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“Innovation entails some degree of courage”

Chemistry: Christoph Schlünken a member of ALTANA AG’s Management Board in Wesel and responsible for innovation, explains how digitization can open up completely new dimensions for the chemical industry.

Photo: ALTANA

Christoph Schlünken

- has been a member of the Management Board of ALTANA AG since 2014, where his responsibilities include innovation, environment, health, and safety.
- The 59-year-old has been at ALTANA for 20 years, during which time he has headed three of the specialty chemicals group’s four divisions.
- Prior to that, the PhD chemist spent seven years in various capacities at the former Bakelite AG.

ALTANA AG intends to become CO_2 neutral by 2025, says Chief Innovation Officer Christoph Schlünken: “We’ve developed a roadmap for each site specifying where energy can be saved and alternative energy can be used.”

VDI NACHRICHTEN: Mr. Schlünken, converting a specialty chemicals company to digital processes is not exactly trivial. How did you tackle this task as head of innovation at ALTANA?

CHRISTOPH SCHLÜNKEN: We launched our digitization strategy years ago and identified topics in the various areas of our value chain that we intended to work on. For example, we wanted to automate and digitize the arduous laboratory work involved in testing paint samples for our customers. For this reason, we contacted the Swiss plant manufacturer Chemspeed, which had already developed some modules that fit our BYK division**.**

The result is a high-throughput screening system. What exactly can it do?

Our HTS system is an exciting example of how digitization can open up completely new dimensions for the chemical industry. It carries out fully automated serial tests. More precisely, it tests the additives in coatings. Up to 220 samples per day can be produced and tested with high throughput, making it the largest facility of its kind in the world. What used to take months we can now do in just a few days.

The system was surely not cheap.
To be quite honest, at first I was skeptical about the large investment of € 15 million. It takes courage and commitment to make such a decision, because we still had to develop many of the required modules and the related test methods. But we know this would accelerate innovation on the one hand and increase customer loyalty even more on the other. We now carry out processes ourselves that are usually handled by the customer, such as coatings formulations.

Have you gotten any feedback on this yet?
Needless to say, our customers are thrilled. They realize how much work we can do for them. Our advantage is that we can be close to customers and offer them solutions that also set them apart from their competitors.

If the facility does all the work, how does that affect the workforce?
The HTS facility only takes over the tedious, small-scale laboratory work. We didn't want to cut jobs. Instead, employees can now focus on higher-value work.

And can be creative and innovative?
Yes, employee satisfaction is part of our value-driven culture at ALTANA. It fuels creativity, which is needed for the innovation process. Openness is another component – which, by the way, is one reason why I've been at ALTANA for so long. Here, everyone can say what they think. This openness, in turn, gives rise to new ideas. Trust, appreciation, empowerment to act – we try to live out these things, whether in Germany, China, or the United States. The man at the machine, the woman in the lab, tell us what our values are. And they give the managers feedback on a regular basis. Our innovation culture sets us apart from other companies in the chemical industry.

Which topics are currently being focused on?
The focus in all divisions is of course on sustainability. We intend to be carbon neutral by 2025. That means reducing emissions from our own processes. At the same time, we want to integrate alternative raw materials that have a smaller carbon footprint. We assume that, in view of the Green Deal, the EU will impose significantly higher regulatory requirements on chemicals, and as a result a number of substances will probably no longer be permitted in the future. This is another reason why we need alternative raw materials, including biobased ones. By the way, the HTS system also helps us here because it enables us to identify advantages at lightning speed – for example, when we test the applicability to biobased raw materials.

Can you give some examples of specific innovations that are currently in the pipeline?
Many innovations are aimed at making our customers more sustainable. At ELANTAS, for instance, we are developing new wire enamels that insulate electrical wires, leading to more efficient electromobility systems. In addition, we are working on additives for the production of supercapacitors, li-ion batteries, and fuel cells that can be recycled. At ACTEGA, we are researching coating systems that ensure that fewer substances migrate. This means, say, that packaged food

can be kept longer. And at ECKART, we are working on pigments for coatings that are permeable to radar and lidar waves. This makes them suitable for autonomous vehicles, in which sensors transmit the movements of pedestrians, cyclists, and other vehicles on the onboard computer.

And what activities are you pursuing in the field of printing?
In this area, too, we have developed completely new technologies from internal synergies, for example EcoLeaf, which our internal start-up ACTEGA Metal Print can use to apply metallic gloss directly to a substrate without the use of a foil. The pigment development was carried out by ECKART, while ACTEGA provided the printing expertise. We are concentrating primarily on label printing.

What are the advantages of this kind of metal printing?
Since only the exact amount of the metallic pigments required is used, EcoLeaf is an alternative to hot and cold foils – which is advantageous in terms of sustainability and costs. We also develop special inks for the printing process here in-house. In addition, we are developing polymers and pigments that are fine enough not to clog the print nozzles. This is interesting for 3D printing, for one thing. Here, we invest in new platforms and technologies and also look at interesting start-ups. For instance, we have a stake in dp polar GmbH, which developed a machine for an extremely fast 3D printing process that allows components to be produced on a rotating disk so that there is no pause during printing.

Let’s return to ALTANA becoming CO_2 neutral by 2025. That’s an ambitious goal. Where do you see the biggest challenges?
We’ve developed a roadmap for each site specifying where energy can be saved and alternative energy can be used. In Italy and India, we already generate our own energy with renewables. Back in March 2020, we switched our worldwide electricity procurement to alternative sources.

The New German Federal Government is just beginning its work. What do you expect from politics for your industry?
For the entire industry to achieve its climate protection targets, incentives must be created to ensure that sufficient capacities of electricity and heat from CO_2-neutral sources are available in the future. New processes must be accelerated through public subsidies, and obstacles to use and to self-generation must be removed. And policymakers must create comparable competitive conditions for the industry with internationally uniform CO_2 pricing.