

A feasibility study into the viability of providing innovative, flexible prosthetic devices to limb-difference patients in Sri Lanka

In March 2020, the Knowledge Transfer Network (KTN) recruited design mentors to work on a programme for The Global Challenges Research Fund (GCRF). The GCRF was a £1.5 billion fund to support innovative research which addresses the problems faced by developing countries.

Victoria Milne, CEO of Tenshi and technical expert of ISO, was selected from a pool of specialists to become a Design Mentor and work with a small number of companies who were deploying human-centered design within their projects, for the first time. One of those companies she worked with was Mitt Wearables.

Mitt Wearables

Mitt Wearables (Mitt) is a UK SME, who were seeking to address the pressing need for comfortable, flexible, and low-cost prosthesis in developing countries - a concept which was already validated in the UK. Now distributed by Koalaa, the startup creates comfortable sleeves for children and adults across the UK and America.

The Challenge

Globally, more than **70m people suffer with limb-difference effects**, with prosthetic-limbs playing a key role in improving their quality of life. Sri Lanka knew more than most the damage caused by this impairment, following the end of the 25-year civil war in 2009. 160,000 of its nationals became amputees, with a staggering **90% lacking proper prosthetic-limbs**. The prosthetics made available offered limited functionality, poor adaptation to body shape and were prohibitively expensive.

The Solution

Mitt Wearables sought to address an unmet need and deliver significant humanitarian-benefits by addressing the pressing need in Sri Lanka for comfortable, innovative, and low-cost prosthesis.

Mitt developed an upper limb prosthetic prototype that offered:

- Cost-effective materials and manufacturing
- A flexible/self-adjustable sleeve, compared with their global competitors
- Waterproof, maintenance-free, washing-friendly
- Self-fitted in seconds without clinicians/medical infrastructure
- Simple task-specific tools



The results

The development and trial of an upper limb prosthetic prototype gave us great insight into what needs to be done for those living with amputations in developing countries. MIT Wearables ended the project with:

- The validation of need/opportunity of the innovation within Sri Lanka.
- An implementation and execution plan for a potential demonstration phase.
- A results framework for the demonstration on the Sri Lankan population.
- A Long-Term business plan that addressed market potential and needs.

If you are a startup or small company, looking for support in applying human-centered design to your upcoming project, please contact [Victoria](#) who'd be happy to have a chat about how Tenshi can help you.