

Individual, Networked, Efficient

Future trends on the Chinese automotive market

China represents one of the largest and most interesting markets for the automobile industry. Thorough knowledge of this market, the ability to innovate, and new technologies are all of great importance in meeting the demands and requirements of Chinese customers. Porsche Engineering has been working with Chinese customers for more than 20 years now, and has recently strengthened its activities yet further in the country by founding a subsidiary in Shanghai. We spoke with Professor Zhuoping Yu, an automotive expert at the city's Tongji University, and Jianying Wang, the director of Porsche Engineering Shanghai, about trends and technologies on the Chinese market.

Interview: Frederic Damköhler and Nadine Gubl



Professor Zhuoping Yu

In addition to serving as assistant president of Shanghai's Tongji University and dean of its automotive department, Professor Yu is director of the Shanghai Automotive Industry Corporation (SAIC). He is also the chairman of the Collaborative Innovation Center of Intelligent New Energy Vehicle at Tongji University.



Jianying Wang

After studying automotive engineering at Tongji University, Jianying Wang started her career in the Chinese automobile industry. In 1995 she joined Porsche and since then she was managing Porsche Engineering's sales activities with Chinese customers. She was appointed director of the newly founded site of Porsche Engineering (Shanghai) Co., Ltd. in January of 2015.

What will Chinese customers expect from mobility in the future?

Prof. Dr. Zhuoping Yu Just like in Europe and the USA, individual mobility has become ever more important for Chinese people. The number of motor vehicles per 1,000 in the country currently stands at around 100. But this figure will increase approximately threefold over the next several years. This enormous rise in the number of cars will require the right kind of infrastructure. Given the well-known problems related to emissions and space, this will not just be a matter of building new roads and parking lots. Intelligent traffic systems or new ways of organizing traffic will be needed. Ideas on how to limit the use of cars are currently being considered—such as allowing only certain license plates to drive on certain days—as are different models of car sharing.

Jianying Wang I think that Chinese customers have especially high expectations with respect to safety and comfort, while low emissions and affordable prices continue to be very important as well. To achieve these aims, promising solutions might be found in ways of combining individual mobility with public transportation.

What technologies will have an especially strong influence on the automobile industry over the coming years?

Yu In my view, electromobility, lightweight construction, and intelligent driver assistance systems will be important topics in the future. Mobility is not yet a given in our country. More and more people have the means to buy their own cars these days, and want to do so because of the new type of flexibility and freedom they offer. But this devel-

opment poses new challenges in terms of traffic and the environment. In order to reduce energy consumption and pollution, it's crucial to pursue further development on alternative drive concepts. As for traffic safety, ever greater significance is being attached to intelligent technologies such as driver assistance systems.

Wang Lightweight construction will play an even more important role in the future, especially when it comes to reducing fuel consumption and for electric vehicles. The challenges we're facing here have to do with high production costs as well as vehicle safety. A number of technologies and systems have to be developed further if we want to be able to combine different materials safely in cars. We at Porsche Engineering are working on various ways of doing this. >



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Jianying Wang

What will be key for development processes in the future?

Wang Individual development cycles are becoming shorter, which means that development processes as a whole are also becoming shorter and that

everything is moving much faster. It's more important than ever to keep a constant eye on the market, but it's becoming harder to do so at the same time. What is innovative today will be obsolete tomorrow. And this gives rise to new organizational requirements.

New tools or front-loading mechanisms are constantly being set up in order to keep pace here.

Yu Development processes will be influenced all the more by supplier industries and other sectors. Car makers will be concentrating more exclusively on the core process of development. Wheel-hub drives for electric vehicles and batteries, for example, are not part of the core business for car makers. Development processes will be split up to a greater extent, and parts of these processes will be delegated to service providers. Sales, or sales systems, will also change. Car use no longer necessarily means car ownership. These approaches will require well thought-out systems of use and information technology, which in turn will influence the development process and need to be taken into account right from the start. Successful integration of systems part-

ners, which means joint projects and communications, will lay the foundation for the successful completion of development processes.

Non-automotive companies, particularly technology companies like Google and Apple, have entered the automobile market. What effect will that have on how the sector develops?

Wang A new competitive environment is arising. Joint ventures with these types of technology companies could be helpful in the future, and enable all partners to benefit in the best possible ways from their respective experience and developments.

Yu The way I see it, the roles will be re-assigned. Google will become a major supplier and partner in the future. Car makers will have to master a lot of challenges or lose their favorable market positions to these ambitious tech companies.

Professor Yu, to what extent does the demand for sustainable mobility influence your work at the university?

Yu Our university, or rather our courses and programs, are being further developed to address the demands associated with sustainable mobility. In 2010 we formed a working group on e-mobility with members from Tongji University and the Technische Universität München as well as from two additional Chinese universities and the Shanghai Automotive Industry Corporation (SAIC). This in turn led to the launch of a cooperation and integration center for electric vehicles. The goal is to advance the preliminary development of innovations in this area. We need to incorporate the topic of sustainability into the educational system. In connection with electromobility, another major topic that the university will need to address is intelligent traffic control.

How does Tongji University differ from other universities?

Yu Compared to other Chinese universities, Tongji maintains intensive relations with leading German universities and companies. Ever since it was founded in 1907, it has been in close contact with the medical and mechanical or civil engineering departments of German universities. We started offering a degree program in automotive engineering at the end of the 1980s. Our courses and programs are very practice-based and future-oriented. Tongji has studied industrial developments in China from the very beginning and has continually adapted its programs to meet the needs of industry. Internships are also required—as is often the case in Germany—in order for students to start gaining practical experience. An

ever increasing number of students and the feedback we get from companies confirm that we're on the right track with this approach.

Wang Those are the reasons why we work with Tongji University too, and especially why we support the automotive engineering department. Experienced employees from Porsche Engineering hold guest lectures at the university and also propose topics for students to work on.

And now to conclude with a very different question, Professor Yu: assuming you could take a test drive as part of series development work at Porsche, which model would you choose?

Yu A Porsche Cayenne S E-Hybrid! When can we start? ■

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Prof. Dr. Zhuoping Yu

CAYENNE S E-HYBRID – Fuel consumption (combined): 3.4 l/100 km, CO₂ emissions: 79 g/km, Power consumption: 20.8 kWh/100 km, Efficiency class: A+