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Straight from the Heart

Doctor, professor, engineer, entrepreneur, philanthropist; Shlomo Ben-Haim is a pioneer in the medical device industry, improving the lives of millions of patients suffering from chronic diseases.

Images by Grantly Lynch

Professor Shlomo Ben-Haim has always been driven by a passion to help others. As a medical doctor, professor, engineer, and entrepreneur, he has turned that passion into a successful medical innovation powerhouse which has touched the lives of more than 30 million patients around the globe. Born and raised in Israel, he is one of the so-called Start-up Nation's best-known and most successful entrepreneurs. He has invented and developed groundbreaking medical technology, authored more than 300 scientific papers, created more than 550 patents and established more than 20 companies over the years.

In the past, Shlomo has preferred to stay away from the spotlight even as interest in his work has increased. In this rare interview, *The CEO Magazine* speaks to Shlomo about innovation in the medical device field, his work with the Hobart Group, and his vision for the future of healthcare.

Shlomo started his career in medicine with an MD from the Technion Israel Institute of Technology. Specialising in cardiology, he treated heart patients in both Israel and the United States. He also gained a doctorate degree in physiology and biophysics from the Technion, building on prior formal education in nuclear physics, biomedical

engineering, computer sciences, mathematics, and philosophy. He became a Professor of Medicine, Physiology, and Biophysics at the Technion and Harvard Medical School.

But through his medical practice, Shlomo began to realise that there was a limit to the effectiveness of procedures and treatments then available for many heart conditions he was seeing in his patients.

“Having this dual background in medicine and engineering helped me identify the addressable shortcomings of current therapies for a variety of medical conditions,” Shlomo says. Shlomo set out to do something about it, planning to >



Image courtesy of Therea Johnson Herlihy

establish new companies to carry out much-needed research and development in the area and to develop disruptive solutions that can treat patients suffering from lifelong chronic diseases with a single intervention.

It was the start of a transition from hands-on medicine to entrepreneurship. Shlomo took a leap of faith, leaving the medical practice and entering the medical device industry.

The change was difficult, but it brought fulfilment. "There are great rewards for innovators," he says. "Innovation is fun, it's joyful, and when you reach your target, when you successfully introduce innovation into the market, it's joyful all over again. So it's extremely worthwhile putting in the effort. The most important lesson is to never give up; if you are convinced that you have the solution, keep pursuing the dream to make it happen."

In 1993, Shlomo founded Biosense, later renamed Biosense-Webster, a company focusing on

new ways to diagnose and treat heart rhythm disorders. As founder and chief scientist, Shlomo pioneered innovative new technology, including advances in 3D mapping and navigation tools used by doctors when treating heart conditions. Biosense's technology and products quickly became the new standard of care in the field and, to date, more than 10 million heart rhythm patients around the world have been treated by Shlomo's inventions and developments.

Three years after Biosense's inception, Shlomo sold the company to international giant Johnson & Johnson for US\$427 million. But typically for Shlomo, this wasn't his only successful venture. In 1996, he founded Impulse Dynamics to develop cardiac contractility modulation [CCM], a new technology for the treatment of severe heart failure. With heart disease being the leading cause of death in the world, the technology has the potential to improve the lives of more than 20 million patients. In 2004, Johnson &

Johnson invested more than US\$80 million in Impulse Dynamics, to support the development and commercialisation of the new treatment.

Although his speciality is the heart, Shlomo also founded innovative companies to work on treatments for other health conditions, including obesity, diabetes, deep vein thrombosis, limb ischaemia, and post-stroke and sports injury rehabilitation. Some of these companies are gathered under the Hobart Group, while others were sold to larger companies over the years.

"My first medical invention, a device to facilitate cardiac catheterisation for treatment of heart rhythm disorders, became very successful," Shlomo says. "I began to think I could make more of a contribution to patient care by building multiple companies to develop different solutions. I did it, putting them all together as the Hobart Group. Today, the people who make up the group help select the therapies we develop,

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- Shlomo Ben-Haim

and offer commercialisation support to each of our portfolio companies."

The companies making up the Hobart Group today are Impulse Dynamics, MetaCure, Motorika, EP Dynamics, Molecular Dynamics, La Vita Technologies, FlowMedic, and Medispot. "All are focused on chronic disease," Shlomo explains. "There are six major chronic diseases: cancer, heart disease, lung disease, diabetes, depression, and rheumatoid arthritis. These chronic diseases are a huge strain on healthcare systems around the world, accounting for almost two-thirds of the healthcare budget in most countries. The Hobart Group seeks out new technologies and solutions to treat each of these diseases with a single, cost-effective intervention."

"We want to help both the patients and society who also bear the financial burden of these diseases," says Shlomo. The various Hobart Group companies cover an incredible amount of medical ground. Impulse Dynamics focuses on therapies for chronic heart failure and its novel product is already commercially available in 38 countries. MetaCure looks at minimally invasive, one-time treatment for type 2 diabetes, while Motorika sells robotic rehabilitation solutions for orthopaedic patients and patients suffering from stroke and brain or spinal injury. EP Dynamics aims to improve efficiency in cardiac arrhythmia treatments and FlowMedic produces devices to prevent deep vein thrombosis in post-surgical patients. La Vita Technologies is working to develop systems for the treatment of autoimmune diseases, and Medispot invented a technology for very efficient primary healthcare delivery.

Innovation is the unifying principal of the group. A business that

"Together with Professor Shlomo Ben-Haim and his group, we have turned the medical device approval process into a competitive advantage. By juggling regulatory science, medicine, business and technology, the Hobart Group and Physio-Logic have fostered scores of unprecedented regulatory approvals and developed a rapid time-to-market advantage." - Gadi Ginot, CEO, Physio-Logic, physio-logic.com



continually looks for new, out-of-the-box solutions to problems is rare, but it is the value on which Shlomo has built his entire career. Growing up in Israel, which boasts one of the highest rates of innovation and start-ups in the world, Shlomo was surrounded by examples of pioneering business and medicine from a young age.

But while innovation might be a buzzword in many industries, in the medical industry it truly saves

lives. And this, ultimately, is Shlomo's ambition. He wants to revolutionise the health business model to benefit more people, reducing spending at the same time. Is it an impossible task?

Shlomo thinks not. "Innovation is the power behind our ability to survive," he says. "And innovation in healthcare is particularly critical, because healthcare demands are always changing. Technology from other fields, if implemented correctly, can create medical >





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breakthroughs; it has happened many times over the past 100 years, with innovations such as the introduction of antibiotics and new medications that have transformed countless lives. But people now live longer and face new types of health problems, so there is always a need for new solutions.

“We also need to change the social system supporting healthcare,” Shlomo adds. “Healthcare has become expensive and demanding from a human resources perspective. About 10 per cent of the world’s manpower is involved in delivering healthcare and, despite the escalating costs, the benefits are diminishing. These issues require the innovative use of technology and financial solutions to lower costs and improve outcomes.”

Another key value is a commitment to making the world a better place through healthcare. “Everyone at the Hobart Group is dedicated to patient care,” Shlomo says. “Patient health and wellbeing is at the heart of all we do. We are always trying to find solutions that improve patient health. Whenever we analyse a healthcare situation, we start with the patients. After addressing the patients’ needs, we consider the society’s needs. We have to make sure our solutions are achievable within the capabilities of the particular society we are addressing. A good solution; that’s our reward.”

One key factor in the success of the group is its partner network. Choosing the right partners and building successful long-term relationships allows the group to achieve its goals.

“The most important way our partners can help us is through an alignment of interest. We pick partners and providers who think the same way we do; that means treating the patient as number one and maintaining high quality and ethical standards.”

Shlomo is adamant the Hobart Group will never work with a company with questionable ethics.



“Current healthcare services are highly inefficient; their cost effectiveness can be improved significantly using technology from other fields.”

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“Ethics and quality are critical to our practice. If our suppliers don’t share those qualities, our relationship will be short-lived. We are proud of the companies we work with, like Finnegan, one of the world’s leading intellectual property law firms. Finnegan supports us in building our IP portfolio, and they work in a very strategic way. For us it’s not just about obtaining patents for patents sake. Our objective is to integrate patents into our business strategy, methodically developing patents designed to achieve particular business goals. Our group produces a significant number of patents; we have over 600 of them. Finnegan is a very strong supporter of our strategic patenting efforts.”

There have been challenges for the Hobart Group. The biggest, Shlomo says, has been convincing the healthcare industry that the new solutions are the future. The group has had to push against

reluctant government and bureaucracy to bring disruption to the sector. But Shlomo believes the reward of improving the lives of millions is worth the effort.

“Multiple challenges arise from the fact that a fledgling company is likely to be very small. And when you are an innovator, your proposed solutions can be unusual. For healthcare companies, the path of least resistance is often to think along the lines of previous solutions, the way it’s always been done. We come up with disruptive solutions, and it’s difficult to convince healthcare establishments, financial management, and governments that change is best. But the benefit of pushing a disruptive solution is that you have a much larger potential contribution and value proposition.”

Shlomo believes the Hobart Group will continue to grow.

With major change and reform underway in the healthcare sector, the group can demonstrate the effectiveness of their products and the impact they can have on the lives of many people living with serious conditions.

“There is a huge opportunity to introduce new technologies and make a substantial impact,” says Shlomo. “Current healthcare services are highly inefficient; their cost effectiveness can be improved significantly using technology from other fields. Information technology, image processing, big data, solid-state technology, and new forms of signal processing, for example, have all transformed other industries and have high potential in healthcare. The Hobart Group is one of the most prolific generators for healthcare innovation across the globe and is committed to leverage new technologies to improve the lives of patients worldwide.” •

