“Focus on sustainable technologies”

Is the technological transformation process taking a step back due to corona or just running up to a restart with even greater momentum?

Uwe Wagner, Chief Technology Officer of the Schaeffler Group, provides answers.

Interview: Daniel Pokorny

Uwe Wagner,
Chief Technology Officer
of the Schaeffler Group

%30

of the EU's 1.8-trillion-euro corona relief package is supposed to be invested in the area of **climate protection.**

€7 billion

from the German federal governments' corona economic recovery program will be invested in future projects involving **green hydrogen** to be produced exclusively by means of renewable energies.

80

leading companies in the energy, transportation and industrial sectors have joined forces in the **Hydrogen Council**, a global initiative based in Belgium. Schaeffler is engaged there as a steering member providing decisive input to the advancement of this technology. In addition, Schaeffler is a founding member of the "Bavarian Hydrogen Alliance" established in 2019.

Would you have ever thought that a virus would keep the world on edge like corona has?

No, I wouldn't have. I don't think anyone was able to anticipate the impact we're seeing today.

What is your most impressive personal experience or realization in conjunction with the corona pandemic?

In retrospect, even I am amazed about how fast and effectively Schaeffler responded to the rapid developments with professional crisis management. In spite of all the circumstances, we managed to keep our operations running and, of course, kept pursuing our innovation projects, too. As a positive side effect, we intensively enhanced our skills in the area of digital applications, having worked on this at full stretch out of necessity and with great personal commitment on the part of our employees. I'd like to use this opportunity to expressly thank all our colleagues who supported this effort. It seems to me that team cohesion has increased due to corona – in spite of physical distancing.

Talking about physical distancing: person-to-person contacts have been subjected to restrictions. What is the greatest challenge this entails?

Body language, facial expressions: all of this is often lost in purely virtual meetings, and along with it, the empathy that is a decisive element in communication. Video conferencing helps in this respect, but it does not completely replace real-life contact. That's why I really look forward to the time when physical meetings will increasingly be possible again. Direct contact between people, both in private and professional life, is clearly more important than any video conference, no matter how technically perfect it may be.

In the wake of corona, has the world become more or less open-minded regarding the pursuit of diverse technological approaches?

According to my perception, the world in general tends to have become more open-minded concerning technological preferences. The available resources have no doubt been cut to some extent at the moment. However, the commitment to achieving goals like the reduction of CO_2 emissions using a wide range of approaches, including new technologies such as hydrogen as an alternative energy source, tends to have intensified. Important political decisions about funding support for hydrogen technology – both in Germany and on the European level – are relevant proof points. In addition, I find that the general focus on innovation has been sharpened: Which innovations deserve to be given a chance? Which areas do not merit any further development? Today, these questions are more important than ever, especially due to the tougher financial conditions. This leads to a new stimulation of competition focused on innovations.

The world has changed due to corona. What were the major effects in your area of responsibility?

As an automotive and industrial supplier, our global development network was a major issue for us. Due to the regional differences of the pandemic and diverse effects on various sectors, we had to show maximum flexibility here and act with speed and agility – which we managed to do really well. We kept the global development network running, which has also provided us with valuable experiences going forward. However, we miss aspects of our local presence like direct customer contact or even the direct exchange between our international teams. As briefly mentioned before, these aspects cannot be completely replaced by purely digital meetings in the long run. Especially the beginning of this phase was difficult also for our individual development engineers, who had to leave

their prototypes at the company and work from home. But our employees managed to adjust to this situation really well. After just a short time, the development processes were running like clockwork. In addition, we developed solutions for resuming on-site prototyping and testing in compliance with all hygienic aspects.

Digitalization has received a boost due to corona. What effects has this had at Schaeffler?

We're already in a very good position in terms of digitalization at Schaeffler, so we were well-prepared for coping with the crisis, of course not only in research and development. To name just one example: Maintenance employees were able to perform a large part of their tasks from home, even if this meant taking care of real-world machines and equipment, because we've already interlinked and virtualized a lot of our equipment. Project planning, programming, diagnoses and setup adjustments can largely be handled remotely. Obviously, the pandemic has also clearly shown how important digitalization is in all areas of the organization. That's why we'll continue to drive our agenda here.

You're the chief technology officer: to what extent have forward-going strategies changed or areas of emphasis shifted?

The significance of focusing on the right technologies has sharply increased. Here, we're benefiting from our innovation program that we've consistently continued to implement also during corona. It enables us to compare innovative ideas with Schaeffler's market potential and fields of expertise and select the technologies we're going to pursue in greater depth accordingly. However, corona has not led to any fundamental changes regarding basic technological trends. Now being massively boosted, hydrogen and electric mobility are technological trends that we've been focused on for a long time: In the context of a carbon- neutral, sustainable future, our emphasis is placed on the enormous potential of green hydrogen. As an automotive and industrial supplier, we keep our eye on the entire range of applications – from hydrogen production using electrolysis to mobile and stationary applications in fuel cells to the utilization of hydrogen-based direct-reduction steels. We're actively engaged in a large number of hydrogen initiatives in order to establish and help shape the hydrogen eco-system together with strong partners. As a supplier of systems and key components, we're going to play an important part in this context. Plus, we're also in a very good position in other areas such as electric mobility (see page 62) and robotics (see page 78), and have frequently demonstrated the expertise we've massively expanded in the area of systems in recent years.

What are the prospects for autonomous driving, going forward?

At Schaeffler, we still believe that this will become a hot topic, albeit the question of whether this will happen sooner or later due to corona is not so easy to answer.

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>
> *Uwe Wagner*

— The departure from fossil fuels and the transformation of mobility continue to have the same high priority as before and require a fundamental change in the entire energy sector. Schaeffler's activities in the "energy chain" focus field address exactly these market segments – from digital solutions to mammoth bearing solutions for wind turbines

Some players in this field have shifted this topic to a lower priority level due to the current constraints, while others are accelerating it for exactly the same reason in order to gain a competitive advantage in this way. Aside from these considerations, there are applications in which autonomous driving is going to gain traction for very rational reasons, such as in the heavy-duty field. The utilization of autonomous vehicles will really pay off here. With our drive-by-wire initiative based on Space Drive, we'll be able to offer a key technology in this area.

What does the situation look like in the industrial sector?

In the industrial sector, we're really well-prepared for the digitalization boost due to corona with proven- in use applications, too. In the area of Industry 4.0, for instance, with cloud-based services and condition monitoring solutions like OPTIME. By enabling seamless monitoring at low costs, this plug-and-play system eliminates an important hurdle. The general idea up to now has been that condition monitoring can be costly – that's why up to 95 percent of all units in a production machine or plant are not being monitored at all or just sporadically, which entails high risks of unplanned stoppages and downtimes. We generally want to help our customers optimize their production processes, enhancing their efficiency and flexibility, and, as a result, making them more resilient against unexpected challenges such as corona.

Will it be necessary to place a greater focus on extreme situations like a pandemic in future technical developments?

I think that our well-balanced development portfolio and our global development team are crucial factors in this context. The more balanced one's position is in this respect, the better is one's ability to respond to exceptional situations. We're in a very good position with our innovation strategy here and are therefore going to retain it as it is.

The climate discussion has faded from the spotlight to some extent due to the corona crisis, but satellite pictures and air measurements show that the lockdown measures have been beneficial to the environment. Obviously, no one would like to have an everlasting lockdown, but where have you identified corona-induced climate-friendly potential that might also be viable for the future?

In my view, the climate discussion has not lost any momentum, neither on the political level nor at Schaeffler: increasing energy efficiency, driving defossilization and decarbonization – these actions are being pursued worldwide and of course here at Schaeffler, too. The key objective driving all of these efforts is that the energy consumed has to become increasingly carbon-neutral. And this objective should mainly be achieved by focusing on the development of sustainable technologies. In this context, the renewal of car fleets is an equally important aspect as the efficiency enhancement of existing technologies. Both are going to soon lead to positive results. Of course, aside from this, it's important to develop an awareness of our personal carbon footprint: less travel, both privately and for business, intensified remote work, more conscious consumption, plus support for new mobility concepts are possible aspects that benefit our climate.

Around the world, a factional dispute has flared up: While one camp would like to restore the pre-corona status quo as soon as possible and pump money into existing systems, the other one views the pandemic as a turning point and advocates radical renewal, even though it may initially be painful. What is Schaeffler's position on this?

We do not see ourselves positioned in either of these camps. We stand for continuity and an unbiased view of technology. Our 30/40/30 scenario, which we continue to regard as being realistic and which in this form can make a major contribution to decarbonization, is a perfect example. For newly registered vehicles in 2030, it predicts 30 percent fully electric vehicles, 40 percent hybrid powertrains and 30 percent conventional IC engines. We include completely new fields in this, for instance in the context of hydrogen, where we've been focusing on the entire value chain from electrolysis to the fuel cell for quite some time.

In times of crisis, strengths and weaknesses are exposed. What areas proved to be strengths?

The fact that Schaeffler is an automotive and industrial supplier and that both divisions are effectively coordinated once again proved to be beneficial. Our Skalica site in the Slovak Republic is a case in point. While automotive orders declined at the beginning of the pandemic, they remained relatively stable in the industrials market. At the Skalica plant, more than 4,000 employees produce needle bearings, cages and other products for industrial applications, plus components for transmissions, as well as belt and chain tensioners for automotive customers. Besides the differences in the automotive and industrial divisions' order situations, the plant was confronted with another challenge: Within a short period of time a large number of employees – sometimes as many as 20 percent – were unable to work for reasons of infection protection and corona virus control. In order to meet all industrial customer deadlines in spite of these manpower shortages, colleagues from the automotive division stood in on short notice and helped to sustain the manufacturing operations in that way. Due to this fast support, we delivered all orders on time. One of the crucial factors in this effort was the very high skill level of our employees, plus their flexibility and willingness to help out. This example impressively shows how Schaeffler closes ranks worldwide in times of crisis and how cross-divisional teamwork has to function in order to jointly rise to the challenges. Corona has made us even stronger!

And how is the collaboration with customers and suppliers in times of crisis?

Here, the relationship with our customers and suppliers that has been growing for decades and is based on mutual trust has paid off. We have been engaged in constant exchange – in both directions: As a result, we're able to mutually assess our demand really well and respond with flexibility. This is also true for joint development projects.

Summing up our conversation in two sentences: what is the "new important?"

Flexibility, efficiency and strong judgment are more important in these days than ever. Due to our decades-long market experience and close interlinking with our stakeholders, we're able to systematically respond to all requirements and demands, and provide innovative solutions in response to global challenges.

Curriculum vitae

Uwe Wagner (b. 1964) *studied mechanical engineering at the University of Stuttgart. In 1993, he started his career as a development engineer in the Control Hydraulics Automatic Transmissions unit at LuK. In the following years, Uwe Wagner held various management positions. In these roles, he implemented numerous new product developments and volume production launches together with his teams. In 2007, he assumed responsibility for the Transmission Technologies business unit. With numerous concept and product developments, such as the first Schaeffler hybrid clutch, he and his team paved the way for research and development activities in e-mobility. Uwe Wagner became a member of the management board of the Automotive division upon being appointed as Head of Research and Development Automotive in 2014. Two years later, he also assumed this role for the Industrial division. Since October 2019, Mr. Wagner has been Chief Technology Officer at the Schaeffler Group.*