Christian Kinch â?? CEO, Bactiguard, Sweden

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Bactiguard

is a Swedish medtech company with a global presence, offering prevention solutions for nosocomial infections, reducing the use of antibiotics and the spread of multi-resistant bacteria. Its CEO, Christian Kinch, explains how Bactiguardâ??s solution works to save lives and reduce healthcare costs. He also shares the companyâ??s international journey in the strategic Indian and Chinese markets, and his plans to grow it into the next Swedish unicorn.

Christian, your background is quite unusual in the healthcare industry. After studying at the Stockholm School of Economics, you launched multiple entrepreneurial ventures in the pharmaceutical and medical technology space. What makes you so passionate about the healthcare and life sciences industry?

I became interested in medicine when, during my military service as an airborne ranger, I was trained as a medic to treat traumatic wounds and infections. Even though I did not go to medical school and instead studied finance at the Stockholm School of Economics, I never lost my interest in healthcare and medicine. I was so eager to join Roche who were offering a unique opportunity to finance professionals to learn medicine in order to add value to their offering, that I didnâ??t complete my degree. This one-year training was the best school I ever attended.

After two years with Roche, I started my first company, a staffing agency renting out sales reps to pharma companies in order for them to access a flexible sales force in a country with rigid labour laws. After selling this company, I created a second one in 1998. Two years prior, Sweden had entered the European Union and I saw a golden opportunity to engage in pharmaceutical arbitrage, moving AstraZenecaâ??s Losec (omeprazole) to Greece, relabeling it manually, taking it back to Sweden and selling it to Apoteket, the state-owned pharmacy, at a 10 percent discount to the regular price. This company grew from nothing to USD 70 million in sales before I sold it to IVAX Pharmaceuticals, later acquired by TEVA.

Today, I am active in three companies covering three different areas, all housed in the same building. The first is Bactiguard which prevents healthcare-associated infections to increase patient safety and save lives. The second is Smartwise, a company created in partnership with Prof Staffan Holmin of Karolinska Instituteâ??s Department of Clinical Neuroscience. He and his team developed a smart catheter the size of a hair which can enter through the groin and access any organ in the body to administrate treatments such as chemotherapy. Finally, Procella Therapeutics, which stands for â??professional cellsâ?•, was launched in partnership with Prof Kenneth Chien, one of the

founders of Moderna Therapeutics, which set a record for the largest biotech IPO with a valuation of USD 7.5 billion. Procella brings stem cells donated for research by US patients to Sweden and develops them into heart cells for transplantation. Last year, Procella and Smartwise entered into a collaboration agreement with AstraZeneca to develop novel cardiovascular and catheter-based therapies, and last April signed a USD 320 million deal with the healthcare giant. Together, these companies are addressing the three biggest killers in the world: hospital-acquired infections, cancer and cardiac diseases.

How does Bactiguardâ??s solution help prevent healthcare-associated infections?

Bactiguard is at war with hospital-acquired infections. In Europe alone, 33,000 people die every year due to antibiotic-resistant bacteria and 75 percent of these infections are healthcare-related infections, according to the European Centre for Disease Prevention and Control. The rise of antibiotic-resistant bacteria can be directly attributed to the overconsumption of antibiotics. The consumption of antibiotics varies widely between countries. In Europe for instance, Greece consumes three times as many antibiotic doses per person per year as in Sweden and the Netherlands. As a result, antibiotic-resistance has become an alarming healthcare challenge in Greece. Half of all Greek patients carry multi-resistant bacteria, whereas in Sweden less than 1 percent do. The situation is so serious that hospitalized patients who do not carry multi-resistant bacteria are isolated when it should be the other way around.

According to the WHO, if we do not act, by 2050, 10 million lives are at risk and an economic loss of USD 100 trillion may occur annually as the result of such resistance. As a matter of comparison, 8 million people die annually from all forms of cancer. The regions that are most affected are China, India and Africa. As a result, China and India are at the top of Bactiguardâ??s attention.

How does our solution work? Our patented technology, Bactiguard Infection Protection (BIP), consists of a five-atom thin layer of noble metals â?? gold, palladium and silver â?? which is applied to the surface of medical devices. When the device gets introduced into some type of fluids like blood or urine, it creates a galvanic reaction. As kids, some of us tried licking a 9V battery and experienced this effect first-hand: it hurts, and you immediately want to stop. This is what happens to the bacteria: they cannot adhere to the surface and thus do not have the opportunity to multiply and create a biofilm leading to infections. The fact that we do not kill the bacteria makes us different from other technologies. It not only works on bacteria, but on fungus as well. This is important as fungi can cure serious infections and have also started developing resistance in the same way as bacteria. Moreover, our technology is biocompatible meaning no harm is caused to surrounding tissue. Finally, it can be applied to any surface.

Everywhere in the world, 60 percent of healthcare-related infections arise in the urinary tract, the bloodstream or the respiratory system. As a result, we have developed a urinary Foley catheter, a central venous catheter, and endotracheal tubes. We are now entering orthopaedic trauma implants and developing vascular stents.

What gets me out of bed in the morning is the knowledge that our solutions prevent ten people from dying every day from these infections. By using our products, hospitals are able to reduce infections by up to 90 percent. Moreover, preventing infections means patients stay shorter in the hospital which reduces healthcare costs. And if fewer people contract infections, fewer antibiotics are used.

Where is the proof? Our solution has been available in the US since 1995 through our license partner C.R. Bard, later acquired by Becton, Dickinson & Company (BD). Devices coated with our technology are used by 85 percent of US hospitals and have been used to treat 180 million patients.

Every year, we prevent 135,000 urinary tract infections (UTIs) in the US, saving the lives of 4,000 people and half a billion dollars per year for the healthcare system. In Sweden, if hospitals were to adopt our Foley catheters, 100 deaths would be prevented, and the healthcare system would save half a billion krona every year. We are now in tenders with 70 percent of Swedish hospitals to make this a reality.

The legacy of Bactiguardâ??s technology stems from Sweden and embodies the countryâ??s tradition of excellence in innovation. How does Bactiguard leverage being part of such an innovative ecosystem?

With its hundred-year history, Bactiguardâ??s technology is indeed deeply rooted in the innovative environment of Sweden. It stems from the Swedish Nobel Prize laureate in physics 1912, Gustav DahlÃ©n, the man behind the famous AGA Lighthouse. Gustav DahlÃ©n had a protÃ©gÃ© called Axel BergstrÃ¶m, who developed the technique of applying a thin layer of metals to non-conductive materials. Axel then passed this knowledge on to his apprentice, Billy SÃ¶dervall.

When I took over Bactiguard in 2005, the company was only a technology licensing company without its own product portfolio. The company only consisted of three people. Since then we have developed our own portfolio of products, the Bactiguard Infection Protection (BIP) portfolio, sold in 40 countries and generating 35-40 percent of our revenue. Those products were developed with the hospital around the corner, the Karolinska University Hospital in Huddinge. We have conducted clinical trials together with the hospital on our central venous catheter, our endotracheal tubes and our Foley catheters. Moreover, we are now developing a vascular stent with the Karolinska Institute, a project led by Prof Staffan Homin, in order to prevent the risk of stent-related thrombosis, a major concern in clinical practice. Being part of this brilliant Swedish ecosystem where the industry, the healthcare sector and academia work hand in hand is a tremendous opportunity.

Nevertheless, over the last few decades Sweden has somewhat lost its position as a testbed of innovation. When I started in the industry in 1992, Big Pharma considered Sweden to be the most forward-leaning testing ground thanks to its controlled environment and excellent quality registries. We need to regain this position. I see positive trends going in this direction. All the stakeholders in healthcare and life sciences, from the care sector, to academia and industry, agree that we need to invest in what made us strong in the past to regain our attractiveness.

As you mentioned, Bactiguard now distributes its portfolio in 40 countries. What step would you say was paramount to the success of your international journey?

As I said, in 2005, Bactiguard was only a technology licensing company. At the time, my partner Thomas von Koch and I asked ourselves: how difficult can it be to coat our own device, register it and sell it under the Bactiguard brand? It turned out to be quite difficult. It took us six years and costed us about EUR 30 million financed through profits derived from the licensing business. However, we are now reaping the rewards of these investments. In the last three years, we have doubled revenues generated by our own portfolio. The business is growing organically and is profitable.

If you want to make a quick buck, make an app. But if you want to take on a real challenge and build a sustainable business, the pharmaceutical and medical technology sectors are the best industries to be in. Once you have developed quality products supported by evidence, you will thrive in the long run. In this regard, our long-standing collaboration with BD is a perfect example. Through this

partnership, Bactiguard is the world leader in the prevention of UTIs. While BD has the right to our coated Foley catheters in the US and Japan, we are selling our portfolio in the rest of the world: Europe, China, India and the Middle East. In these markets, we control our own destiny.

In these markets, how does Bactiguard position itself as a trusted provider of quality medical solutions?

At Bactiguard, everything is about evidence-based quality. We use the same quality standards as the pharmaceutical industry. We have conducted more than 40 clinical trials around the world involving over 100,000 patients, including in the US, China, India, the UK, Germany, France and Sweden. On average, our Foley catheters reduce UTIs by 35 percent but some of the most recent trials show reductions of up to 90 percent. Our central venous catheters reduce infections by 50 percent on average. In the respiratory area, our endotracheal tubes reduce pneumonia by 60 percent on average. Ongoing trials are also showing promising results for orthopaedic trauma implants.

We consider these clinical trials to be an investment, not a cost. We are not selling a product, we are selling a solution to prevent hospital-acquired infections and we need the data to back up our claims.

Recently Lena Hallengren, Minister for Health and Social Affairs, praised Bactiguard for its contribution to the development of the healthcare sector in India. How strategic is the Indian market in the companyâ??s international ambitions?

Extremely strategic. A long time ago, Carl Bennet, the founder and chairman of Getinge, told me that if you can sell in India, you can sell anywhere in the world. We entered the Indian market about six years ago. At first, we targeted private hospitals and clinics with the promise to drive down their costs, but they were completely uninterested. So, we changed our sales pitch. Instead, we promised to increase their revenue. Private hospitals generate 90 percent of their revenue in the first five days of a patientâ??s stay. As a result, if a patient is blocking a bed beyond that time because he or she has contracted an infection, the hospital is losing revenue.

As part of the partnership on health between Sweden and India, Lena Hallengren wants to help the country of 1.3 billion people reach the ambitious vision of zero hospital-acquired infections. Bactiguard and other Swedish organizations are actively collaborating to make this goal a reality. This is a perfect example of a strategic public-private partnership to tackle one of the most pressing challenges in society. We are now doing the same in China.

Speaking of China, how does a small company like Bactiguard approach the second-largest healthcare market in the world?

Our entry into the Chinese market was a bumpy road. In 2011, we started the registration procedure armed with our FDA approval and the CE mark. We thought registration was just around the corner, but it took us five years to gain market access. During those years, China has changed dramatically, quickly aligning itself with international standards.

Today, Bactiguard has a solid foundation in China. In collaboration with the Chinese government, we are now tackling the most pressing issues of its healthcare system. When I met with Li Bing, Minister

in charge of the National Health and Family Planning Commission, she shared with me one of the biggest issues in Chinaâ??s healthcare system. The doctors working in the countryâ??s 20,000 hospitals receive 30 percent of their monthly revenue from kickbacks prescribing antibiotics, a strong negative incentive. This situation needs to change. Therefore, last June, we partnered with the Chinese company Well Lead, which sits on 50 percent of the global market for Foley catheters, producing 100 million of the 200 million catheters in the world. In the last six years, the company has gone from having no revenue in China to generating half of their sales in their home country. By partnering with a strong local partner, we can address the issue of hospital-acquired infections, and the over-prescription of antibiotics. Moreover, having a local manufacturing footprint in China is critical for success, especially in turbulent times like the ones we are experiencing now. Between two similar products, if one is made in China and the other is imported, the one made in China will win. We have also hired a Chinese medical doctor and professional businesswoman, who is well-connected within the Chinese Communist Party, who has concluded that we need to be considered as a local.

So far Bactiguard has been successful in attracting capital to finance its international ambitions. However, as is the case for most Swedish life sciences companies, investment mainly comes from local sources. Are you planning to attract foreign investment as well?

Before we entered the stock market in 2014, Thomas von Koch and I owned 100 percent of the capital. At the time, we had a net debt of about EUR 47 million with 11 percent interest. Every December we paid EUR 5 million in interest with a revenue of 10 million. The knife was a little bit too close to our throat, and we needed to deleverage. This is the reason why we entered the stock market. We have attracted some of the biggest Swedish pension funds such as AP3 and AP4, as well as Nordea Funds, a mid-cap investment fund. Now we are starting to see interest from foreign investors, as well as domestic institutions and brokers.

What are the key milestones you would like to achieve in the next few years?

Bactiguard is addressing one of the top three killers around the world, hospital-acquired infections, and is already the leader in preventing UTIs. Bactiguard is thus well-positioned to become a major life science company. On the financial side, our goal is to become the next unicorn by reaching a valuation of one billion dollars.

We plan to achieve this by first continuing to grow our BIP portfolio and implementing our solution into the healthcare sector around the world. In order to do so, we need to integrate it into the IT systems and educate healthcare professionals. We have done it in the US and Japan and are now doing it in China and India. Secondly, we are looking to form strategic alliances in areas where our solution can add value, initially in implants. Bactiguard is a small company and does not have the resources to enter every market. By forming long-term partnerships with industry leaders, we can be a small company with a large global impact. It is much better to own 4 percent of a very large pie than own 100 percent of a small slice.

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