

BEDTIME STORIES: WEAVING TRADITIONS INTO DIGITAL TECHNOLOGIES

KRISTI KUUSK

EINDHOVEN UNIVERSITY OF TECHNOLOGY

K.KUUSK@TUE.NL

GEERT LANGEREIS

EINDHOVEN UNIVERSITY OF TECHNOLOGY

G.R.LANGEREIS@TUE.NL

OSCAR TOMICO

EINDHOVEN UNIVERSITY OF TECHNOLOGY

O.TOMICO@TUE.NL

ABSTRACT

Bedtime Stories is a proposal for a long-lasting - environmentally, economically and societally sustainable smart textile service. It is a set of woven bed linen with images that can be recognized by a custom made fairy-tale application. This new way of story creation is an opportunity to share personal experiences and pass that wisdom through generations. Therefore contributing to a better quality of life.

Bedtime Stories is part of a research-through-design project. It involves crafts (methods and values) in the environmental load of textiles and garments production, selling, wearing and disposing area. Multiple iterations of Bedtime Stories gives insight into how we have been "weaving" traditions together with digital technologies.

INTRODUCTION

Bedtime Stories (see figure1) serves as a case study for exploration of how crafts and craftsmanship way of working (Sennett 2008) could contribute to smart textiles growing into a societally sustainable field as an alternative to the fast fashion. It explores how techniques and approaches such as weaving, story

sharing, quality pursuit, local production and design for longer time would make the textile product act naturally in a sustainable service system. How technology can enrich the apparel world by making it possible for textiles to adapt people's desire for constant change. It is carried out using a research-through-design approach: a process in which scientific knowledge is generated through, and fed back in consequent cycles of designing and building (Hengeveld 2011), and that the design act of creating prototypes is in itself a potential generator of knowledge (Stappers 2007). The knowledge on how to create sustainable smart textile services is extracted from the two iterations of the project.



Figure 1: Bedtime Stories by Smart Textile Services: TU/e, Unit040, Johan van den Acker Textielfabriek, Studio Toer.

Bedtime Stories consists of a pillowcase and a blanket made from a durable textile that is designed and woven in the Netherlands and an accompanying iPad to see the augmented reality hidden behind the layer of technology. The technology makes use of image recognition algorithms, which make it possible to recognize certain patterns and images in the textile. When moving over the pattern with the camera of the iPad it recognizes and connects to certain objects in the story that are visualized in an augmented layer. This

creates interaction possibilities between digital and physical worlds. When a woven symbol (for example a flower, a wolf or a grandmother in the setting of the Little Red Riding Hood fairy-tale) on the fabric is scanned and recognized by the tablet computer held by the storyteller, the child can play with the textile to manipulate the digital visual.

A linear way of reading from a book is replaced by customized experiences. The parent can create his own story using inspiration from the fairy-tale but adding his own elements, characters and experiences to it in a digital or physical layer. Personal values get transferred together with the cultural meanings and the product very exquisitely becomes part of a combination of product design with service elements to contribute for a more sustainable smart textiles field.

ITERATIONS

Bedtime Stories is a project developed further from QR-coded traditions (see figure 2), that is a set of pillows embedded with embroidered folkloric Quick Response codes that explore how new ways of communicating can be a way towards sustainability in the fashion field. Cultural information is shared by storytelling in several layers enriching interaction between generations and within families. (Kuusk et al. 2012) While traditional quality-aimed technique, such as embroidery is long lasting and static, the digital layer connected to it provides an opportunity to the textile product to act in a service system to stay updated and remain interesting throughout time - therefore enabling sustainable way of thinking for garment and textile areas.



Figure 2: QR-coded traditions: a pillow carrying a fairy-tale associated to the traditional colours and symbols of a specific place by Kristi Kuusk (Kuusk et al, 2012).

QR-coded traditions started from a traditional background carrying local values about time, details, fairy-tales, family and sustainable living. It was a personal exploration of the author, try-outs without a specific goal in mind that led to the development of the initial prototype.

The second iteration, worked further in collaboration with industry partners - Bedtime Stories - incorporates also values added by the group of partners, such as new weaving technique, augmented reality realization and commercial opportunities. This prototype has been developed to validate the concept of storytelling through image recognition and human interaction with textile. It served as a tool to create a common language between industry partners, academia and creative parties. (Bhömer et al. 2012)

REFLECTIONS

Niinimäki suggests that the most promising sustainable design strategy is the combination of product design with service elements: Product Service Systems strategies are therefore a future path to proactive and sustainable design (Niinimäki, 2012). While the woven cloth can be part of a family for years, the stories can change throughout the children growing, seasons, mood and so forth simply by downloading an update. Or the business model might even support proper care taking of the sheets and provide customers an opportunity to change them in time. It would be a similar approach to lending books from a library. This would force the responsibility and desire for pursuing good quality and careful cleaning of the product back to the producer and service provider.

REFERENCES

- Kuusk, K., Tomico, O., Langereis, G., Wensveen, S. 2012. Crafting smart textiles - a meaningful way towards societal sustainability in the fashion field?, *The Nordic Textile Journal*, Borås, CTF Publishing, pp.7-15.
- Bhömer ten, M, Tomico, O., Kleinsmann, M., Kuusk, K., Wensveen, S. (2012). Designing Smart Textile Services through value networks, team mental models and shared ownership. In: *Proceedings of ServDes.2012: Service Design and Innovation Conference*. Espoo, Finland 8-10 February 2012.
- Hengeveld, B. 2011. Designing LinguaBytes a tangible language learning system for non- or hardly speaking toddlers, Eindhoven, PhD thesis, Eindhoven University of Technology, ISBN: 978-90-386-2533-1.
- Niinimäki, K. 2012. Proactive fashion design for sustainable consumption, *The Nordic Textile Journal*, Borås, CTF Publishing, pp.61-69.
- Sennett, R. (2008). *The Craftsman*. New Haven & London, Yale University Press.
- Stappers, P. 2007. Doing research as a part of doing research, *Design Research Now*, Board of International Research in Design 2007, Birkhäuser Basel, pp 81-9.