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Rob Kirschbaum was awarded the renowned Giulio Natta prize, as it says on the certificate, for his outstanding contribution to the launch and development of various technologies and materials, and promoting open innovation at DSM. An interview with a scientific fighter. "I prefer to be at the front of the innovation process. Nothing gives you more energy than exploring and pushing back the boundaries."

Kirschbaum is Vice-President of Open Innovation at DSM and was previously director of various materials activities. His nomination for the Giulio Natta Award came from an unexpected quarter. The idea turned out to have come from the former head of technology at Bayer. He had met Kirschbaum in 2002 when it appeared that a joint investment in an Israeli venture capital fund was in need of some adjustment. The contact continued and the Bayer man gradually became so impressed with Kirschbaum's performance that he put his name forward for the Giulio Natta Award. The panel of judges was in complete agreement and as a scientific industry man, Kirschbaum is now one of the first people in the world to take home an award which for a long time was reserved only for professors.

Benefit of the doubt

"Yes, I have done a lot for Dyneema and Stanyl. The history of Dyneema is an exciting boy's adventure story in which I played my role with great pleasure. The early years at Stanyl were what turned my hair grey: the market was extremely difficult and internally there were huge doubts about whether we should go on. At such times you have to decide whether to stop and write everything off or go on and continue throwing money at it trusting in a vision. That was what we ultimately did and, despite the halved R&D budget and continuing internal doubts, we were able to get that business off the ground. I regularly had to stick my neck out with the Board of Management when I had to explain

why progress was so slow. With hindsight, the fact that I was given the benefit of the doubt turns out to have been a brilliant move."

Jobs and euros

'The Giulio Natta prize is for my 'collected works', so apart from Dyneema and Stanyl, fire retardant materials, halogen-free plastics and bio-polymers too. It should also be seen as a recognition of the hundreds of people at DSM who have contributed to this over the years. You can't possibly achieve anything like that on your own. But that doesn't mean that I am not unbelievably proud of this prestigious award. I wouldn't have said it myself, but the observation made by the panel that partly due to my efforts for Dyneema and Stanyl in these segments, DSM now has a turnover of around half a billion a year and some 900 people earn a living from it, is actually correct, I think

The key to the future

"I can get worked up about the perception of chemistry and role of this industry in the future. Chemistry has long been seen by many people as a polluter. We are certainly not the cleanest lad in the class. But in terms of safety and the environment the improvements in recent years have been incredible. Another side of chemistry however is that it really does have the ability to change from being part of the problem to part of the solution. And that's what we have been working on for a long time. I can give dozens of examples of products and technologies which demonstrate that we understand what sustainability is all about. At the same time there are many dozens of projects aimed at increasing that. Sustainability is the key to our future, you can't get away from that fact."

Impatience

"What does sometimes give me a headache is the general lack of haste, even though I perfectly well understand why that is. Just take the value chain in materials: we develop a certain material, which the next party turns into a certain form with injection moulding, who then supplies it to a company which assembles the article with other components, which then sells the product on again to a car engine builder, for example, who then sells it on to a car manufacturer. A highly complex chain in which nothing happens of itself. Then you have the interests and earning models of the various parties in that chain. We consider biorenewable plastics essential for the future, but there are industries in the chain which don't see it that way. The lack of any incentives from the government also

plays a part. It is most disappointing that we didn't manage to agree on a successful and binding protocol for the worldwide reduction of CO_2 in Copenhagen. And, if I may say so, the European chemical industry has managed to join hands in the form of the Cefic organisation in Brussels, although the bureaucracy there does need to be cut back. In the meantime the world's problems continue to grow and in the relatively short term another three billion children will be born, possibly including my grandchildren. Now do you understand why I am concerned and impatient?

No opportunity without threat

"I am definitely in the 'believers' camp. Pessimism doesn't help, and I firmly believe in what the Chinese wanted to express with their Waishi character. Every crisis or threat harbours the seeds of opportunity. You can see those opportunities most clearly if you first confront the crisis head on. And then get on with it, while keeping a level head. The DSM strategy could be boiled down to the philosophy behind this ancient Chinese character. That strategy revolves around nothing less than helping to tackle the major problems in society and seizing the opportunities that this presents. And persevering, despite opposition and uncertainties. That is why the Board of Management has left the innovation budgets largely intact. That is why we are so committed to open innovation."

It works

"Open innovation is necessary because you can't do it on your own. That applies whether you are an individual, a company, a country or even a continent. I have seen DSM really open up in recent years. That openness was also given a huge impetus when we sold the petrochemicals to Sabic and thus the need for an open chemical site and campus (Chemelot) was created. A barbed wire fence and locked doors would have been a bad recipe for the future. Over the last few years we have demonstrated that open innovation works; our renowned 'innovation funnel' is even on the cover of a book by a leading professor at Berkeley University. Some ten years ago we could already show that New Business Development is vital to the future; even though we earned a lot less from that than the average venture capitalist. We now know that we really make progress because of our innovation model. We have a much broader horizon at the start of the various projects, the processes move along more quickly, the decision-making is better quality and we sometimes also earn something by, for example, selling promising start-ups which fall outside the scope of DSM for good money.

Crystal ball

“What do I see if I look to 2040? IT, nanotech and biotech merging to become a new discipline and, following the example of Mother Nature, we can work at a molecular level. Miniaturisation and plastic electronics will lead to new products which we cannot even dream of now. Computers the size of your mobile phone powered by vast amounts of green energy, with a built-in flexible screen and a keyboard projected onto your desk or table top with a laser. Then, for example, in between snorkelling and reading a book while on holiday, I could work for an hour or so a day and avoid making mistakes once I am back in the office because I have to quickly deal with 800 e-mails. I envisage super smart systems to deliver medicines to just the right place in the body and technology which enables you to grow synthetic organs such as heart valves on the basis of stem cells. I think of new conductive composites, materials which are completely made of waste such as cellulose, nylon produced by bacteria, electric vehicles which are necessary because at some point in time we are going to have to take our leave of combustion engines, of improved protein yields from the sea and from agriculture with the aid of improved genetic techniques. In the geographical sense I see the present gradual shift to ‘the East’ gaining momentum. In China and India we see a rise in highly qualified intelligence and in Europe we could easily interpret that as a threat. But as I already mentioned: threats and opportunities lie side by side, but I also see Europe taking action. Because for years European research programmes have focused on knowledge acquisition. There is a shift taking place however and people want to put more money into concrete demonstration projects. A nice idea or knowledge for its own sake is no longer enough; it has to be about products or technologies with a clear market potential. And that is what innovation is about.”

Celebrating and…

"As you move towards the future you must not forget to celebrate the successes you achieve along the way. It was an amazing day for me, like a dream, there in that classical palace in the Italian Ferrara. I even made a short speech in Italian. I do not have a full command of the language, so I practiced beforehand with a DSM colleague in Italy who tactfully informed me that my Spanish(!) sounded pretty OK. The certificate hangs in my office but I still have to find a place for the silver medal which came with it. My wife was there too and I also expressly thanked her. She has had to put up with me for all those years."

…persevering

"You know how difficult it can be to turn an idea into a commercial success. You know that DSM can't do it all on its own. You know that the traditional business models need a complete overhaul. You also know that the world is facing a number of major problems in terms of food, water, energy and medicines. If you realize that, you also understand that you as a person and as an innovative company have to be a bit of a fighter. Trying out new things, keeping at it. At DSM we could definitely do with a bit more entrepreneurship. I realize that the compliance department will not thank me for saying it, but if you want to push the boundaries as a company it really should be possible to live by the saying 'it's better to beg for forgiveness than ask for permission'."

tags:

Company culture, DSM Dyneema, Sustainability, Innovatie, ondernemingschap, Stanyl