



TIMING is Everything

Anoto is constantly developing world-leading digital writing solutions. The versatility of Anoto's products and patents enables the company to work with partners in a huge range of sectors to integrate digital and analogue processes.

Images courtesy of Anoto

Anoto is a company built around a single concept: the digital pen. Don't be fooled, though; the complexity of the technology belies the simplicity of the idea. The notion was conceived by Swedish entrepreneur Christer Fähræus in 1996, while he was writing his doctorate. Christer envisioned a writing implement that could bridge the gap between the physical world and the digital one, while enhancing utility and efficiency for the user.

After three years spent securing key mergers and partnerships, Anoto Group was created in 1999,

and listed on the Stockholm Stock Exchange in 2000 with a US\$1 billion market cap. The company's CEO, Stein Revelsby, has been involved with Anoto from the very beginning. Back in 1996, one of the founders came to Stein and told him about their vision of a digital pen. Stein was fascinated by the idea, and recognised that it addressed a large market, so he became one of the company's two seed investors.

Stein then took a back seat in the running of Anoto for about 10 years, continuing his work as an investment banker, venture capitalist, and strategic consultant, with a focus on technological

innovation. In 2006, he took on a larger role in the company by joining the board. In 2010, he was asked to take on a role as a management consultant, and then the board asked him to become the company's CEO in October 2011.

Stein is grateful for his background in finance, and often draws on his 20 years of experience in his role at Anoto. "My professional background has given me the advantage of working with the boards and top-level management of companies, which allowed me to gain experience over the years regarding strategy and value creation. >



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“By the time I joined Anoto, I had worked with all kinds of companies throughout their early, middle, and later stages. I had covered the whole spectrum, from hardware to software and services, and I had learned from mistakes. I gained a lot of experience, and I learned to be pragmatic, stay focused, build up momentum, and use it to drive through until the finish line. At the same time, I learned to be humble, because you can never beat the market. You have to follow the trend or, in my case, be prepared for a long journey.”

It hasn't been a smooth ride to success for Anoto. Stein has continually had to adjust his expectations and re-evaluate the company's direction. “At the beginning, Anoto had a number of large companies developing applications for the technology. It was a broad vision, and that turned out to be the biggest challenge for the company—to have focus when executing a strategy,” Stein says. “Despite these challenges, I never

gave up on finding a way forward for the company.”

Stein's determination has paid off, and Anoto now works with a global network of partners through its offices in Sweden, the US, the UK, and Japan. The company itself is structured around three key areas: business solutions, technology and licensing, and C Technologies AB. The last is a subsidiary company with activities revolving around the C-Pen Digital Highlighter, a product that uses scanning technology to capture and convert printed text into a digital format.

Anoto's business solutions division handles the development of form-processing products and services, providing utility for private and government-owned organisations. The company's real-time data-capture solutions enable enterprises to streamline their workflows, increase efficiency, and cut costs. Anoto delivers digital writing solutions to key

business areas, including health care, finance, transport and logistics, and education.

Anoto's technology and licensing section allows customers to leverage Anoto's hardware and firmware to develop and sell their own products. This organisation has partnered with global firms like Panasonic, Livescribe, and PolyVision to create solutions for tablets, educational tools and toys, and visual communication equipment like interactive whiteboards. The company holds more than 380 patents internationally, along with 130 patent applications.

The company's landmark product is the Anoto Live Digital Pen. It looks and feels like an ordinary pen, yet the Anoto Live pen enables users to convert everything they write into a digital format in real time. The Anoto Live Pen detects and digitises writing by pinpointing every stroke of the pen against Anoto's unique, non-

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repeating Microdot Pattern using a built-in camera. The data can then be transferred to any device via Bluetooth or USB, yielding highly accurate, editable text, compatible with any computer, tablet, or mobile phone.

In an age of laptops, iPhones, GoPros, and other information-recording and data-processing devices, the importance of the pen and pencil has not diminished as one might have expected. “These days, there is a strong trend in computing towards what we call ‘natural interaction.’ Natural interaction refers to using touch, gesture, voice, and even vision like with Google Glass, instead of keyboard and mouse,” Stein explains.

“Writing things down by hand has been a preferred communication tool because of its accuracy, which is the result of huge libraries of symbols, letters, and languages, developed in many cultures over the centuries. Writing has bettered



the human culture for thousands of years, and the pen is a natural and intuitive tool, which we're all very familiar with. However, for a digital pen to be as useful as a pencil or a ballpoint pen, it needs to be precise: it has to

possess the same touch, sense, and feel, in addition to offering that digital connectivity.”

Stein compares Anoto's journey to a kind of Darwinist evolution. “So many people have tried to perfect >



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the digital pen. In the beginning, I think we were probably naïve to think that we could go from analogue to digital writing overnight," he says. There's a historical precedent for this kind of gradual development: the patents were first filed for the original ballpoint pen in the 1880s, yet it took more than 30 years before ballpoints hit the market.

The patent was initially issued to American leather tanner John Jacob Loud, who aimed to create an alternative to the fountain pen which could write on leather products. He succeeded, but the potential of the ballpoint pen for handwriting went unexplored, as Loud's product was too coarse for paper. It wasn't until some 50 years later that Hungarian newspaper editor László Bíró developed, refined, and patented the Biro ballpoint pen, which has now been the go-to product for handwriting for over a century.

"When you consider the history of the ballpoint pen, it's clear that it may well take 50 to 100 years to go from

analogue to digital writing," Stein says. Anoto's digital pen has been on quite a journey already. The company began by working with partners from the telecommunications industry to explore new routes for mobile messaging. But when text messaging came into play during the mid 1990s, Anoto abandoned this route and went into business solutions instead.

"We got the most traction from structured data, or data capture, like filling in a paper form where you could keep the paper trail and at the same time get the content into a digital system. We also saw traction in the documents area, which could include value documents in banking or insurance, customer applications, digital signatures on contracts. In health care, for example, nurses could work offline using the pen, and bring their content back to the office, or send the information via cell phone to the backend systems."

When Stein took over as CEO of Anoto, tablets had just emerged into enterprise business with full force, and Samsung was launching

their Galaxy range. "Despite the fact we had Steve Jobs telling people they don't need a pen because they can use their fingers, computing started becoming much more pen-centric," Stein says.

"After 2011, we realised that we need to focus on the people who are using the pen as a business-critical tool. Specifically, this relates to people using value documents and signatures, especially customers or companies who need to keep original documents for legal or compliance reasons. Many of these companies are also looking to rationalise their paper workflow to cut time and costs. Aside from that, we also resolved to focus more on the creative industries that are using the pen as a precision tool. If you're a designer, or you are making a movie, or designing a car, or drawing molecules in a pharmaceutical company, then you will be using a pen, because it is more precise."

Stein explains that the pen offers users greater opportunity to utilise

our libraries of symbols and words, as well as enhanced creativity and flexibility compared to what you can accomplish with a keyboard, a mouse, or a finger. "The finger is definitely not a precision instrument. I think most people who go into an Apple store and sign on an iPad with their finger can't even recognise their own signatures," Stein quips.

"It has been a long journey, and a bit of an evolution for us. I was looking at all these companies and applications for our products for all these years, and there were many reasons why these things didn't come together at the time. I think that success is very much about having the right timing. For instance, text messaging came into play at the wrong time for us. But as a result of that timing, we have now developed solutions for both interactive displays and paper. Since then, our focus has shifted away from structured data, and toward applying our technology in the creative industries."

The people at Anoto are experts in collaboration and teamwork, and the group has a long and fruitful history of working with innovative partners to create cutting-edge products and solutions. "We are a small company, and our primary strength is our IP portfolio and our core technical competency," Stein says. As such, it is important for Anoto to be located in the key hotspots for technology development around the world.

"We come from a very strong technology development point of view, and the whole of the southern Sweden area is known to have a strong and innovative technology culture. Recently, in the summer of 2014, Anoto set up an office in Los Angeles, because Los Angeles is the world capital of the creative industries. That way, we could be closer to our end users, and learn about the defects, about our end-user work habits, and about the user interface.

"We have realised that we need to work with leading companies within the technology industry,

which have the resources to go to market when it comes to channels and resources for marketing and sales. As a result, we picked a select number of partners in those industries where we thought that the pen is a critical tool. When working with larger companies in those key industries, we have tried to be as transparent as possible to avoid too much overlap and conflict in the value chain. We always try to develop personal relationships with the people in the companies we work with, so that we can become true partners with those companies."

Navigating these working relationships has turned out to be a learning curve for Stein and for Anoto. "We learned that large companies have long lead times when preparing to go to market, especially when it comes to getting supply chains ready. We also learned that you need to secure funding and staying power. Sometimes, I compare this with sports: if you are going for the Olympic medal, you need to put in your 10,000 hours of training, you need to be persistent, and never give up. I think it is the same in business. As I said, success is very much about being in the right place at the right time."

Throughout its history, Anoto has accrued the great capacity for staying power and adaptability that comes with experience. Stein has followed the company over about 18 years, lived through all of its various stages and partnerships, and experienced all of its ups and downs. "In one sense, it is quite extraordinary that a venture company is still alive after all these years without having reached commercial success. That fact alone says a lot about the promise of this technology for the future."

As Stein says, it all comes down to timing. Although Stein is prepared for the long road, he also mentions that there are promising signs in the market. "Computing is definitely becoming more pen-centric. You can see that with operating systems and software like Microsoft 8 and Microsoft 10. You can also see that

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software companies are embedding digital writing functionality, and computer drivers and APIs are adapting to pen input, in addition to mouse and keyboard, as well as voice, gesture, and touch.

"Another key factor for us is being able to offer performance for price, because the IT industry is always looking for higher performance at the lower price. From where we're situated right now, that is exactly what we can bring to the table.

"In the future, I think that most handwriting will be digital. Larger brands like Montblanc, Cross, and Bic all need to go through the transition from analogue to digital. It may take 50 years, but I think Anoto has a great technology to enable digital writing, in the same way that we use pens on analogue surfaces like paper."

Anoto's digital pen also opens up new creative spaces and opportunities, like large interactive walls and whiteboards. "We can bridge the gap between analogue pens and digital wallpapers, corporate boardrooms, and collaboration solutions, as well as interactive displays and screens. As long as Anoto stays focused and works with the right partners, I think we should have a very exciting future." •

