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**GREG HORN:** Hello, and welcome to the Health Pulse, a podcast exploring how analytics in the health and life science industry is growing and its repercussions in all our lives. My name is Greg Horn and I am your host for the series. And as always, we'll be joined by my expert guests to discuss a topical subject.

On this week's episode, we turn our attention to AI and pharma data and our guest is Herman De Prins, and he's from UCB. But before we get to that, just a reminder that we have our email address, [thehealthpulsepodcast@SAS.com](mailto:thehealthpulsepodcast@SAS.com), that's [thehealthpulsepodcast@SAS.com](mailto:thehealthpulsepodcast@SAS.com), where we're taking your comments, questions, and thoughts on the podcast so far.

We're using that information to help formulate the plan for future episodes, other guests we want to invite, and to generally inspire questions that we're going to ask to future guests, as well. So please keep those emails coming through. So without further ado, let's join and welcome this week's guest, Herman De Prins. Herman, good afternoon to you as you're in Spain. Can you introduce yourself, please?

**HERMAN DE PRINS:** Thank you, Greg. I'm the global CIO of UCB, which is a biopharma company. I cover basically all technology across all aspects of our business, ranging from the back office the infrastructure to scientific applications.

**GREG HORN:** And Herman, just tell me a little bit about how you got to that position. What did you do before?

**HERMAN DE PRINS:** I spent most of my career in the medical device industry, both in Europe and the US. And then about 12 years ago, I joined UCB, which was pharma and new to me.

**GREG HORN:** Fantastic. And one of the things we like to do in the podcast is find out something about you. So when you're not at UCB, what is something that you like to do?

**HERMAN DE PRINS:** A lot of my spare time goes to road cycling. It's a great compliment to my work because at work, I need to make many decisions in a very short frame. And on the bicycle, I can think a problem through for like an hour or so. And actually, a lot of the things that I've done at work were designed and created on the bicycle.

**GREG HORN:** Fantastic. And do you have any particular places you like to ride? Any favorites?

**HERMAN DE PRINS:** Spain is my favorite, so the Calpe region, you get a lot of professional cyclists here. So that's quite fun.

**GREG HORN:** Fantastic. So thinking about UCB, not everybody listening will know the brand of UCB. So can you just tell us a little bit about where you're located, what you do, and just a bit more background about the company?

**HERMAN DE PRINS:** Sure. UCB is a mid-sized biopharma company. It's headquartered in Belgium but by the nature of the industry, it's global. We have offices in 40 countries. Our research organization has key locations in Belgium, the UK, and different states of the US. And what we do is try to find innovative solutions for people living with severe diseases, focusing on immunology and neurology.

**GREG HORN:** So UCB has been an early adopter in AI and you've even gone so far to get patents in the space. So what was the spark for you that started that journey into AI?

**HERMAN DE PRINS:** It actually started in February of 2011 when I was walking on streets somewhere in Raleigh, North Carolina, and I saw a television play in a shop. And it was the famous *Jeopardy* show where the Watson computer won against two of the best American players, and that sort of intrigued me.

A month or so later, I was in San Francisco at an event and during the lunch break, as an introvert, I was standing on my own at one of those tables with some lunch. And a tall person walks up to me and he says, can I join you? I said, sure. Turned out to be John Kelly, the head of research of IBM at the time, also called the Father of Watson. So he started talking about the possibilities of this technology and just a few months later, we had a project in the domain of epilepsy.

**GREG HORN:** Fantastic. And I said, you do have patents in the space. Is there anything in that area you can talk about and tell us a bit about what you've been investigating?

**HERMAN DE PRINS:** Early on, we applied for a couple of patents for the most part to reward our employees and as a recognition more than as the idea of selling products. But those were early patents in the space of AI, yes.

**GREG HORN:** Can you give us some examples of some of the early things you've been able to achieve?

**HERMAN DE PRINS:** Well, one example is that in 2013, we published the results of our work with IBM with Watson technology in using cognitive computing to support personalized care for people living with epilepsy.

**GREG HORN:** Fantastic. And can you tell me a little bit about how that works and what it does?

**HERMAN DE PRINS:** Well, at that time, what we were working on was basic similarity analytics. And so based on real world data, we could predict potential outcomes for patients.

**GREG HORN:** As a CIO, it's very clear why AI would appeal to you. But you have about 8,000 staff in the organization, so how do you get them on board the AI train? And what do you do to keep them engaged?

**HERMAN DE PRINS:** So early on, we had this idea of ensuring that we take everybody along on our journey, and we formalized that. In 2016, we started what we called a technology practice. And this was a forum where we did things like hosting keynotes, writing white papers, organizing workshops for the whole company. So the audience was the whole company.

In 2018, this became the DataMines and digiMines program, which as the name refer to, were respectively about data literacy, on the one hand, and digital business transformation on the other hand. The idea remained the same, which is to increase the understanding and capabilities of all employees that need be around digital.

**GREG HORN:** Fantastic. And do you see a certain group of employees who are more likely to take this on? Do you see a more enthusiastic group anywhere in the organization?

**HERMAN DE PRINS:** I see, for the most part, enthusiasm across the company around digital and analytics in particular. I'm sort of more worried about the sheer amount of initiatives and the relative priorities of those than I am about potential pockets of resistance.

**GREG HORN:** So how do you decide how to prioritize then, in that case? Because I think it's very easy to be overwhelmed with cases, as you just mentioned. So how do you make sure that the good cases rise to the top?

**HERMAN DE PRINS:** Well, obviously, it's the role of the specific unit or function that has the right use cases and we look at, basically, a business case. And we also allow some level of experimentation, of course, because given it's all new, you can't always predict or commit to a certain outcome.

**GREG HORN:** Yeah, for sure. And do you see any resistance at all? You've kind of briefly mentioned it there. But are there pockets of resistance? And is some of that resistance well founded? And how do you cope with that question?

**HERMAN DE PRINS:** I see very little resistance. I mean, I see, again, is it because we did this digiMines thing and DataMines? I don't know. But I see basically all enthusiasm.

**GREG HORN:** That's fantastic. And as a company, you are in the entire value chain from drug discovery to bringing it to your doctor and your patients. Where do you see the most value being driven by AI at the moment?

**HERMAN DE PRINS:** Well, before anything, there's value for AI across the whole value chain, basically everywhere. But the highest value pools are for sure R&D and in second place, I would say the commercial area. But if I can contribute to finding better solutions for specific patient populations and do that faster than before, you create a lot of value for patients and for the whole ecosystem. And that's why I prioritize R&D, in terms of value.

**GREG HORN:** So in the R&D space, I guess you're looking at the kind of fail fast approach. Would that be right-- finding something that isn't going to work as quickly as you can?

**HERMAN DE PRINS:** Amongst many other things, yes. That's correct, yes.

**GREG HORN:** OK. And do you have any examples where AI has really helped to accelerate that R&D process?

**HERMAN DE PRINS:** Well, we have a lot of initiatives with AI in R&D, but maybe I can refer to our Moonshot Initiative, which we did last summer together with Microsoft where we use our algorithms, so basically our AI and Microsoft's mass compute power to do research on potential treatments for COVID that would normally take six months, and we did that in three days. So that's the magnitude of acceleration you can achieve.

**GREG HORN:** Wow, that's fantastic. And I guess related to that, I mean, some might say we are undergoing the world's biggest clinical trial right now, when it comes to coronavirus and the role out of vaccines and the speed of that rollout. So do you think AIs had a role to play in that? And do you think it could have been used earlier in the process?

**HERMAN DE PRINS:** While I don't know it for a fact, I'm convinced that AI played a significant role in the development of the vaccines and potential treatments. And it's not specific to COVID. I think the whole industry is embracing AI quite well.

**GREG HORN:** When you think about the use of AI into the future, what do you think are going to be some of the big breakthroughs? And what do you think is going to drive those? And let's think about time scale, as well. How quickly do you think it will happen?

**HERMAN DE PRINS:** Well, Greg, I'm not a futurist. I apply what's possible. But I do believe there will be massive and sometimes scary advances with AI on many fronts. Take one example is GPT-3, which is a language model, to produce human-like text. It uses deep learning and today with GPT-3, 175 billion machine learning parameters. And that's 10 times as much as the previous technology, which is in our hands mostly today. So think about putting such capacity and capability into a robot, for instance. That's just huge. I also see AI becoming more embedded in products, in technology products. So it won't always be obvious what's AI and what's not AI.

**GREG HORN:** I do think that's a risk. Do you think we should be telling people what is AI and what is not AI? Do you think it should be very obvious to people?

**HERMAN DE PRINS:** Well, there certainly needs to be a set of rules around it. And I know that the European Commission is working on them. So like with any technology, there's risks and there's opportunities.

**GREG HORN:** Yeah, for sure. We just did the hackathon. We had a contestant that ran a chatbot, an AI chatbot. And when you asked him certain questions, it would just hold its hands up and say, I am a chatbot. I can't answer that question. Do you think A should have limits like that, and admit when it doesn't know the answer?

**HERMAN DE PRINS:** Yeah, well, specifically whether it should say no, I don't know. But clearly the issue of bias in the data, bias in the algorithm, ethical issues, data privacy, are all significant concerns.

**GREG HORN:** Have you had to deal with bias issues within your data sets? And if so, how have you overcome those?

**HERMAN DE PRINS:** So by definition, every data set has a bias. That also means that every of your AI initiative is based on something that's biased. In our process, we do ethical reviews and bias is one of the elements we look at.

**GREG HORN:** Fantastic. And when you think about bias and the role of bias, sometimes it can play a positive role. Have you explored that in any way at all?

**HERMAN DE PRINS:** Not really. Since I said every data set you use, every algorithm has bias. So with that, you're dealing with it positively or negatively.

**GREG HORN:** OK. And just one final question. If you think about the projects and the prospects that you're looking to get into the future, are there any kind of key projects you're very interested in? And what's driving that interest?

**HERMAN DE PRINS:** Well, as I said before, the biggest interest for me is what we can do in R&D and maybe even mostly in research because I think the power of AI in research is already significant but will become really valuable in developing new treatments for people.

**GREG HORN:** That's fantastic. And thank you very much, Herman, for joining us today. That's a really interesting insight. And thank you very much for your comments and questions that we've been getting from our audience. Keep them coming at [thehealthpulsepodcast@SAS.com](mailto:thehealthpulsepodcast@SAS.com) at I think Herman touched on something very interesting at the end there, where he talked about the R&D piece and the rollout of AI in that space.

So if you have questions, comments, and points on that, please make sure you send them through. Thank you very much for joining us today. We're going to be bringing those questions to future guests, as we've already mentioned. This has been the Health Pulse podcast. I've been your host, Greg Horn. Please like and subscribe and we will keep sending you future episodes. Thank you very much.