Smart Fridge: Phase 1 Design

The assignment brief for DAT602 “Everyware” states that “Contemporary developments in computational and digital technologies have altered the way we perceive and experience “home” “[[1]](#endnote-1). This is referring to the use of smart technologies within the home that are becoming more common in our day to day lives and the internet of things (IoT) - popular examples may include objects such as the hive, smart energy meters or even more domestically the Amazon Alexa and Google Home. The bottom line of a smart technology is essentially a device that connects to the internet, collects and exchanges data. In the case of this assignment we are focusing specifically on domestic household items.

During a session with Stavros Didakis my group was asked to consider a domestic object that can make our lives better. Although very broad we went about thinking in the sense of our daily routine and how it can affect our environment and daily lives. Whilst there were many ideas flying around the room such as a floormat that checks the cleanliness of your shoes before you enter your house, we wanted to come up with a domestic smart device that could better the lives of many on a more serious scale rather than just on the level of personal comfort.

The idea we came up with was a smart fridge. We were fully aware that these already exist in the form of products such as the Samsung FamilyHub. However, the Samsung is essentially a fridge that has a screen and connects to the internet to stream television, play music and allows you to view the inside of your fridge from your Smartphone. Whilst our fridge will have similar features, it will focus more on collecting an inventory of items through scanning items with googles image recognition into the fridge to put together in a database stored on a raspberry pi recording data such as calories, fat, protein, what the food is and its sell by date. When thinking in terms of how we can better the lives of many through a domestic household item, we wanted to base our design around human consumption and/or the countries health crisis.

What we proposed for our project proposal was that the food would be scanned before being put in the fridge through the use of image recognition or barcode scanning with a webcam and then sent to a raspberry pi. Then through the use of a mobile app the user would be able to view the inventory of the fridge, receive prompts on which foods need using up due to their best before dates, view product data e.g. calories, fat, protein etc and also have recipes suggested to them depending on what ingredients they have in the fridge. The idea of this is to reduce food wastage by prompting the user to use food up before the sell by date, save the user money by preventing food going to waste and also to help them with healthy eating by displaying the foods properties and suggesting healthy recipes.

Inspiration for this idea came from the idea of smart homes such as the Tron Intelligent House by Ken Sakamura. The Tron House was completed in 1989 and aimed to for “total computer architecture” to serve as the foundation for building a computer-based society in the 21str century[[2]](#endnote-2). With a total of 380 computers[[3]](#endnote-3) the Tron House serves as a perfect example for the term “ubiquitous computing”, a concept referring to the idea of computing that can be everywhere at anytime. A good fictional origin of the ubiquitous computing concept could arguably be the short fictional story “The Veldt” by Ray Bradbury published in 1950. The story doesn’t necessarily refer to the house as being computer powered, however the house is full of devices that are everywhere within the home and will serve the inhabitants at any time in any way from cooking them meals to tying their shoes. These two sources are both prime inspirations for our creation of the smart fridge – the idea that it could be a domestic object within a house that is constantly serving the inhabitant whilst being “everywhere” by being accessible through the users smartphone at any time.

1. DAT602 assignment brief, i-DAT, Plymouth University 2018. [↑](#endnote-ref-1)
2. http://tronweb.super-nova.co.jp/tronintlhouse.html [↑](#endnote-ref-2)
3. http://tronweb.super-nova.co.jp/tronintlhouse.html [↑](#endnote-ref-3)