



BLOG

It's cool to be **actively involved** in thinking about the **latest technology**

Stan's Challenge



Stan Verdiesen
Software-architect at ICT Group

Stan Verdiesen feels like a kid in a sweet shop on the project he's working on: [Atlas Copco's SmartLink IoT platform](#) that processes as many as 200 million messages a day and that uses the latest of the latest Azure techniques. "Even for Microsoft, this scale is unique. That's why they regularly ask us to actively think along about new technologies they develop for Azure."

Stan studied Computer and Information Science (I&I) and worked as many as nine years for a company that develops climate computers in the glass and horticulture industry. In 2014 he felt it was time for something different and applied for a job at ICT Group. "It's a completely different environment, because developing and maintaining a product for years is totally different to working on defined projects. What I learned in my first job is the importance of quality:

if there are any errors in the code you develop, then you carry the consequences for years. It is extremely important to develop code without technical debt. At the same time, clients always ask for speed. They don't know the level of complexity hidden behind a question. And that's the reason why a software architect has to have an independent opinion and warn the client of the dangers that arise if you want to launch new software too quickly."



Leading the way in migration to the public cloud

During his first four years at ICT Group, Stan worked on various projects for PostNL. "At the time they were one of the first large companies in the Netherlands to migrate critical parts of their ICT landscape to the public cloud of Azure. I came on board in 2014, and at that time the available solutions within the Azure landscape were still rather limited. I have actually grown with the possibilities within this cloud platform."

IoT-platform with unlimited scalability

He had worked on various projects for PostNL until 2018, when Atlas Copco indicated that they would like to upgrade the SmartLink platform they had developed to SmartLink 2.0. "SmartLink is an IoT platform that monitors assets remotely for optimal execution, and in which predictive maintenance is an important component. In the case of Atlas Copco, this involves gas and compressed air compressors. The first version of the platform had met its limits. Atlas Copco managed to develop a profitable business model based on remote monitoring and predictive maintenance of assets. They want to process and store the telemetrics of all the equipment they sell to clients worldwide, and this is the reason why SmartLink 2.0 had to become an easily scalable platform."

SmartLink currently processes 200 million IoT messages each day, a number that is growing daily. "Because new machines are being sold constantly and we are connecting more and more new types of devices", says Stan.

Sparring partner for innovation

During one of the first weeks he worked on the project, he was allowed to go to Microsoft in Seattle for a week to participate in a bootcamp on all the technologies that were now available on Azure. "This was super interesting, because I was already using some of them at PostNL, but the landscape is growing so fast, and here I learned everything that's available."

And it is knowledge that Atlas Copco considers very important. "They expect ICT Group to be a sparring partner, and to proactively come up with ideas to further innovate the SmartLink platform. For them, it has been a strategic decision to process and store all the telemetrics of their equipment and to develop a business model around predictive maintenance. Instead of considering SmartLink as a cost item, they see it as a driver of new business. And that's the reason why they think innovation is so important and ask me to think proactively about it."

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Always keep developing

As a software developer, Stan spent a year and a half working on the new platform. Once the foundation of SmartLink 2.0 had been created, he was asked to take on the role of software architect. Stan saw this as an interesting new challenge: "The foundation had been created, but that does not mean that the product is 'finished'. It never is, you can always continue to develop. Currently, my most important task is to work with the client to think about which direction we are developing in. To do so, I listen to the wishes of Atlas Copco, to colleagues within ICT Group who have applied certain technologies to other clients that may also be of interest to us, and to the engineers at Microsoft who are working on the latest technologies that become available within the Azure platform. I combine those three into sound and useful advice."

Azure is like a candy store

Whereas [Pauline's team](#) focusses on the front-end, the focus of the back-end team managed by Stan is on processing and storing the incoming messages from the IoT sensors. As already mentioned, they use the latest techniques. "Azure is like a sweet shop, there are over a hundred services that help you build applications. And there are more than twenty different services for data storage alone. It is my job to analyse and decide: how do (new) techniques match our requirements? If you want to show certain information somewhere, what is the most efficient way to retrieve the data? And what's the best way of storing the required information? It's a matter of continuously figuring out, trying and pioneering, even now that the foundation has been created. It is nice that Atlas Copco gives us a lot of freedom and always takes our advice to heart. "



Direct contact with Azure developers in the product teams

Atlas Copco is willing to reconsider previous choices, says Stan. "The technology is developing so fast that with today's technologies you make different choices than you did two years ago. We are – and we must – constantly review previously made choices. SmartLink's scale and the technologies applied also make it into a model project for Microsoft, and this is why we can interact directly with their developers in the product teams. In fact, there are several instances in which our advice and feedback have led to certain decisions at Microsoft."

"Take the Time Series Insights (TSI) feature for instance. We were allowed to participate in a pilot run with TSI version 1, and we found a large number of possible improvements, which Microsoft then started working on. TSI version 2 includes several improvements that have been made by us." An example is the request for functionality to import large amounts of data simultaneously. "SmartLink 2.0 has been live for two years now. We already processed more than 100 million messages a day when this version was launched, but this has risen to 200 million and that number continues to rise. The fact that it was not possible to import large amounts of data made TSI unsuitable for SmartLink. After all, this historic data is of crucial importance for Atlas Copco in order to monitor the devices and to predict when a device needs maintenance. Microsoft listens to this, understands the question and develops functionality for it."

Dream job

Due to Atlas Copco's drive for innovation, Stan's team has just completed a major redesign of the SmartLink platform, including a number of major architectural changes. "If you

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are market leader, you will have to deal with the dialectics of lead. You are making choices that you will have to review later because the latest technology has already progressed another ten steps. The great thing about this project is that our client also realises this and wants us to keep up with the innovations. This means that researching the usability of all the new techniques that become available for SmartLink is an important part of my work." He realises all too well how lucky he is that he is allowed to work on such an innovative project, with such a huge impact on the client's business model and even on Microsoft's innovation direction. "If, like me, you love technology and would like to work with the latest of the latest, this job is a dream."

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