Market Research – VISA Hackathon

**Finlay D. Webb**

Goal: to find an area we can capitalise on, that allows us to create a solution that makes repairing/refilling a more appealing option for consumers to follow.

Methodology: case studies within each industry (repair and refill), with comments as to what they could be doing on top of their success, or what they’re doing not so well too. The idea here is to discover what WE could do, to fill the gaps. Each industry is split into 2/3 segments, which are examples of common areas within each. We will start with repair.

**Repair**

Examples: Household appliances (1), clothes (2), cars (3).

1. Household appliances

Market size/type: saturated, small independents up to large corporations

Market longevity: long, this won’t fall to technological replacement

Market evolution: minimal, it hasn’t seen many advancements in recent years

However, there has been some advancement, we will look at larger corporations rather than independent/sole-traders, as they are more easily worked with and easier to access information on. The case study for household appliances is “IFIXIT’. We will look to find a way to make this more appealing for consumers.

IFIXIT

- Overview: This is a firm that offers help on fixing your appliances yourselves, *via* manuals and forum assistance. They also offer a store to buy tools and parts too. An interesting part is their advocacy for the *Right to Repair*; here are some more details…

* *Right to Repair* is a mission of IFIXIT, where they are campaigning to allow consumers the rights to manuals, tools and parts for their goods that they have bought. A counterexample is a company like Apple.
  + For every 1000 tonnes of electronics, landfill creates <1 job, recycling creates 15 jobs, and repair creates 200 jobs.
* IFIXIT state that manuals aren’t made readily available to repairpersons in the West, but instead the information is kept with the manufacturers which are predominantly in Asia.
  + 6.9 million tonnes of e-waste was generated by the US in 2016.
  + 23% of shredded electronics could be easily repaired or refurbished.
  + 345,000 jobs would be created from carrying that out on the 23%.

Conclusion for IFIXIT and household appliances: One thing that large data could aide is IFIXIT to **implement a forward predicting repair model**, with more information on what users are buying (VISA dataset) and what is breaking, we could create a model that predicted when things were going to break on average, and what those things were. Then we could **create a directory** to give to the consumers, with links to pages/companies like IFIXIT, with more resources being directed at the products that are frequently breaking (or are predicted to). This would increase the ease of the process of getting a repair for the consumers, and thus disincentivise a new purchase instead.

Furthermore, an article in the Journal of Environmental Science & Technology, explores the idea of predictive maintenance, stating that sensors and other metrics on specific products can be used to predict when the product will fail, this could add to the model.

2. Clothes

Market size/type: saturated, small independents up to large corporations

Market longevity: long, clothes will always rip/decay

Market evolution: medium, there has been new tech that makes this easier

Again, best to look at the market evolution/advancements to find a place where we can apply ourselves. The firm that will be examined is SOJO. This is an acclaimed start-up, that has grown very quickly in the UK.

…

SOJO

- Overview: This is a repair/tailoring firm that offers door-to-door services, this cuts out the cumbersome process of going to a shop yourself. You book, they collect, fix, and deliver it back to you. It is an easy process and has managed to partner with clothes companies in the UK, so that you can organise it even more easily.

* The USP of SOJO is that they take the hassle out of having to go to the tailors/seamstresses, and instead come to you. This and the fact that it’s a young a company gives it glamour. The model they use, goes straight for the consumer, and works with brands too.
* Data science doesn’t seem to be able to play a part in this company, and in the clothing repair sector in general. The data that is used is stock management, and in processes.

Conclusion for SOJO and clothes: There doesn’t seem to be a way of implementing/utilising a dataset to improve the effiency and reach of SOJO, in order to make re-commerce more appealing to the consumers. Advertising would be a way, but that isn’t what we are trying to do.

3. Cars

Market size/type: saturated, small independents for repairs, up to the manufacturers themselves

Market longevity: medium, as cars become more digital, local businesses are restricted

Market evolution: big, cars have changed vastly, this affects the market greatly

If we look at the market evolution again, we can think of increased computer diagnostics, more focus on preventative maintenance (mentioned in 1.) and the rise in electric vehicles. All of these pose challenges to mechanics, and possibly imply that buying new would be the wiser option. Another thing to consider is how insurance companies seem to ‘write-off’ cars much more frequently now to save money, at the expense of the climate. Let us look at each of these in relation to data.

How could we use data to try and make repairs more viable? For the consumers, there isn’t much we could do to combat the atrophying skills of mechanics, if their car is too advanced, that is all, they must try and buy new or go to a different place. However, there is room to explore in the area of insurance and repairs. Let us look at a case study, take Direct Line Group & Thatcham Research.

Direct Line Group & Thatcham Research

- Overview: DLG is an insurance company that cover a range of different things, the relevant one being car insurance. TR is a research company that focuses on car safety and repair. Both apt. DLG says that a write-off occurs when the car’s repairs would cost more than the cash value of the vehicle itself. TR backs this up, offering also that the older the car, the more likely a write-off occurs. However, “once the insurer has decided to declare a write off there is little you can do either.” (Total Loss Gap). So perhaps there isn’t much to go off here to make repairing a more appealing option, as the consumer has no say in the UK. One way that a consumer can navigate this is by buying back their broken car.

* A car can be bought back, repaired and driven again if it is a ‘category N’ write-off, it it much more difficult if it is a ‘category S’ write-off. Sometimes, the insurance company will lowball a consumer on the price of their car, and in this situation, you could use the pay-out, buy back the car, repair it and have leftover funds in the process. Better for the climate, and consumer.

Conclusion for DLG, TR and cars: We could utilise the VISA dataset, and others, to build a **pricing and repair model** for the consumer’s car. This way they could assess themselves whether or not it would be better to buy back the car and repair it themselves, when their insurance company writes it off. This model would have an array of factors, such as mileage, type of crash, age of driver, occupation, location, all to correctly assess what they should do. This could be a viable option to make repairing more appealing to the consumer, rather than taking the money and buying a new car.

**Repair industry possible project ideas:**

Both of these ideas utilise data, and both would make repairing more appealing than re-buy.

**(1.)** a forward predicting repair model and directory combined that works with the consumer and utilises companies like IFIXIT to keep the appliance working and sustainable.

**(2.)** a pricing and repair model to assess the most cost-effective and sometimes eco-friendly method to deal with a crashed/written-off car.

…

**Refill**

Examples: Re-chargeable batteries (1.), Coffee shops (2.)

1. Re-chargeable batteries

Market size/type: small, large corporations dominate

Market longevity: long, electricity is integral to most of everyday living

Market evolution: medium, the demand for batteries has increased with EVs and new tech

We look to market evolution first. General market development is just increasing efficiency, how quickly they charge, how long they hold the charge for, how cheap they are, etc. As an additional note we are considering batteries like AA or AAA, not batteries in EV as they are only rechargeable. Lets look at a case study to better see how they are making improvements to appeal to consumers more and more:

Duracell

- Overview: a US founded alkaline battery company, that brings in ~$2 billion revenue annually. In the UK we use a lot of batteries for TV remotes, gaming controllers, small appliances like this. But most of the time these are single use even though there exists an option to use a rechargeable battery. So how does data relate to this, how can data be used to make rechargeable batteries more appealing?

This is a tricky question, as without advertising we are restricted. Duracell competes with competitors on branding and small incremental differences, perhaps this could be leveraged.

Conclusion on Duracell and re-chargeable batteries: One possible way would be too develop an **incentivisation scheme/software** that gives the consumer rewards based on how many times they recharge a battery. We could use image recognition and require the user to submit a photo of the battery out of charge, and the serial number, and then another photo with it charged up. Perhaps there is an easier way to do this, but this way requires no cooperation from Duracell. The incentive could just be telling them how much CO2 they saved, or it could extend further, to discounts etc. This would make recharging more appealing than re-buying.

2. Coffee shops

Market size/type: saturated, lots of independents, lots of larger firms

Market longevity: long, coffee is a necessity in some people’s lives

Market evolution: minimal, coffee doesn’t change, the way it is served sometimes does

The market evolution that is interesting to us is the idea of refillable cups, there are schemes like rewards and discounts about in the market. This is something that has been around for a while, and is good for the environment, as approximately 7 million coffee cups are discarded every day. Reusable cups certainly fit into the idea of a circular economy. How can we utilise data to help this appeal to more people?

Coffee generally is quite analogue, you buy the coffee, you drink it, not a lot of technology is involved. Brands like Starbucks and Costa have profits to spare and so, tend to endorse more generous schemes to try and promote re-usable cups. A recent innovation was ‘Lydy’, that is, instead of a cup, just a lid as cups tend to be forgotten when leaving the house in a rush. It is hard to see how data could be used. The only solutions tend to be business specific, or physical ones, like the Lydy. No case study needed.

Conclusion for coffee shops: There doesn’t seem to be a way that we could leverage a data set and software development to increase the appeal of reusable cups, other than with statistics. Perhaps if we went down this route, survey at POS would be a viable option.

**Repair industry possible project idea:**

Only one viable option, to try and make refilling more appealing than re-buying.

**(1.)** a incentivisation scheme. The software to carry out the scheme would require the consumer to upload two photos, one of the battery empty (serial number included) and one of the same battery charged, *via* image recognition and photo information (date, time) we could make a website that verified the uploads, and gives the consumer the reward. Unsure of what the reward would be yet.