

**WHAT
WILL
INDIVIDUAL MOBILITY
LOOK LIKE
IN THE
FUTURE?**

Carlo
RATTI

Susanne
KLATTEN



BMW WELT, MUNICH, 8 JUNE 2016

Interviewer
ADRIANO SACK

Photos
DIRK BRUNIECKI

WHAT WILL INDIVIDUAL MOBILITY LOOK LIKE IN THE FUTURE?

SUSANNE KLATTEN: There are a number of possible scenarios: you might share a car with other people who have roughly the same route as you have, which means you have to plan ahead. Or you could book a car that is parked around the corner and just leave it somewhere handy, and it'll stay there till you get back. You'll be provided with increasingly detailed information about traffic jams so you can take the least busy and most convenient route. Alternatively, you might be picked up by a self-driven car. Then you can read your newspaper, call a friend or concentrate on your first conference call of the day as you travel.

CARLO RATTI: Or even better: your car doesn't wait for you. The most exciting thing about the self-driving car, in my opinion, is not the fact that you don't have to drive it yourself. That's okay, even if some people still don't feel comfortable with the idea. The most exhilarating aspect is that cars will be used more efficiently. When you don't need your vehicle, somebody else can use it. The average car in the US is only used for 5 percent of the day. The rest of the time it just takes up valuable space. We have studies that show we could cut down the number of cars needed by 30 to 40 percent.

SK: That sounds great for singles or maybe even couples. However, I'm wondering how this would work for a family with children. Their life is a little more complex and unpredictable. Is car-sharing meant for a certain demographic group or a particular phase in life?

CR: Sharing could have advantages for families, too. They could easily adjust the size of the car to their needs. Instead of a four-seater, they could pick up a small van. If you combine the potential of car-sharing and ride-sharing you could run a city such as New York with 20 percent fewer cars. The question is: will people want to do it? Will the car be a status symbol? What we are observing at MIT is that only ten years ago, it was cool to drive to university in a big car. Now it's considered cool to use a Zipcar or an Uber. What used to be the value in owning a car has migrated to a smartphone or something more ephemeral.

SK: Certainly in the western world, we have a very individualistic way of seeing things. We are trained to express ourselves through objects and status symbols – we compete with each other for these and demonstrate our success through them. But I believe these values are changing. There is a new generation, a global community, which sees sharing as a status symbol.

CR: Traditionally, the only way to demonstrate status was through physical objects. Now you can communicate your values on digital platforms. It's much easier to disseminate something you do or do NOT do on social media. Consumption is no longer a prerequisite.

“The city of the future will look pretty much like the city of today. After all, our cities look quite similar to Roman cities from 2,000 years ago.”

Carlo RATTI

SK: I think the more affluent and highly developed countries have to set an example here. Take India and China, two extremely dynamic and ambitious societies. Successful people there want to own the same products as we do in the West. Of course we mustn't try to impose our beliefs, but we must engage in dialogue – and that requires openness from both sides.

CR: We can't tell them what to do and what not to do or how to consume responsibly, but we can suggest the next technological step. Think of how fast China became extremely successful with solar energy. I understand you have a strong focus on what people need and want. How do you find out what that is?

SK: This is a key question for the BMW Group. But the electric car, for example, was not something that the majority of consumers asked for. It was primarily an answer to questions raised in society and politics.

CR: In my office, we work with the notion that innovation functions in a similar way to evolution: through mutations that prove successful or not. As 21st-century designers, we don't think we are entitled to tell people what is right for them. We just want to increase the number of options available to them, so that they can make their own choices. We try to explore different options, distancing ourselves from the top-down approach of many architects of the recent past. When Le Corbusier developed a masterplan for Paris in the 1920s, he thought he had found a solution to all of society's problems. His plan was quite simple: demolish the whole city, leave Notre Dame and build a few skyscrapers. We work very differently these days: we want to show all the choices available in the here and now.

SK: The BMW Group already has a vast array of options: diesels, petrol-driven cars, hybrids, all-electric cars. We have a very wide range of products. But there is also a limit to the number of models you can offer.

CR: This approach doesn't necessarily have to mean building and offering more models. It can also deal with new apps or new types of mobility in general. That's what the BMW Group is doing by funding start-ups. Some of them will be more successful than others.

HOW WILL THE FACE OF THE CITIES CHANGE?

CR: The city of the future will look pretty much like the city of today. After all, our cities look quite similar to a Roman city of 2,000 years ago. We will always need horizontal surfaces to stand on, façades to protect us and windows to look out onto the street. These elements will remain. Even in this beautiful Coop Himmelb(l)au building we have vertical walls – for the most part. Nonetheless, in the coming decades our lives will be very different. Just think about how much our lives have changed in the last ten years – the way we work, the way we communicate.

SK: I hope the quality of life in the city will improve. We need less pollution, less noise, cleaner air. Just imagine if 50 percent of the cars were electric today: life in the cities would change dramatically for the better. In the end we have to work with what we have. We can't build new cities from scratch. So we have to finance projects that make city life more efficient and livable.

CR: We've always had the good and the bad in cities. It was Élisée Reclus, one of the first urban planners of modern times, who expressed the hope that one day we can combine the advantages of a city – exchange, proximity and communication – with the pleasures of the countryside. I think we're moving in that direction.

SK: I've heard about projects in Los Angeles where they want to create small subcentres so people don't have to go downtown for work, shopping or leisure. Everybody driving their own car used to be normal in the US. It's a

“Mistakes of the past can be avoided in the future.”

Susanne KLATTEN

problem these days because there's just too much traffic. With a bit of luck, projects like these will help us avoid sitting in traffic jams for hours on end, which is currently the norm in Los Angeles. We're moving back towards the way European cities used to be organized. Mistakes of the past can be avoided.

CR: The tragedy of humankind is that each generation repeats the mistakes of its predecessors. In the technology field, however, whole countries are making huge strides and just skipping evolutionary stages. In Africa, for example, people leapfrogged landlines and moved from practically nothing directly to mobile communication. Today, to some extent, mobile banking is more advanced in Kenya than in Germany. These are just two examples of incredibly rapid progress. What happens if India and China embrace Uber-style car-sharing models? They might suddenly overtake us in the field of mobility.

CITY OPEN AIR COMPUTERS – WHAT DOES THAT MEAN?

CR: We're all aware of how the internet has changed our lives. Now the internet is entering physical space. We call it the Internet of Things. If you think about a car, it already has thousands of sensors, internet access etc. Something similar is happening everywhere. On the streets, in our homes. This will change the cities dramatically – not so much on the surface, but in the way they function.

SK: And a major role in this will be played by the materials used and the kind of technology integrated in the façade of a building.

CR: How do you see this from an industry point of view? It feels as if in Germany everybody is obsessed with the term Industrie 4.0. I haven't even encountered 3.0 yet... [laughs].

SK: We leapfrogged one stage [smiles]. But seriously: there's enormous potential. Especially if your value chain runs all the way from the raw materials to the finished product for the customer. Industrie 4.0 means you know much more about your product, you're in control of every little step of the production process and you can create a much more efficient workflow and determine how best to use your workforce.

CR: Will we still have people working in production?

SK: Of course. Manufacturers will always need people for their ability to make decisions in the interest of the customer, for their sense of quality. Other jobs will change. Maybe not tomorrow, but the day after. We've seen over the last 30 years that people have been replaced by machines for the most unpleasant and physically demanding jobs. This process will be expanded much further. But humans will remain irreplaceable – precisely because of the increasing complexity of the world.

CR: Can progress be achieved in a big corporate structure or is it more likely to succeed in small start-ups?

SK: In principle in both. Perhaps the way the future is conceived and turned into reality will differ, but one thing is for sure: innovation will continue to pick up speed. But the BMW Group can't rely on agile start-ups alone. As a global car manufacturer, the company is locked into a fixed infrastructure, and this impacts the speed



**Susanne
KLATTEN**

has a major equity stake in the BMW Group, where she and her brother Stefan Quandt are members of the Supervisory Board. She was born in Bad Homburg and majored in Business Studies. Klatten is also owner and on the Supervisory Board of the chemical company Altana and holds stakes in the graphite producer SGL as well as the wind turbine manufacturer Nordex. She supports the Center for Innovation and Business Creation UnternehmerTUM at the Technical University of Munich in its quest to transform scientific innovations into market-ready products.

**Carlo
RATTI**

is an Italian architect, engineer and inventor who teaches at the Massachusetts Institute of Technology, where he is director of the MIT Senseable City Lab, a research group that explores how new technologies are changing the design of cities. He is also a founding partner of the international design office Carlo Ratti Associati, which he established in 2004 in Turin, Italy.

“Playing is a wonderful new trend.”

Susanne KLATTEN

at which we work. Google and Apple are able to react so quickly because they have a different structure. Very importantly, their products are also adaptable at short notice. So our work cannot be compared directly. However, the spirit of innovation has been an integral part of the corporate culture of the BMW Group since its very beginnings.

CR: That sounds good. But innovation with heritage is a bit of an oxymoron. By definition innovation defies heritage.

SK: I think it's important to take a holistic approach. To explore the future you have to be aware of where you come from. You have to know your own strengths and abilities. And the challenge is how to create the space for innovation within an established company.

CR: We have seen what happens when this space is not created. A company like Nokia came from nowhere to become a global player – and then fell back into virtual oblivion – all in 20 years. That has never happened before. You miss one single move, in this case the smartphone, and you're swept away into complete insignificance. This makes everybody so obsessed with innovation, which can lead to a so-called value crash. Companies have to reward failure, because you have to fail in order to succeed later. But failure is not an option for a company that creates beautifully engineered cars.

SK: I'll give you two examples of our willingness and ability to innovate. When the BMW Group initiated the “i” project – which eventually led to the BMW i3 and the BMW i8 – it started independently and outside of the classical corporate structure. The challenge at some point was to reintegrate the entire project. Which, if I may say so, was achieved quite successfully. The other example is carbon fibre. This material and its use were a whole new world for the BMW Group. What we're talking about here is weaving filament yarns for high-volume production. It seemed daring but it worked. Now carbon fibre is used in lots of different model series.

CR: On the “i” project, I have a simple question: should an electric car look different from a normal car?

SK: In my opinion it should have a slightly futuristic look to set it apart. But it will be autonomous driving that has a greater impact on design, because there is so much more to take into account. How will the car be used? How many people be travelling in it? Do you need a steering wheel? Do you want additional seating? Do you need to see the outside world or would you prefer a beautiful 3D projection?

CR: In Germany you have a traditional obsession with machines and also with cars. Do you still see that in the millennial generation?

SK: My family, for instance, has always been fascinated by cars. And my kids are, too. In the end there is no way to beat the beauty of an extraordinary design. No matter whether you own or share, if you drive or are driven: you don't want to sit in a dull metal box. The interior design of the vehicle is also likely to undergo dramatic changes. I recently met with a group of young designers who presented their ideas – and there seem to be limitless possibilities. In the future, the interior of a car will be an experience for all the senses.

THE IMPORTANCE OF BEING PLAYFUL

SK: Playing is a wonderful new trend. Look at our phones. People love playing and it's easier to reach them if things and functions have a playful touch.

THE EFFECT OF 3D PRINTING ON CAR MANUFACTURING

CR: That's why people enjoy working in start-ups. It's the closest thing to playing, trying new things. There was this Dutch artist in the 1960s called Constant who talked about the emergence of a "homo ludens". He argued that machines would increasingly take care of the practicalities of life so that people would be free to play again.

SK: That's probably why we can see so much innovation: because playing has become more accepted today.

CR: And because it's possible nowadays. In the past people were so occupied with physical labour there was no time left for playing...

THE RESPONSIBILITY OF COMPANIES

SK: From my point of view companies have always had a great deal of responsibility: for the quality of their product, for the people who work for them, for the impact they have on society and the environment. But the demands made on companies have multiplied. Sustainability is a huge issue, as we are responsible for change.

CR: Today success is measured not only in delivering the maximum return to the shareholders but in having maximum impact as well. The ultimate metric is the power to transform the world – to make it a different, and hopefully a better place.

SK: It all started with the idea of public-private partnership. Nowadays corporate responsibility goes much further. Sustainability is part of the identity of most companies, and it's certainly an integral part of the identity of the BMW Group.

SK: I'm fascinated by the possibilities 3D printing has to offer. This technology will spawn many new ideas and opportunities for both private individuals and companies alike. It will also allow us to use materials more efficiently and to rethink the logistics of materials. And it will open up new opportunities for talented entrepreneurs.

CR: In the distant future you'll be able to download your new iPhone, pay a fee for the design and just print it. But we're still quite a long way away from this. Does that mean that everybody will be able to design their own phone? No, because there is too much technology involved. But what it will lead to is consumer response playing a more significant role. That was one of the major innovations of Zara, the Spanish clothing company. They manufacture their products very quickly, push them into the stores and see what sells. In the case of the BMW Group that doesn't mean you will engage your customer in the design of the engine, because that is for a highly skilled team of engineers to do. But it will be possible to print 20 different cars to see what people like. People can be engaged without becoming co-designers.

SK: Even today production is highly flexible. Thanks to the huge number of possible configurations, virtually every car that comes off the production line is different. In the future there will be more such options. Perhaps it won't be necessary to own a factory in order to use it. The finances of production might be restructured. And why not build the shell of a car first and design the interior afterwards? What's not going to change is the fact that a brand stands for something. You'll still have certain design features that tell you: this is a BMW Group vehicle. A company that stands for sustainability, efficiency, creativity, flexibility and reliability.

CR: If you create an experience, people will be able to identify with the brand and its values. It will be more than just an object. It will be about a lifestyle.