The textile companies that remain in the Netherlands are struggling to stay profitable: competition, high technological know-how and a culture of cost-focused SME companies makes it difficult for this industry to collaborate and combine their strengths. Although there are many interesting smart textile concepts, we have seen few relevant examples that are producible and valuable for our society: the ‘killer application’ has not been found. That is why it is important that multi-disciplinary parties team up during the ideation process to come up with innovative solutions. In the Smart Textile Services project, we are exploring new applications for smart textiles and stakeholder adoption. We try to create shared ownership of the ideas and solutions through collaboration and engagement in workshops where we invite people from a variety of disciplines: fashion designers, interaction designers, textile engineers, and service providers. We hope to provoke innovation and collaboration not only in workshops, but also when people return to their company, institute or service.

These workshops are also a great way to explore the technology available. As designers and engineers come together, they start to experiment with the materials and look beyond the traditional approach. Together, they can go beyond the boundaries and explore radically new ideas.

In June of last year, we organised a full-day workshop “Beta textiles, Textile and Code”, which was hosted by Waag Society in their FabLab, an environment where people can rapidly prototype their ideas. In this workshop we were interested to learn who should take the lead in such a project. To reflect the real-world situation, we invited participants to act...
as fashion designers, technology experts, and textile engineers in the morning and collaborate in multidisciplinary themes during the afternoon.

The most challenging and at the same time most rewarding moment during the workshop was right after lunch. We had asked the group who worked as fashion designers in the morning to come up with a shape for the garment and after lunch the other participants from the “textile engineering” group and the “technology group” had to decide how their expertise and input would best suit the concept of their choice. Each of the resulting six groups brought participants from the different disciplines together.

With the goal to have a working prototype at the end of the day, the groups set to work with knitted fabric that was produced in collaboration with the Textiel Museum. One of the fabrics had conductive areas to measure stretch and the other fabric had integrated circuitry and pockets for LED lighting. This set-up ensured that the participants could start immediately, instead of first having to produce a smart textile themselves.

One of the great things about the Smart Textile Services project is that through these workshops there are so many tangible objects to show our progress and inspire other companies. At the end of the Beta textiles workshop, we had six iconic garments that all made use of technology: a dress that could shorten the hem line with actuated thread, and heating up and emitting light when the wearer’s skin, the individual pockets into contact with the chest area as a reading light, or as a spotlight near the hands.

Many of these low-tech prototypes are actually the first step in an inspiration loop. Kristi began the bed linen project because she was curious to explore the use of craft. “I was looking at the patterns and symbols of traditional clothing and was inspired by their underlying meaning. I thought about those patterns and came up with a bed cover and pillow case that contained a QR code. You could scan the code with a smartphone and it would trigger any QR code reading software that would tell you a fairy tale.”

When the project began, Kristi was in the lead; she set the wheels in motion. Relatively quickly after that initial concept, though, Léon Meertens contacted her and said he wanted to be involved in the project. He works as an R&D manager for a large textile manufacturer, Johan van den Acker Textielfabriek BV.

And soon other companies who saw opportunities to further improve the concept approached us. Guido van Gageldonk and Wouter Widdershoven from the textile company Uinta, for instance, suggested we switch from QR codes to image recognition. And the final application is conceptualised and designed as a collaboration between all parties involved.

Many interactions between the different partners often take the form of challenges. “If I can build such an inspiring but low-tech prototype with my hands alone,” we would ask a textile manufacturer, “how can you build on that idea but do it properly, with the necessary tools and make it so that it is ready for production?” These challenges go in any direction — each development from one partner challenges the others to work further on the ideas.