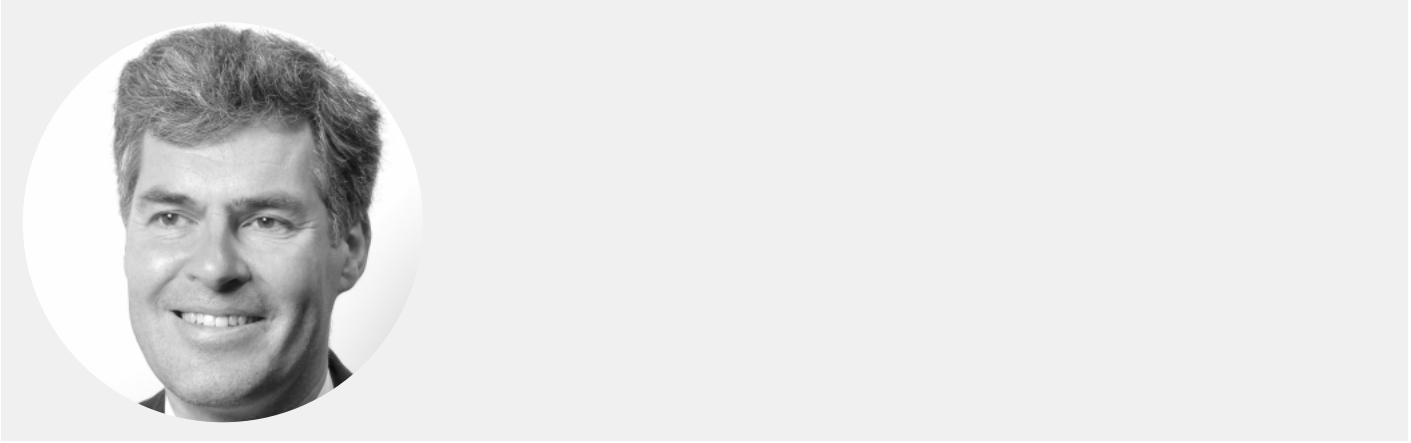
Interview: Hans Hofstraat – Vice President, Philips Research, The Netherlands



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In an exclusive interview, the Vice President of Philips Research explains the key to continuous evolution, improving healthcare stakeholder relations, and fostering "Open Innovation."

You have been Vice President of Philips Research since 2007, a centenarian institution that stands as one of the largest private research organizations in the world. What is the key to continuous evolution in this type of institution and the avoidance of stagnant thinking?

When I joined Philips in 1998, I led the Polymers and Organic Chemistry department, while the general focus at this time was still on high-volume electronic products – even though Philips Research has been active in healthcare for almost a hundred years. Historically, Philips Research's mission has been to explore the big trends and challenges all around the world, and address them with meaningful innovation. Our promise, when I started in 1998, was "focusing on improving people's lives with meaningful innovation", and this remains at the core of our research approach. However, society and the needs of people are changing over time. This implies that our portfolio and approach should be dynamic. In this way, we have succeeded in remaining relevant to this day. Philips Lighting and Philips in HealthTech are now two standalone operating companies within Royal Philips, and as a result, Philips Research is now focused on HealthTech innovations, covering

the continuum of health: healthcare, health and well-being.

We are obviously extremely closely linked with the commercial branch of Philips, in an approach that is better described as co-creation than a simple partnership. We jointly try to understand and analyze local needs all around the world, and how we could innovate in a way that would make a true impact on both patients and healthy people. This co-creation philosophy across the group is extremely valuable for us, as it provides our researchers with a better understanding of local market needs and dynamics, and also strengthens our Innovation to Market process, which is the phase where we transform an idea into a concrete product for a given market.

Now that Philips Research is entirely concentrating its efforts on Health Tech innovation, what are your main areas of research?

We are inspired on a daily basis by the needs of all parts of the healthcare ecosystem, and we strive to consider, analyze and provide with integrated solutions the complete breadth of the health continuum. What really distinguishes Philips Research from our competitors is that we truly have a holistic approach to health. Some other companies may indeed have adopted a more specialized approach of these unmet needs, usually leading them to offer more compartmentalized innovation, both in the way they are conceived and implemented. Nevertheless we see that these “silo” innovations usually represent an increased cost for hospitals, while our objective is to transform the way health(care) as a whole is delivered to people.

In this vein, our current focus is more on health in its wider sense than strictly on healthcare – as far as healthcare is considered as the response to sickness. Within our continuum of health approach, we want to preempt illness if possible and react more quickly to the first symptoms of disease, which could lower costs for healthcare providers on the other end. We see sickness as an “episode” of patients’ lives. Within our continuum, we obviously continue to integrate prevention, diagnosis and treatment-oriented innovations, but as soon as a patient is diagnosed or treated, Philips Research also looks further at the unmet needs that will provide patients with a better quality of life overall.

While we were initially focused on conceiving hardware and software, we are now also developing service offerings and integrated solutions that will complement our mixed hardware/software portfolio, as only a more integrated approach will allow us to have a greater impact on patients’ lives.

Your ambition to deepen your commitment through the continuum of health and particularly to ease early detection of disease notably relies on big data management.

What are the main challenges that you identify in this field to ultimately improve patient-related outcomes?

Using big data management to improve healthcare at a global level is obviously easier said than done, but is nonetheless a research path in which we are currently investing a lot of energy and resources. If we consider the data management process, the first step to reach is the digitalization of the clinical information, a process in which Philips Research is undoubtedly a frontrunner. Secondly, we need to ensure these data can be usable, which means ensuring their accessibility and interoperability between the different healthcare providers, but also in the meantime guarantying the safety of these sensitive data. Thirdly, we ultimately concentrate our efforts in aggregating this huge amount of data into clear, useful and meaningful information that can support healthcare providers and patients.

In order to further enhance this promising discovery process, Philips has created the HealthSuite Digital Platform, which is an extremely secure but open platform allowing various stakeholders to share and manipulate data. Conceived as an open tool, pharmaceutical companies and other MedTech companies can also use and contribute to this platform, which falls within our objective to ensure interoperability of healthcare data. Finally, this data platform also strives to connect patients and healthcare professionals to each other, creating interesting opportunities to foster population health monitoring and management on a very large scale

Philips Research has recently been deepening its research activities in oncology. How could your expertise lead to closer research partnerships with pharmaceutical companies and among other healthcare stakeholders?

Oncology is a very challenging therapeutic area where digitalization will increasingly play a crucial role, and Philips Research is already making a large contribution to this effort – notably thanks to our historical expertise in radiology imaging. With our imaging-guided biopsy system, physicians can already precisely know from which area of the body a sample is taken. We then added to this technology an extremely practical tool to reach the tumor tissue and transfer the sample to a versatile digital pathology solution that displays the tumor tissue taken on a computer screen in less than 50 seconds and with tremendously high resolution! The next step we are currently pursuing is to be able to use this digital image to precisely select where the oncologist would like to proceed to a genomics analysis, which will allow better understanding and prediction of the developing path followed by the tumor, and then more precisely adapt the therapeutic treatment!

In this regard, oncology demonstrates how Philips' commitment to improving digital diagnostics can tremendously improve therapeutic treatment, as well as the importance and relevance of our integrated digital solutions. Finally, we also see how digitalization could enhance better collaboration between all stakeholders in the healthcare value chain, from the medical professionals to the pharmaceutical companies, and including the patient.

Talking specifically about potential upcoming co-creations and co-developed projects, Philips Research's new innovations could thus be of great interest for pharmaceutical companies, with regards to diagnosis, imaging-guided intervention and personalized care as it has been described for oncology, but also for instance to monitor and manage patients' adherence to their treatments.

Philips is the Dutch healthcare champion and a R&D player with world-class resources, while "Open Innovation" remains one of your fundamental pillars. How do you contribute to fostering the local research environment in your home country?

Eindhoven has been our major research hub since the beginning, but as a global research player, we always considered ourselves an active part of a research ecosystem, and it stands for the Netherlands and Europe, as well as for Brazil, China, India, Africa or North America – where we are also located. We only envisage innovation as a two-way process in which we are members of a family that works together.

"Open Innovation" has indeed characterized our research approach since 2000, but we now more frequently embark on co-creation processes with external stakeholders, which truly underscores both our commitment and the advantages we see in embedding our research process within its local context.

In this regard, we treat all our research hubs and environments with equal importance, wherever they are located. In our view, creating meaningful innovation is locally dependent, as healthcare needs are different from India to Brazil than they are in Western Europe or North America. This local presence is our strongest guarantee to better meet the needs of all these different contexts, while it also allows us to benefit from the innovative power of countries like the United States, but also India or China, which should absolutely not be overlooked.

Furthermore, we see that cost-effectiveness of innovation is very high on the agenda, not only in the Netherlands, but also in most of the countries we are implanted in. In this regard, value-based products and patient-reported outcomes of our innovations become absolutely crucial. Nevertheless, maintaining affordability and carefully considering the economic cost of potential new products is also extremely important. Once again, our international presence is our best asset

to calibrate this affordability objective to very varied economic contexts, from India, where out-of-pocket payments represent 80% of the total healthcare total spending, to the UK, where the NHS offers a very comprehensive reimbursement scheme.

In this global perspective, where are your main strategic objectives for the upcoming five years?

Bringing meaningful innovations will always remain our core strategy and focus, while we will strive to realize the promise of value-based healthcare throughout the overall continuum of health. We also want to leverage the strengths we have been able to develop for patients to healthy people, within a mixed customer/patient approach based on a further digitalization of health. The next step for us is indisputably to empower people, not only patients, to help them take charge of their own health and well-being. Finally, our contribution should allow us to intervene at an earlier stage of the disease, moving from “reactive healthcare” to “pro-active health”.

On a personal note, you have been part of Philips Research since 1998 and a Vice-President since 2007. Looking back on this already rich relationship, could you highlight one of your achievements that particularly showcases both your contribution to the company as well as Philips’ unique research spirit?

In terms of meaningful and life-changing innovations, our digital pathology solutions are particularly close to my heart. It is also a great proof point of our versatility, I mentioned earlier, and underscores the remarkable flexibility and adaptability of our researchers. When I joined Philips in 1998, I was heading a research group essentially focused on consumer electronics. One of the main application areas was data storage; particularly DVD/DVR and Blu-Ray technologies. When Philips decided to concentrate on healthcare at the beginning of the new millennium, we then had to change from a company that previously had a historical but relatively small presence in healthcare to the healthcare powerhouse that we are now.

At the beginning of this transition, we looked at the technological strengths developed for consumer electronics that could be ingeniously exploited within a healthcare context. In this effort, amongst others we leveraged the technology behind DVD and Blu-ray disc players to become the engine at the core of our recent digital pathology scanner, which is now able to produce a scan at a record speed and with an unprecedented resolution! I am extremely proud of our ability to successfully transform our cutting-edge knowledge in consumer electronics into meaningful and life-changing healthcare innovations.

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