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EPISODE 2: DIGITAL AT THE PACE OF SCIENCE

AUDIO TRANSCRIPT

INTRO: *You're listening to Driving Digital in Biopharma, a podcast from Accenture. Your host is Tom Lehman.*

TOM LEHMAN: *Within Accenture's Life Sciences business, I lead our Global Biopharmaceutical R&D consulting business and in that role I've had the fortunate opportunity to spend the majority of my time with our clients, and our people, focused not only in developing digital strategies to enable R&D, but also working with our clients to implement and scale those digital solutions.*

We are happy to continue this podcast series on the topic of digitalization and Biopharma R&D, as we explored the experiences and the progress that has been made with digitalization in our industry – as well as the challenges that organizations have faced along the way.

In this episode, "Digital in the Pace of Science," we'll talk with Kailash Swarna. Kailsash is a corporate vice-president at Novo Nordisk and is leading the transformation of R&D from a digital perspective globally. Prior to Novo Nordisk, Kailash worked with global life science leaders, including Takeda. He holds a PhD, and an MBA and Kailash is also an MIT Sloan Fellow. Welcome, Kailsash, to Driving Digital in Biopharma.

KAILASH SWARNA: Thanks Tom.

TL: *So you have been with Novo Nordisk for the better part of a year and prior to that had a range of industry, consulting, service provider, academic experiences. What led you to make that career switch and joined Novo Nordisk?*

KS: My reasons for coming to Novo Nordisk was that at Novo Nordisk, I saw an opportunity where we could really take the impact of the science that we were doing on behalf of patients and make it that much better being able apply the data and the knowledge that we have as an organization. We are a pre-eminent company when it comes to treating diabetes and metabolic diseases and we felt that by being able to apply a digital transformation mindset to what we have, we could do a lot more for our patients.

TL: *As you step into this role: a high profile, new role, digital transformation on the agenda for Novo Nordisk, what was the State of the strategy around digital when you joined?*

KS: I would say that was a nascent strategy. We have a new CIO in the organization, who when I joined had been with the company for around two years, and had come from an industry different from Biopharma, and was starting to get a technology foundation for the company in place – and had really done an amazing amount of work in terms of pulling together a technology strategy that was getting ready to become a digital strategy.

So we are starting to think about what the foundational platforms would need to be before we started to think about technology and digital from the context of the business. That's sort of where we were when I first started.

TL: *So with that in mind, I think you're starting to hit that something, were there elements that you felt were missing or needed to be specifically addressed in order to round out that strategy?*

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KS: Yes, Tom. A key element that was missing or perhaps a bit misunderstood that in our line of business whether it was in clinical development or in discovery or other parts of R&D, there was a perhaps perception that a technology strategy was somehow the same as a digital strategy – or a technology strategy it was the same as a digitization strategy.

So often what we would see is a list of "I.T. projects" (quote-unquote), being listed as (quote-unquote) "digitization" projects. While in some cases are absolutely the same, in most instances the articulation of the business value that technology could provide wasn't the same. That is one of the key things that I found as a challenge when we first started.

TL: *Value certainly is an interesting topic in of itself. Just thinking about, looking at the research that we have done recently, one of those challenges that we see with digital and what perhaps is slowing down some adoption, is just is that challenge in articulating that value. There is an intuitive belief that there is an opportunity to do something, but being able to then translate that into demonstrable value seems to be holding a lot of organizations back.*

Can you talk a little bit about the breadth of this? Was this a cross R&D view? Was there an intention to focus on specific therapeutic areas or functional areas? If you can, just share a little about what you stepped into and then also how it may have evolved?

KS: This is very much a global cross R&D view. It spans our earliest collaboration in target discovery and understanding what the basic biology world looks like,

all the way through the launch of the product, indications and beyond. Looking into what happens to our drug in the hands of physicians and with patients with the course of several years after the drug's been launched. So we're looking at discovery all the way through to clinical development and everything in between.

One of the elements that is unique to the work that my team does, here at Novo Nordisk is that in addition to therapeutics, in addition to looking at discovery and development, launch and therapeutic perspective, we also have a vertically integrated device organization and medical device organization that we also have to take into account. So the work we do is across R&D from both therapeutics and for medical devices.

And to the question that you're raising about how is it involved, one of the key things that we've had to understand is, given the cadence of the business that beyond today – so, for example, as with any company, we had to take into account things like, "What is a foreseeable future for the next three to five years looks like in terms of launches, in terms of late stage clinical programs? Where is the biggest need?"

We also stepped into this world at a time when we were very active with some very significant clinical development activities, and then the Corona came on the scene, we, as all other pharma companies, experienced some substantial challenges when it came to some of the clinical development efforts underway.

So we had to really rethink in some respects what do we need to do to make sure that we first and foremost take care of the needs of our current patients,

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and secondly make sure that our clinical development activities are not disrupted in any substantial fashion. That allowed us to put digitalization in the context of the overall business priorities, which I think was an important step along the way.

TL: *So with that in mind around the business priorities and just looking at Novo Nordisk and more to the broader corporate strategy to expand beyond diabetes, how does digital from a strategy standpoint help to make that growth strategy happen?*

KS: Great question. As a company one of the things that really distinguishes us is we work in the chronic disease space. We are treating diseases that affect perhaps one in four, one in five human beings around the world. And most of those patients will be with our drugs for many years. If we are doing this right, this landscape actually become a situation where what might have been a debilitating or acute illness, will become a more manageable illness over course of time and allow them to lead a mostly normal life.

For us, what we've understood from other industries, in consumer space, from essentially what happens in the social media space, as technology become more ubiquitous in the life of people, we start to understand that how we treat patients can also follow a similar path.

So I think digitalization is foundational, fundamental to how we look at patients, how we look at the caregivers that are around patients, how physicians interact with patients.

In every respect, being able to sort of describe a patient or any of our other stakeholders in a more complete picture, requires us to have a better view towards all the data that's around them. And that I think is foundational to the way we think about digitalization.

TL: *As you as you've gone through the past year, and as you've started to really put the definition around that strategy, helpful to put a little bit perspective on this, because you've mentioned data now a couple of times – and that certainly seems to be a big area of focus in the industry, lots of different ways to look at that. There is simply, just making sense of the data that is produced and would be considered internal data, if you will, versus adding to that with the variety of different external data sources, real world data – and then adding on to that, perhaps, data that it comes from the connectivity to patients.*

Have you thought about or prioritize the areas within that?

KS: Very much so. Maybe we can take two distinct views of it. If you take a look at what happens at the clinic, as you know, we have a lot of non-clinical or nonmedical descriptors or influencers of a person's health. And as an industry, we've tended to focus mostly on – even when we talk real world evidence – certainly a narrow slice of real world evidence that we take into account. Mostly it's typically electronic health records or other information related to a clinical outcome on a medical outcome for a patient.

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Recently, what we've understood is that all elements related to how a patient interacts with the healthcare system – the socioeconomic information, demographic information, geographic information – all of that plays a huge role in health outcomes. So we're starting to see how we can bring all that together in a unified way. And of course, in a fully compliant way because we're are now talking about sensitive information.

So we think technology plays a huge role in being able to stitch together that information in a manner that allows us to maintain the privacy and the security of individual patients, but also allows us to get the benefit of what the rest of the world is doing to specific individual patients, if you will on the patient side and potentially onto some of the stakeholders who surround the patient.

On the flip side of discovery, what we're also starting to understand is that when we think about target discovery and target validation, we've taken the view in the past that we will go with a hypothesis driven due to us identifying a given target. But we're starting to understand now that, as you know, with more genomic information available, with genome association sequencing data available, there's a lot more information that allows us to get a more – if you will a higher fidelity picture – of what a particular disease pathway to target looks like.

A colleague of mine the other day I think explain is really beautifully. His analogy was akin to what we see in the television marketplace. We have seen advancement go from high-definition to ultra-high definition to 4K to 8K.

You're seeing the same picture but you're starting to see details in the picture that we were not able to see before. I think that is a really, really important aspect for our scientists: to be able to see that information with greater fidelity that we could not do before.

TL: *Do you think it's a matter in our industry of the of the science catching up with the technology or is the technology caught up with the science at this point?*

KS: I think the technology is caught up in the science and in fact I would go a step further. Internally we created a tag line. We call it, "Technology at the speed of science." We actually think that now science is outpacing technology in terms of some specific aspects of what we do. Both in terms of the pull from the majority of our stakeholders – whether it's a patient or a provider or a payer or a regulator – they're actually driving us in areas, with specific elements of what they do, that is actually accelerating the pace of the science and I think technology needs to do more to keep up with it. And by that I mean specific technology that is a fit for purpose aspects of technology still need to keep pace with what's happening scientifically.

TL: *With the range of technology that's out there – and I have to imagine in in your role, no shortage of choices, no shortage of opportunities, whether they are some of the larger technology companies that are out there or smaller startups – how do you make sense of all of that? How do you figure out where to spend your time?*

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Because again, as you said, there's from what you just described on the upstream part of the process versus clinical versus getting closer to commercial lots of different needs – but how do you make sense of all that's out there?

KS: It's hard. It's something that we spend a lot of time doing and we've come up with a handful of principles, which I know will change over time, but here's what we've tried to do: Internally be crowdsourced some of this. We have some really smart people in their organizations, people in each of the domains who have more expertise than any one team like mine will ever have.

So what we've tried to do is create a digitalization working group. This is not a hierarchical group. It's a group that meets once a month. And essentially, what the team does in between meetings, is put on their domain hat and through their lens do a scan of what's happening that's relevant to their space, both in terms of a technology platform that addresses a specific business need, or something that potentially is over the horizon in terms of what might be happening a couple of years down the road. And then we get together these meetings, what these teams are asked to do is come back with their top two or top three topics that they believe is highly relevant for the rest of the team to discuss and come forward with.

These are senior people in the organization and they had a good decision rights, if you will, to help recommend a couple of areas where we think we should move forward. At which point we then look at the vendor landscape with the technology landscape or academic landscape to see who is leading in this case.

Here we apply a fairly rigorous approach towards: what's the wisdom of the crowds, what are the scientific publications telling us, who's been working in the space in terms speed to delivery? Those are elements that we apply in terms of understanding we're good leaders out of the space, and then we try and do rapid evaluations with them. It's far from perfect. It's a process that's evolving right now. It's one approach.

The other approach is, then we start looking at some of the larger more established organizations that have a long history and a successful track record in terms of implementing large systems.

Typically, what we look for is an alignment with our way of working. At Novo Nordisk we have a very specific way of working. We want to make sure that whichever technology partner we pick aligns with our understanding, our needs in terms of how we select and implement projects. One of the challenges we've seen is that we might have the best technology with a given partner, but if the implementation and the journey to getting the solution isn't compatible, we don't see success.

So we look for mutual compatibility in terms of our ways of working, the speed with which we want to proceed, the chemistry between the teams. I think that's a super important part for us. That, of course, is based on the fact that, there is foundational technology that we're going after. In other words, there is a solution that has to match. After that we're looking for a cultural fit and an implementation of the company.

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TL: *So with that it might and the last point you were talking about there around somewhat proven… it's an interesting time for our industry because there are a lot of this is unproven – or is certainly unproven in the space that we operate in, whereas you see other industries who are much further along than we are.*

Is there a portfolio mindset you also bring to this around taking some perhaps calculated bets on some just really new or unproven technologies versus saying, let's let the industrya point where we will then actively consider it? mature to

KS: Yes. It's a qualified yes. I mean, when the potential for, shall we say, a delay or a failure from a business critical outcome is very high, we tend to be a little more conservative, as you can imagine. If you're working with something late-stage clinical development where there is a possibility of delays to our trials or potential impact to our current patients, we are understandably a little more conservative when it comes to solutions in that space. But, that said, when it comes to some of the more leading-edge platforms that we are looking at – machine learning, A.I. application to data science, broadly speaking – we are much more open to being on the leading edge.

I mean, as an example, we have several world-leading collaborations with some of the academic institutions in Europe and in the US and most of our collaborations are designed in a way for us to be able to push that leading edge in some fashion, to get a sense for what the world is doing. And then we use that to inform our decisions about which vendors are partners we work with.

One other element that's worth mentioning, is that we're also looking for technology partners who demonstrated the ability in other industries – not necessarily just in pharma. In fact, especially vendors with the ability to demonstrate experience from other industries perhaps even as far away from pharma, where they've solved problems of similar scale. Right? Very challenging hard problems, whether it's in finance or aerospace or automobiles or any of these areas where they solve problems that are of massive scale, similar complexity, and they bring a mindset to solving a problem that is very directly transferable to the work we do in pharma. I think going to be a super important trait in the vendors we look for.

TL: *We've certainly have seen that. An interesting parallel between the patient experience and various different types of customer experience, and really trying to bring some of those perspectives. And that's both understanding holistically your end consumer, if you will, but also thinking about, how do you engage and how do you interact and edit appropriate way.*

And as I look at other industries that are that are certainly further ahead than our industry, travel – prior to COVID, of course – but travel and entertainment and those types of things where you can really start to interact with a consumer, really start to understand their behaviors and really start to dial your product in, or the way that you interact with them in a very specific way. Have you done more on the experience side or is it not so much yet?

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KS: We're early in the process of understanding patient experience as a as a broader customer experience element. And for our therapeutic areas, for the diseases that work in that's super important. Like I mentioned before, our patients don't just take drugs, they experience our drugs. If you're a diabetic and you're taking a drug of some sort from one of the companies that produces these, you're living with a drug, your family is living with a drug; it's something that you experience over the course of your day. It has a direct impact.
It's a constant companion in some respects. And what we want to do is to turn that around. Rather than to be a burden or a chore or something that reminds you of the disease that you have, you want it to be something that reassures you, that is allowing you to live a natural normal life.

That mindset shift, I think, is very much a customer-centric way of looking at it. Rather than looking at it as a clinical or a medical problem, we want to see this as something that's helping improve a patient's life, or a person's life. I think we have a long way as an industry, we have a long way to go before we get to that place. But for companies like us, it's really important because our patients are around medicines for long periods of time.

TL: *Yeah absolutely. Particularly the chronic space, makes a lot of sense. So we've talked a little bit about the strategy, we've talked about the value that you're looking for in this space and the range of technology that is available.*

As you think about, ultimately, that end patient in mind and the way that it translates into your priorities, how do you determine what to do when and in what sequence?

KS: It's a work in progress. It's is perhaps a little bit too easy to say, "Well, let's start with the patient in mind and let's be patient-centric and work our way out or work our way back from that." It's actually much more challenging to be patient-centric than we've made it out to be as an industry.

I think patient-centricity, in my opinion, is perhaps a little bit of an overused term, only because no patient ever is an island unto themselves. They are interacting with others and in a many-to-many relationship. They often are influenced by what a physician says and does, or what a payer would say, or which health plan or which part of the world they live in, or what medications they have access to, and so on. So patient centricity means many different things. It's a very multi-dimensional problem.

So the first thing we're looking to do is to really understand the dimensions of patient centricity, so which markets are being more influenced by what a physician says and does? And if so what was does patient-centricity look like in that context? And how do we tailor the experience that we're trying to give that patient or that customer from the point of view of the environment in which they live and in which they operate?

It's easy to talk about digitization in some countries, but there are many countries or many places in the world where our medicines are used where patients don't have access to digital technologies. So what does patient experience or patient-centricity mean in that context?

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So I think to do answer your question directly, one of the first things we are starting to learn is, what does it actually mean to be patient-centric? And then we're starting to really work our way back, or work our way up, from there in terms of designing specific elements.
So what does the device look like that is getting us to trial? How easy is it to use? And from there, on things like shelf life, how do we make sure that medicine is stable, has the right formulation and so on. So every element of what goes into the final product, as seen through the eyes of a patient, there isn't a single definition for that patient, so to speak.

TL: *Is there a strategy that you've employed to really start to figure out how do you balance the potentially competing demands or competing interests across various different stakeholder groups, when you think broadly around what digitalization can do in R&D?*

KS: We have. We've started to really pay attention to that in the following manner. We are guided by our corporate strategy and our business strategy in terms of understanding which markets we operate in, which therapeutic areas we operate in, and which modalities we use. And that really is super helpful because it allows us to make sure that we are not distracted by things that others might be doing that are not directly relevant to our business strategy.

So we anchored and grounded in our core business strategy in terms of where will be. Of course everybody wants to do that, but here at Novo Nordisk, I've seen a very true commitment, a direct commitment to being able to do that across the board. That's our, if you will, guiding principle to start with.

We're addressing the needs of our internal stakeholders, our scientists, our clinicians, in terms of the kinds of technologies and capabilities that they would need to have access to work.

If you think about our healthcare providers, the physicians that prescribe our drugs are who advise us in terms of what goes on with our medications, we deal with everyone from a general practitioner to endocrinologists to specialists to people who work in a number of areas which have comorbidities associated with diabetes or cardiovascular disease. So we have a very diverse group of stakeholders when it comes to even our physicians.

So what we've started to do very clearly is to say, if you are a general practitioner, this is how you consume information about the patients you see. And we've started to really understand the content that you would need to create for those physicians and how they consume that information and so on, with a number of other areas.

Novo Nordisk has taken a lot of pride in terms of the way we conduct our clinical trials. So our CRAs, our scientists, we have a special relationship with them. But we also recognize that going forward we will be potentially expanding – we know we're going to be expanding – both geographically as well as in terms of number of sites and the places we work in. So what has worked for us in the past may not necessarily be the way things work out in the future. So we have a team closely looking at what the next generation of sites might look like; what a “virtual” study might look like, where the whole definition of a site starts to change. So those are the things that are currently underway.

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TL: *You take me to a different place there, where in this industry certainly, there's a familiarity with the way things have been done and with that, a level of comfort –tried and true, if you will. And so at times it's difficult to move people away from something comfortable into a new way of operating. And one of the things from our research suggests that the risk aversion in our industry is holding back the adoption of digital technologies.*

What has your experience been? Has that been a similar experience or are you seeing folks willing to take that step, take some risk and do things differently?

KS: I would say that's been a bi-model response in some ways, as you might expect. We have parts of the organization, understandably, that are conservative and view the unproven nature of some of the digitalization efforts with a cautious eye, because they work in elements of the business where their entire business foundation is in terms of managing and mitigating risk. So something seen as adding to the risk is innately difficult for them to accept, unless there is a very high bar in terms of being able to cross into that region.

In reality though, culturally speaking, the way we continue to work as an industry, I think, is largely because we as an industry have looked at ourselves as somehow very special, that we are immune to disruption, that just the nature of who we are as a pharmaceutical industry, we are exempt from some of the broader pressures of the rest of the world faces.

It's my view, and I think a lot of my colleagues share that.

Personally I believe that, we are special not because of who we are, but we are special because of what we do. And if what we do is not relevant to our patients, then we won't be special anymore. I think that simple logic, in many ways, is something that's helping me convey the message to my colleagues – that let's not really look at this as so much changing in the way of what we're doing. Let's look at this as making what we do more relevant to the people who are changing around us. That's been super helpful.

The second part of that equation is that a lot of our young people, a lot of the people that we're bringing are onboard – we've recently expanded geographically to other sites around the world where we are tapping into the innovation mindset in many of these new geographies. And we're starting to see people who are “digital natives.” These are people who have come in with the expectation that their world and what they do and what they're doing it for, will innately be digital by nature.

TL: *And do you think that there is a talent gap that's there? We certainly have seen this in other organizations, where there's a perception that there's either not enough of an understanding embedded within the business or that the technology function has not yet made that leap into some of these newer technologies. Is that something that you have seen as well?*

KS: I have. I think I would probably describe it a little differently. The talent gap is perhaps more like an impedance mismatch.

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Where our domain colleagues often tend to look – by domain I mean our scientists and clinicians, our regulatory affairs people, etc. – they tend to see the world through a set of technologies as a specific solution. In other words, “I need a tool to solve a particular problem.” What they're not necessarily being able to convey is what the nature of the problem is.

I'll give you a classic example. Often in situations where people who say, “Hey, let's get a meeting with IT colleagues and we will tell them exactly what solution to build for us. We will tell them we need this database, with this company and this platform that looks like this.”

And our IT colleagues often look baffled. Why are you guys telling me what platform to use? Wouldn't it be better if you rather describe the actual business problem you're trying to solve? Because that's where you bring your expertise in. And then let us on the technology side, whose job it is to actually keep pace with the technology, tell you what the right potential business solutions would be. So it's less of a skill gap or a capability gap, but more of a communication gap that we're seeing in many areas.

TL: *Make sense. And I would imagine, right, if you if you pivot that conversation, again less about specifics around the technology but more around the business problem, it then takes you to that next step.*

We talked about this a little bit earlier around than the articulation of the value. What is the value to the organization of actually addressing that problem?

Which then creates a little bit different starting point for the conversation and perhaps a little bit more staying power, if you will, to stay committed to doing something about it.

KS: I completely agree. I think one of the things from a technology industry perspective in this space, where we perhaps have done a poor job – industry wide. And for this I mean our technology company partners, as well as us as pharma. We've tended to take the easy road and go to saying if you do A, B, and C, you'll see a two year reduction in your clinical development timelines, or you'll see a $2 billion increase in your sales of your drugs. We’ve tended to come up with numbers or relatively easy, if you will, handles on which we can articulate and “value.”

And the reason that's a challenge is most often something like that doesn't quite pan out exactly that way. Rarely does a technology solution directly tie to a specific financial outcome or a specific outcome that's measurable. Instead what we found is valuable is, let's change the conversation about what value is in terms of each of the individual stakeholders we've talked about: the internal employees, the physicians, the providers, the payers and so on. In so doing I think we can actually come up together with a realistic measurable, sensible, measure of value.

So for example, when we talk about the fact that for a particular study we can go through and call up a patient accrual rates that are 1.5 times faster than where we are today. That's something that's tangible and measurable in a six month timeline. As opposed to something that's measurable over a five year timeline or a 10 year timeline.

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I think being able to bring up value measures of that saw in from a from a molecule generation point of view, we can create more diverse molecules by applying certain data science technologies and we can measure that from when we started before, we did it to when we finished applying these data science methodologies. So if we can actually break value down into bite sized chunks, I think we allow a great deal more success with that.

TL: *Absolutely. And I think that is one of the challenges. People are expecting a substantial financial return, they're expecting this massive business case to play out, and unfortunately sometimes that takes years to get to that point and the investment tolerance is just not there. So I like the approach. Again, appropriate in the digital conversation, talking about bite sized chunks and really getting to the point of saying, "How do you do it into more of an experimental approach as well?"*

Maybe you aren't making that huge investment upfront, but you're starting out in pieces and you're starting to see that the evidence is there, much like we do with the science at the end of the day. You start and you build over time.

KS: Spot on. I mean that that analogy which is that you want to bring the same experimental and scientific methodology to how we think about digital as we do to chemistry, or biology, or clinical science, or any of those areas. And I think we've done ourselves a disservice in the industry.

We've tended to look at technology somehow as an adjunct, as a support function and as opposed to something that is core to the business.

And I think when we start to realize that it is core to the business, as any of the other functions we've described before, then we start to apply the same kind of expectations and mindset – which is we will make some mistakes in some of the experimentation that we do, but that advances our science our understanding of the technology in such a fashion that we can apply more effectively the next time around.

TL: *Indeed. Let's say we move from experiment to scale and you move out into the future and let's put ourselves out five years from now – how do you measure the success of what you're doing?*

KS: The measurement of success for me would be the impact that we have as an organization. Like I said, we are working in disease areas that have the potential to impact the lives of one in four or one in five human beings in the world. So by being able to change that, that is can we move the needle in terms of improving or increasing the impact of our medicines on a larger population in a measurable way. That would be that would be one macro measure. I think that would be the gold standard measure in some respects.

Secondly, again going back to the discussion about measuring value and success in bite size chunks, one of the things I would also look for is, there are lots of opportunities for us to bring process optimization and efficiency gains in the organization. These are measurable in the near term. Whether it's in manufacturing or are in process development or in chemistry labs, digital labs – Tom, you know the work that the world is doing in terms of total digital lab space – and there are measurable improvements that we can bring to each of those areas.

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It would be wonderful to see a seamless connectivity across labs, around the world in such a fashion that an experiment started in our Beijing facility is completed in our Denmark facility and analyzed in our U.S. facility, all within a short period of time, without too many hops in terms of data systems. To me, that's an engineering problem and that's something we can solve today.

Five years down the road, it would be wonderful to see all the labs across Novo Nordisk seamlessly connected in that fashion. One more area would be, I think the transformation perspective, for me the ultimate success would be my team, the digitalization team will cease to exist.

We will work ourselves out of this current role in which we are. We will all go on and do other things in the organization, but we will be absorbed back into the functions because digitalization won't be an afterthought. It won't be something you have to do. It will become part of the core way of how you operate in terms of your day to day business.

TL: *And that's what we've seen in other industries. It becomes a bit ubiquitous, right? At the end of the day, as you said, it's not this thing on the side. It's not the separate strategy. It just becomes your way of operating and it becomes the way in which you do your work, whether it's in the labs, whether it's in clinical, whether it's on the road to commercialization – it just becomes the way of doing things.*

So certainly as I said, we've seen that happen in other industries I do believe our industry is on the journey but hasn't made the same progress other industries have made yet.

KS: Agreed. But I think what's exciting about that, for us, is that we are now starting to see momentum build within our company across the board, whether it's young scientist or a post-doc in our lab or our c-suite, we start to understand this is about changing the way we work.

It's not about a particular technology or a particular platform or any of those sorts of things. It's about fundamentally changing the way we think about our work and the way we actually execute our work. So from that perspective it's super exciting because I think it's an area that is starting to gather momentum – not just at Novo Nordisk, but also across many of the collaborators and partners that we work with.

TL: *Yes absolutely. I completely agree. And I think it's a great place for us to close. I think that that is what it comes down to. It's a fundamentally different way to think about the work we do, how we do the work, and as we talked about before how we engage with our patients and adults by keeping that in focus of what this is all about.*

It has been a pleasure talking with you. I appreciate the perspectives that you shared and the candor you brought to the discussion and again, a good reminder of what it's all about –

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which is the patient, is the products that we that we work on. I do thank you again for joining and it's been a great conversation.

KS: Thanks Thomas. My pleasure. Really appreciate the opportunity.

TL: *Until next time this is Tom Lehman with Driving Digital in Biopharma.*