

can use new product quality assurance methods in simulations to check for undesired cracks, bends, rebounds, or thermal distortion, and then successively adjust the relevant processes to generate standardized assessment parameters. This enables high-quality components to be produced with robust and efficient processes.

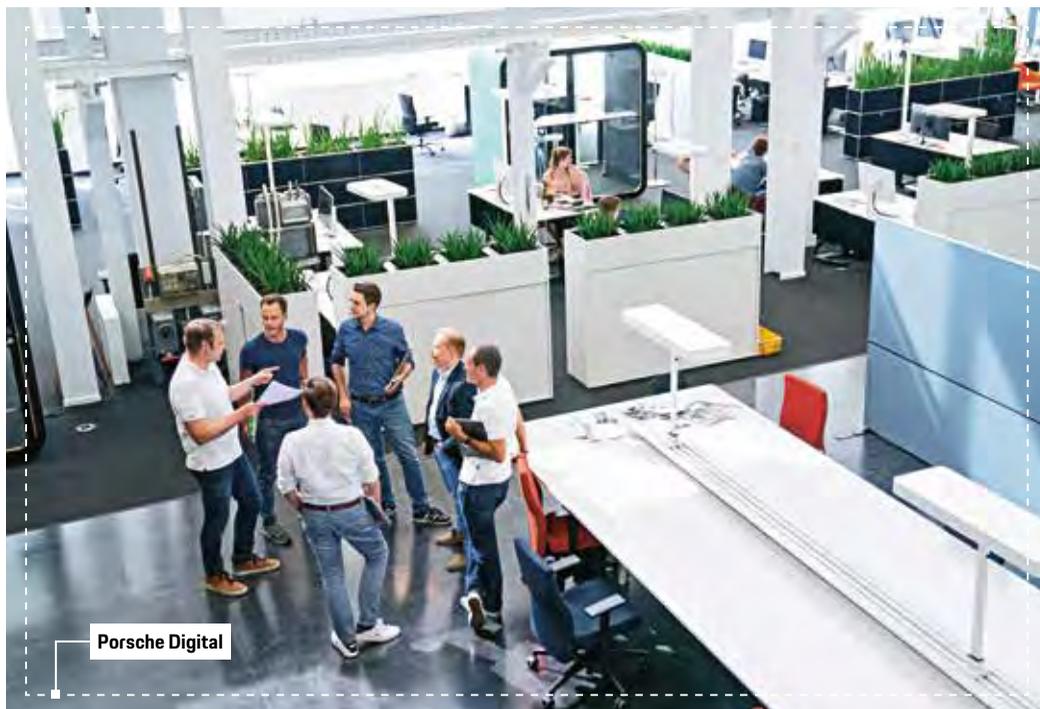
TRENDSETTERS

How can the Porsche lifestyle be transferred to the digital world? The creative minds at Porsche Digital GmbH are taking a close look at this question.

You place your hands on the steering wheel and gaze out through the expansive windshield. Then you put the 911 into first gear and drive off the grounds of the dealership out onto the road. Who would not want to do this? But let's say that's not an option because you're short of time or live too far from a dealership. In that case, there's nothing better than enjoying an individual presentation of the eighth generation of the classic sports car in the comfort of your own home with the help of an online advisory service.

A number of Porsche Centers in Canada are already offering this type of service. What is more, you can also take virtual tours of their showrooms and have employees present in-

dividual cars. Detailed sales consultations can be held as well. This format for sales is the happy result of a joint project by Porsche Digital, Porsche Canada, and a British start-up called Go InStore. The advantages can be seen at a glance. The combination of innovative technology and personal interaction creates the type of experience that customers know and expect from Porsche. All around the world, Porsche Centers continue to be the central points of contact, but now they are going one step further: with the help of this new app, they'll be made accessible on a virtual basis as well. That is an especially good idea for a country as large as Canada. It allows customers to take a convenient look at what dealerships are offering without having to travel long distances to get there. ›



Porsche Digital was founded in Ludwigsburg a little over two years ago. Its initial staff of two has grown into an eighty-member team

The digital sales format is a good example of the dimensions in which Porsche is thinking. The overarching topic is the Porsche lifestyle. It has to do with the cars, of course, but also plays a crucial role above and beyond the driver's seat.

Porsche has an outstanding tradition and long-lasting products. These qualities also need to be reflected in the digital world. What the company puts on the market has to bring added value to its customers. This cannot be a matter of running after short-term trends. Instead, Porsche have to define the trends of

the future. Three new products from Porsche Digital show what that will look like: Porsche 360+, Porsche Road Trip, and Porsche Impact (see info box on the right).

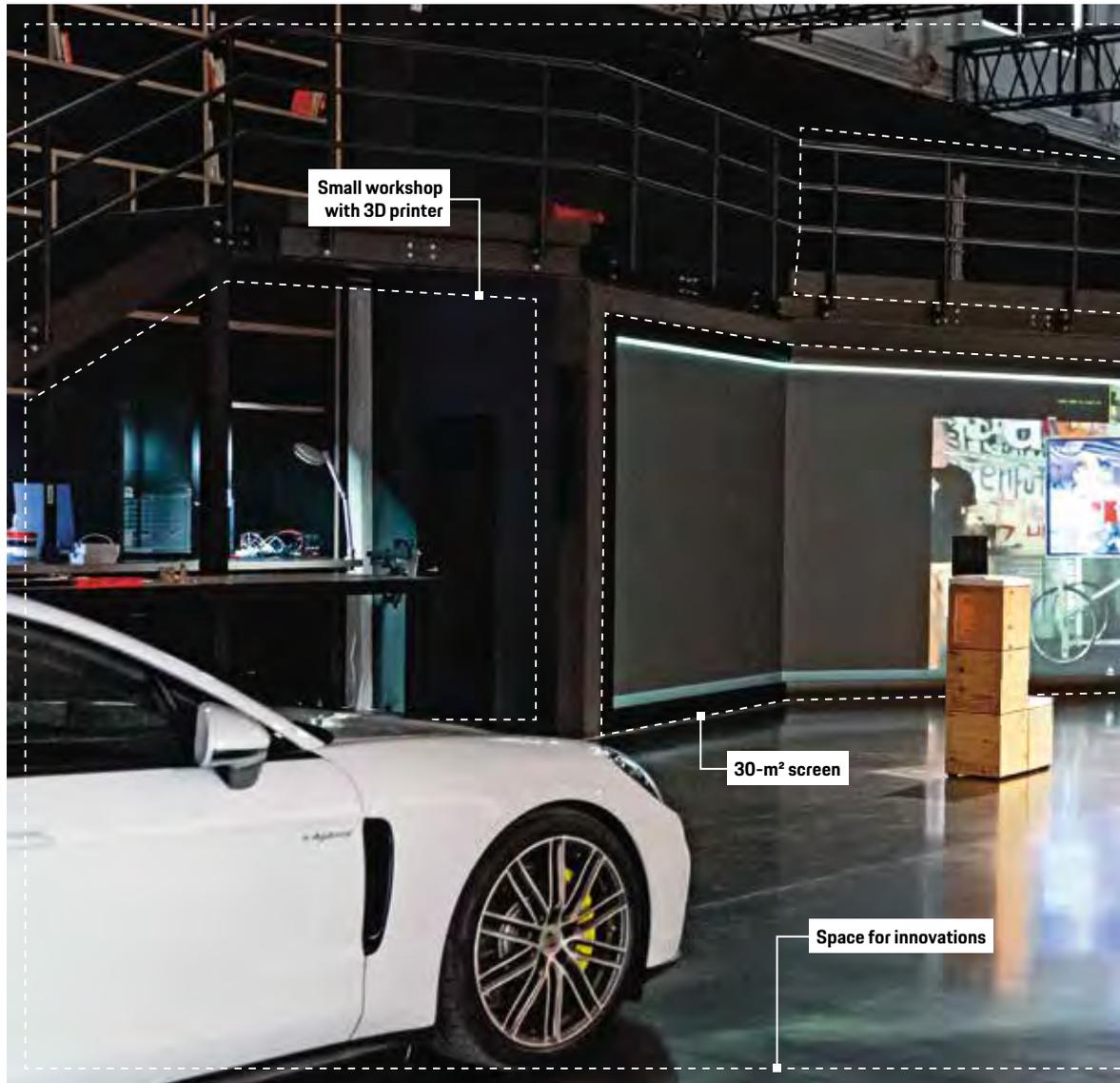
These three apps were created by the Porsche Digital Experience Foundry. Even though the term "foundry" might seem a little out of place at first, upon closer inspection it forms a linguistic bridge between traditional industry on the one hand and the modern digital world on the other. Here is the foundry where the engineers' ideas take shape, and there are the digital worlds and services that are now

deriving entirely new levels of meaning from that material world. But how do we make these digital services tangible? How can virtual worlds of experience be tested? And who exactly are the customers? What do they want and how do they think? While the automotive development department is building real show cars and prototypes, Porsche Digital is using its Experience Foundry, which is a simulation space for prototype development unique in the automotive world.

The actual site is a hall dominated by a screen of thirty square meters. A gallery is

The Porsche Digital Experience Foundry: a simulation space for prototype development unique in the automotive world

Photos: Matthias Mederer/
ramp.space GmbH & Co. KG



located above the screen, and across from it is a tiered seating structure that can easily accommodate fifty people. Behind it is a small workshop whose range of equipment includes a 3D printer. And between all of these facilities is a world of space for innovations, which can also be used to present complete cars. The heart of the Foundry is the screen, which was created together with the start-up partner home-iX to meet the exacting requirements of Porsche Digital. It enables Porsche Digital's interdisciplinary teams to immerse themselves in the worlds of their potential customers.

With a single click you can be sitting on the terrace of a villa with a view out over a river valley. With the next click you can find yourself in an office, or in the passenger seat of a car. The IT platform in the background ensures that everything is connected, such as the Porsche Communication Management with smart home functions, or smartphones with cars. The platform enables digital products and services to be designed, tested, and optimized at very early stages of development to meet customer requirements in much more specific ways than would be possible simply at a computer screen.



Gallery

Tiered seating for fifty people

Porsche Road Trip: the digital travel guide

This app lets car fans plan, organize, and navigate extraordinary trips, and offers suggestions for tours of different lengths.



Porsche 360+: the lifestyle assistant

A personal assistant in the form of a constant digital companion, Porsche 360+ offers services to make customers' lives easier, and opportunities for exclusive experiences.



Porsche Impact: the emissions calculator

This app lets customers calculate and offset their individual carbon footprints based on mileage, car model, and driving habits.





SECRET PROJECT

WARNING: GROUP DYNAMICS!

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If you just let motorsport developers do their thing, you'll get a race car like the new version of the legendary 935. Of course, the developers will also set a record for the short amount of time needed for the entire process from idea to implementation.

No one suspected a thing. Not even the other departments in Weissach got wind of the "Flat-nose" project. The actual moment when the car was unveiled in California at the Porsche Rennsport

Reunion in Laguna Seca last September felt like the build-up to maximum torque—simply overpowering. The development team had kept completely silent over the long period leading up to this event. Now, after months of suspense, the 935 was finally allowed out into the world.

From 1976 to 1980, the race car based on the Porsche 911 (930) caused a sensation on international racetracks and won the manufacturers' world championship four times in a row. It dominated the 12 Hours of Sebring on multiple occasions, as well as the 24 Hours of Daytona. It was also a class winner at Le Mans. No other serially produced



Despite its reworked front and rear, the 935 is clearly still a 911



It all began with an idea—and a sketch

Grant Larson played a key role in designing the new 935



The 935/78 role model was a sensation forty years ago



race car has racked up so many successful results. The 935 made its mark for all time, especially in the white Martini livery that earned the 935/78 Le Mans race car the nickname “Moby Dick.” Who would ever dare attempt to come up with a successor?!

“Working on the new 935 was a special experience for every one of us. The car brought us even closer together,” says Kay-Alexander Breitbach, project leader for GT customer sports. “And it’s just amazing that it could finally have its premiere in Laguna Seca, not to mention in an anniversary year.” As overall project leader Matthias Scholz adds, “Another reason we enjoyed a special type of group dynamics was that we also worked closely together with the designers.”

Because no homologation was planned, the team had free reign—with the possible exception of the time pressure they were under. “The exterior design was supposed to be finished in three or four days. So we only



Like its historical predecessor, large parts of the body were replaced or supplemented by carbon-fiber reinforced (CFRP) parts

had one attempt—and it had to work. Everyone was extremely motivated right from the start. You don’t get a chance like this every day,” says Grant Larson, who was responsible for designing the front and the rear.

The new 935 will be used for club sport events and private racecourse training programs. Based on the 911 GT2 RS and inspired by its historical model, large elements of the car body were replaced by carbon fiber-reinforced components. Just like its Moby Dick ancestor, white is the main color used. The 911 character is clearly evident under the extended rear and overall length of 4.87 meters. Porsche has made a small series of seventy-seven of these powerful sports cars with 515 kW (700 hp). Racing fans around the world are thrilled!



To find out more about the 935: <https://bit.ly/2DFJ50q>

911 GT2 RS: Fuel consumption, urban: 18.1 l/100 km, highway: 8.2 l/100 km, combined: 11.8 l/100 km; CO₂ emissions (combined): 269 g/km

ALL IN THE MIX

Hubertus Bessau, Philipp Kraiss, and Max Wittrock founded the mymuesli company in 2007. Their idea was to let customers order their very own organic muesli mixes online. In 2009 they opened their first shop. Today mymuesli posts sales of more than 50 million euros. How did they do it?

Max, when friends start a band, their friendship often suffers ...

Founding a company is usually not the problem. The stress comes with the second album. It's cool to start something, but the real skill is to keep working together. And that won't happen without honest feedback.

You banked on organic ingredients right from the start. Was that the right idea at the right time in 2007?

We decided early on to make it organic because it simply felt right to us. Moreover, organic ingredients always came out ahead in our internal taste tests.

What about your starting capital?

We were fortunate to have finished college without having to pay back student loans, and we needed around €3,500 to start the busi-

ness. What surely saved the most money was that Hubertus programmed our first website himself. For that matter, we did everything ourselves in the beginning.

Did people make fun of your idea?

Yes, of course! In 2007, many people thought we were crazy to do e-commerce with muesli instead of launching a new social network.

Was opening the first shop a risk?

Philipp, who was in charge of our finances, knew what we could afford. And our small shop in Passau proved very reasonable. So the risk was manageable.

When a start-up grows fast, it can get tricky.

What I found difficult about our growth was that there's no one to tell you what to do. Suddenly our team just kept on expanding. We had to sort things out and chart our course. Part of the art lies in accepting the fact that you'll make mistakes, and trying to avoid them in the future.

Any advice to new founders?

Just dive in! Go beyond the stage of "wouldn't it be great if..."! I can only encourage anyone who gives it a try. It's worth it.

Interview Jo Berlien



Fotos: mymuesli

Max Wittrock (36) is a native of Munich and originally studied law



mymuesli.com



Mymuesli lets you create your very own muesli from more than eighty different organic ingredients—or select one of six delicious standard types. Get your free sample pack* and find out what muesli "type" you are. Place an order and get your mymuesli sample pack of six organic muesli mixes free of charge! Just scan this QR code:

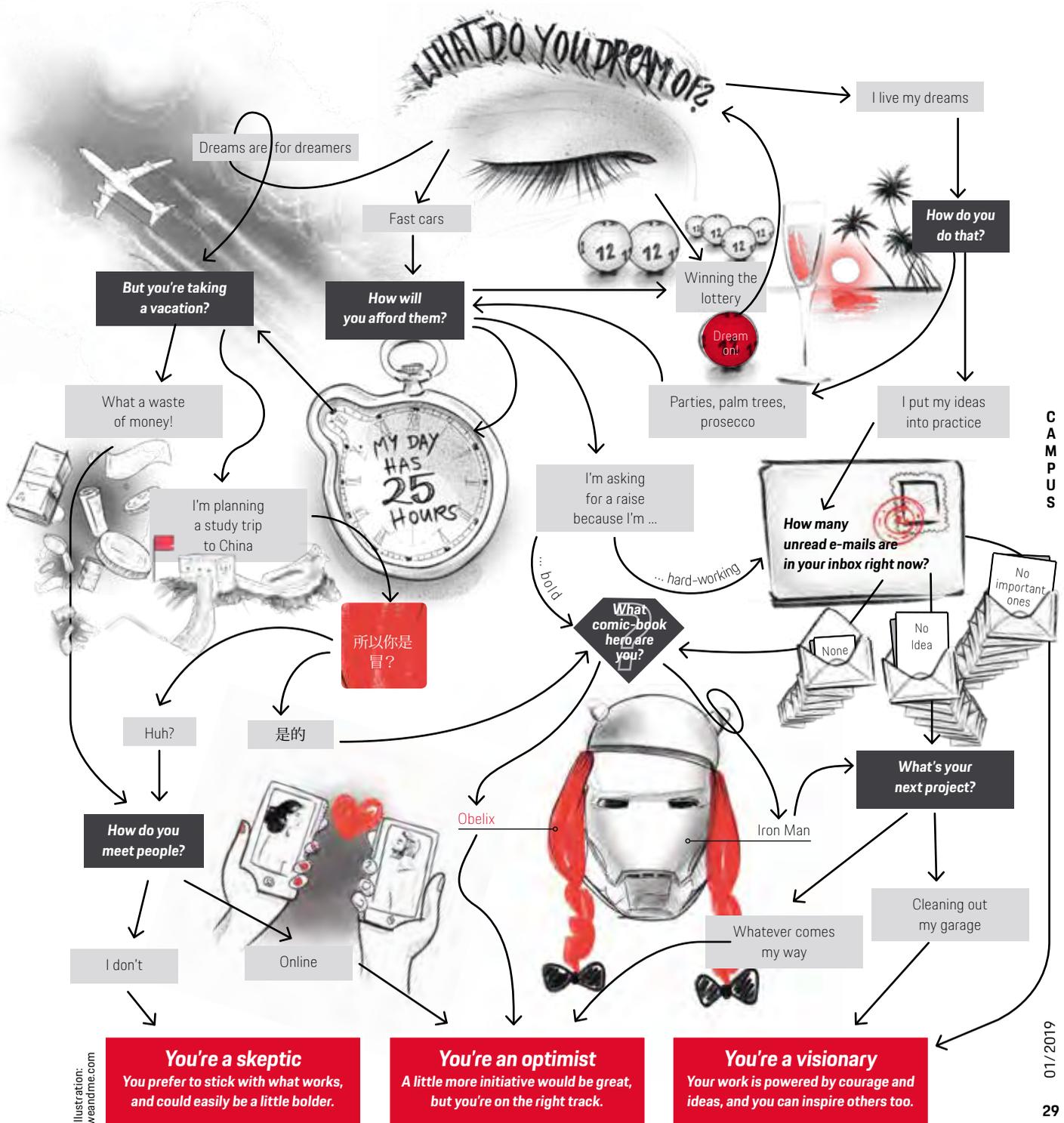
**For a minimum order of 15 euros. Only available online and only while supplies last. Offer available for a limited time only. Information on the promotional period is available online.*



www.mymuesli.com/porsche-campus

DO YOU HAVE WHAT IT TAKES?

Are you a ditherer or a doer? Do you follow orders or develop ideas?
Do you take a bold approach to business? See what this test reveals.



CAMPUS

Illustration: weandme.com

THEY JUST WANT TO PLAY

Artificial intelligence has been an established field of research for decades now. But rapid developments such as big data and exponentially greater computer capacities are making it one of the key technologies for the future.

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A good half-century has passed since artificial intelligence (AI) first attracted widespread public attention—in the form of an epic science fiction film. In *2001: A Space Odyssey*, a HAL 9000 supercomputer takes control of a spaceship. Can a machine be more clever than a human being?

AI was actually born in July 1956 at Dartmouth College in New Hampshire. The initiator was John McCarthy, who invented LISP, the second-oldest programming language. He and fellow utopians launched a new field of study that went on to mesmerize the world. That same year, Arthur Lee Samuel, an electrical engineer from MIT, taught an IBM 701 computer how to play checkers.



1956
Playing checkers with a computer: Arthur Lee Samuel with the IBM 701

The machine proceeded to learn from its own experience, especially in its later versions. In 1961, it played the Connecticut state champion—and won. The basic idea behind artificial intelligence had thus been put into practice—namely, the ability of software to learn by processing huge volumes of data.

Embedded in countless smartphone apps, AI now accompanies us wherever we go. If you've ever spoken with Alexa or Siri, the sentences are analyzed by AI algorithms. Yet AI never ceases to amaze when it reaches still another milestone. An early example was the 1997 chess duel between a computer named Deep Blue and world champion Garry Kasparov, which the machine won. Games in general are a popular field for AI



1997
Deep Blue beats reigning world chess champion Garry Kasparov

scientists to test their work—and one that also attracts a lot of attention. *Jeopardy!* is a good example. Contestants on this TV quiz show are given clues from which they have to deduce the right question. The clues usually have multiple layers of meaning and often require combining a variety of facts, which makes the game more challenging. But an IBM computer named Watson succeeded in beating the two human record holders in 2011. Instead of relying on a single algorithm, Watson's secret to success consists of using hundreds of them simultaneously and then ranking the results to arrive at a potentially correct answer.

The next eyebrow-raising development was the product of a start-up called DeepMind. Launched in London in 2010 and acquired by



2016
Artificial intelligence triumphs against humans in the game of Go

Photo: MGM/Alamy

Photos: International Business Machines Corporation, Peter Morgan/Reuters Pictures, Greg Kohs



Intelligent encounter of the virtual type: Director Stanley Kubrick explored the relationship between people and machines back in 1968 in the classic sci-fi movie 2001: A Space Odyssey

Google in 2014, DeepMind created the AlphaGo program, which continually optimizes itself while playing the game of Go. The company wanted AlphaGo to beat a human, which was considered impossible to achieve due to the complexity of the strategy involved. But in 2016, AlphaGo beat reigning world champion Lee Sedol from South Korea. In its current incarnation of AlphaZero, the program only loses to itself and also only learns from playing against itself. People don't have a chance anymore.

Artificial neural networks are what make these feats possible. In human nerve systems, neurons are networked in seemingly limitless dynamic ways. Brains learn by constantly reassigning weight to these connections. Pathways used regularly become stronger; the opposite effect occurs in those used rarely. Artificial neural networks try to imitate these structures. Interlinked artificial neurons take input values and feed this information to neurons at succeeding levels. The final value is produced by a level of output neurons at the end of the chain. The variable process of assigning importance is what gives the network its ability to learn. Today's networks contain ever more levels. They are more complex, more nested, and deeper—thanks to greater computer capacities. Some deep neural networks consist of more than a hundred of these successively connected program levels.

But artificial intelligence requires training, also known as deep learning. For example, systems can be trained by receiving corrective feedback from people or from other types of software. They use the feedback to draw inferences—and to learn. Porsche IT director Matthias Ulbrich considers AI the most important technology for the future, and says it will be the next step in helping to give us more time for truly essential activities. "AI will help create value. Just like robots are already helping us do physically demanding tasks, AI will support our thought and decisional processes in routine types of work," he explains. The company is already putting initial applications into practice in several divisions. Ulbrich's vision is to make data available in real time by voice commands. "If the latest sales figures for a certain region are needed at a board meeting, for instance, the AI system will find them immediately in response to a voice query, so you won't have to spend a lot of time and energy making a PowerPoint presentation beforehand."

But developers still have a lot of work to do before we reach this point. Two crucial issues are security and privacy. At Porsche they are the focus of work by Tobias Große-Puppendahl and Jan Feiling from the main electrics/electronics department. After all, personalization, swarm intelligence, and the private sphere need AI themselves to maintain privacy in the process of gather-

ing and exchanging data. A process called federated learning is expected to help minimize data exchange. For example, a local AI system in a car learns from the behavior of its user. If a driver says "I'm cold," the system should turn up the heat. What it learns—or rather experiences—is passed on to the cloud and the global AI system installed there. But concrete data such as voice records remain in the car. The important component is always the intent: each user expresses his or her wish in an individual way, and expects the same thing in return. Just like somebody who doesn't share our language but is still able to get across the idea that they are freezing.

HAL 9000 from *2001: A Space Odyssey* can do that too, of course. But AI's ability to rise up against people is pure science fiction—at least for now. Professor Sebastian Rudolph, a Dresden-based AI specialist, also considers such a scenario extremely unlikely. However, just like any other technology, AI can be abused or used incorrectly. Which means we should not fear this particular technology any more—or any less—than technological progress in general. Seen in this light, it makes sense to help shape it. Große-Puppendahl and Feiling, for example, have taken much the same approach to AI as Ferry Porsche did with sports cars. "We couldn't find the AI that we were looking for. So we created it ourselves."

PROBLEM? SOLUTION!

Desislava Belokonska works at the Porsche Digital Lab in Berlin, while also studying software engineering at the city's CODE University. When asked what her greatest skill is, she replies, "problem solving." Since childhood she has loved logic puzzles.

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For some people logic puzzles are a waste of time. But for others they exert an incredible draw. If you want a taste of that attraction, take a look at the notorious zebra puzzle. Its fame derives from supposedly having been invented by the young Albert Einstein, although that is not actually true. Einstein is also said to have claimed that only 2 percent of the population are capable of solving the puzzle.

Desislava "Desi" Belokonska (21) is always up for that type of challenge. Her father is an engineer, her mother a computer scientist, and she herself a mathematician. As a child, it never occurred to her that analytic thinking was anything unusual. It was in fact child's play for her. "I was surprised when I got the best grades in my class," she recalls. She then went to the same high school that her mother did: the Kiril Popov Academy of Mathematics in Plovdiv, Bulgaria's second-largest city. Plovdiv lies around 150 kilometers southeast of Sofia and 1,800 kilometers southeast of Berlin, where she lives today. "I chose Germany because I was very interested in the language, which I learned in high school," she says. Bulgarians consider western Europeans, and especially Germans, to be much better at mastering the practical side of life, she says, and furthermore, they manage to do so on time. Desi had heard of the picturesque city of Heidelberg, but in 2016 she decided on Berlin. "It is an appealing and international city, and it's where the start-up scene is." After studying software engineering for a year at the Free University in Berlin, she switched to CODE, a private university for digital product development. And because Porsche is a partner of CODE, she also started



Photo: David Breun

Supports the selection and introduction of quality assurance tools for cloud-based applications

Works on ideation, conception, and prototyping of connected car and smart mobility-related functions

Working Student in the Digital Products Development team

Responsibilities

- Develops Android/iOS apps, web applications, and cloud-based backend services
- Works on ideation, conception, and prototyping of connected car and smart mobility-related functions
- Supports the selection and introduction of quality assurance tools for cloud-based applications
- Works on implementing a cloud-based platform via IaaS, PaaS, and container technologies
- Supports implementation of continuous delivery processes, systems, and tools
- Develops cloud-native shared services
- Develops and tests the prototypes
- Continually optimizes existing services

Requirements

- Student of (commercial) IT or a comparable field
- Enjoys programming and developing new services and digital products
- Initial practical experience in Java software development and one of the following: web, cloud, or mobile app development for Apple iOS/Google Android
- Enjoys working on agile teams
- Conceptual and independent approach to work
- Marked digital affinity for current IT trends
- Flexibility and creativity

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www.porsche.com/jobs





working as a student employee at the Porsche Digital Lab on Stralauer Allee. As part of a small blockchain team, she is currently working on how to track elements of supply chains. Transparency and sustainability are major considerations. Take the leather on steering wheels, for example, and the cattle it came from. Where do they graze, and can the stations between those fields and the steering wheel—the livestock business, slaughterhouse, tannery, and leatherworking shop—be identified?

Desislava loves her job and appreciates her work environment. "The atmosphere is very inspiring. I work on an international team and am very eager to learn more. I like being able to switch between the university and the Porsche Lab—and a lot of what we learn at CODE is relevant to what we do here. There's a focus on the environment in both theory and practice." And there's something else that she has learned. "Many people think a Porsche is a car. So did I at first. But it's a lot more than that. When I see the projects here, what we're working on, and the many other different topics!" She expects to graduate in 2020 with a bachelor of arts degree, and doesn't yet have concrete plans for her professional life. "I'm curious about where all of this will lead."

That sounds unusually unstructured for someone who loves analytics and logical thought. What does she do when not working or studying—does she go out dancing, for example? "I'm afraid I'm a typical student," she says. "I like parties and also did some waitressing before coming to Porsche." She keeps homesickness at bay by flying to Bulgaria four times a year. Western Europeans will be hearing more about her home town of Plovdiv, because it is one of the two European Capitals of Culture for 2019, along with Matera, in southern Italy.

But back to the logic puzzles. "I discovered that logical thinking is what I like most about mathematics," she says. "I love puzzles. And that's what most math problems are. In high school we had a tradition of solving a little logic puzzle in the last ten minutes of class." The original version of the zebra puzzle appeared in the British magazine *Life International* in December of 1962. It stymied people throughout the country for months until the magazine printed the answer on March 25, 1963, along with a list of several hundred readers worldwide who had sent it in. Fifty-seven years later, the answer is just a click away. That development too was brought to us by the field of mathematics, in conjunction with computer and information sciences. Desislava solved the zebra puzzle as a child, together with her mother. "The last time I went home I found the sheet of paper we used. It was a very nostalgic moment."

Text Jo Berlien

INTERNSHIPS

TOP 5

Porsche offers many different internships. Here is a selection of the latest exciting fields. It's always a good idea to apply!

Internship in Corporate Finance & Treasury, Weilimdorf
Reference number:
PAG-P-6502129-E

Internship in International Sales, Zuffenhausen
Reference number:
PAG-P-6700045-E

Internship in Data Protection, Weilimdorf
Reference number:
PAG-P-6308010-E

Internship in IT Infrastructure & Services, Weilimdorf
Reference number:
PAG-P-6300005-E-2

Internship in Styling: Exterior, Interior, Color & Trim, Weissach
Reference number:
PAG-P-6201113-E

 www.jobs.porsche.com

"The digital transformation is not a project—it's a fundamental process of change. Electromobility, digitalization, and connectivity are very high on Porsche's agenda."

Lutz Meschke
Member of the Executive Board,
Finances and IT

★ Open to new ideas

Porsche and its subsidiary MHP have been running the innovation-based Porsche Digital Lab in Berlin since 2016. The lab's partners include CODE University, and it is open to ideas and partnerships with IT start-ups working on big data and machine learning, micro services and cloud technologies, Industry 4.0, and the Internet of Things.

IT'S ALL IN A NAME

Six hundred options, one choice: Taycan.
What the name of the first fully
electric Porsche means—and how it came to be.

The task: is to find a name for a new vehicle that has no predecessor. “Honestly, it’s hard to imagine a more exciting challenge,” says Kjell Gruner, director of marketing at Porsche. “Pure expression. Letters and a meaning that find their place in the history of Porsche and the history of the automobile.” This car is, after all, the first purely electrically powered Porsche. It unites all the characteristics of a sports car from Zuffenhausen, fulfilling every expectation: undeniably exclusive, yet without extravagance. Its virtues: power, speed, superiority in every measure—and extremely beautiful, of course.

Model names at Porsche establish a connection between the respective series and its characteristics. The Boxster gained its name by combining the roadster style with its boxer engine. The Cayenne, as expected, added some spice, and the Cayman was so named for its ferocity and agility. Macan unites poise, power, fascination, and dynamism, while the endurance-optimized Panamera could win the famed and fearsome Carrera Panamericana. And the new model? The name of this four-door will not bear any numbers like 911, 718, or 918; instead, it should convey everything that makes the car special—and especially alluring. The name should highlight its inimitable significance within the Porsche family. It should be fresh, dynamic, gripping—not some technocratic portmanteau, but a name that tells an emotional, coherent story. And ultimately it should be a name that unites tradition, mo-

ernity, and the future. In short, it should reflect the character of the vehicle and meld unmistakably with the Porsche brand.

The way

When the project team first meets, it hasn’t yet been decided how the Taycan will look in detail. Designers, engineers working on the new series, specialists from marketing and sales, in-house and external lawyers, and brand and brand-law experts all come together. “All aspects of the name determination process are covered: automobile-related, creative, technical, legal, and linguistic,” says Michael Reichert, project manager for the Taycan naming project. “A name for a car is ultimately an emotional decision—but one that should be based on facts and arguments. That requires a systematic approach and attention to detail,” explains Gruner.

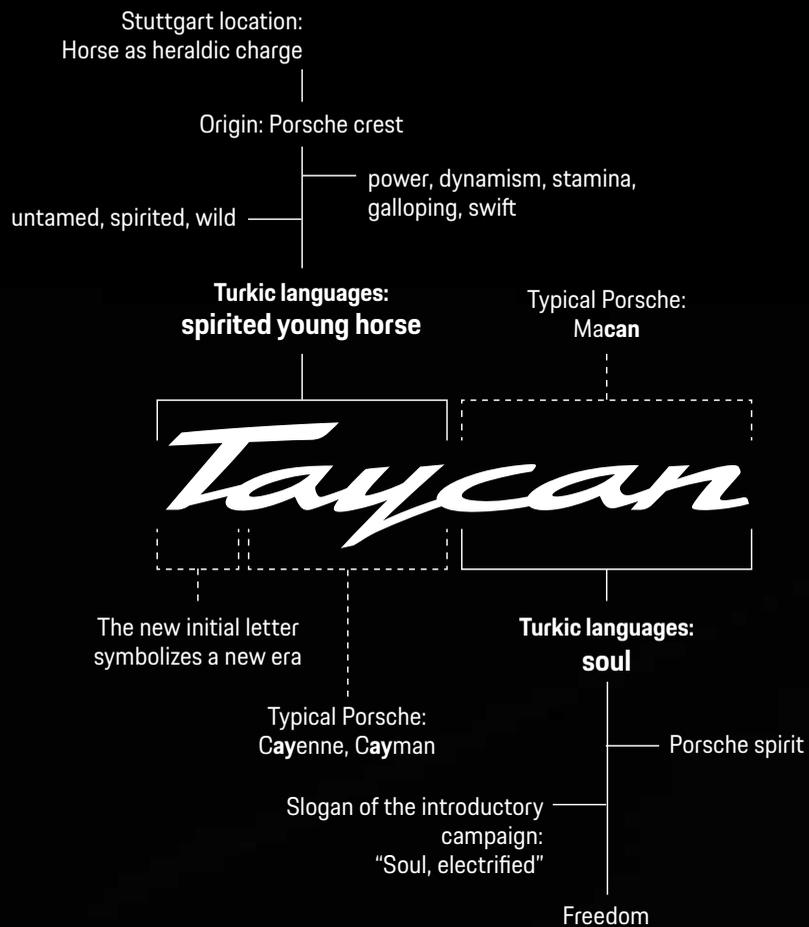
One key question: what distinguishes the new car—what impression does its shape make on the observer, the customer? Answer: because an engine block in the conventional sense isn’t required, one of its characteristic design features is the exceptionally low front section of the car. The body is shot through with air, giving the overall impression that the electric sports car is lively and dynamic. Could terms from the worlds of hydro- and aerodynamics be a good starting point for a suitable name? The team inches forward, discussing, experimenting, favoring, discarding, and rethinking things. First in a small group, then in a continually expanding process involving more and more people. In total, the experts develop six hundred ideas,

which they then gradually whittle down to a few favorites. Pairs of native speakers representing twenty-three languages consider the sound and meaning of potential model names to rule out unpleasant or unsuitable associations from the outset. Lawyers deliberate every conceivable risk of trademark violation, inspect databases around the world containing millions of registered trademarks, revise names, and locate rights holders. A Herculean task that ultimately lasts a year and a half.

The name

In the final stretch, the marketing experts select their favorite names, assembling a list to be presented to the assembled board in the autumn of 2017. The decision is made: Taycan. A name that fulfills every phonetic, legal, creative, strategic, and model-specific requirement. Composed of two terms of Turkic origin, this word can be roughly translated as “soul of a spirited young horse.” And that’s exactly what the first fully electric Porsche will be: lively, impetuous, vigorous, light-footed on long stretches without tiring, and free-spirited. The name reflects both the source and the future of the brand: the horse on the Porsche crest, the expression of its soul, on its way into a new era of the sports car. A perfect fit, too, with the slogan of the advertising campaign: “Soul, electrified.” Taycan also has positive associations in many of the world’s languages: in Japanese, for instance, taikan means roughly “physical experience”—driving in its most electrifying form.

Text Peter Gaide



ART CHECK

Along with all the paints, brushes, and palette knives, you're sure to find two things in Uli Hack's studio: books about Porsche and model cars. The Porsche fan visited like-minded artists throughout Europe to invite them to participate in *The Porsche Art Book* project. And of course they were just as excited about it as he was.

Acrylic paintings, sculptures, comics, illustrations, prints, and much more—Uli's book covers twenty artists whose work deals intensively with Porsche. Hardly any other brand inspires art in all its forms like Porsche. "The aesthetics arise from the efficiency alone. You also see this in nature, or in people. Those who are fit simply look more attractive," he says. Another reason this Freiburg-based artist undertook the project had to do with the company's historical significance. Porsche has always been closely connected with automotive history. That too helped to generate interest in the project. When Uli paints, he has to listen to music. Fast and loud is how he describes his favorite style. Somehow that seems right.

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 Book tip: *The Porsche Art Book*. Christophorus Edition, 1st edition 2018, Delius Klasing, Bielefeld, 264 pages



Uli Hack

Artist, curator of automotive collections, and Porsche enthusiast

Born in Traben-Trarbach, he has lived in Freiburg since 1989. A love for Porsche has always been part of his work, and has extended beyond his own artistic creations. He was the creative director of the Louwman Museum in The Hague from 2007 to 2010, and now works on projects with the Delius Klasing publishing house—including the Porsche company's customer magazine, *Christophorus*.

Photo collage: shutterstock/campra



Erich Strenger Porsche poster

With his passion for Porsche sports cars, this designer, illustrator, and photographer played a major role in shaping the company's visuals in the 1950s and 1960s—with everything from posters and brochures to cover pages of the *Christophorus* customer magazine.

Marcello Petisci Chlorine 2 (acrylic on canvas, 2014)

"I find the pure quality of the water around the car body very beautiful," says Marcello. He always begins working on paintings of this type in summer. He first puts a model car into water and takes multiple photos of it, and then transfers the image to the canvas.

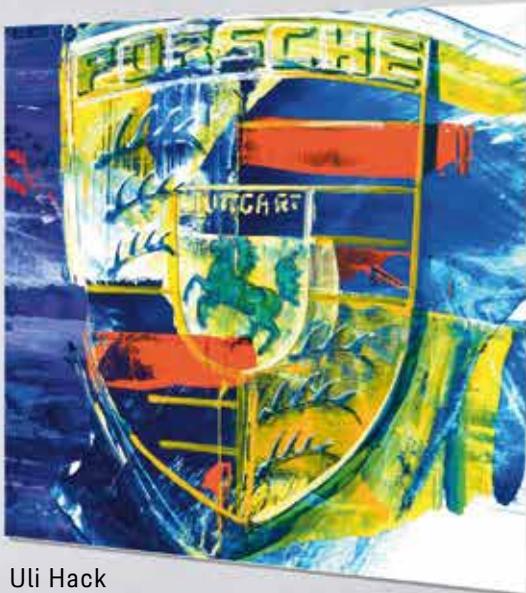
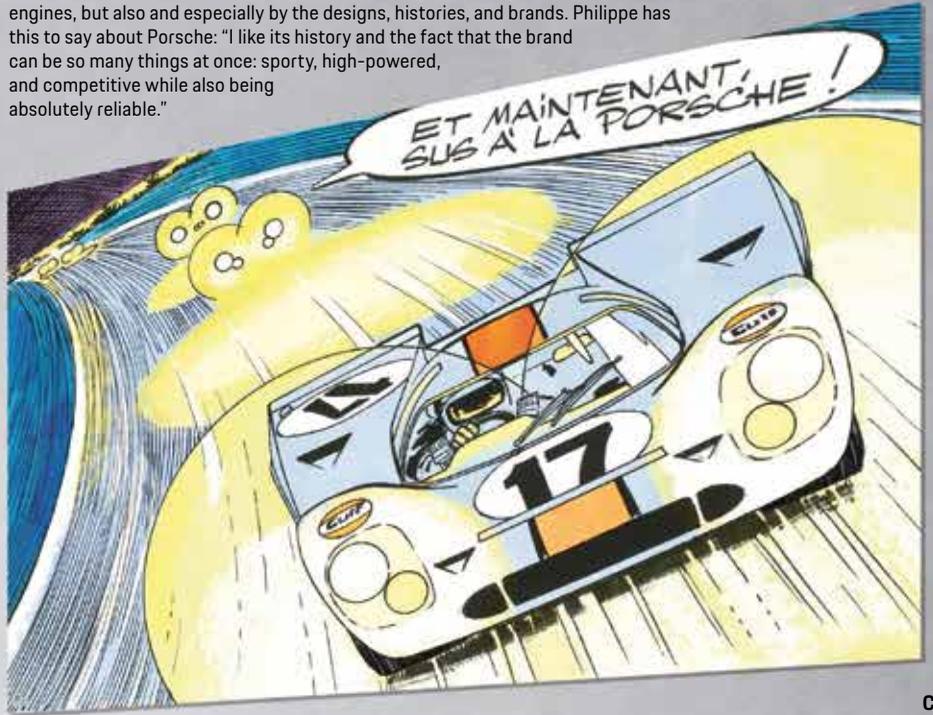


Chris Labrooy Four Pink Porsche Carrera RS's

This product designer creates fascinating images at the computer. The preferred objects for his 3D works come from Zuffenhausen. These four pink 911 Carrera RS 2.7 cars seem to hang like ripe dates from palm trees in California.

Philippe Graton
Porsche 917 (Plexiglas)

Philippe carries on the famous tradition of the Michel Vaillant comics started by his father Jean Graton. When it comes to cars he is fascinated not just by the mechanics and the engines, but also and especially by the designs, histories, and brands. Philippe has this to say about Porsche: "I like its history and the fact that the brand can be so many things at once: sporty, high-powered, and competitive while also being absolutely reliable."



Uli Hack
werk 1 (acrylic on canvas)

The initial spark for his artistic work was this painting that interprets the Porsche crest. He created it during his tenure as art director for Albert Westermann's State of Art fashion label. Ever since then, Uli has been using acrylic paints and palette knives to put Porsche themes on canvas.

Gerry Judah
Inspiration 911 (2015)

The London artist is a master of enormous sculptures like this one on Porscheplatz, which sends three 911s shooting twenty-four meters up into the sky.



MAGAZINE

FROM TRAINEESHIP TO DREAM JOB



Twelve months, one goal—this year Porsche is once again offering an international potentially career-launching trainee program with project assignments in different departments. College graduates can apply online in April for the ten traineeships advertised in all divisions. The program will start on October 1, 2019. If you don't want to miss a job opening, you can set an alarm

in the job locator, which will automatically notify you of new offers. This particular twelve-month program includes multiple project assignments in different departments plus a two- to three-month assignment abroad at one of the international subsidiaries. Seminars and workshops will let you acquire a deep familiarity with the world of Porsche. A mentor on the management level will be ready to assist you with advice and practical support. Use the Porsche job locator to see all open positions and to send your application quickly and easily.

 www.porsche.com/jobs

SUMMER SEMESTER EVENTS



Meet Porsche representatives and hear about the many ways to start your career:

- April 8** **bonding Dresden**/TU Dresden
- April 9** **International Business Fair**/ESB Reutlingen
- April 9** **Karrieremarktplatz**/HdM Stuttgart
- April 9** **Polymesse virtuell**/ETH Zurich
- April 10** **Career Fair Mannheim**/University of Mannheim
- April 12** **Berlin Talent Summit**/Berlin
- April 25** **Accelerate Conference**/HHL Leipzig
- May 4** **women&work**/Messe Frankfurt
- May 7** **Konaktiva**/TU Darmstadt
- May 8** **Informatik Kontaktmesse**/University of Stuttgart
- May 11** **Lange Nacht der Technik**/TU Ilmenau
- May 15** **KIT-Karrieremesse**/Karlsruhe Institute of Technology
- May 16** **HPI Connect**/Hasso-Plattner-Institut Potsdam
- May 21** **bonding Braunschweig**/TU Braunschweig
- May 25** **Sticks & Stones**/Funkhaus Berlin
- June 27** **KOM**/TU Munich
- July 3** **bonding Automotive Day**/RWTH Aachen
- August 7** **Formula Student**/Hockenheimring

UNDERSTAND PORSCHE—AT A GLANCE

FERRY PORSCHE FOUNDATION

Last year, the sports-car maker launched the Ferry Porsche Foundation, which supports educational and social welfare projects, and actively promotes child and youth development work. The foundation strengthens the company's previous social and community activities— independently of its business operations.

VARIOCAM PLUS

VarioCam Plus is a variable engine valve control system used in cars like the 911 Turbo. It combines intake-side camshaft control (VarioCam) with intake-side valve lift switchover (Plus). This enables performance and torque to be improved and fuel consumption and emissions to be lowered.

POLE POSITION PROGRAM

This internship program is for people who have already completed an internship at Porsche and shown outstanding results. Participants can attend specialized talks, seminars, and network meetings after their internships are over. This program focuses on candidates in areas at Porsche with growing demand for junior staff.

PORSCHE SAFARI

The Porsche company has joined forces with the Auwaldstation environmental training institute and set up an outdoor classroom for schoolchildren on the 132-hectare natural off-road grounds of its Leipzig site. Children have an opportunity to explore a four-kilometer hiking trail and learn about local fauna.



HOW TO JOIN US

JOBS AND CAREERS

Would you like to join us? Check the job locator at www.porsche.com/jobs to see all the positions—from internships to direct openings.

INTERNSHIPS

Internships are available in nearly all company divisions and at international subsidiaries. They can start at any time, run three to six months, and consist of thirty-five hours/week. Apply four to six months before you would like to start. Prerequisite: ideally three semesters plus initial practical experience.

WORKING STUDENT

Join everyday company operations at any time. Duration: at least six months. Work schedule: ten to twenty hours a week. Prerequisite: ideally three semesters with successful results.

COLLEGE THESIS

An ideal combination of theory and practice. Duration: three to six months.

STUDENTS

COLLEGE AND NON-COLLEGE CAREER ORIENTATION

High school students on both college and non-college tracks can do a one-week career orientation internship).

VOCATIONAL TRAINING

Technical and commercial apprenticeships for positions like automotive mechatronic technicians or industrial clerks. The application period starts in summer for the following year (e.g., July/August 2019 for September 2020).

WORK/STUDY PROGRAM

Three-year bachelor's program at the Baden-Württemberg Cooperative State University (DHBW) combined with periods of practical training at the company. Eight different courses of study: IT, automotive IT, economic IT, economic engineering, mechanical engineering, electrical engineering, mechatronics, and digital business management. Prerequisite: very good general or subject-oriented college preparation. Apply in July/August for the following year. Permanent job contract possible following successful completion of the program.

HIGH SCHOOL STUDENTS

HOW TO REACH US

-  www.porsche.com/jobs
-  www.facebook.com/porschekarriere
-  [porschecareers](https://www.instagram.com/porschecareers)
-  Hotline: +49 711-911-22911
(Monday through Friday, 2 to 5 pm)

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**Developing the sports car of the future isn't all fun and games.
Come to think of it – maybe it is after all.**

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