AUTOMOTIVE NOW

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KPMG
cutting through complexity

Chain reaction

The tremendous challenges which automobile manufacturers face in coming years will likely also have a largely undiminished impact on the supplier companies. The following applies to both sectors: Any company that wants to hold its own against its competitors has to withstand the growing pressure of innovation and the no less rapidly increasing pressure of globalization. This is quite expensive. The only survivors may be those who offer state-of-the-art drive technologies and develop new, booming sales markets over and beyond the classic markets, which are tending to stagnate. The only reassuring message is that when viewed overall, the tasks to be tackled are equally challenging for all suppliers worldwide.

Many are trying to meet these challenges together in the form of cooperative ventures. However, affiliations with companies from the Asian boom markets are by no means sure-fire successes. Differences in mentality and rigid legal regulations often tear apart again what does not match up in the cold light of day. But in the end there is no alternative: All the parties will have to work on their cooperation skills – simply to be able to handle the financing of new, capital-intensive technologies.

Suppliers must have a presence in the places where their customers are located. They must adapt their products specifically for different regions, markets and segments. And they must set themselves apart from their competitors, not only in terms of cost and quality but also in terms of service. The ones who take this advice to heart should be able to hold their own in the race for the best solutions in the key disciplines of comfort, safety and energy efficiency.

Yours

Mathieu Meyer
Partner, Global Head of Automotive

Contents

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Strong together

Even major suppliers are often daunted by the upheavals facing the automotive industry in the next few years if they are on their own. Cooperative ventures, especially in research and development, might be the solution. How suppliers in the automotive industry are equipping themselves for the change. **Text: David Selbach**

Photos: Getty Images/Caiaimage; RWTH Aachen

Johnson Controls is a long-established company. Formed in 1885, the US supplier group now has 168,000 employees in more than 150 countries. The company supplies virtually all the automobile manufacturers with vehicle seats, headlinings, door trim panels and dashboards, plus batteries. But even Johnson Controls, a company bursting with strength, relies on partners in the harsh world of global competition. In March 2012, the Americans established a joint enterprise with the Indian company Pricol Limited, a leading supplier of instrument clusters. From Pune, Johnson Controls intends to conquer the Indian market in this way. Germany's Amberg-based automotive supplier Grammer is taking a similar approach. The Bavarian company has been working with the Chinese supplier Jiangsu Yuhua Automobile Parts since the end of 2012. They want to build truck seats together.

Finding partners for new markets

Other suppliers are also seeking access to new markets with the aid of partners. Spanish CIE Automotive is hooking up with the Indian Mahindra Group, Bosch is cooperating with Japanese battery manufacturer GS Yuasa in order to get a foothold in the battery business for electric vehicles. Even the Daimler Group has been looking for associates in the area of e-mobility, and in fact several of them. The group is working in close cooperation with Californian electric car manufacturer Tesla and developing its own electric-powered vehicle together with Chinese automotive group BYD. It is also doing research on lithium-ion batteries together with chemicals company Evonik. According to press reports, however, business is not going quite as hoped for at "Li-Tec", the Daimler-Evonik joint venture.

All these companies demonstrate what experts will be urgently recommending to supplier companies in the next few years: namely entering into cooperative ventures in order to establish themselves on a more global footing, to open up new markets and areas of technology and to achieve more efficient production. The problems of Daimler and Evonik also make it quite clear that not every cooperative venture will end in a success story. "Suppliers have the opportunity to strengthen their position in added-value networks by means of smart cooperative ventures," says Garnet Kasperk, Director of the Center for International Automobile Management at RWTH Aachen, Germany. "They cooperate vertically with OEMs and horizontally with other suppliers." Kasperk stresses, however, that at the moment it does not often work like this in practice. Above all in the case of small and medium-sized suppliers, these "cooperation skills" are little in evidence.

Flexibility in the supply chain

Most market experts are in agreement that many companies in the automotive industry will hardly be able to avoid joining forces with other companies. The automotive economy is actually still doing well in the USA and in China, but the industry faces massive upheavals in the next few years.

For one thing its center of gravity is shifting towards Asia. "Europe's share of global sales is shrinking," says expert Kasperk. "The higher growth rates are being achieved in Asia and Latin America."

"The higher growth rates are being achieved in Asia and Latin America."

Garnet Kasperk, Director of the Center for International Automobile Management at RWTH Aachen

Although the economic prospects for China now look less optimistic than just a few years ago, automotive suppliers still expect double-digit growth rates from the world's second largest economy. Purchasing power is increasing, the Chinese can afford larger and better equipped vehicles.

Electronics supplier Bosch wants to earn 30 percent of its turnover in Asia in the medium term, explains Uwe Raschke, Managing Director for the Asia-Pacific region. The Stuttgart-based firm already employs 35,000 workers in China; in the next few years the workforce in the People's Republic is set to grow to around 50,000 employees. In the end Bosch really has no alternative. OEMs are relocating ever

larger parts of their production to these markets, so suppliers have to follow them.

This applies particularly because Asian supplier companies are rapidly catching up in terms of technology, with the Chinese in the lead. In terms of electric propulsion, a key issue in the future, they are in many cases already on a par with Western companies. Wanxiang, one of the biggest Chinese groups and a supplier of automobile parts among other things, is showing the way. At the start of 2013, the Chinese bought US company A123 Systems, a firm specializing in the development of batteries for electric cars. "In today's markets it is more and more important to collaborate with partners," explains Pin Ni, boss of Wanxiang North America. Together with A123, Ni now intends to capture the market for high-performance vehicle batteries.

The challenge of new drive technologies: Experts from Bosch assemble components for hybrid and electric drive trains.

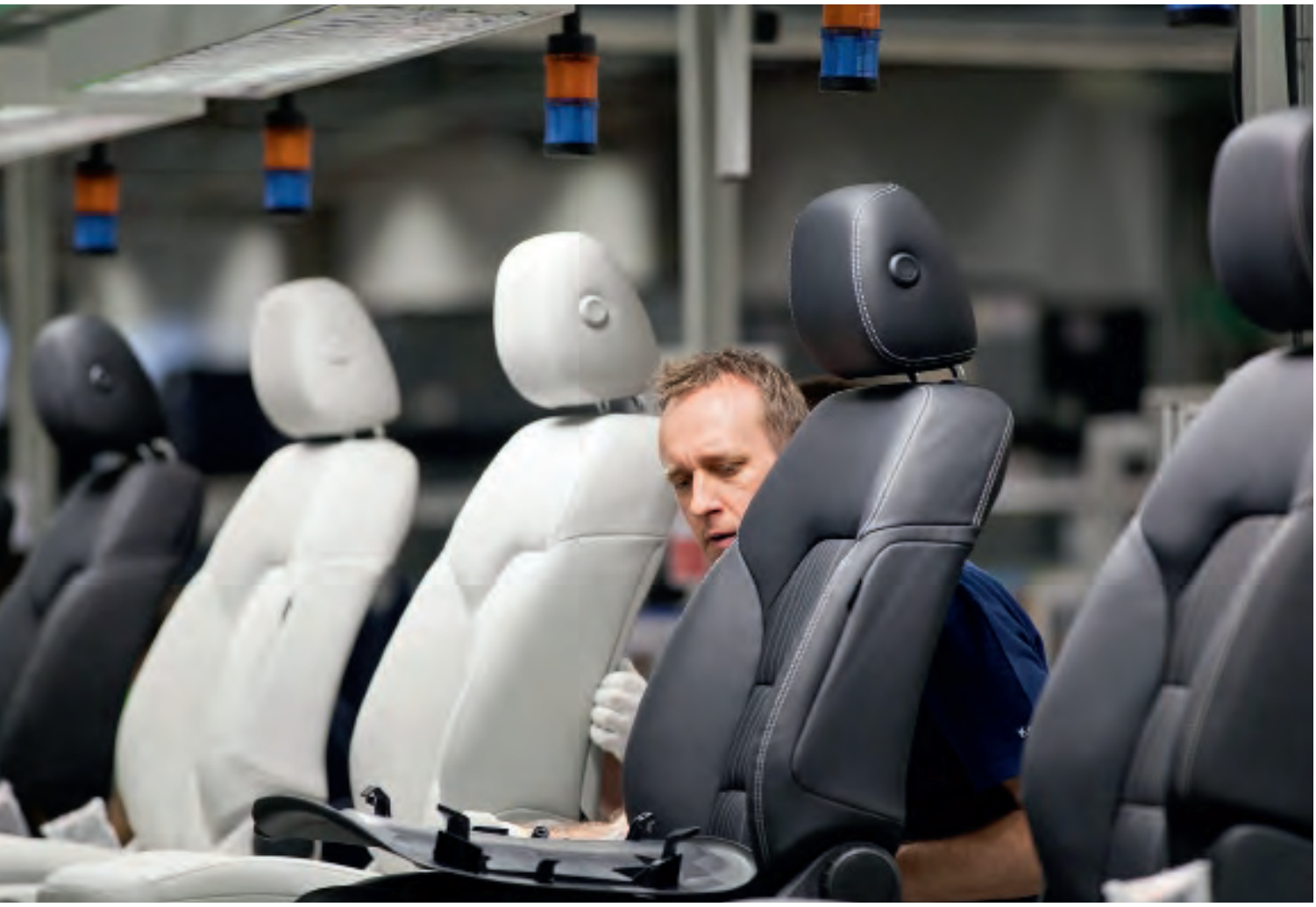
It does not make life any easier for the industry that supply chains are to become more and more flexible at the same time as delivery times become shorter. This is not just down to the fact that cost pressures are increasing. "Supply chain disruptions are an enormous problem in the automotive industry, because supply relationships are extremely interwoven on an international level nowadays," explains Stewart Pedder, Managing Director Supplier Business at market research institute IHS. For example, natural disasters could put the sensitive flow of goods in the industry tremendously out of kilter. Car manufacturers want to be able to reschedule in such cases. "For that reason they demand flexibility in the supply chain," says Pedder. OEMs now expect shorter and shorter delivery times above all for components which are not part of a long-term model platform and are thus especially affected by great model variety and faster model cycles.

Many suppliers are using cooperative ventures in order to gain a foothold in growth regions. In the summer of 2013, Spanish supplier CIE Automotive announced its alliance with the Indian Mahindra Group. For CIE Managing Director Anton Pradera, the cooperative venture with Mahindra is a way to capture the Asian market via India.

"We are impressed by the prospects of the car market in India," says Pradera. "In addition, the significance of India as a global production center for small cars is also growing." Mahindra in turn intends to use CIE as a door-opener to Europe, says Hemant Luthra, Head of Systech, Mahindra's supplier division. "Together we now have production plants in the world's most important regions." In the past in Europe Mahindra has concentrated on components for heavy trucks, such as drive shafts for example. "The cooperative arrangement with CIE is now also bringing in customers from the automobile sector," says Luthra. Together Mahindra and CIE earn almost three billion dollars from sales. "In today's vehicle market you need to have a certain size and a very competitive cost structure," says Luthra. "That is why it is necessary to set up cooperative ventures of this kind." He thereby wants to prepare Mahindra for the "next wave of consolidation" in the supplier industry.

Industry dividing lines are becoming blurred

Even suppliers themselves occasionally have difficulties in adapting their corporate cultures to one another. But in the case of e-mobility the cooperation partners in question come almost exclusively from outside the industry. The industry itself has little expertise in terms of electric motors and chemically complicated high-performance batteries. Problems are to be expected. The collaboration between electronics supplier Bosch and South Korean manufacturer Samsung came to grief in September 2012. However Bosch has just announced another attempt to get established in the field of lithium-ion batteries. Together with Japanese battery manufacturer GS Yuasa and the Mitsubishi Corporation, Bosch wants to improve its position in relation to electric and hybrid vehicles. "In the future, we will have to work to-



From America to the world: Production of automobile seats at the new JIT plant of US-supplier group Johnson Controls in Kecskemét, Hungary.

gether even more comprehensively," stresses Wolf-Henning Schneider, spokesperson for the vehicle technology division, with a view to e-mobility. He believes that electrically powered cars could be an area in which Europe can again achieve a leading position. The joint venture is to be based in Stuttgart and work is scheduled to begin at the start of 2014.

"We are impressed by the prospects of the car market in India."

Anton Pradera, Managing Director at CIE Automotive SA

And the little guys? If even major enterprises such as Mahindra and Bosch have to engage in cooperative ventures, you might think it looks entirely hopeless for companies with a few hundred employees and only domestic production facilities. This is by no means the case. Clusters such as the MAHREG Automotive innovation network based in Barleben near Magdeburg, Germany, could be the answer. Originating in 2001 from the "InnoRegio" competition of the federal government at the time, 90 automotive suppliers from Saxony-Anhalt, Germany, have now joined forces in the cluster.

MAHREG, which stands for "Magdeburg-Anhalt-Harz Region", coordinates joint research projects and carries out marketing and PR work for the members. "The automotive suppliers in Saxony-Anhalt are small units," says MAHREG spokesperson Jürgen Ude. Only two members have more than 1,000 employees; many do not even have ten. When MAHREG initiates joint projects with research institutes, such as with the Institute for Competence in Automotive Mobility (IKAM) in Magdeburg, several companies work together – at least one has market access, perhaps building a prototype. This, says Ude, gives small companies the opportunity of professional research and development. They can make contacts. And get extra orders. Together they are stronger.

Photos: Bosch; Johnson Controls; Bloomberg/Getty Images

Global perspective

Automotive suppliers face similar challenges worldwide. AutomotiveNow asked three supplier companies about their strategy for the coming years. Answers from Hella from Germany, Bridgestone from Japan and Cummins from the USA.

USA
NEIL PATTISON,
Sales Director European Automotive Business of Cummins (diesel and gas engines)

Which strategies can an automotive supplier employ to remain competitive in a globalized market?

Cummins has a philosophy of "the right technology matters." We develop products using the right technology specifically for each region, market and segment, providing the best possible solution for our customers. It is not a one-size fits all. The technologies we develop for the leading emissions regions of Europe and North America are then used in areas such as Brazil, Russia, China and India as their markets demand it. Cummins has been established in these areas for many years, so we were well placed to grow as these markets have grown.

Which new areas of business and markets should suppliers consider? How can the business model be extended?

There is a trend developing towards improving engine and vehicle efficiency now that the key exhaust constituents of particulates and oxides of nitrogen have been significantly reduced. Advanced technologies such as hybrids, electrification and waste heat recovery are being developed and tested. These technologies will extend the life of diesel engines as a commercial vehicle power source for a number of years to come.

The contribution of suppliers to added value has risen higher and higher in recent years and will soon reach 70 or even 80 percent. To what extent does this mean that the balance of power is shifting to the disadvantage of the OEMs and in favor of the suppliers?

Since the 1970s Cummins has integrated a number of our sub-system suppliers (turbos, exhaust aftertreatment, filtration, fuel systems etc.), to have greater control over the finished product and a better integrated solution for our customers. Some of our growth has come from selling these components to other integrated manufacturers who wouldn't necessarily buy an engine from Cummins. Also, many of our major customers already produce their own engines, so Cummins' products need to be competitive with theirs and offer enough value to drive a long term business partnership with mutual benefit.

There is a trend to be observed among automotive suppliers towards a more comprehensive range of services. What is your company doing in this respect?

Cummins has recognized the need to build our engineering capability to support customers through challenging emissions changes. The tighter the emissions, the more complex the installation from a technology perspective. Our engineers work as part of the customer's team to tailor the products for each installation from a product and electronic perspective. The aim is to deliver the best result from an efficiency and running cost perspective as well as low emissions.

Photos: Sashkin/Fotolia; Cummins; Bridgestone; Hella Hueck

JAPAN
HIROSHI YOSHIMORI,
Vice President and Officer, Group Global Marketing Strategy and Motorsport, of Bridgestone (tires)

GERMANY
DR. ROLF BREIDENBACH,
Chairman of the Board of Management of Hella Hueck (headlights, body electronics)

We are working to identify market and competitive trends and foresee changes by promoting innovation, trying to create customer value by increasing sales of competitive products and services globally and constructing and enhancing a business model that will extend beyond the mere sale of products.

It is important for suppliers to have a presence where their customers are located. Because the business of the automobile manufacturers is becoming increasingly globalized, the issue of internationalization has also become a critical success factor for Hella. This is why we started to establish a global network at an early stage, with the result that we now have a presence in over 35 countries, at more than 100 locations. As we move forward we are maintaining a sense of proportion, because as a family company our focus is on sustainable growth and not on growth at any price. This also means that we should concentrate on our core business areas of lighting and electronics.

We are constructing and enhancing a business model that will extend beyond the mere sale of products to, for instance, the promotion of a solution package that includes new tires, retread and maintenance services, the collaboration between the tire business and diversified product business and more.

The automotive industry is essentially driven by three key megatrends: energy efficiency, safety and comfort. In our view, nothing is going to change very quickly in that respect. As a result, we have consistently aligned our portfolio to these trends in recent years and developed numerous groundbreaking products.

We are not in a position to answer a question about the bargaining position of suppliers.

At the end of the day, manufacturers and suppliers are in the same boat. Both want to make driving safer, more efficient and more comfortable. The greater the basis of trust for the cooperation, the better things often work. Many groundbreaking innovations are thus the result of close collaboration by the two parties. With the ever increasing complexity of the products, this collaboration will certainly become even more intensive. For committed suppliers with a flair for innovation there are excellent opportunities to make a mark.

Yes, for instance in the field of truck and bus tires, we have been providing a total solution package that contributes to stable and comfortable operations and cost savings for our customers while satisfying society's requirement to reduce resource consumption and CO_2 emissions.

In our view, it is becoming increasingly important to differentiate yourself not only in terms of cost, quality and innovative capacity but also by means of services offered. Particularly as there are a variety of starting points and opportunities opening up in this area. We can see how important an effective range of services is, for example, in our aftermarket business. We support our workshop partners in this respect by providing technical hotlines and promotional campaigns, among other things. Our diagnostic systems and workshop equipment also contribute significantly to finding the service required for each vehicle model quickly and easily.

Boom in the backyard

Ready for shipping Vehicles from VW on the quayside. Over 80 percent of the cars produced in Mexico are for export.

Mexico has grown to be the world's fourth biggest car exporter almost in secret. And the investments are not stopping. Manufacturers appreciate the low-cost, well trained staff and the export-friendly free-trade agreements that the country has concluded. But what it now lacks are trained technicians – and the domestic market is still a problem.

Text: Klaus Ehringfeld

Just a short time ago San José Chiapa was a sleepy village on the outskirts of the Mexican city of Puebla. There were only a few surfaced roads, but there was lots of empty space. Now the roads have been surfaced and the empty spaces are being rapidly developed. Because this is where the first Audi AG plant in Mexico is coming into being. The company from Ingolstadt, Germany, intends to see the Q5 off-road vehicle rolling off the production lines in San José Chiapa, 180 kilometers southeast of Mexico City, by 2016. 150,000 units are planned to start with. A big step for the premium car builder, which has previously only produced the vehicle in Germany and China. And yet another success for Mexico, the new automotive power.

The foundation stone was laid at the beginning of May 2013. A marquee covering an area as big as 400 soccer fields. Wheat beer, Mexican Mariachi Bands, but also heavily armed federal police officers. In Mexico they are always present when politicians and heads of industry meet to inaugurate something. Because it was not just Rupert Stadler, Chairman of the Board of Management of Audi AG, who attended. The Mexican Secretary of Economy, Ildefonso Guajardo, and the Governor of the State of Puebla, Rafael Moreno, were also present. After all, Audi is investing almost a billion dollars in setting up the factory.

"Viva México, viva Audi," exclaimed Stadler as the foundation stone was laid. But from Mexico the Audi boss has his sights set on one market in particular – the market to the north. The USA is the second largest car market in the world and SUVs are particularly popular there. And Mexico is close; the conditions for automobile manufacturing are outstanding. And ups and downs in important currencies like the euro and yen in relation to the dollar are also absorbed if production is primarily in the dollar zone.

In addition, Audi is locating its plant where parent company Volkswagen has been successfully building cars for decades, and where the group subsidiary can draw on a network of 70 suppliers. Puebla lies little more than 60 kilometers from San José Chiapa. The megacity is Mexico's automotive center. The Volkswagen brand has its second largest plant here, which manufactures three models for the global market: the Beetle II, the Golf Variant and the Jetta VI. The Bora IV is also to be assembled here for the national and South American market. And the Golf A7 is also set to roll off the production line in Puebla in mid-2014. The German Wolfsburg-based car-builders have yet again invested 700 million dollars in this.

Because Volkswagen is also fully backing Mexico. A new production line has started up in Puebla every year since 2009. Vehicle output has doubled. Last year, the workers in Puebla assembled 604,508 cars. A growing trend.

Those who manufacture cars in Mexico have (almost) the whole world open to them. Mexico has negotiated more than two dozen free-trade agreements with 44 of the world's nations. From nowhere else in the world can you export to so many countries duty-free or with favorable duties. This gives Mexico an almost unique selling point as an automobile producer. The country has supplied North America since 1994 via the NAFTA free-trade zone, Europe since 2000 with the EU free-trade agreement; Mexico also sells its cars to Japan and Central America as well as to some South American countries on preferential terms and with lower duty imposed.

First and foremost an export platform

But Mexico offers car manufacturers even more advantages, say representatives of German manufacturers: "Mexico is very competitive, with its combination of qual-

Photo: H. Leue, Getty Images/Lonely Planet Images

Adding the finishing touches: Quality control staff at the Puebla Volkswagen plant.

ity and price in an international comparison," says Gerd Dressler, CEO of BMW de México. Andreas Hinrichs, CEO of VW de México, highlights "experienced and well trained workers with comparatively low wages and a dense network of suppliers." But above all the free-trade agreements are an invaluable advantage for a global company like Volkswagen, stresses Hinrichs.

"Mexico is first and foremost an export platform," reiterates Eduardo Solís, head of the industry association "Asociación Mexicana de la Industria Automotriz" (AMIA). Over eighty percent of the vehicles manufactured in Mexico are sold outside the country's borders, the vast majority of these in the USA. In the first half of 2013, this constituted around 75 percent of Mexican production overall. After Japan, Germany and South Korea, Mexico is now the fourth largest exporter.

The attempt of the industry to diversify exports had made great progress in recent years. Sales to South America and Europe were increasing. As well as VW de México, which already ships 30 percent of its output across the Atlantic, Mazda also intends to sell a proportion of the output from its new factory in Guanajuato to Europe, beginning next year.

Deliveries to Latin America increased by 55.9 percent in 2011, from 11.1 percent to 15.0 percent of the overall volume. But there was a setback last year. As imports became cheaper on the important Brazilian market, primarily as a result of the strength of its currency, the country enforced import quotas for Mexican cars, which will only end in 2015.

The boom is only just beginning

Another advantage of Mexico in comparison with other locations is the high productivity achieved, says AMIA head Solís. It is one third higher than in Brazil, for example. The wages also contribute to this. According to official statistics the hourly wage of a Mexican car worker is

Organized crime

The main disadvantage of Mexico is the threat of organized crime, which has replaced the government as a regulatory power in some parts of the country – primarily in the north. However, according to car industry and business representatives, multinational companies do not suffer from this problem. No-one would make an investment decision on that basis. "We are not aware of problems with organized crime," says Gerd Dressler, CEO of BMW de México and President of the German-Mexican Chamber of Commerce, CAMEXA. Even if you might have to spend more money on security in Mexico, the general conditions and the overall context for investment are very attractive, says Dressler.

Photos: Volkswagen; picture alliance / AP Photo; Audi

between four and seven US dollars; in Brazil it is between seven and 13 dollars. Another factor is the collaboration between companies and universities in the technology sector, adds BMW CEO Dressler. Leading suppliers also operate their development centers in Mexico.

These assets have helped Mexico develop into a new heavyweight in the global automobile industry in recent years. In 2012 the previous production record of 2.9 million vehicles was broken, an increase of almost 13 percent compared to 2011. Another record figure is expected for 2013. 1.98 million cars had already been produced by August.

And the boom is only just beginning. Audi is the ninth car maker to come to the country. General Motors, Ford, Chrysler, Nissan, Honda, Toyota and Volkswagen have been manufacturing cars in Mexico intermittently for 50 years. In addition, Honda, Mazda, Nissan and Chrysler/Fiat are building factories which are to begin operating between the end of 2013 and 2014, increasing the annual capacity by 665,000 units. And even Daimler and BMW are considering a production facility in Mexico. While the Mexican Minister of Economy, Guajardo, is already almost certain the Munich car maker will be coming to Mexico, BMW says that a decision has not yet been made regarding a plant in Mexico.

According to AMIA data, over the past ten years international car manufacturers have invested more than 20 billion dollars in Mexico. Almost 21 percent of foreign direct investment flowed into the automotive sector in 2012 alone. According to optimistic calculations by the industry associations, Mexico should be in a position to build 4.1 million cars a year by 2020. The country is already the world's eighth biggest car producer, behind China, the USA, Japan, Germany, South Korea, India and Brazil. As cars have been produced in Mexico for export on a grand scale since the 1980s, by now most of world's leading suppliers are located there. There are 1,200 suppliers, of which some 500 are Mexican companies. These mainly deal with the aftermarket.

Along with the new factories and manufacturers, more suppliers are streaming into the country; others are expanding their plants. In the second half of 2013 and in 2014, the Mexican Industry Association of Automotive Suppliers (INA) expects 300 to 400 new suppliers to set up plants, with capital investment amounting to 1.5 billion dollars. According to the head of the association, Oscar Albín, the new Audi factory alone could bring around 500 million dollars of investment and the establishment of up to 50 plants. Mexico is now the world's fifth largest producer of parts after China, Japan, the USA and Germany. "We have already left South Korea far behind," INA head Albín is pleased to say. BMW supplies its plants in the USA and Germany with parts from Mexico.

Weak domestic market

However, the high level of demand also exposes the weaknesses in the supplier industry, because even now certain materials which are essential for the industry are only available with difficulty, if at all. This means that fabrics and leather in particular have to be imported. Even up to 80 percent of special steels come from overseas. International steel manufacturers, including the Japanese Nippon Steel and the Argentinian Ternium, have announced capital investments amounting to more than ten billion dollars over the coming years.

Laying the foundation stone: A new Audi plant costing 900 million euro is being developed in San José Chiapa.

In addition, many specialist suppliers lack suitable skilled staff. "Suppliers in the technology sector in particular do not come to Mexico because they cannot find any suitable staff," says Albín. INA and the Mexican government are currently negotiating about a fund to train skilled technicians. "The discussions are proving very promising," says the head of the INA confidently.

Tire manufacturers are also investing. They are gearing up for delivery to the new factories and for exports. After starting up its first factory in 2012, Pirelli wants to plow a further 200 million dollars into expanding produc-

Fiesta Mexicana: Employee working on the assembly line producing the new Ford Fiesta car, at the Ford Motor Co. plant in Cuautitlan Izcalli, Mexico.

Ready for export: Nissan cars waiting to be shipped at the port of Veracruz.

Man at the wheel: Employee at Delphi Delco Electronics assembling steering wheels.

tion in Mexico by 2017. The Japanese company Yokohama Tire is planning its first plant in Mexico to supply Mazda and Honda. In April 2013, Continental laid the foundations for a development center in Guadalajara.

However well Mexico works as an export platform, its domestic market is poorly developed. Sales of cars and light commercial vehicles lag significantly behind the Latin American average. Around 19 to 20 cars and light commercial vehicles per 1,000 inhabitants are sold in the region; in Mexico it is only around eight. According to the AMIA industry association, twice as many cars could be sold if the huge import of used cars from the USA was stopped. It ruins the market and the majority of vehicles do not meet environmental guidelines anyway. A strong domestic market will also be important as a buffer when the next global crisis causes the international sales markets to collapse again, stresses the AMIA.

In addition to cheap imports from the USA, the poor availability of credit and the weak income growth are also responsible for the stagnant domestic market. In 2012, 51 percent of new purchases were financed by credit, while in Brazil and Columbia it was 70 and in the USA it was 90 percent.

At the end of August 2013 a new CO2 standard came into force in Mexico. This is to be applied gradually from the 2014 model year. The new standard particularly affects the US producers GM, Ford and Chrysler/Fiat, as their vehicle fleets include a greater proportion of fuel-hungry SUVs and pickups. This standard might not affect Volkswagen so seriously.

The automotive sector is of vital importance for the economy of the second largest national economy in Latin America, because it is now the most dynamic and important industry. It generates 3.5 percent of the gross domestic product, creates 500,000 direct and hundreds of thousands of indirect jobs. With 36 billion dollars of national value added, last year the sector surpassed the previously dominant oil sector, as well as foreign exchange earnings from tourism and money transfers from Mexican expats.

The Chocolate Cars

"Chocolate cars" is the nickname used to describe imported used cars from the US into Mexico. The importation of used cars is one of the drawbacks Mexico has to deal with from the NAFTA agreement signed in 1994. It is estimated that from 2005 to 2013 around 7 million (or 800000 per year) used cars were imported either legally or illegally from the US to Mexico. The average age of those imported cars is estimated to be over 16 years and a large proportion of these cars do not fulfill the environmental conditions required by the Mexican environmental laws. Considering that in Mexico around 1 million new cars are sold a year the domestic car market could almost be doubled. With an estimated market size of around 2 million cars a year, Mexico would not only be interesting as a production place but also as a domestic market, being among the 10 biggest markets in the world.

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Photos: Bloomberg/Getty Images; K. Dannemiller/Corbis; B. Daemmrich/Corbis; KPMG

Dragonfly flight inspiration: Festo is investigating how principles from nature can be applied in automation technology.

New rules

Innovations are extremely important for the brand identity of car makers, especially in the premium segment. Constantly increasing electronics, different tastes in the West and in Asia and ever-shorter innovation cycles are making research and development more and more complex. The industry is trying out various innovative approaches. **Text: David Selbach**

Car-sharing as a computer game: According to Anthony Franze in Adelaide, Australia, by 2025 you will be able to work your way up from level to level in BMW rental cars. Beginners receive bronze membership and may initially only hire compact cars or scooters. Individuals who have covered enough miles to reach the second or third level will receive an SUV or a higher range vehicle. And anyone who has gained enough experience with sports cars may even get to try a concept car or participate in a driver training. Franze's car-sharing concept is called "Reward Me" and it was awarded prize money of 5,000 US dollars by the Munich car manufacturer BMW at the end of 2012. Franze was able to travel to Munich and discuss his idea with BMW's Head of Research and Technology Christoph Grote. What will become of the concept remains his secret for now. What matters is something different: Namely that BMW is soliciting the views of its customers, suppliers and researchers in the first place.

Listening to the community

BMW uses the "Co-Creation Lab" to regularly launch idea competitions on the Internet and invites interested laypersons to propose interior designs or new online configurators. In the search for the "Urban Driving Experience 2025", i.e. future mobility concepts, the manufacturer took it a step further and joined together with US start-up Local Motors. Local Motors represents a radical new business model and seeks to transfer the open-source principle to vehicle construction. The company provides parts lists and

Photo: Festo

construction manuals, while the customer constructs the "Rally Fighter" SUV himself. Local Motors is extremely focused on the customer, says Matthias Meyer, BMW's Project Manager for the Urban Driving Experience. And the American company's special business model has allowed them to tap into an Internet community of extremely dedicated car enthusiasts with over 20,000 members. "BMW found the opportunity to exchange ideas directly with this community to be extremely valuable", sums up Meyer.

The personal involvement of top management in innovations is a fundamental requirement in an industry whose image is characterized by innovations – especially in the premium segment.

The times in which technology-mad engineers devised new ideas alone on test benches are gone. Technology now serves a single purpose. "The focus is on the application", confirms Peter Post, Head of Corporate Research and Technology at the machine builder Festo in Esslingen, Germany, whose systems support both OEMs as well as suppliers. "Today's research activities are characterized by a much more open approach." The car industry is looking towards "open innovation" (see box), listening to employees, suppliers and customers and attempting to use the intelligence of the masses. BMW considers itself to be a forerunner; Festo has also embraced this concept over a number of years. "It allows us to gather different perspectives on problems right from the start and generate targeted solutions for the market", says Post. The German technology group's innovation management also plans to implement a "Future Radar", which will allow Festo to develop scenarios for the coming ten or twenty years in order to identify trends at an early stage.

Never miss a trend

The sector never wants to miss another trend – such as the one towards car-sharing or the electrification of the drive train. "The OEMS were naturally aware of these things", explains Antonino Ardilio, Head of Technology Management at the Fraunhofer Institut für Arbeitswirtschaft und Organisation (IAO) in Stuttgart, Germany. "But their priorities were wrong. They frequently looked at these trends from a technology perspective rather than from a customer perspective."

Now everything has changed. The focus is on electronics – and not just because hybrid and electric vehicles are operated by electricity instead of fuel. "These days, a car also needs to fit seamlessly into the customer's ecosystem", says Ardilio. The customer considers questions such as: Does the car have a USB connection? What interfaces are there for a smartphone? Does it have Internet capability? One consequence of this is that carmakers are more frequently joining forces with IT companies and manufacturers of consumer electronics. "Bluetooth, WiFi or 3G Internet are not exactly the domain of an OEM", reports Ardilio. The new Mercedes S-class has incorporated a three-dimensional surround sound system by Burmester and many OEMs offer fee-based online driver assistance systems or Internet flat rates for their cars. Partner technology.

Three-dimensional surround sound: A Burmester system installed in a Mercedes-Benz S 65 AMG (V 222) 2013.

Long cycles meet short-term requirements

The new dominance of electronics also has a second consequence: "The long innovation cycles in the automotive industry have to be synchronized with the short cycles in the multimedia sector", says Ardilio. For example, Bosch and Cadillac have come together to develop an open-source platform for passenger car infotainment systems. This also allows independent software developers to create apps. These kinds of platforms need to be updated on a regular basis.

This means that innovation management is becoming more decentralized as well as complex. For carmakers and their suppliers there is no getting around the implementation of IT systems that make these processes manageable. One of the most important software providers in this area is Hype Innovation, the company run by the former Daimler developer Enno Scholz. The companies that he works for include Audi, General Motors, PSA, Volkswagen and

Photos: Daimler; Local Motors; BMW

Open-source principle in car making: Together with the US start-up Local Motors, BMW developed the "Rally Fighter", which the customer assembles independently.

Volvo, as well as renowned suppliers such as Bosch, Brose, Knorr-Bremse, Mahle and Osram Sylvania. The standardized processes of platforms such as Hype allow a company to involve their employees and partners, as well as customers, in their brainstorming while still maintaining an overview. "The focus is on reproducible and scalable innovations", says Scholz.

Over the years he has noticed a few things in his projects: Top management needs to promote the topic of innovation. "The CEO of successful OEMs and suppliers is often an innovative car enthusiast who acts as a kind of role model." Scholz believes that the personal involvement of top management in innovations is a fundamental requirement in an industry whose image is characterized by innovations – especially in the premium segment. According to Scholz, if the focus is on cost savings and process improvements, it may be possible to keep the innovations at the production level without any additional management involvement. "But this is completely different if new product features or business areas are affected."

The complexity of research and development is also increasing as the focus of demand shifts towards Asia. European and US OEMs have long established research centers in this area: For example, Daimler has been operating its Mercedes Benz Research and Development India (MBRDI) location since 1996. This now employs around 1,400 engineers and IT specialists who support the parent group as internal development service providers in digital component design and with virtual tests.

Far East car horns with stamina

In the future, MBRDI will also increasingly adapt global Daimler products to the Indian market, says Managing Director Jens Cattarius. "The Indian market is currently still in the discovery phase, but this will change rapidly. Our presence here will then give us a great advantage." Cattarius and his team have already set the ball rolling for the group, even if this is only on a small scale: MBRDI employees have developed a new horn for cars sold in India. Because on the subcontinent – this must certainly also have been identified by other Western OEMs before Mercedes-Benz – drivers honk their horns constantly, as many times in one day as a German driver would honk in a whole year. A normal Western horn could not take this for very long. And a car without a horn is inconceivable in India.

Open innovation

Open innovation is a brainstorming, research and development process in which new technologies and products are created by gathering and incorporating external knowledge, rather than by a small number of company insiders. Companies use idea competitions, social networks or supplier cooperations to invite employees, business partners and even customers to submit their ideas. Open innovation is only in its infancy in the automotive industry. BMW involves customers in innovation management within the "Co-Creation Lab", while Volkswagen manages its "Forum Innovation" with suppliers and the "Concept Teams" consisting of employees.

A question of structuring

Internet sales, fleet sales and car-sharing: In addition to the traditional car dealership, customers are faced with an increasing variety of options when purchasing a car. Car makers are exploring these new sales paths in order to respond to customer demands for more brand experience. These innovative sales channels also have a range of tax consequences that OEMs must be equipped to deal with. **Text: Brigitte Romani, KPMG in Germany**

Manufacturers are already launching pilot projects on the path to completely online trade. It is only a matter of time before the entire product range will be available on the Net. Daimler has already sold 666 Smart cars in a single tranche online within hours, for example. Other manufacturers, such as BMW or Hyundai, are following suit and are seeking to establish their own online sales operation for their models.

But the physical sales operation is also developing rapidly and increasingly moving away from traditional dealerships: Showrooms, pop-up stores, temporary shops and pavilions are the car dealerships for the iPad generation. Captivated by the visualization – or so it goes – the customer will immediately enter into a sales contract. In the meantime, Audi, with Audi City, and BMW, with their i Store, have both opened digital showrooms in London. The business model is proving popular: Additional showrooms are planned in central metropolitan locations by 2015.

BMW is also currently causing a stir with another strategy. So-called "mobile sales forces" aim to bring the sales department to the customer's living room. This form is not bound to

Photos: Audi; BMW; VW; KPMG

authorized dealers. Rather, freelance employees negotiate and finalize contracts for and with the manufacturers.

These new sales forms involve a whole range of tax considerations and represent a great deal of work for the tax departments of automotive groups. This requires close communication between the tax division and sales. Preventive rather than reactive actions are required.

A key question will frequently be whether permanent establishments have been founded. Showrooms, pop-up stores and similar localities form the basis from which the local business will be operated. The question of who will run the local operation is decisive from a tax perspective. The issue of whether a local unit is leasing the premises is not the sole determining factor, as the corporate unit providing the sales staff also needs to be considered. And more importantly, which letterheads are provided on the sales contracts.

The location of the server for online trade also needs to be carefully selected. As, depending on the structure, the location of the server may qualify as the permanent establishment. Permanent establishments represent a significant compliance expense. They have to be registered with the local tax authorities and potentially also with regulatory agencies; the business income has to be divided between the parent company and the relevant permanent establishments.

Introduction of the Authorized OECD Approach

The rules for determining the income of permanent establishments are currently undergoing a radical transformation with the introduction of the Authorized OECD Approach. Permanent establishments will be considered to be independent for tax purposes, similar to a partnership. This assumed tax independence requires a range of documentation to be prepared that goes beyond the accounting measures required for pure permanent establishments. The personnel assigned to each activity in the permanent establishment and the assignment period must be documented. The individual company assets must either be allocated to the parent company or the permanent establishments. Only once these steps have been completed, the identified assets are recorded in the permanent establishment's accounts. The income and expenses related to these assets and the other associated staff are also recorded in the permanent establishment's accounts.

With careful planning, the attribution of additional permanent establishments can be avoided or their adverse impact on the tax burden can be moderated. Showrooms and similar localities must be entirely managed by a separate group company. This includes the leasing of the premises, the equipment, the responsibility for employees as well as the conclusion of customer contracts. If the concept is developed centrally and the business equipment is purchased centrally, for example, the local company must remunerate the group headquarters for the concept and lease the business equipment under customary arm's length conditions. The same applies for employees. If the staff is employed by the group headquarters, a secondment of personnel must be agreed. And finally, the local group company, not the group headquarters, must take the role of representative for customer contracts.

The involvement of the local group company in the group headquarters' sales concept leads directly to transfer price issues. The development of the showroom concept, the organizational support by the group headquarters, the employee structure and finally also the financing services must be integrated into the group's transfer price system and recorded in the documentation. This documentation is generally easier to manage than the above activities with respect to permanent establishments. Only the transfer price structure has to be considered in the group.

These new sales forms also impact on sales tax. For example, in the case of a direct delivery to the end customer by a foreign subsidiary, the new cars ordered online are treated as imports subject to German sales tax based on the single taxation method for vehicles. The proud new vehicle owner must submit a corresponding form to the competent tax office for the individual's place of residence within ten days in order to avoid possible confiscation of the vehicle registration document. This results in a multitude of different possible structures to achieve the most cost-effective sales tax ruling for the manufacturer as well as for the customer, including with respect to re-imports or internal imports.

In conclusion, it is clear that tax departments of automotive groups are faced with significant additional expenditure that requires planning to ensure that hard-won profitability is not wiped out by tax disadvantages.

About the author

Brigitte Romani joined KPMG in Germany in 1987. Since 1999 she has been a partner in the area of international tax law at KPMG in Frankfurt, where she works mainly with international corporations in the fulfilment of their tax obligations. As Global Automotive Tax Leader, Brigitte Romani is in charge of the worldwide Automotive team for the Tax function. She is highly experienced in structural consulting for international corporate groups active in the automotive industry. She primarily focuses on issues impacting multiple service areas that arise, for example, in the context of restructuring and partnerships.

Read more about the latest developments and new sales concepts in automotive retail in the KPMG study:

Global Automotive Retail Market
(English, September 2013)

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CHARGED UP

The car industry is facing a transition period which will be characterized by the coexistence of various drive technologies. The winners of this trend will be financially strong suppliers, because e-mobility research requires high level and long-term investment. **Text: Daniel Müller, KPMG in Germany**

High voltage: In the High-Voltage Battery Project House at Audi in Ingolstadt, the development and production departments and partner companies are for the first time working together on the construction of prototype lithium-ion batteries.

Photo: Audi

With a history of more than 150 years, e-mobility is not a new topic but certainly a currently relevant one. Since last year the Pope has owned an electric vehicle, Formula E has been announced and automobile manufacturers (Original Equipment Manufacturers = OEMs) are presenting their futuristic electric and hybrid vehicles to potential customers worldwide. What are the medium-term effects of this development trend in drive technology on the nature, structure and management of the automotive supply chains (ASC)?

We looked into these questions with an online Delphi survey involving experts from 14 institutions in Germany and Great Britain. It focused on the present technological status of the alternative drive technologies, as well as their influence on key areas of the ASC.

The results show that the automotive industry is at the start of a transition period which will be characterized by the coexistence of various drive technologies. This already noticeable trend will increase in the next 15 years, with hybrid electric vehicles dominating the market for alternative drive technologies. Because of continuously rising oil prices and falling costs for e-mobility – for example as a result of falling battery prices – the hybrid vehicles will greatly increase their market share in the medium term in relation to traditional vehicles with internal combustion engines. Hybrid vehicles must however be seen as an interim technology, because in the long term battery electric vehicles (BEVs) offer the greater potential overall. But this technology is still inferior due to limited range, inadequate infrastructure and relatively high purchase costs.

In order to produce these technologies there is a need for traditional skills but also for new skills which are now not sufficiently available in the ASC, if at all. New suppliers, such as manufacturers of batteries or communication technologies, will therefore join the ASC, while conventional vehicles will also continue to be produced. This will lead to an expansion of the ASC. The lack of skills in the traditional ASC (above all among the OEMs) will also lead to wide-ranging cooperative ventures and closely intermeshed strategic alliances. So the ASC will become more complex in the transition period, and not only the supply side but also the demand side will be affected. OEMs have already entered the car-sharing business and will intensify their involvement quite considerably in the medium term. OEMs will act not only as vehicle manufacturers but also as service providers for personalized customer mobility – which will also lead to structural changes in the ASC.

Change in the balance of power

The nature of the goods handled in the ASC will also be affected by the changes. In the transitional period various parts and components will be required – predominantly electrical and chemical – which will have to be developed, produced, transported, stored and fitted in electric and hybrid vehicles. Since it is primarily the suppliers who have the skills required for this, the shift of the value-adding activities towards these suppliers will continue to increase – which will also be expressed in a change in the balance of power.

The winners from a development of this type will primarily be financially strong

Green power: As part of KPMG's commitment to sustainability and alternative mobility solutions, employees in Brussels can access a pool of electric cars for visiting clients or attending events.

suppliers, as research in the field of e-mobility requires high level and long-term investment. The investigation identified as possible losers those suppliers which produce components designed exclusively for the internal combustion engine. These suppliers will have a steadily deteriorating order book to deal with in the transitional period.

Fast charger: With its Combined AC/DC Charging System, Phoenix Contact offers a solution for electric vehicles with both direct and alternating current.

In order to counter the trend towards this shift in power, OEMs are currently expanding their skills portfolio – a process which can be observed throughout the automotive industry at the moment and which will only intensify. Although many suppliers will gain influence, OEMs will still dominate the ASC in 15 years time. However, they will have to share considerably more power with leading suppliers within the value-added chain than at present. The new technologies are also forcing OEMs to reconsider their current core skills, in order to set themselves apart from their competitors by means of diversification. Possible areas of diversification identified by the experts include branding, vehicle design and systems integration.

Customer-orientation will play a key role. In order to meet individual mobility requirements to optimum effect, the customer must be kept informed about the existing drive technologies throughout the transition period and advised with regard to their various application options. This includes not only the required range but also aspects such as comfort, performance and the nature and frequency of vehicle use, as well as where the vehicle owner lives and works. This will be a challenging task for marketing, sales and the entire aftermarket sector.

High degree of sensitivity required

The nature of the goods and services on the demand side of the ASC will also change. The switch from mechanical to electrically and chemically based components will change the strategic significance of various components in the transition period. This will also necessitate the revision and optimization of logistics routes and possibly also the repositioning of some production facilities.

In view of the increase in size and complexity of the ASC, as well as the change in the nature of the required components and the corresponding demand for additional skills, the management of the ASC will also change.

A high degree of sensitivity will be required in this regard in order to guarantee a smooth transition between old and new supply chain members. Furthermore, the increasing cooperative ventures and alliances demand a culture which supports and enables the transfer of knowledge and is also suitable for responding quickly to changes in the market. Highly qualified and flexible employees and managers are needed for this goal, a fact which has to be taken into account from recruitment through to training.

Corporate functions which can contribute to reducing the wide variety of products, increasing flexibility and achieving a lasting reduction in costs will also become much more important. This applies especially to global component and technology purchasing and to production.

The adaptation of in-house processes and structures to e-mobility is becoming a strategic imperative for most players in the ASC and a prerequisite for their long-term competitiveness. Even so, the transition from traditional to alternative drive systems will be a gradual process, so the companies still have plenty of time to adjust to the new market situation. The challenge is to exploit this opportunity.

About the author

Daniel Müller has been employed as an Assistant Manager at KPMG in Germany since February 2013, advising companies on the effective and efficient design and reorganization of their supply chains.

Photos: Phoenix Contact; KPMG

What remains of the day

Mehmet Balaban, 46, has been driving a taxi in the Turkish metropolis of Istanbul for twenty years. He sits at the wheel of the cab for twelve hours every day – he shares the taxi license with a partner. Balaban tells of the daily struggle for customers, of his frustration in traffic hold-ups and of the astronomical rise in the price of taxi licenses for AutomotiveNow. **Text: Susanne Güsten, photograph: Kerem Uzel**

"I always drive the late shift, from two in the afternoon till late at night. I only get a day off every two weeks. There's not much time left for the family. But I have to earn money. I've calculated that I have to earn at least 80 euro every shift to break even. Only then am I driving for myself. I have to give the owner of the cab 50 euro for each shift, and on top of that there's money for fuel and for my food. Some days, I make 25 euro profit; some days I break even, some days I'm out of pocket. It's not easy. I live with my wife and two kids in a rented apartment.

And my partner and I are lucky. We took over our taxi license from my friend's father, who bought it in the seventies. In those days, it was still possible; today no ordinary person can afford it any longer.

I never had any other regular work; I used to drive a minibus occasionally. But as a taxi driver I'm unbeatable! No one knows Istanbul as well as I do. Our taxi belongs to a stand in front of a hotel, but every day I drive all over the city, wherever my customers want to go.

An hour to cover two kilometers

Traffic in Istanbul has become a disaster in the last two or three years, because everyone suddenly has a car and the streets are choked with vehicles. Now all you do is sit in traffic. It has now got to the point where I no longer take passengers for certain routes at certain times of the day or night, because I know that it will take me a full hour to cover two kilometers. It's simply not worth it.

We used to have fight off illegal taxis until they were stopped by a law a few years ago. But now city hall has recognized the formerly illegal taxis as transport companies, which are now causing us problems again. But we can't do anything about it. I have to keep driving, even though I would happily stop today. But I don't have any other job."

ISTANBUL TAXI LICENSES, which can be traded quite legally, have turned into highly sought after speculative items. In the last nine years, the price of a license has tripled and is now around 470,000 euro. Since the number of taxi licenses for the city of 15 million inhabitants has been held constantly at around 17,500 for over 20 years by the Istanbul authorities, the great demand from buyers is leading to this inflationary trend. However, the vast majority of license holders do not drive them selves, but lease their permit to a driver instead.

Photo: starekase/Fotolia

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