

TEXTILE + DESIGN LAB

Case Study Number: 09/2017

Project Title: The Smart Shoe

Researchers: Sam Burton, Sarah de Guzman, Andries Meintjes, Robert Van Garderen and John McDermot.

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Project Period: July 2017 – ongoing

Project Description:

'The Smart Shoe' for children was developed by the design team at footwear brand, Bobux, in collaboration with AUT Engineering student, Sarah de Guzman. The aim of this project was to better understand the needs of Bobux's customers; parents who are often unsure as to whether their child's shoe fit is correct. Easing this anxiety and allowing parents to provide their children with better comfort influenced the development of the concept. This concept utilises integrated sensor technology within the shoe design to provide the user with additional information regarding the length of the child's foot and the fit of the shoe. The Textile and Design Lab was approached during the initial phase of this project to assist with development work including the prototyping of knitted sensors.

Background:

This project team entered the 2017 C Prize Awards scheme, the theme for which was wearable technologies, and was selected as one of ten finalists. Project leader, Sam Burton, has a background in industrial design, with knowledge of applied design thinking principles. Other members of the team included shoe designer, Robert Van Garderen, Andries Meintjes, an electronics engineer, and John McDermot.

Process:

The project adopted the approach of set based design; this involves the delegation of tasks to different team members, who develop the design through periods of integration and a high level of communication. The initial stage of the process was to rapidly develop prototypes which would then be used to collect user feedback – an important aspect that was considered to moving the design of the shoe forward. The TDL was involved in this initial period of prototyping, where Shima Seiki knitting technology was used to explore the integration of the sensor within the design of the shoe. The accessibility and knowledge of the TDL was invaluable as it allowed for team members to prototype initial concepts and develop the scalability of the design for larger production runs offshore.

The final prototype featured stainless steel and polyester yarn in the knit based sensor, which is embedded in the second layer or lining of the shoe. Information is then collected in an electronic component at the heel of the shoe, which sends the data for collation on both cloud-based storage and a mobile app for the user.

Project Outcomes:

The outcome was the development of a scalable prototype that will allow Bobux to provide its customers with a 'smart children's shoe' that can better track and manage sizing issues in the near future. More importantly, the product will also allow Bobux to collect greater data regarding children's podiatry through a global market, allowing for the brand to further improve and develop their products in line with the needs of consumers. Sarah is still working with the company to further develop the shoe to address other podiatry issues beyond sizing before the product is taken to market.

Publications:

<https://www.stuff.co.nz/technology/96282468/south-auckland-engineer-in-arms-race-with-nike-to-help-babies-fit-their-shoes>

Link to journal / documentation:

<https://www.cprize.nz/lab-books/bobux>

Images:

