LCR4.0 START

European Union
European Regional Development Fund

NORTHERN POWERHOUSE

Case Study

Company Name
Dynamic Devices – The Kettle Companion

Industry
Assisted Living

Delivery Partner(s)
Science and Technology Facilities Council

Background

Dynamic Devices, a premier provider of embedded integration services, is developing the 'Kettle Companion', an assisted living product that helps those who live apart to stay connected.

Challenge

The Kettle Companion supports assisted living by illuminating when a loved one activates their kettle at home. This is signalled through a monitoring plug and communicated via Wi-Fi to a paired Kettle Companion in another user's home. Additionally, if there is a change in pattern of use, for instance, an elderly parent has not had their habitual morning cup of tea by the usual time, the paired Kettle Companion will illuminate red. A text message alert can also be sent to the owner of this appliance, prompting them to check on their loved one.

Founder of Dynamic Devices, Alex Lennon, needed to explore the manufacture of the IoT enabled device. Alex had undertaken work to develop a Computer Aided Design (CAD) and had a requirement to prototype the Kettle Companion and understand the options for using additive manufacturing as a production method for small volume batch production - the company had identified that there are significant initial costs associated with high volume mass production. The design also required translucent material to be effective

Solution

Accessing prototyping experts at the Science and Technology Facilities Council, via LCR4 START, allowed the Kettle Companion team to explore material use and the most appropriate additive manufacturing technique to produce prototypes. Three prototypes were produced, each providing a different finish by varying the material use and 3D printer.

The team at STFC assessed the prototypes considering the suitability of the CAD for additive manufacture, the materials for light transparency, and durability. The ability to prototype using different methods meant that the Kettle Companion team were able to quickly explore two additive manufacturing production methods, both of which have different benefits in terms of cost, production time, and post processing time.
The revised CAD was issued to Kettle Companion for future use, along with recommendations for anticipated weekly production volume and suitability for small batch production.

Impact

Integrating additive manufacturing into Kettle Companion's digital strategy and the addition of unique materials provided by STFC to aid product functionalities, such as the lighting, has provided the company with an essential move into the next stage of its product development, with the ultimate aim of manufacturing the device for consumer use.
Kettle Companion has been able to explore potential unit costs for each device and can start to plan a route towards initial production.

> Working with the team at STFC via LCR4 START on the Kettle Companion has been a crucial stage in our journey so far, allowing us to explore options that have reduced costs and de-risked the transition of a concept to a physical prototype. We are excited to be able to move into the trial phase now and are seeking families to test out the latest update of the Kettle Companion.

- Alex Lennon, Dynamic Devices.