

# KE-works

## Where digitalisation and collaboration meet

Having started out in automation, Dutch SME KE-works has since come to focus on collaboration: how can the work processes of multiple engineers be aligned without becoming overwhelming? For co-founder Joost Schut, a paradigm shift is key. “You once had the option just to work as an engineer in a big company or move into consultancy and observe the whole thing from the outside. The challenge was to change the status quo, and that’s where we started with KE-works.”

### The difference of digitalisation

This story began in 2008, when Joost and ‘partner in crime’ Jochem Berends were PhD students at Delft University of Technology in the field of digitalisation, design and experts – in other words, the study of how humans can be involved in highly automated and digitalised design processes. “That was an issue at the time and still is,” Joost begins. “But it really sparked something in me, so we started the company. The main focus is Europe with the Netherlands as the core market. Our largest segment is the construction industry because they lag behind in digitalisation and have a huge problem with data mobility and flexibility. We can make a big difference there.”

### Quality at the core

They do this via KE-chain, a platform for digital collaboration which can be used to optimise all business processes in a shared, real-time work environment with a particular focus on quality. “We’re always in regulated sectors,” explains Joost. “The quality of the end result is important not only for our specific client but also for their clients, which are semi-public organisations or have high regulations that require them to be very transparent. We believe

that quality should not be a side process but should be fully integrated into your operational process. With digitalisation, you can make that happen.”

Transparency isn’t the only driving force behind KE-works: current engineering processes typically generate high degrees of administration and grow more complex over time, creating a loop which companies find hard to break on their own. Once these same companies go digital, the entire concept of time or version management changes through access to real-time information. “One of the success stories is that we’re able to integrate people working from anywhere, both inside and outside,” Joost says. “Everybody is able to see each other’s work as well, so you aren’t stuck in your own silo with no idea what’s going on around you! This enables a completely different way of collaborating.”

### Building blocks of success

As intended, this approach positions KE-works outside of the traditional status quo: neither a large engineering firm nor consultants, yet able to help push forward the state-of-the-art nonetheless. “As an SME, you need a different approach, which is to focus more on what’s local and be more

flexible in order to fill in gaps left over by the bigger software suppliers,” Joost continues. “What makes us unique is the flexibility in our environment, allowing different experts to share information and integrating this in one process which they’re able to change themselves. They are in control; we just provide the blocks.”

As a concrete example of this, Joost points to the Dutch Aerospace Laboratory which, among other things, performs tests to determine material properties for all kinds of clients. With the help of KE-works, they were able to digitally integrate the entire material testing process from project set-up to reporting. This includes the work of different experts, the data exchange with the physical test bench and the software models used for the post-processing of the data. The result is a streamlined and scalable process which is transparent for all stakeholders. Similar benefits have been felt by customers in a huge variety of domains, from underground infrastructure to aerospace, thanks to KE-works’ tailorable approach to each individual company’s needs.

### Projects for smaller partners

As for KE-works’ participation in ITEA, Joost sees similarities to its starting point within the university, where all technology developed is just beyond the curve and innovations must be connected to make an impact on digitalisation. Automation within digitalisation, for instance, has been a focus of KE-works throughout its existence and, while enormous progress has been made, implementation is still relatively limited in Europe.

To continue pushing forward this development, KE-works is sometimes involved in Horizon projects, although Joost emphasises that “ITEA is by far the most important for us because our focus is digitalisation. At a European level, we need strategic funding in areas we believe in or we will just be surpassed by the Americans or Chinese. At a more local level, we need to meet other companies with the same challenges and various solutions to build networks and experiment with what’s feasible. You can bring those lessons learned into your products and increase your impact. Without publicly funded projects, I think that this is impossible unless you’re very big. So, for SMEs such as us, the benefits of being involved in the ITEA Community and the projects cannot be underestimated.”

### Making new connections

At the moment, these benefits are being felt in DEFAINE, the latest in a long line of ITEA projects



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that KE-works has contributed to. Many of these have focused on digital engineering and design processes, typically in the automotive, aerospace and medical sectors, and DEFAINE aims to create a design exploration framework that will use artificial intelligence and machine learning to enable improved solution designs in early project stages. Through contact with aerospace giants like GKN and Saab, KE-works has the opportunity to make the KE-chain platform even more flexible while developing connections with industrial partners that may one day be end-users.

Within DEFAINE, KE-works is also looking into how they can continue to enhance their services with new innovations, such as connecting different models in order to assess design properties or analysis results and include the data in one design iteration. “That’s the current challenge we’re facing and we see different ways to collect the information. The most pragmatic is the human, the expert. The second is to collect models and different analyses. The third is to connect sensor data. For us, the goal now is to create one collaboration platform with all those different data streams,” concludes Joost. “And we practise what we preach! So, we’re always open for collaboration.” Like ITEA!

### More information

<https://ke-chain.com/>