

Jeroen Tas: 'If we don't look at the big picture, we can tweak ourselves to oblivion'



*When he bought large orders of light bulbs for the Winter Palace, the Russian Tsar became a high-profile customer of Philips, the Dutch multinational corporation founded in 1891 to produce just that: light bulbs. But the company never limited itself to one line of products. In the 20th century, Philips became a household name, with its brand name stamped on a long line of consumer electronics. One of its less known areas was healthcare: as early as 1918, Philips created a medical X-ray tube, and in 1949, the Synchrocyclotron, a type of particle accelerator to study malignant tumours. In 2005 it became clear that the multinational was pivoting to healthcare, when it accelerated the process of divesting many of its units that “defined the company in the eyes of the consumer”, as explained by **Jeroen Tas**, chief innovation and strategy officer and member of the executive committee of Philips. This is the type of company transformation that attracts attention from academics and business professionals globally. Why take such a big step? “If we don't look at the big picture, we can tweak ourselves to oblivion”, Jeroen told LSE Business Review managing editor **Helena Vieira** on 7 November, during the Web Summit conference in Lisbon.*

How was the decision-making process in this transformation? How difficult was it and how did you come up with this decision?

It was profound and difficult. The whole history of Philips is technology-driven. Based on that technology, you find the application area. So, you basically proliferate your products, you proliferate the space that you play in. Then we said, okay, probably that's not the right way to go. We should probably home in on a specific domain, and then start applying the right technology to outcomes in that domain. Basically you go from technology, product, feature, function, to 'how can we be more relevant in the space that we elect?' In our case that space was health technology. Should we divest our generic consumer electronics, televisions, lighting? And also, these were areas where we felt there's very little synergy with what we do in the rest of the organisation. Philips was founded 127 years ago as a lighting company. It's pretty profound when we say we're going to IPO (*list on the stock market*) our lighting business and get out of it. It's even worse when it comes to television sets, because most people associate the company with TV. If you're older, you think of radio. But the point is that we decided to divest the stuff that defined the company in the eyes of the consumer. And then, instead of being a products company, we said we were going to be a solutions company. And yes, we still do products, but these products will just be building blocks for a solution.

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What is a solutions company?

When we decided to focus on outcomes in certain domains, we pretty soon concluded that we can't be a hardware company, or software company or consultancy. To have real impact in healthcare, you need to have depth, to understand the clinical context. That forces you to go beyond just a heart. You can look at an MRI machine as a big magnet with technology around it to process the signals coming from the machine and turn it into an image. It's a really important diagnostic capability. We want to optimise how we use that diagnosis to be much more precise in disease detection. In order to do that, we're going to look at how we can better interpret the images, how we can make the experience better for the patient, how we can make it easier to select the right configurations and protocols. We can start applying other people's technologies to this. For instance, we applied AI to develop images. Now we can reduce the scan time for images by almost 50 per cent, which is a big deal. If it goes down to 15 minutes, from 30 minutes, that's big. We are now using diagnostic capabilities that we didn't use earlier because it was just too expensive and took too much time. You start looking at things from a different perspective. We're seeing five million people that now get good sleep because they have our sleep apnoea devices. We need to think that 60, maybe 65 per cent of the adult population has sleep disorders. We have analysed billions of hours of sleep and helped guide people towards better sleep. Looking at our experience, how can we use our insights, whether they're behavioural or clinical? How can we use our deep insights to detect the disease even before the patient suspects it? Sleep apnoea is one of the most under-diagnosed diseases. If we can diagnose it early, we can avoid a lot of downstream clinical issues because it's typically the first in a series of chronic diseases that are all interrelated. So, if we can help consumers, guide them towards better sleep, avoid full blown sleep apnoea, everybody wins, the consumer wins, the payer wins, we win. So, we reframed what we're doing. We're no longer a hardware company, a software company, or even a services company. We're all of those things together. And I think that's a huge change.

"If we can apply deep insights and algorithms to patients at home, with continuous monitoring, this will have a huge impact on the health care system."

I was thinking that must have taken a burning platform to get you guys to change.

I always say we don't have a burning platform problem; we have a boiling frog problem.

What's the difference?

A burning platform is right in your face, you see it burning. The problem is the boiling frog problem. You put a frog in water, and you start heating the water. It will start boiling gradually, the frog won't notice it, won't jump out, and will die. So, it's a slow death without noticing it. I'm talking about some of our bigger and more successful businesses that we started transforming. We're hugely successful in patient monitoring; 43 per cent of all monitors in the world are Phillips, but they're all in intensive care units. They monitor seven vital signs and they do it very well. But vital signs are really relevant if you know the context of the patient, their medical history, their current state, if we can compare them to other patients. We can turn that into becoming predictive. If we can take all these deep insights and algorithms and apply them to patients at home, with continuous monitoring at home, this will have a huge impact on the health care system. But you have to change. Who are you? The company that builds the best and highest quality patient monitors for intensive care units? Or the company that really helps people by giving them deep insights on the state of their health? When we are predictive, we tell people, 'if you stay on this course, then this is where you end up, therefore we recommend these and these interventions to you'. That's a different perspective on how we extend and grow our business.

These are still highly successful companies. But we know that if we don't put them in a different context today, they may become a burning platform or maybe, instead of a burning platform, every quarter it's just going to get a bit harder. You don't notice it unless you take a broader perspective, considering what the competition is doing, what our customers are doing, and what they are looking for. Over time, have we addressed a bigger need? Or are we still addressing this little need somewhere in the corner where we keep tweaking it? I always tell people, 'we can tweak ourselves to oblivion'. You can easily spend every day making what you have a little bit better. And you should probably do it, but at the same time you should be constantly asking, 'am I creating more relevancy? Am I driving towards substantially better outcomes? Or am I doing something on autopilot?' I think it's an easy risk. It's a risk that a lot of companies fall into, because it's always easier when you have a successful product to just go to your customers or your key opinion leaders. And you ask them, 'what's the next two or three features you would like to see added to the product?' Most customers are more than happy to give you feedback. Better still, you can glean it from the way you use IoT and your products and find it out yourself. We constantly have to do it. We have to make our products better, but at the same time, that is not sufficient. You have to keep looking at the bigger price, the better outcomes, the larger impact.

“Healthcare is never stand-alone. It's always an ecosystem. we can work with pharma, or join forces with competitors.”

Who are your customers? Hospitals and clinics? Consumers-patients like me? Governments monitoring their population's health?

Big retailers in the US like CVS, Walmart and Walgreens are all getting into health care. They're turning their stores into health hubs. Payers, health insurance companies are increasingly looking for companies like us to help them reimburse in a different way, to get better outcomes. If we can help insurance companies identify those patients that have sleep apnoea and don't know it, or have diabetes and don't know it, we can immediately intervene and point them towards a therapy that may put them in a better place. That means that insurers will have lower downstream costs for that patient. We all know that the cost will become exponentially higher if you wait too long to treat a chronic disease, and typically you have co-morbidities. We have to look at where we can have the biggest impact. Traditionally it has been with hospitals and consumers, but now I think our landscape has expanded substantially. We're talking regularly with government, specifically ministries of health. We're working very closely with pharmaceutical companies. For instance, I was recently talking to a company that just got FDA approval for an Alzheimer drug that doesn't cure the disease, but can stop it. It's obvious that the earlier you catch it, the less the impact. How can we create a set of diagnostics that allow for early screening, based on the patient's risk profile, and how can we make that screening as easy and cheap as possible? We start with the problem and then we look at our tools — ultrasound, MRI, CT. With MR we can start detecting Alzheimer's using AI, we can start looking at two studies in a row which check things like brain atrophy, or little spots in the brain that may indicate Alzheimer's. So, AI can come in and help you find signs, even where the naked eye cannot see them. If you know which patients are at risk, you can put them on an MRI screening programme. That used to be very expensive, but with other technologies now, we can hopefully do it in 10-15 minutes. The cost will go down. We are flipping things around and trying to find where the impact is, or with whom we can create impact. Healthcare is never stand-alone. It's always an ecosystem. we can work with pharma, or join forces with competitors. For instance, we're really strong in cath labs (catheterisation laboratories) where we use image-guided catheters to go into your body and insert a stent, if you have a clogged artery. The stents are not ours, they may come from Medtronic or Boston Scientific. But what if we work closely with these guys to make that procedure better? And really align ourselves, so we can simulate the standard search and quantify it beforehand, so that when we do the procedure, it goes as smoothly as possible. It's no longer about the features of the cath lab. It's really about optimising the procedures and with whom we should work to do that, so we can improve the outcome for the patient, lower procedure costs and offer better guidance to professionals. So, we're turning things around.

What's the importance of 5G for this e-healthcare market?

I think 5G is going to be hugely important both inside and outside the hospital. It will allow us basically to integrate connectivity into any device at low cost. But more importantly, it's self-provisioning. So right now, doing stuff at home takes quite a bit of effort to have things connected, you have to make sure it's secure. If there are changes, then you have to synchronise. So, it's not a seamless experience. For people that have a continuous glucose metre, they may have a wearable from Philips and they may have a camera that monitors it. If all of this is self-configured and self-connected and has extremely low cost for connection, you can create compelling experiences. You can also use this for emergency care. For instance, a stroke is a big issue. If somebody has a stroke, you have to act very fast. There's about one half hour of what is called time-to-needle, which is the time for a doctor to locate the clot that blocks the blood flow in the brain. If everything you need is available in the ambulance (the CT scanner, the patient monitoring information, the ECG) you can prep and stream all the medical information; you can identify which hospital has the cath lab and the staff on standby that can perform the procedure because not all hospitals will have the same availability. So, if you can start making these decisions in real time and everything is synchronised, you can dramatically improve acute care. And the same applies for cardiac arrest. I wrote a [blog post](#) on the importance of 5G for emergency care.

“...(young doctors) will see that with virtual care they will probably be able to treat twice as many patients in a day, with better outcomes.”

Are you planning to incorporate upcoming technologies such as VR and AR? Are you integrating all of these things in what you do?

It's the same story. I recommend that you look at a procedure in a cath lab. When you use big screens you can literally see the catheter going through the body, with a combination of X ray, ultrasound and smart catheters. The doctor has to keep looking at the screen all the time, and to operate the C-arm. We started creating a solution with Microsoft HoloLens. And with that, the interventional doctor, the surgeon, always looks at the patient, and he or she can literally see the catheter going through the body, overlaid with all the vital signs of the patient. Interestingly, he can pull out the heart. *[Check a Microsoft/Philips promotional video below.]* Because we use a model of the heart that gets populated with the X ray, the ultrasounds and maybe an earlier scan, and then he can look at it from different perspectives. He can essentially augment what he's seeing, and he never leaves the side of the patients. He uses a voice-activated C-arm, so he can say, 'move left', or 'rotate 90 degrees'. So, he's just talking to the C-arm. We're putting that in clinical trials shortly. We didn't invent HoloLens. Microsoft did. But we started looking at this technology as a type of gaming technology that's actually getting to a level of maturity, and we can use it in real-time medical procedures. It's amazing to see how we start applying consumer technology to professional healthcare.

So, if I survive another 20 years, then I'm likely to grow to a very old age, because then all diseases will be diagnosed and treated or prevented early.

You will, I guarantee you that, depending on where you live and if you use Philips technology. That's the point. We will be applying these technologies in a consistent, integrated way in another 10 years. I guarantee you that it's not the technology holding it up. It's the incentives system that is holding up the widespread adoption. Let's say you're a cardiologist, and you have worked for the last 30 years in the same way, you schedule appointments with your patients, patients come into your office, sit down and you spend eight minutes with them doing a diagnosis. Now you can sit behind your screen and guide procedures in real time with a general practitioner who is sitting in with a patient. You both look at the patient's ultrasounds and jointly do a diagnosis there and then. That's quite different. There need to be new incentives. Young doctors may want to do that because they'll see that with virtual care they will probably be able to treat twice as many patients in a day, with better outcomes. But it's a big change. If you're still getting paid for eight-to-ten-minute office visits, then you're not going to change it. If you're going to pay for outcomes, you should be incentivised to find signs of congestive heart failure, Alzheimer's or sleep apnoea early on. The earlier we find it the better we treat it, the lower cost we send downstream.

“Healthcare is the second largest industry in the world, US\$7.6 trillion. But there's no health data infrastructure.”

I was thinking that it may actually lead to an increase in inequality in healthcare. It's already a very unequal situation in the world and a poor person in Africa, not a rich one, will have a much smaller chance of growing to an old age than me.

There are two things. There are non-clinical factors that directly relate to health, like safe housing, steady income, social support, education, health care, access to clean water, and sanitation. These are kind of [table stakes](#), but we can improve access to care. For instance, in Africa, we work with 120 community life centres that became self-sustaining, where we give them basic diagnostic capabilities, a little pharmacy, a way to do procedures that serve a community. (*You can see a short video [here](#)*). We're now looking at extending that with digital capabilities, where people can just use a smartphone for quick symptom checks. Smart Q&A, where you ask a couple of questions and you very quickly analyse a symptom and give recommendations when you can remotely talk to a doctor, if necessary.

In Indonesia, where childbirth mortality is high, we did a project for obstetricians. Indonesia has about 15,000 islands, most without obstetricians. So, we created a backpack where a nurse can come to a village, examine the pregnant women and stream that data to a central system that interprets it and sends back a recommendation from an obstetrician. With that you can supervise hundreds of patients anywhere. And that technology is at scale now, it's being used. Again, you need a system that incentivises this kind of care. The government or the health system needs to embrace these technologies, because we're never going to educate the doctors and the nurses to create a Western level system, but we can leapfrog through technology. You know, if you go to China, every doctor I talked to asked me about what we're doing in AI and virtual care, because they want to give small towns the same quality of care available in Beijing or Shanghai. I believe there is a huge opportunity. Health care systems should move from consultations, diagnosis, treatment and medication, to proactive population health management using large scale technology.

I was probably unfair to Africa. It's not the only continent where there's poverty in the world. Poverty is everywhere. There's a lot of poverty and inequality in the US too, for instance.

Yes, and there's also no access to quality care in big parts of the US. In other parts of the country, there's too much healthcare. Many tests and procedures that are not really necessary. Healthcare is not equal. Technology-driven change can have a positive impact, or it can go the other way. It really depends how you govern it.

Can we talk about Big Brother? Who is going to control patients' private health data?

You should. You should be in control of your data.

How can I do it?

Well, that's another thing. Healthcare is the second largest industry in the world, US\$7.6 trillion. If you look at how it's spent, you see it's on brick-and-mortar hospitals, people (nurses, doctors, paramedics), drugs, administrative systems. But there's no health data infrastructure. I come from financial services; I can literally be anywhere, sometimes without even touching anything. I just hold my phone and I can withdraw money anywhere in the world. And I've been to places that barely have electricity, but I still I could walk up to an ATM and get the money. Financial services have invested heavily in secure infrastructures for transactions anywhere in the world in real time. For every transaction, it goes back and asks for a personal authorisation. There is no reason why we cannot do this in healthcare. We just need to put the incentives in place. One of my first big impactful projects was when I ran the tech lab for Citibank, and we launched internet banking. That was in 1995, 24 years ago. Everybody said, 'you're completely wasting your time, nobody's ever going to do their banking on the internet'. We have an infrastructure, we have Swift... And I felt it was not true, things were going to change. I feel exactly the same way about health data now. It's going to be yours; the forward-looking health systems are going to give you the tools to manage it. And yeah, it may take a little while, but I'm convinced it is going to happen, and the systems that do that will allow for data donorship, when you donate your anonymised data for research, if you want. This is going to spawn innovation.

I hope so.

I hope so too. And I'll do everything I can do to support and enable that.



- *This is part of a series of four interviews during the [Web Summit](#) conference in Lisbon, 5-7 November 2019. The conversation was edited for clarity and brevity.*
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