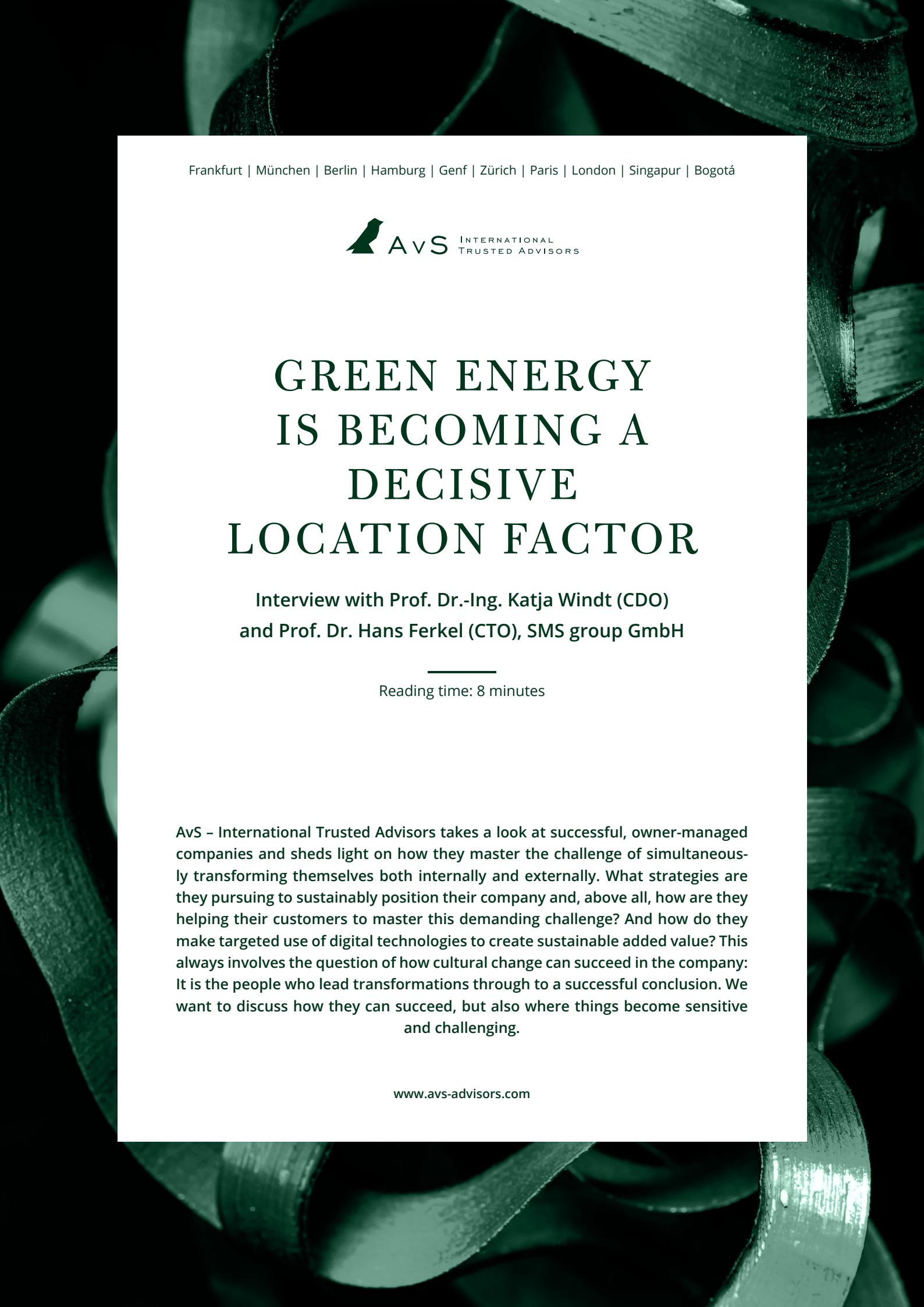

Frankfurt | München | Berlin | Hamburg | Genf | Zürich | Paris | London | Singapur | Bogotá

AvS International Trusted Advisors

GREEN ENERGY IS BECOMING A DECISIVE LOCATION FACTOR

Interview with Prof. Dr.-Ing. Katja Windt (CDO) and Prof. Dr. Hans Ferkel (CTO), SMS group GmbH

Reading time: 8 minutes

AvS – International Trusted Advisors takes a look at successful, owner-managed companies and sheds light on how they master the challenge of simultaneously transforming themselves both internally and externally. What strategies are they pursuing to sustainably position their company and, above all, how are they helping their customers to master this demanding challenge? And how do they make targeted use of digital technologies to create sustainable added value? This always involves the question of how cultural change can succeed in the company: It is the people who lead transformations through to a successful conclusion. We want to discuss how they can succeed, but also where things become sensitive and challenging.

»
We will see a new competition for locations, a new battle to attract companies that want to operate in a climate-neutral and sustainable way.
«

AvS – International Trusted Advisors: Prof. Windt, Prof. Ferkel, your goals are very ambitious. By 2026, you want the SMS group not only to be the world's leading supplier of climate-neutral production processes in the metal industry, but also to have repositioned the company from being a traditional mechanical engineering company to become a complete solutions service provider. Steel production, for which you build everything from blast furnaces to rolling mills and strip processing lines in your core business, unfortunately holds the inglorious first place as the largest industrial CO_2 producer today. Ensuring greater climate protection here sounds like a mammoth task.

PROF. DR. KATJA WINDT: That is one of the reasons why I started at SMS three and a half years ago: The challenge is high and the task extremely exciting. With its technological innovations and as a full-range supplier in the metal industry, SMS has always led the competitive field, and has done so for 150 years. Now we are systematically implementing digitalization along the value chain in metal production and processing, and are opening up new performance and business potential. Our service areas Electrics & Automation, Digitization and Technical Service are taking a combined approach. Data is generated in our sensor and automation systems, and then analyzed by our process and digital experts using AI algorithms. By recognizing new patterns from parameter combinations, we can predict, for example, when a component of a system will fail and adjust the maintenance cycle accordingly.

This gives us new levers for more efficient material use, but also for greater climate protection. Our customers are faced with highly complex issues: Already in the next decade, manufacturers want and must be able to produce steel in a climate-neutral way and process it in a resource-saving way. It is no longer just a question of cost savings. Increasingly, we are helping to answer questions about how our customers can offer their clients better and more sustainable products. We no longer simply provide the machines or systems. We use the entire innovation portfolio of mechanics, automation and digitization combined with our consulting expertise and become, so to speak, temporary colleagues for our customers. By using data analytics, we gain a better understanding of the complex interdependencies and can thus offer performance-oriented business models. In this way, we help our customers to increase the performance of their plants. This also applies to CO_2 reduction, for example, through our energy application. In addition, customers are now explicitly asking for digital software products and services. This area is becoming increasingly important for us.

PROF. DR. HANS FERKEL: Mammoth task is a good phrase. I came on board two years ago, by the way, precisely because SMS, as a family business, has shown staying power. When the wind blows cold and hard, we don't panic and look at the figures, but take our time, think things through and discuss them with great openness. And then, above all, we don't just talk, but also implement our plan. One example: In the booming electromobility sector, battery manufacturers and carmakers are looking for ways to recycle batteries and, in particular, to recover the valuable metals they contain – and to do so as far as possible without causing new emissions such as CO_2. We decided to enter the new strategic area of recycling and this year we put our money where our mouth is. With Primobius, a joint venture with the Australian company Neometals, we will start the first pilot plant this year and recycle up to 1,000 tons of lithium-ion batteries per year for our customers in the first stage.

For a fully automated factory or remote maintenance at a customer's site, you will probably have good software developers at SMS and need many more. How do you attract young digital experts to a formerly traditional plant manufacturer? And how do you get the more hands-on engineers to work hand in hand with virtuoso data specialists?

WINDT: We have been working intensively on how we can attract the best digital experts. All companies are fighting for good software developers, who are in short supply. However, we have found that as a family-owned company, with our sophisticated products and above all our role as an enabler of sustainable production processes, we are also attractive to many younger applicants. We also take unusual approaches to recruiting and were represented at the Gamescom computer games fair in Cologne, for example, in order to reach our target group. In discussions with developers, we made it clear that we can not only improve the product enormously with the data from the many sensors in our plants, but that the result of our work is also very real and tangible. It is perhaps also more meaningful than programming the next entertainment computer game.

FERKEL: Of course, we have optimized plants and processes before; we know our plants inside out and can model and calculate the processes that take place in them. Considerable amounts of data are generated when operating the plants. Now the young digital colleagues come along and want to work magic with the numbers. But they first have to learn how to compile the right numbers, correlate them and then interpret them correctly. How exactly does the process work? What is the temperature control like? What do I have to do to ensure that quality really comes out and the result is economical? But it is precisely in this constructive cooperation that new insights and solutions are created for our customers.

WINDT: It is essential that the teams learn from each other. Since we also want to digitize our internal processes more and more, it is important that the digital colleagues communicate what digitization can do.

That probably sounds easier than it is. Does it work?

FERKEL: The transfer of knowledge and the exchange between old and young – that works quite well. Colleagues learn a lot from each other and broaden their horizons.

Windt: I'd say that it works sometimes this way and sometimes that, but we're getting better all the time.

What is your recipe for success in ensuring that this cultural change and mutual learning succeed and that both teams play as one team and win?

SMS group is a world market leader in mechanical and plant engineering for the metal industry. The family-owned company looks back on a 150-year history. The company's declared goal is to be a pioneer for a carbon-neutral and sustainable metal industry. Today, SMS group employs around 14,000 people worldwide and generates sales of more than 2.7 billion euros.

WINDT: Listening is important on both sides, getting involved in the respective new territory and understanding how that opens up new possibilities in my world. Then it's essential to recognize the successes achieved together – even the small ones. If everyone wants to reach the summit individually, it's a long way. It already helps when the first and second intermediate stages are completed and everyone sees: It can be done. The recognition must come above all from the managers, then a culture of appreciation and confidence grows and the belief that we can do it, precisely because we bring different strengths to bear on the task.

For our own digital transformation at SMS, we have tried out a new concept that is proving very successful. We have appointed Digital Ambassadors and looked for volunteers to train other colleagues in digital topics. To this end, we provide them with a quota of hours during which they can act as ambassadors. This has been very well received and provides scope for exchange, innovation and learning. The voluntary nature of the program is particularly important – it is not a traditional assignment to a specialist department. It's self-initiated and informal – in the coffee lounge or kitchen, as a podcast, in virtual meetings or self-created learning spaces, and across departmental boundaries. That's exactly what we want to achieve.

FERKEL: For me, mutual appreciation and the joint recognition of successes are important so that the generations can learn from each other. I remember a party before Corona, there were these two very different generations, the colleagues with often more than 25 years of professional experience and then the young colleagues, many not even 30 years old. It was interesting to see how they exchanged views on the changes brought about by digitization. That really fascinated me. Once the fear of contact has been overcome, topics beyond professionalism are also addressed. That creates the necessary trust to get things on the table that aren't going well. In the end, this not only leads to better cooperation, but also to fewer mistakes, because all and very different aspects – which can include highly relevant information – are taken into account.

Of course, diversity is also crucial for good collaboration, and in our case especially a higher proportion of women. As a traditional plant manufacturer, we still have to do better here and attract more women to our industry.

WINDT: The leadership team is indeed crucial for successful digital transformation. All of us together in

» **Once the fear of contact has been overcome, topics beyond professionalism are also addressed. That creates the necessary trust to get things on the table that aren't going well. In the end, this not only leads to better cooperation, but also to fewer mistakes, because all and very different aspects – which can include highly relevant information – are taken into account.** «

the leadership team have the same understanding of what we want to achieve and, above all, why we want to do it. We are responsible for creating the framework for change. This must be comprehensible so that we can then involve the next management levels and work together to achieve the goal.

Let's come to your ambitious strategy to decarbonize the steel industry with SMS. As a full-range supplier and innovation leader, you have all the technological ingredients at hand. What are the special challenges?

FERKEL: Our customers have set themselves very ambitious climate targets and want to minimize emissions along the entire value chain. This involves the use of green hydrogen instead of coking coal, but also greater resource efficiency. Many steel mills are starting their transformation as existing plants are depreciated over several decades. Here we help with roadmaps on how to integrate the most sustainable product solution when replacement investments are needed for the steel mill. But there are also greenfield projects such as in northern Sweden. Here, the first and largest steel mill is being built, which will produce five million tons of green steel per year - based on green hydrogen and therefore completely CO_2-neutral. Here we can make full use of our innovation portfolio.
However, this is still a single lighthouse project. The political framework for a rapid ramp-up of hydrogen production, the expansion of renewable energies and the necessary infrastructure is still lacking. We also have an extremely competitive situation: companies for climate-neutral mobility, from the electricity industry, the chemical industry - they all need green electricity or hydrogen in the medium and long term. And then, last but not least, the end-consumer for cars or homes.

WINDT: And CO_2 that has previously been captured from industrial processes is also becoming a sought-after raw material, for example in the production of climate-neutral fuels. Together with green hydrogen and CO_2, our customers can produce e-kerosene in several steps to de-carbonize air traffic or e-gasoline for heavy-duty transport. We have acquired a stake in the company Sunfire, whose innovative high-temperature electrolysis process enables the production of such new fuels directly connected to a steel mill. This is industrial photosynthesis, so to speak.
We will see a new competition for locations, a new battle to attract companies that want to operate in a climate-neutral and sustainable way. In the past, it was good roads or attractive site financing or, in our steel industry, deposits of coal that attracted companies. Tomorrow, it will be reliable on-site infrastructure with green power and hydrogen, as well as supplies of CO_2 sources. This is what policy makers in Germany and Europe must be prepared for if a future climate-neutral industry is to be maintained with value creation and jobs. Germany needs to act quickly now so that we do not lose our good position in international competition when it comes to sustainability.

Prof. Windt, Prof. Ferkel, thank you for the interview.

The interview was conducted by Eva Schulz-Kamm and Helene Grimm, AvS – International Trusted Advisors, in July 2021 at the SMS group headquarters in Düsseldorf.

OUR INTERVIEW PARTNERS

PROF. DR.-ING. KATJA WINDT

(born 1969 in Bonn) has been Chief Digital Officer and member of the SMS group management board since January 2018. Previously, she was President of Jacobs University Bremen for four years and headed the Chair of Global Production Logistics. Katja Windt obtained her doctorate at the Institute of Factory Systems and Logistics in 2000 after studying mechanical engineering at Leibniz University in Hanover. She is a member of the National Academy of Science and Engineering (acatech) and the National Academy of Sciences (Leopoldina).

PROF. DR. HANS FERKEL

(born 1961 in Hamburg) has been Chief Technology Officer (CTO) and a member of the SMS group's Executive Board since 2019. He previously headed the research and development unit of thyssenkrupp Steel for eight years. Between 2004 and 2011, Ferkel held various management positions in Volkswagen's research division. Hans Ferkel received his doctorate from the Max Planck Institute for Fluid Mechanics, Göttingen, and his habilitation in materials science from Clausthal University of Technology.