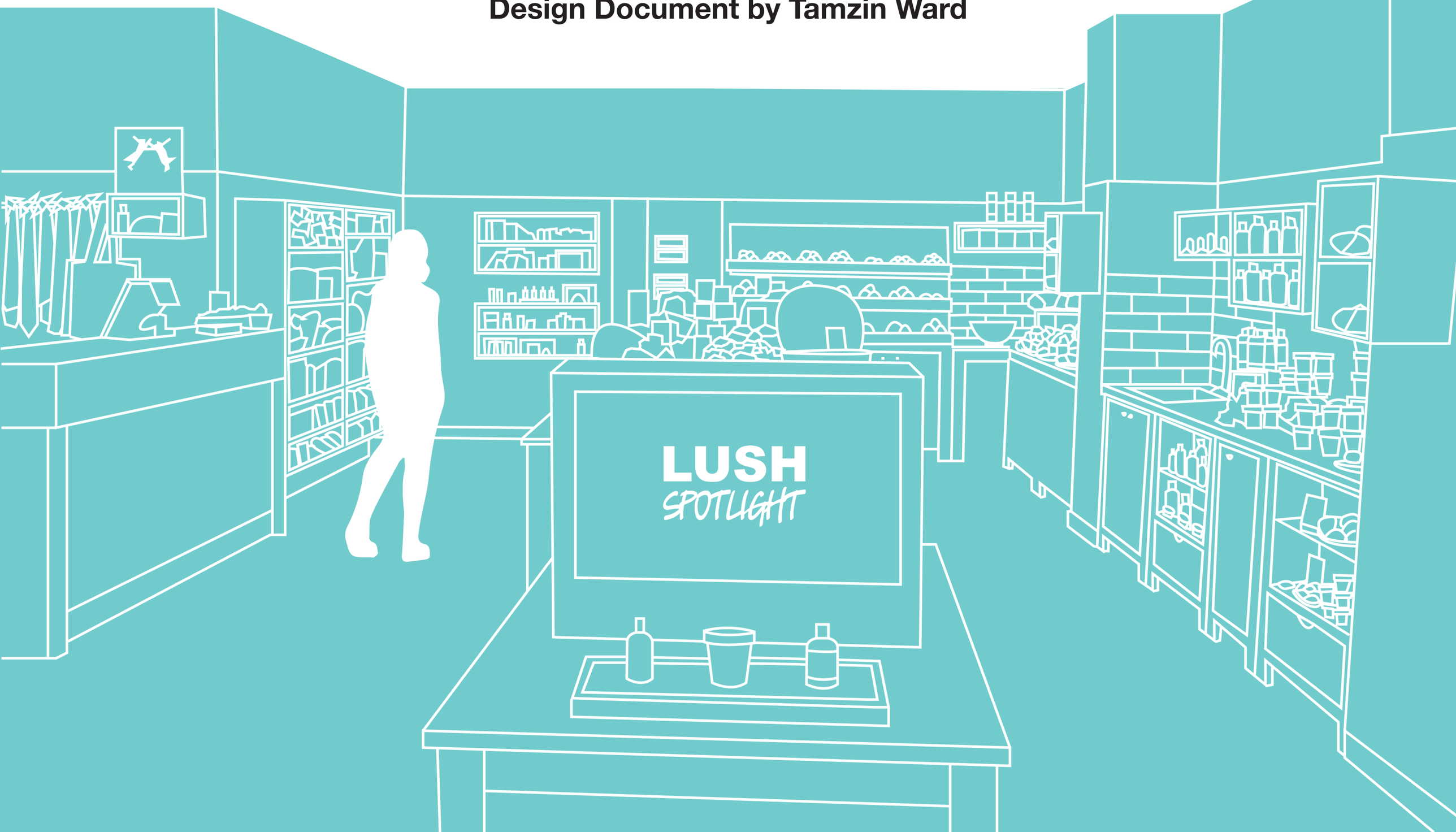
Lush Spotlight

Design Document by Tamzin Ward



Preface

This document outlines the process that I took throughout my final project. Within the documentation I provide details of my approach, methodology and development taken to produce a working prototype of my concept.

The beginning of the project saw me generate various ideas, eventually settling on an interactive retail solution for Lush Cosmetics. For this project, I saw an opportunity to develop my strengths in thorough research to create a solution that had intrinsic value to both the user and the brand.

I planned to exploit my desire to improve existing experiences and set about creating a multisensory retail experience. My research informed my process throughout and allowed me to explore a meaningful pathway to produce my final prototype. All facets of Lush's brand identity were taken into consideration as I took care give thought to all elements to inform my design process.

Brief

As the subject area of the brief was self-determined, it gave me a lot of freedom to write my own brief and decide on project outcomes.

I set out to create a tangible, memorable and worthwhile interactive shopping experience that engages customers and promotes interaction between Lush Cosmetics customers and products.

Content will embrace: visual and verbal preparation of design proposals, research and investigation; assessment of goals, audience, content and design requirements; prototype development and evaluation.

Aims

Demonstrate an innovative solution to my design problem.

Improve my existing interactive design skills.

Expand my knowledge of interactive retail.

Document all of my work, including any issues that I encounter along the way.

Construct a novel, fully working final prototype, including suggestions of where and how the installation could be displayed and implemented within a store environment.

IDEA GENERATION

Shopping Centre Installation

In the retail space of the Metro Centre, there is an existing touch screen installation which allows you to search for places on the map and find out some other basic information. From my own experience, I find that these are often neglected and scarcely used.

For this concept, I would recreate some elements of a metro centre interface, but also implement new features such as product search and price comparison. It would include a greater range of essential information such as disability access information, a tourist/visitor guide, car park information such as parking charges, and the best routes. The interface could also be constantly updated with the latest information such as offers, giving customers an incentive to use it, not just if they are not unfamiliar with the shopping centre. The relevant information could also be downloaded to a smartphone via bluetooth. The concept reduces the hassle of shopping in town so shopping online is less desirable. The interface could also promote independent retailers rather than the massive chain stores, giving an incentive for retailers to provide offers.

Content

Complete redesign of Metro Centre's interactive touch table to create an intelligent and accessible device.

Goals

Increase the interaction of the shopping experience. Provides key information in a simple method.

Audience

Customers of the shopping centre. People who have limited time when shopping. People who have never visited before.

Design Requirements

An interface design which is simple, aesthetically pleasing with great usability. A physical representation of the installation.

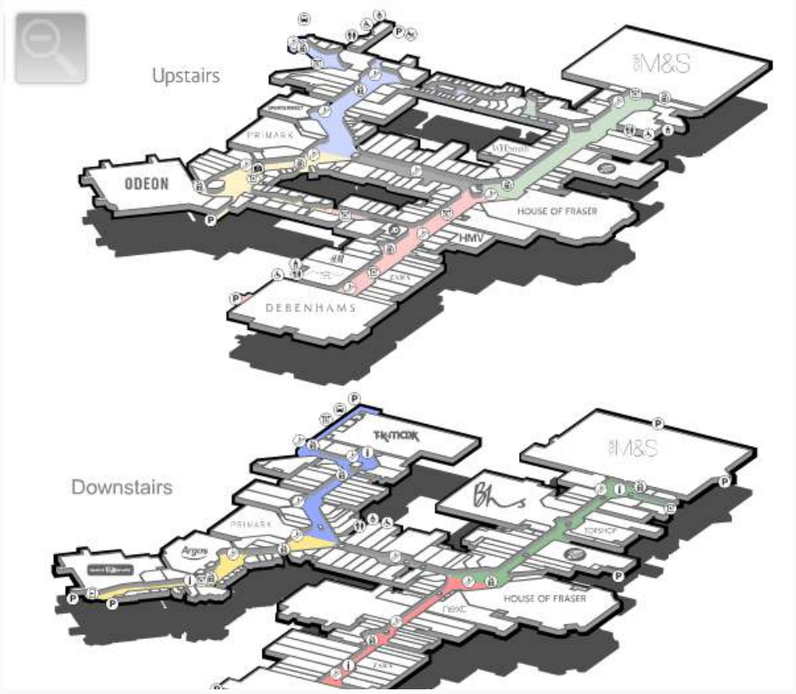


Figure 1 Intu Metro Centre (2015) *Store Map* Available at: http://www.intumetrocentre.co.uk/Shopping/Store-Map (Accessed: 03/01/15)

Real-Time Directions

Within the Metro Centre in Newcastle, there is an existing interface that can be used to locate stores. From my own experience using the interface, I found that the map wasn't clear and quite difficult to follow the directions given. The concept uses augmented reality, combined with the existing metro centre interactive interfaces to solve this problem. Users would input the name of the place they want to visit into the interactive touchscreen and it could produce a unique QR code for them. Using the Metro Centre app, the user could scan the QR code, producing a real-time map overlap which directs you to the location in a reduced amount of time. The application is essentially an informative sat nav for shoppers for use in a shopping centre.

Content

An augmented reality application which overlays directions through the Metro Centre in real-time.

Goals

Improves shopping experience by reducing the problem. Saves time when navigating a shopping centre. Increases interaction with customers.

Audience

Customers of the shopping centre. People who have limited time when shopping. People who have never visited before.

Design Requirements

An iOS application design and implementation of QR code scanner which results in augmented reality designs.

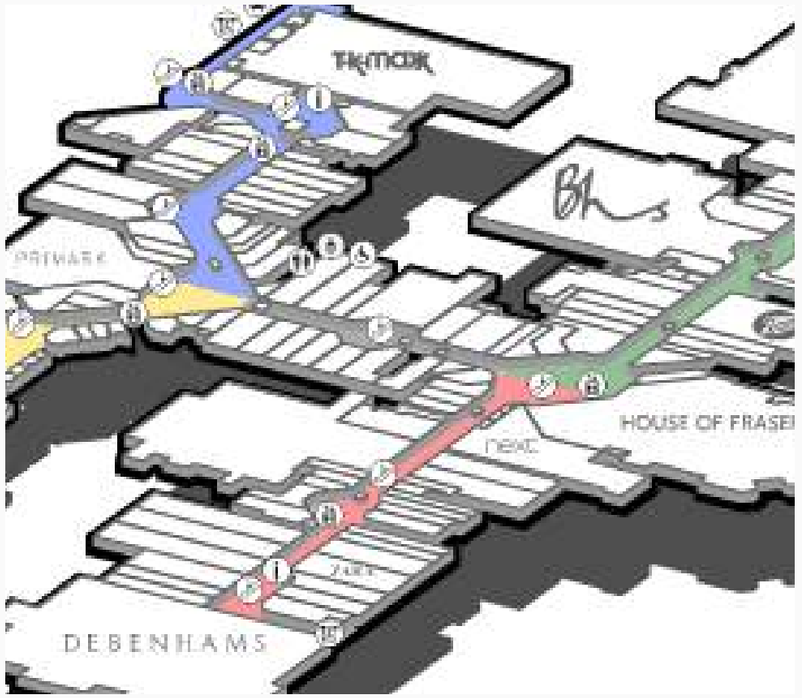
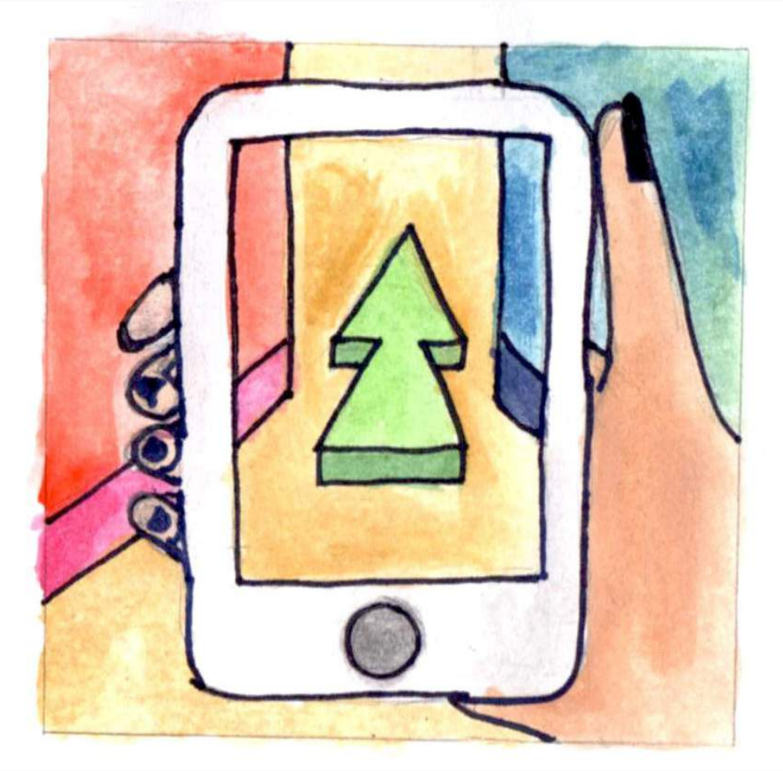


Figure 2 Intu Metro Centre (2015) *Store Map* Available at: http://www.intumetrocentre.co.uk/Shopping/Store-Map (Accessed: 03/01/15)



Parking Pal

Parking Pal improves the parking experience. In the form of an iPhone applciation, it would show a list of where all the car parks are in a map view. The application would also display the prices of the car parks and the number of free spaces in real-time. Parking Pal would measure how much time has elapsed and alert users of how much time is left on their ticket and when they need to return to the car. It could also store which car park space the user is in in larger car parks to help to locate the car.

Content

Application design including location-based car parks on a map, and information about each car park including a real-time availability of car park spaces.

Goals

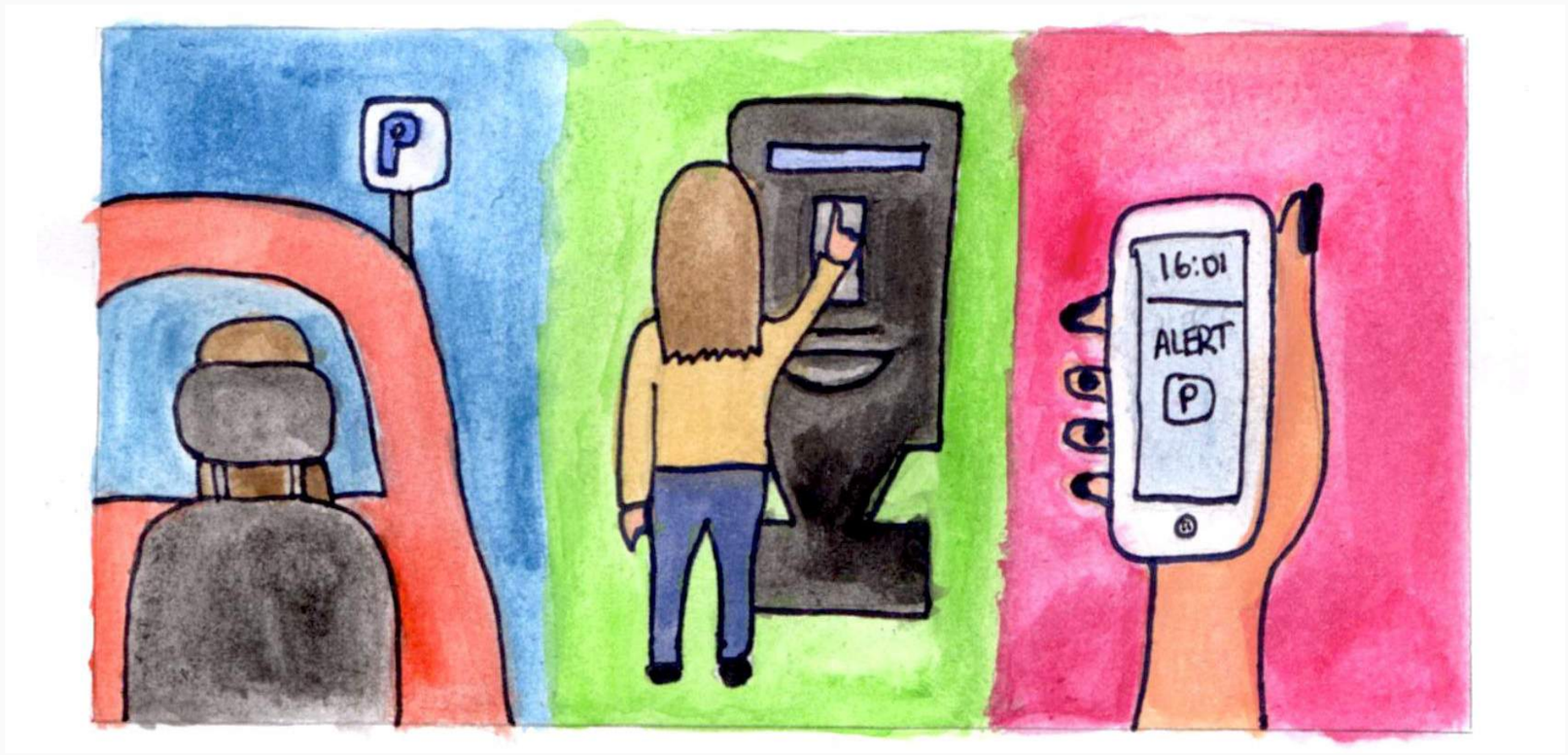
Improves the parking experience, saves money on and reduces time wasted on driving around car parks trying to find a space when there is none available.

Audience

Smartphone users who are also drivers. People who have not visited areas before and need to know where they can park for the day.

Design Requirements

iO8 appropriate application design with all interfaces created for a successful prototype.



Memory Capture

“We are the last generation to have our baby photos taken on cameras”

In this day and age we are increasingly relying on our smartphones to capture our memories. What happens if we lose them? The memory capture concept would aim to solve this problem. Precious photographic memories can be collected from your smartphone and stored in the cloud. This could be done via WiFi or potentially with NFC by placing your phone on a panel. For this concept I would aim to use Arduino to programme the transfer of images from the smartphone onto the digital photo frame. As well as storing photographs in the cloud, the images could also be displayed around the home in a digital frame. Each image could also display the time, date and location of the image.

Content

Using Arduino the smartphone must communicate with the digital photo frame to display the images in real-time.

Goals

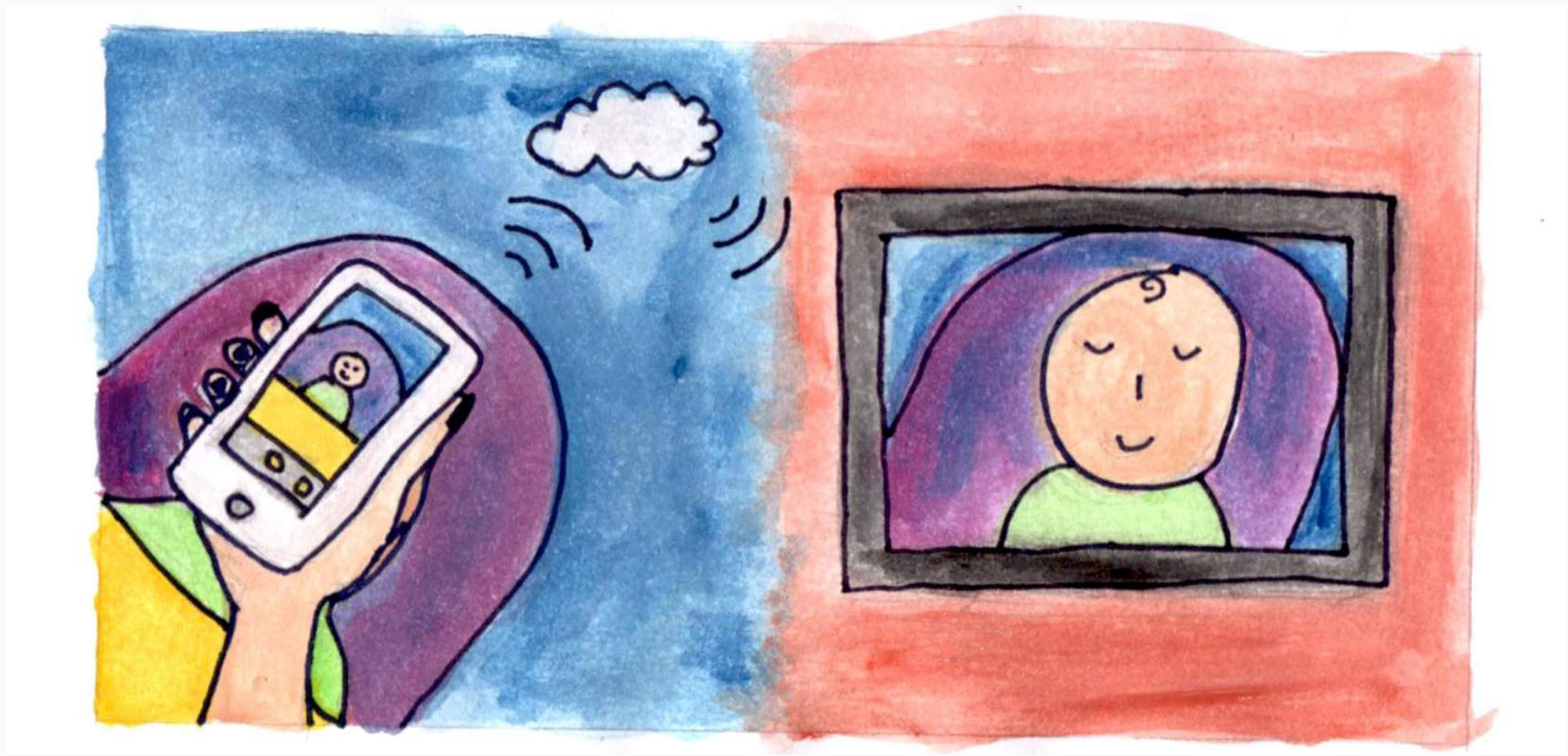
Reduce the chance of loss of precious memories. Increases display of images taken in a seamless method.

Audience

Families that want a way to display their photographs within their home.

Design Requirements

A physical digital photo frame, perhaps constructed using a projector and MDF wood frame.



Instagram Product Wall

Online shopping is becoming increasingly popular. Retailers must now improve the actual shopping experience as the trend is more towards online shopping and there is a demise of many previously busy shopping centres. To increase engagement from customers when shopping in store, retailers could invite participation through Instagram. Products bought by the customers could be shared with the hashtag found on the product tag, and users could share photographs of their outfit ideas and combinations. The images with specific hashtags could then be projected on an installation or a wall within store.

Another option is for the installation to be placed for shoppers to use while waiting for the dressing room in the form of an interactive table. Users could search through the hashtag of the item they are about to try on. This is more appropriate than placing it within a dressing room, as it could increase waiting time and this is a negative for customers. Potentially, the product to be detected with RFID tags, so when the product is brought infront of the wall/table, the specific hashtags are shown, rather than searching for the item manually.

Content

An Arduino powered prototype that searches through the hashtags on Instagram to find and display specific images on a 3D screen.

Goals

Increases interaction between customers and retailers. Gives an incentive to take part and visit the store, therefore competing with the appeal of online shopping.

Audience

Females aged 18-24 would be the best demographic however anyone who likes shopping and has access to Instagram could take part.

Design Requirements

A physical representation of the product wall, potentially created with a projector and a range of materials to create a 3D display.

Idea Generation: Conclusion

After generating a variety of ideas with differing subject areas, I was unsure how to proceed. Feedback from the class allowed be to make an informed decision, with the most popular concepts being Augmented Reality Directions and the Instagram Product Wall.

Out of the 5 concepts I chose to develop the Instagram Product Wall, as I felt that it was the concept that I was most engaged with, and it was in an area of that I was familiar with at the time.

RESEARCH

The Retail Experience

"Shopping as we once knew it has changed; retailers need to experiment in order to keep up." - Evans (2014)

Evans (2014) says that many retailers are taking inspiration from the world of ecommerce to deliver memorable and personalised in-store experiences. The benefit of this is that customers get the best of both worlds; the experience of shopping in-store, coupled with the personalised lure that comes with shopping online. Brands should look at connecting customer accounts across all channels to make purchasing as simple as possible, for instance allowing customers to order in-store on digital interfaces or a service such as click and collect. Not only will this work in the favour of the customer, but it will also allow the retailer to access valuable information about customer shopping and browsing habits.

By driving ecommerce customers in store, retailers can capture customers when they're in the mood to buy and secure additional purchases. Impulse buying in-store is a key opportunity for retailers to exploit. Where people may tend to spend time browsing in-store, dwell time is often very limited online. Specific categories tend to be browsed, and once the purchase is made, they leave. Customers need a reason to visit the store.

Retail Trends for 2015 - Malin (2014)

Technology and Multichannel

Multichannel retail is now a reality. If retailers do not adapt and have a strong multichannel strategy they are going to be left behind. Large retailers like John Lewis and Argos invest in and adapt their business models to provide seamless multichannel experiences. In 2015, consumers expect to be connected anywhere, anytime and anyplace and to anything – they anticipate seamless experiences. Retailers will continue to incorporate technology into their stores, whether it is through augmented reality, digital displays, shelf edge pricing or queue systems – savvy retailers will make sure that technology is not just used for the sake of it, and that it has an intrinsic value to consumers.

In-store environments

Shoppers are demanding more from stores – consumers are increasingly valuing good store layouts, easy navigation, and great product displays. In fashion stores, consumers want good fitting rooms, whilst in consumer tech, they want to be able to access the products to test them. Retailers will need to continue to invest in their store designs and brand experiences to deliver on customer expectations.

Customisation and personalisation

Customers are increasingly becoming co-creators in brands and products, and they are demanding products that demonstrate their individuality – they want products that are credible and are different to the rest. Customers are also increasingly willing to sacrifice their personal data to receive personalised products and services whether this is through loyalty schemes or beacon technology. 2015 will see a greater focus from brands on creating unique and individual products for consumers either through co-creation or effective loyalty and customer management schemes.

POS

Retailers and brands continue invest in point of sale (POS) displays but the focus is shifting to more digital technology in design, from shelf-edge talkers that update prices and offers to digital displays that can quickly adapt to the latest campaigns.

Convenience

As consumer lifestyles are changing, retailers adapting their business models to become more tailored to consumer needs. There is also a huge trend towards commuter commerce, with more retailers trialling 'pocket-size' versions of their stores and offering greater convenience in terms of click and collect (supporting their multichannel offering).

Ecommerce Vs. Traditional Retail

With ecommerce becoming increasingly popular and simple, traditional retail is starting to be eradicated. This is unless more ways in which the two can work together can be found and introduced.

“Competition from online pure-plays and the ever-changing demands of consumers mean retailers need to innovate and enrich the shopping experience through experiential retailing.” - Evans (2014)

To encourage customers to visit physical stores, brands and retailers should consider offering online shoppers incentives such as discount codes that can only be redeemed in store, a free gift, or additional incentives are all ways you can get your online store driving footfall to your physical one. Rather than discouraging online shopping, it’s ensuring both elements of your retail offering work harmoniously together and boost your brand.

Other ecommerce experiences that are changing “bricks-and-mortar” stores include the ability to check product availability in real-time. This empowers the customer and helps them make an informed shopping decision. This means that retailers may not lose out on money when products are not in stock. Rather than customers turning to ecommerce or different stores entirely, they can potentially order something online while they are in-store.

Interactive Retail

Trend Hunter Inc (2015) say that stores are going to increasingly focus on customer engagement as primary business strategy. Many retailers are turning to interactive shopping experiences to solidify relationships. Since purchases are often the result of emotions, maximizing a customer's hands-on experience within a retail environment - whether in a physical store or online - may increase positive feelings and brand loyalty.

According to Evans (2014), Accenture’s latest study on “seamless retailing” quizzed 750 adult consumers in the US and revealed that 21% planned to increase their in-store purchasing this year. 40% of respondents said that improving in-store experiences is the main thing that would improve their overall shopping experience.

Figure 3 Retail Customer Experience (2015) *Neiman Marcus debuts digital mirror* Available at: http://www.retailcustomerexperience.com/photos/neiman-marcus-debuts-digital-mirror/ (Accessed: 12/01/15)

Multisensory Retailing

Retailers traditionally fill their spaces with eye-catching displays in a bid to interrupt the customer journey. Evans (2014) says that an increasing number of brands are tapping into our other five senses in a bid to bolster their retail presence. From touch to taste, interactive merchandising and multisensory retailing is transforming the way consumers shop and brands sell. By using these methods, brands can bring their retail space to life and completely transform the shopping experience.

TASTE TOUCH SMELL SOUND SIGHT

Evans (2014) explains that physically touching and trialling products is always a great way to secure a sale. In an increasingly online retail environment, tangible experiences help set brands – and products – apart. Scent has also been used to drive sales in a number of exciting ways. An example of this retaillers using a chocolate scent to boost book sales. Browns Focus is a retailer that has been using the vanilla scents to increase store dwell time and boost sales. The luxury Bond Street retailer took its inspiration from research that suggested the smell of vanilla can double women’s clothing sales due to its associations with confidence. Sound is used in most stores where music is played in order to boost dwell time and evoke certain emotions within their customers. For instance; slower music helps to navigate around the store at a slower pace, whilst faster music has been known to speed up the shopping process.

Figure 4 Mullin, N (2013) *The new Burberry Store on Regent Street, London.* Available at: http://highlife.ba.com/Shopping/Shops-of-the-future-five-new-interactive-shopping-experiences.html (Accessed: 03/02/15)

Figure 5 Hall, C (2014) *Ugg Store.* Available at: http://www.retailcustomerexperience.com/articles/ugg-brings-interactive-signage-to-new-concept-store/ (Accessed: 11/02/15)

Figure 6 D'strict ArTech Entertainment Company (2012) *McQ by Alexander McQueen Flagship Store.* Available at: http://global.dstrict.com/projects/mcq.php?ckattempt=1 (Accessed: 12/02/15)

Burberry

Burberry executives say they're "blurring" the line between the physical and digital, mimicking the online shopping experience in Burberry Regent Street. Many features on the site have a physical counterpart, from the live customer-service chats to interactive outfit suggestions. In-store there are "Magic mirrors" where RFID technology in the price tags interacts with the mirrors to show a film of how the item was made, along with relevant catwalk footage or examples of what the items can be paired with.. Ortiz (2014) says Interactive signage greets shoppers as they walk in and displays key points in the building. Associates carry iPads with customer information, including past purchases and preferences.

UGG

Hall (2014) says the first-ever UGG Australia technology-driven concept store in the Washington, D.C. features interactive digital signage touchscreens and giving shoppers the ability to customize their favorite styles. The store's aesthetic is complemented by interactive digital enhancements that are intended to introduce elements of online shopping into the physical brick-and-mortar store. The product assortment is heightened by two UGG customization programs: The "UGG By You" program places the consumer in control of the design process to make their mark on five classic styles of UGGs. The "Bling It On" program enables consumers to transform their UGG staples through a selection of Swarovski crystal patterns and looks.

McQ

In Alexander McQueen's flagship store there are "Smart mirrors" with gesture sensing 3D in-built cameras that let customers take pictures of themselves trying on clothes. They can also share them with friends online. Situated on the shop floor there is an interactive multi-touch table called a "Stikus frame" that allows customers to search, watch and share past McQ shows and catwalk looks, and also lets them control the video wall in the store's entrance. Customers can also share the content they want via email on the spot or post onto Facebook or Twitter with a QR code.

Figure 7 Hall, C. (2014) *Surf hopscotch.* Available at: http://www.retailcustomerexperience.com/articles/unilever-uses-scent-marketing-hopscotch-to-launch-new-brand/ (Accessed: 12/02/15)

Figure 8 Coxworth, B. (2014) *SportChek-13.* Available at: http://www.gizmag.com/sportchek-interactive-flagship-store/30841/ (Accessed: 08/02/15)

Figure 9 Retail Customer Experience (2014*) Zy415 unit in use.* Available at: http://www.retailcustomerexperience.com/photos/optical-store-installs-mirrored-touchscreen-that-encourages-online-social-interaction/ (Accessed: 12/02/15)

Unilever

Hall (2014) says a multisensory digital signage campaign for a new laundry soap brand recently gave off a whiff of summer and got shoppers hopscotching along. JCDecaux Innovate and Kinetic Active launched the two-week campaign for Unilever's new Surf Wild Flowers and Morning Dew fragrance. The interactive drive was spearheaded by brand mascot Surfy, encouraging shoppers to play a game of hopscotch using brightly colored vinyl graphic flowers on the floor in front of ad panels. The six-sheet units featured scent emission units, giving off a spray of the new Surf laundry fragrance at timed intervals. The sensory experience also included having the shopping mall elevators fully wrapped with scented vinyl and playing a 20-second audio file every time a shopper entered.

SportChek

Coxworth (2014) says the flagship SportChek store features over 800 screens displaying 220 channels worth of information, over 1,200 sq ft (111 sq m) of digitally-projected content, and 250 staff to help customers use the interactive technology. Some examples of this are the Tacx virtual reality bicycle trainer, that lets customers try out real bikes on computer-generated roads or trails, a projection mapping system that displays custom-designed content on a mannequin and The Silver Crystal custom jersey kiosk allows customers to create their own unique jerseys.

Kite GB

According to Retail Customer Experience (2014), London-based optician Kite GB has installed a touchscreen mirror in its East End store, with help from technology provider Zytronic. The touch-enabled unit utilises a PCT touch sensor with a 42-inch active area. The sensor has been applied to mirror-finished toughened glass and is capable of supporting up to 40-point multi-touch operation. Via the unit, customers are able to take photos of themselves wearing different frames, then post them on Twitter, Facebook, Instagram and other social media platforms, so that their friends and family can look at the chosen frames and give their opinions.

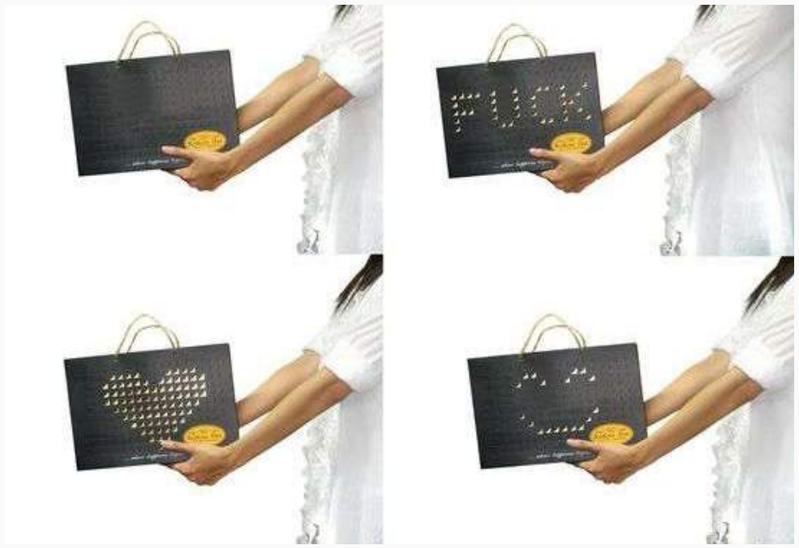


Figure 10 Vong, K. (2010*) The Kokoa Hut Bag Makes Shopping a Personalized Experience.* Available at: *h*ttp://www.trendhunter.com/trends/kokoa-hut-shopping-bag (Accessed: 08/02/15)

Figure 11 Mayfield, A. (2012) *Brilliant: Oxfam's Shelflife and giving objects a story.* Available at: http://brilliantnoise.com/brilliant-oxfams-shelflife-and-giving-objects-a-story/ (Accessed: 12/02/15)

Figure 12 Eisel, K. (2014) *Industry Weapon sm wall.* Available at:http://www.retailcustomerexperience.com/articles/like-friend-or-tweet-reaching-millennials-with-digital-signage-2/ (Accessed: 12/02/15)

Kokoa Hut

Vong (2010) states that Prompt Design from Thailand designed an artistic and innovative shopping bag for Kokoa Hut that encourages customer interaction. Each Kokoa Hut shopping bag is created with little square boxes that can be flipped up to create an image. By allowing the customer to essentially interact and play with his or her shopping bag, Kokoa has a unique branding technique that could boost customer experience.

Oxfam's Shelflife

BBC News (2012) describes Shelflife as a phone app that links stories and pictures provided by donors to tags attached to the goods. The Shelflife system uses QR Codes printed on tags. Browsers in Oxfam shops can scan the tags using the app to find out about an individual item's past. Mayfield (2012) says that Oxfam Shelflife allows people who donate an item to a shop to tell buyers a little bit about it, whether its a quirk of how to use, a little bit about it's history or a funny story. Users can also add and upload stories about their experiences with a product. This means that it is an increasing network of information for people to view and interact with.

Industry Weapon

According to Eisel (2014), leading retailers have turned to digital signage companies to remedy the lack of interest in static marketing among the millennial generation. Digital signage allows businesses to run multiple, ever-changing campaigns that feature videos, music, and user interaction. Based on consumer trends, these lucrative signs can boost audience retention rates as high as 200 percent. Digital Signage companies such as Industry Weapon provide the necessary tools to create vibrant, innovative channels through which businesses can project their messages. By streamlining the user experience and not overwhelming them with information, businesses can focus on what the consumer actually wants.

Social Shopping

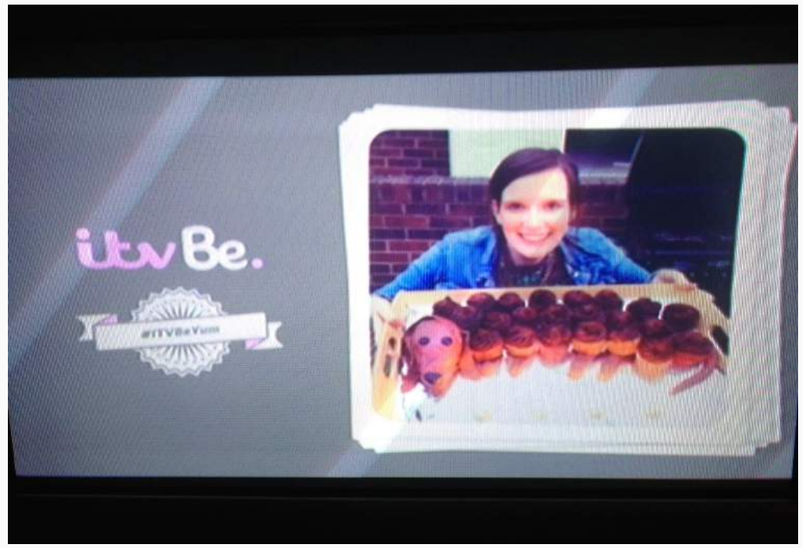
"Brands may find that pictures speak louder than words when it comes to scoring a hit with social shoppers."
- Benady (2013)

People are increasingly using social media to help them choose what to buy. According to Trend Hunter Inc. (2015) Retailers are attempting to capitalize on the fact that many online shoppers like to review, network and interact as they shop. Online storefronts are adding networking platforms to their virtual operations, while marketers are scrambling to apply social media sites like Facebook and Twitter to their selling tactics. Benady (2013) says that marketers are using sites like Instagram to drive "social shopping" and inspire people to collect and share pictures of their favourite products. Langley-Swain (2015) says that retailers and brands that are able to add a depth to their offering by including social media could prove to be a lucrative move by creating a multi-layered experience. By observing customers interactions and creating social media related preferences retailers can enhance this loyalty and offer highly personalised solutions. I feel that retailers publishing approved photos from Instagram hashtags engages with their audience in a social way. I think Instagram integration in-store and the opportunity to display your own pictures would grab the attention of customers.

Figure 13 Walsh, C. (2013*) Dear Topshop.* Available at: *http://www.design4retail.co.uk/blog/stuff-we-like/dear-topshop-pinterest-promotion/* (Accessed: 21/02/15)

Dear Topshop

In November 2013, Benady (2013) says that Topshop collaborated with pinboard site Pinterest to encourage shoppers to pin their favourite products. This helped shoppers create personalised Pinterest Christmas gift guides. The most pinned products were featured on the Topshop homepage and shoppers could enter their Christmas-themed Pinterest boards into a competition to win prizes at the store. The chain also installed giant touchscreens in flagship stores in London and the US so shoppers could see the most popular pins. Popular items on display had swing tags attached stating that they were most pinned products.



#ITVBeYum

ITVBe encourages viewers to interact with the brand and post their photos on Instagram with various hashtags. For example, #ITVBeYum which I have photographed from the television above. I think the incentive to have your photograph displayed on the television really encourages sharing on social media. Viewers sharing their photos increases exposure of the new channel which potentially leads to more viewers.

Competitor Analysis: FashionWall

"FashionWall is the new interactive shopping experience." - FashionWall (2012)

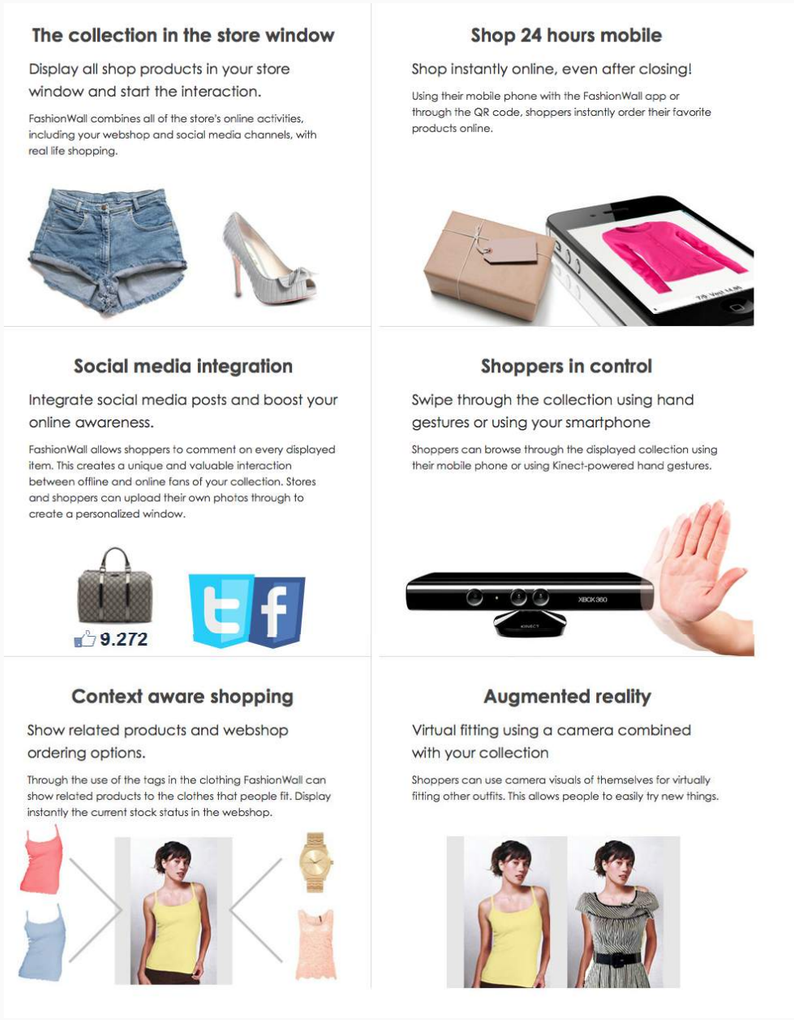


Figure 14 FashionWall (2012) *FashionWall - The interactive shopping experience.* Available at: http://gofashionwall.com (Accessed: 08/02/15)

According to FashionWall (2012), it shows the entire collection in the store window. Shoppers can browse through all the products displayed in the shop window and using Kinect, shoppers can swipe through the collection. Through their mobile phone, shoppers can instantly order the products they like.

FashionWall displays social media posts for the "ultimate" online presence. You can comment on individual items from the store and they appear alongside the item when it is displayed. There is no information about how the FashionWall looks in the shop window and as far as I can work out, this is a concept rather than a fully-functioning implementation into stores. Despite this, there are some similaries between the FashionWall concept and my Instagram Wall concept. I feel that my concept is much more concise, FashionWall are overcomplicating their concept by offering too many services. I think that this makes it difficult to see a USP within the concept, as they do not focus on a sole purpose of the FashionWall. The social element allows response on individual products, and the sharing of photographs from users - however it is unclear on how this is conducted and how this will come into fruition. I feel that my concept is much more engaging and will encourage customers to shop in-store.

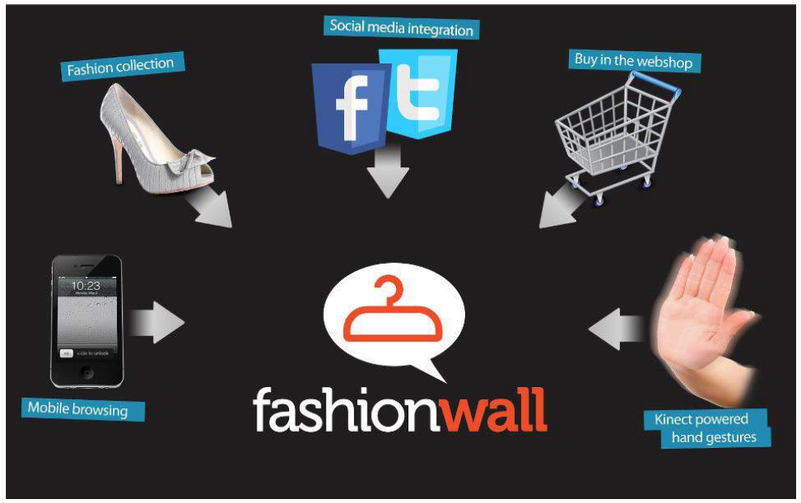


Figure 15 FashionWall (2012) *FashionWall.* Available at: https://www.facebook.com/GoFashionWall (Accessed: 08/02/15)

Positives	Negatives
Increases interaction with shoppers	Overcomplicated due to the variety of functions available.
Social integration allows more customer engagement	The website is not clear about how it can be used in-store.
Shop 24 hours a day through mobile phone	Showing the whole collection in the store window could potentially discourage shoppers from entering.

Concept Re-think: Lush Cosmetics

After conducting research on interactive retail and existing implementations of it, I felt that the Instagram fashion wall concept was not strong enough. I therefore decided to select a single retailer and create a project that incorporates interactive retail in an attempt to maximise a customer's hands-on experience within a retail environment.

This lead me to considering the cosmetics retailer Lush. Lush already use multisensory retailing within their brand strategy, allowing customers to test their products through touch and smell, but I felt that I could enhance Lush stores by incorporating technology into their stores. I feel this is a key attraction to customers in a increasingly technology-centred world. The downfall of the store is the lack of information, there is a multitude of products and it is difficult to know how to different products can be used. There is an expanse of knowledge available online on their website and across YouTube and social media that is not available in-store. Rather than discouraging online shopping, I want to combine both elements of the retail offering in an attempt to boost the brand and increase sales. The initial concept is for an interactive Arduino based project that brings online information in-store. For better personalisation in-store, there is potential to create an iPad quiz. When taken, it would recommended specific products to users.

The Lush display concept consists of a combination of information from existing Lush online platforms, and displays it on large screens situated alongside each section of the store, next to each exhibit of products (bath bombs, cosmetics etc.). The display would be created with information content from the website and video content from Facebook & YouTube. I feel that bringing the online content in-store would enhance the physical shopping experience, as the ecommerce + multisensory experience together would create the ultimate selling strategy. If a customer understands more about a product, and they can touch, feel, smell and know how it works, I believe would lead to more sales.

Motion sensors would detect the presence of customers and would trigger the video information, when a customer stands at the display for a certain period of time. Information about how a product is made, the ingredients, how it can be used and potentially reviews can be displayed on the screens. There is potential to incorporate Instagram feeds showing how other people have used their products.

Content

Arduino controlled prototype which displays information about products on a screen, such as how it is used, when a person's presence is detected.

Goals

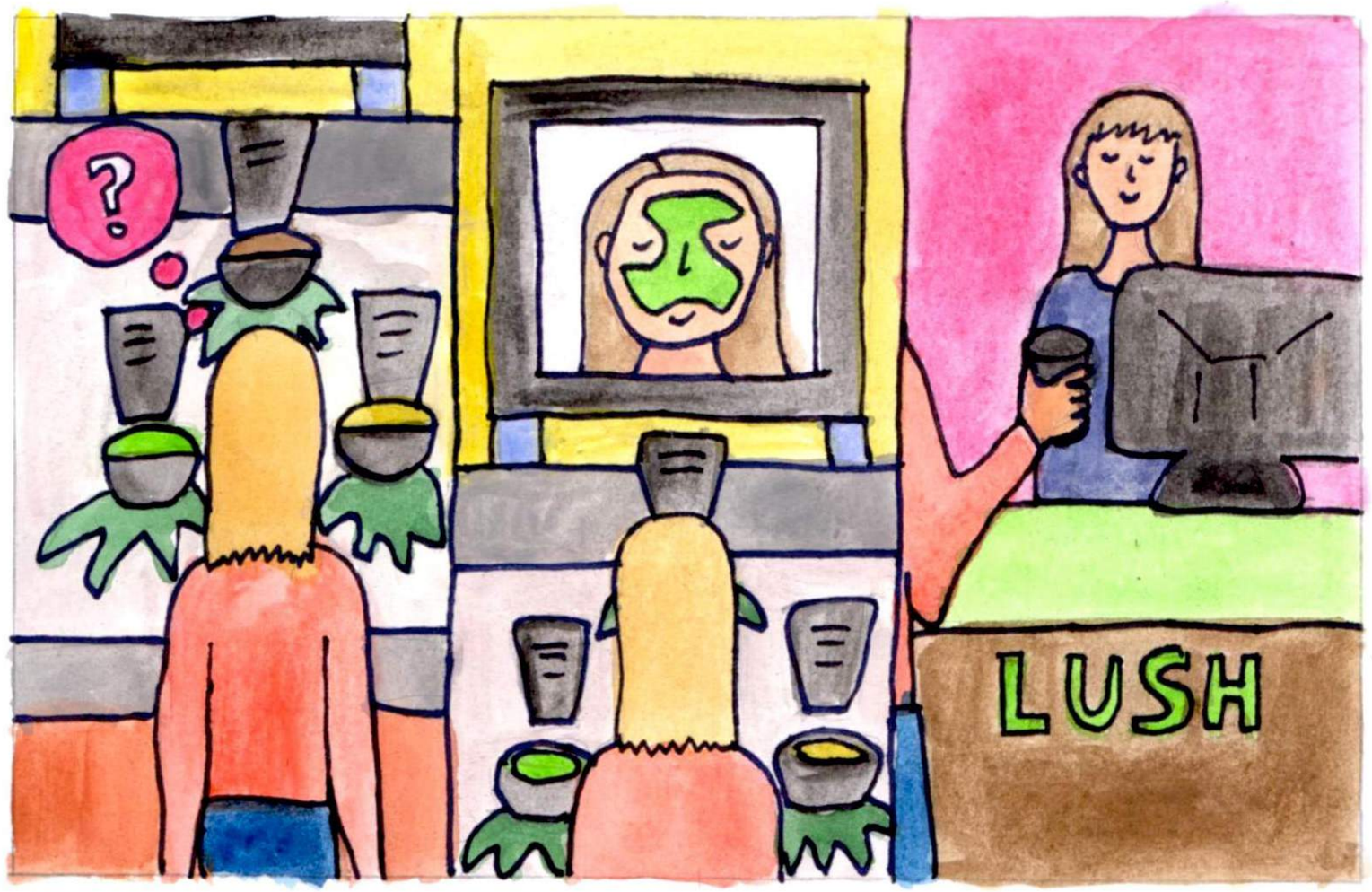
Brings together the advantages of ecommerce with bricks-and-mortar retailling. Increases product sales due to improved understanding.

Audience

Primarily Female shoppers who are 18-24 years old. Casual shoppers to secure more "impulse buy" purchases. Anyone who is unfamiliar with Lush products.

Design Requirements

3D physical representation of a screen, potentially created with a projector and a wooden frame. A designed interface to display a video loop.



Arduino: Initial Thoughts

I can use Arduino to create a working prototype for my project. Arduino (2015) describe Arduino as a tool for making computers that can sense and control more of the physical world than your desktop computer. It's an open-source physical computing platform based on a simple microcontroller board, and a development environment for writing software for the board. Arduino can be used to develop interactive objects, taking inputs from a variety of switches or sensors, and controlling a variety of lights, motors, and other physical outputs. Arduino projects can be stand-alone, or they can communicate with software running on your computer (e.g. Flash, Processing, MaxMSP.). The Arduino programming language is an implementation of Wiring, a similar physical computing platform, which is based on the Processing multimedia programming environment.

To make a compelling prototype for my Lush concept, I believe that I would require an Arduino Uno and several PIR motion sensors. Using the Arduino software I would create code that monitors the motion sensors, and when a person detected in front it would cause a video to play and project product information onto a screen.

Figure 16 Arduino (2015) *Arduino Uno R3 Front.* Available at:http://arduino.cc/en/Main/arduinoBoardUno (Accessed: 20/02/15)

Arduino Uno

The Arduino Uno is a microcontroller board. It can be programmed with the Arduino software The Arduino software, which includes a serial monitor which allows simple textual data to be sent to and from the Arduino board to the computer. It can be powered via the USB connection or with an external power supply.

Figure 17 Adafruit Industries (2014) *PIR Motion Sensor Tutorial.* Available at: http://www.instructables.com/id/PIR-Motion-Sensor-Tutorial/ (Accessed: 20/02/15)

PIR Motion Sensor

PIR sensors, according to Adafruit (2014) allow you to sense motion. They are small, inexpensive, low-power, easy to use and don't wear out. PIR sensors are almost always used to detect whether a human has moved in or out of the sensors range and are ideal for basic projects where you need to detect when a person has left or entered the area, or has approached. However, PIRs won't tell you how many people are around or how close they are to the sensor.

Lush: Fresh Handmade Cosmetics

Figure 18 *LogoBlack* (2015) Available at: http://www.futura4retail.com.au/wp-content/uploads/2013/09/LogoBlack.jpg (Accessed: 22/02/15)

Figure 19 Wallace, S. (2015) *LUSH1.* http://maiedae.blogspot.co.uk/2013/04/beauty-lush-video-product-review.html (Accessed: 22/02/15)

Wikipedia (2015) say that Lush is a cosmetics retailer headquartered in Poole, Dorset United Kingdom. Founded in 1994, the name Lush was the result of a competition that founders Mark and Mo Constantine published in their first handmade newsletter and catalogue. In 1994, husband and wife Mark and Mo Constantine opened the first LUSH store in Poole, England, under the name Cosmetics to Go. Lush adopted its current name on 10 April 1995. There are now over 800 stores in 51 countries.

Lush produces and sells a variety of handmade products, including soaps, shower gels, shampoos and hair conditioners, bath bombs, bubble bars, face masks, and hand and body lotions for various skin types. Lush products often contain fruits and vegetables, essential oils, synthetic ingredients, honey and beeswax. The company is against animal testing, and opts to use volunteers in order to test their products instead. Stores do not typically sell products older than four or five months and most products have a shelf life of approximately 14 months.

Figure 20 YouGov (2015) *YouGov Profiler.* Available at: https://yougov.co.uk/profiler#/Lush/personality (Accessed: 22/02/15)

YouGov Profiler

According to YouGov (2015) and the data about what differentiates customers of Lush from their comparison set, with a sample size of 1089, the most common demographic of Lush is Females aged 25-39, followed by Females aged 18-24 These customers have an average monthly spare income of between £125 and £499, and are said to be online for 50+ hours per week. The top website visited is lush.co.uk and the top Facebook page is Lush Fresh Handmade Cosmetics.

Lush Store

Environment

The layout of the lush store utlises the space quite well. The displays are divided into sections according to the category of the product type i.e. bath bombs and makeup. The newest products are placed at the front of the store.

Experience

The Lush store is a multisensory experience which allows interaction with products through touch and smell. You can often smell the Lush store from outside which entices customers to enter. Physically testing products is more likely to secure a sale.

Insights

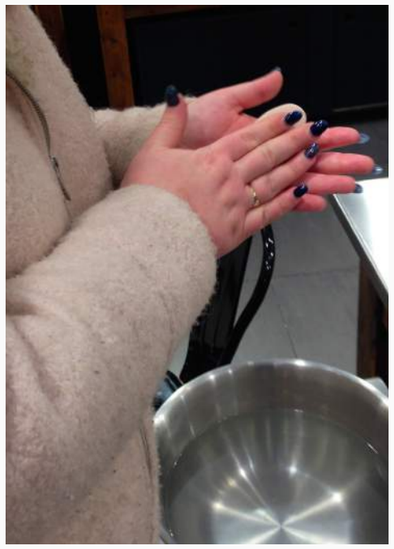
Lush could greatly benefit from incorporating visual digital technology into their stores as there is a surplus of information that could be given simply in a visual form. A shopper who is not familiar with the Lush store could feel overwhelmed on entering. Dwell time could be increased with interactive technology.

The store displays items in product categories.

Trying products is encouraged throughout store.

Sample products are laid out in front of displays.

Stations around the shop invite testing products.



The packaging gives an introduction to the product with a brief and succint product description.

Each product gives concise usage instructions, but lacks visual explanation. This could be an issue for customers who do not speak English.

Lush give a personal touch by allowing customers to know who has made their particular product. They also give a use by date.

The face mask display is set out in the centre of the space with open samples and some refrigerated tubs of the product.

The product invites interaction, you can test it on your skin so you know exactly what is in the tub before you buy it.

There are hints about what each face mask is good for, but it is easier to ask a shop assistant rather than read each one.

Lush Website

Navigation

The website is easy to navigate and visually appealing. The home page (Figure 21) displays a variety of features including products, reviews and articles. The products are logically separated into categories of usage such as body, face and hair (Figure 22) for fast navigation.

Experience

The Lush website gives more information as you scroll, from navigation to purchase the experience is quite seamless. Dwell time is increased by recommending products through related content. The usability of the website is good but there could be more visual demonstration of the products in use.

Insights

There is lots of additional information available on products that is not currently exploited in-store, this could be used to drive ecommerce customers in-store.

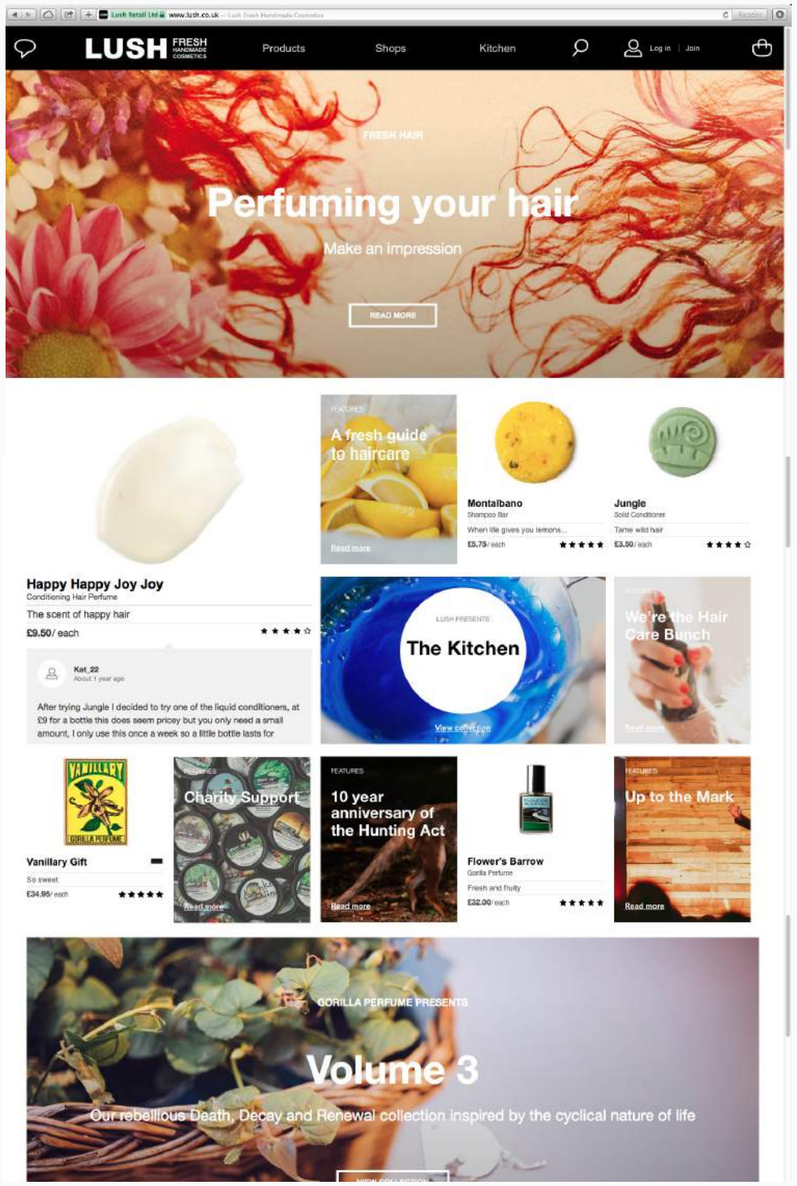


Figure 21 Lush Retail Ltd (2015) *Lush Fresh Handmade Cosmetics.* Available at: https://www.lush.co.uk (Accessed: 23/02/15)

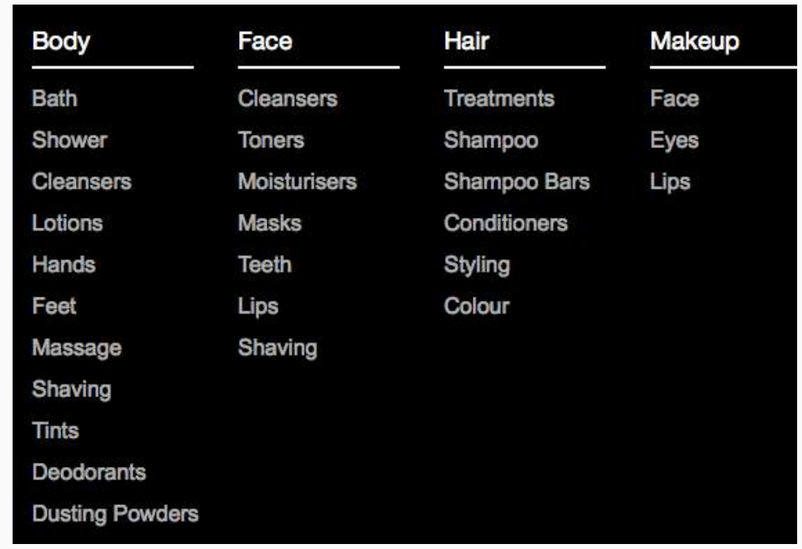


Figure 22 Lush Retail Ltd (2015) *Lush Fresh Handmade Cosmetics.* Available at: https://www.lush.co.uk (Accessed: 23/02/15)

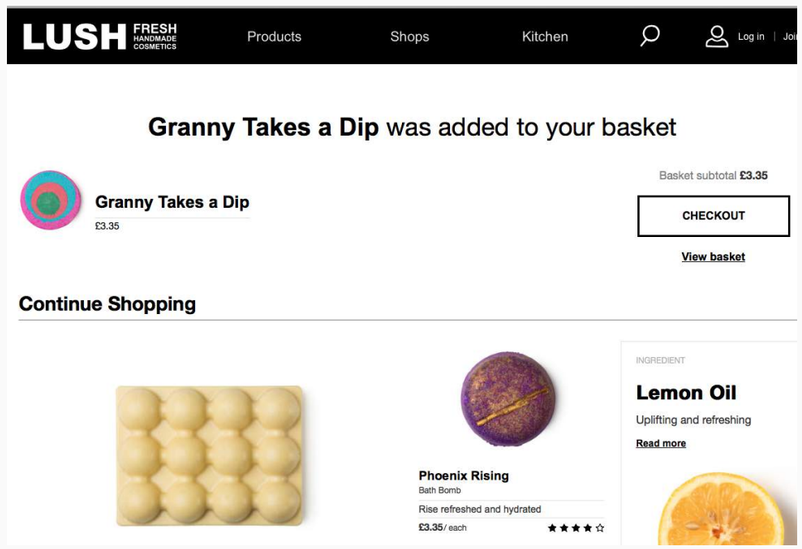


Figure 23 Lush Retail Ltd (2015) *Add to Basket.* Available at: https://www.lush.co.uk/add-to-basket (Accessed: 23/02/15)

Product Overview shows image of product and reviews, it quickly allows you to add the product to Wishlist or Basket.

Social Media links let you share the product online.

A more detailed product description than is available on the product itself, with some instructions on how to use it.

Key product ingredients are highlighted, with a description of how it is beneficial to the user.

Average rating of the reviews is displayed with most helpful, top rated and latest being featured. I find that there is a lack of engagement with the review system.

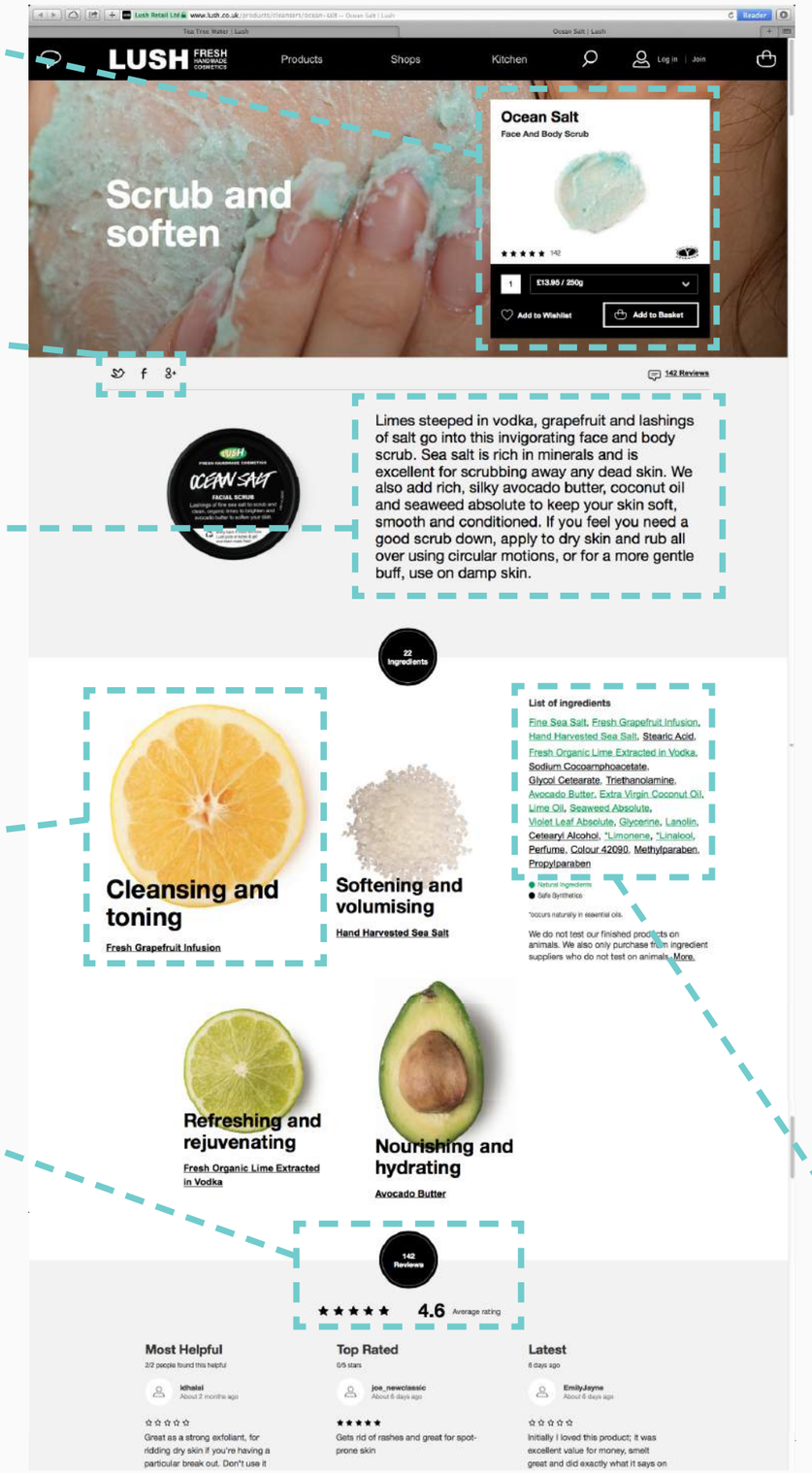


Figure 24 Lush Retail Ltd (2015) *Ocean Salt.* Available at: https://www.lush.co.uk/products/cleansers/ocean-salt (Accessed: 23/02/15)

The user is prompted to review the product themselves. This means that the user must re-visit the site after purchase to leave a review.

Related content in the form of similar products is suggested to the user.

The user is reminded of the Lush USP: anti-animal testing, fresh and handmade products.

A full list of ingredients is given, and you can click on each ingredient to find out more about it, and then search products by ingredient.

"Smells good, does good"
- Lush Retail Ltd

Lush Social Media

Profiles

Lush have a reasonably active social media presence, with profiles on Facebook, Instagram and YouTube etc. Each platform upload a variety of posts including product updates, manufacturing videos, instructional videos and competitions.

Experience

The Lush social media experience is positive however not consistent. There seems to be a lack of content on the UK sites in comparison to the USA, despite Lush being a company that originated in the UK. The social media profiles provide alot of quality undiscovered content.

Insights

The video content available on Social Media enhances the Lush experience. Combining the content from all of the profiles and bringing it in-store would provide clarification on products and allow customers to make better connections with their homemade product ethos.

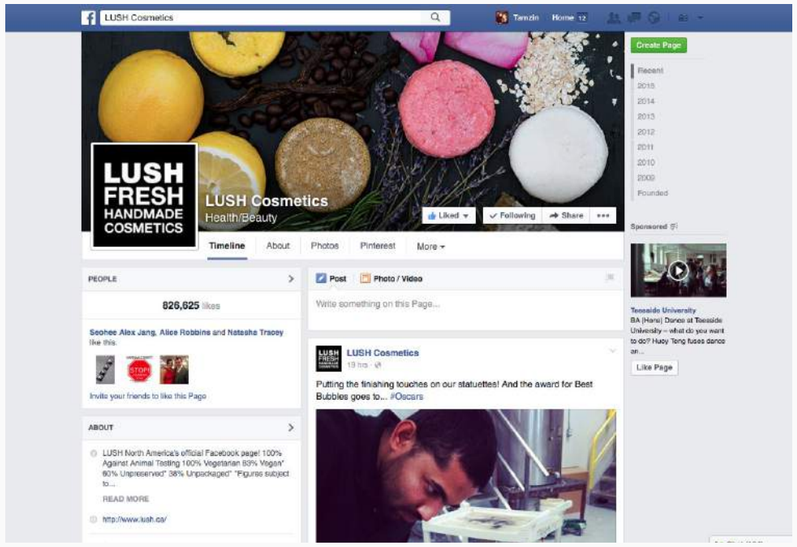


Figure 25 Lush Retail Ltd (2015) *LUSH Cosmetics.* Available at: https://www.facebook.com/lushcosmetics (Accessed: 23/02/15)

Figure 26 Lush Retail Ltd (2015) *LUSH Cosmetics.* Available at: https://twitter.com/lushcosmetics (Accessed: 23/02/15)

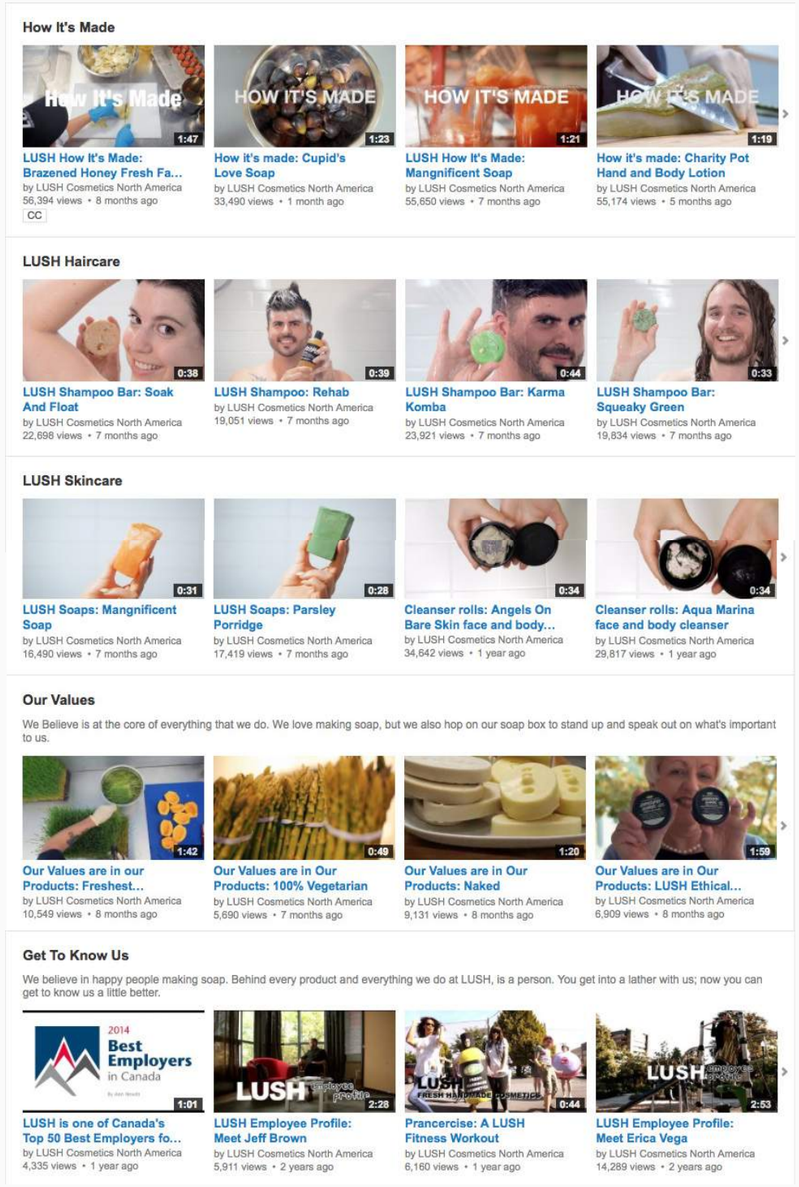


Figure 27 Lush Retail Ltd (2015) *LUSH Cosmetics North America.* Available at: https://www.youtube.com/user/lushvideos/featured (Accessed: 23/02/15)

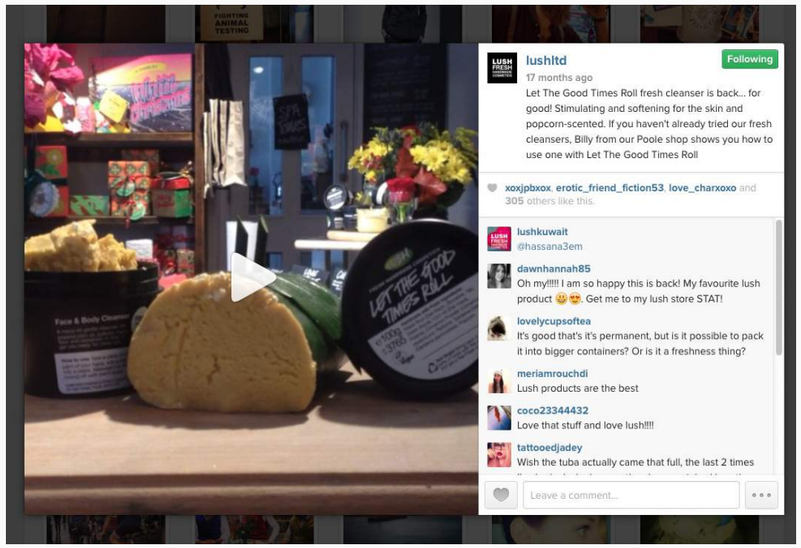


Figure 28 Lush Retail Ltd (2013) *Let The Good Times Roll.* Available at: https://instagram.com/p/fSi_gyrTfa/?modal=true(Accessed: 23/02/15)

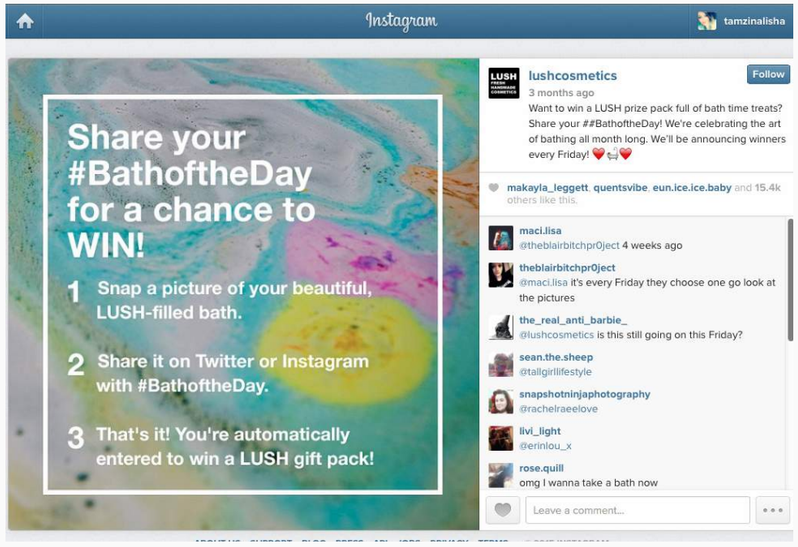


Figure 29 Lush Retail Ltd (2014) *#BathoftheDay.* Available at: https://instagram.com/p/vPWnSet-gG/(Accessed: 23/02/15)

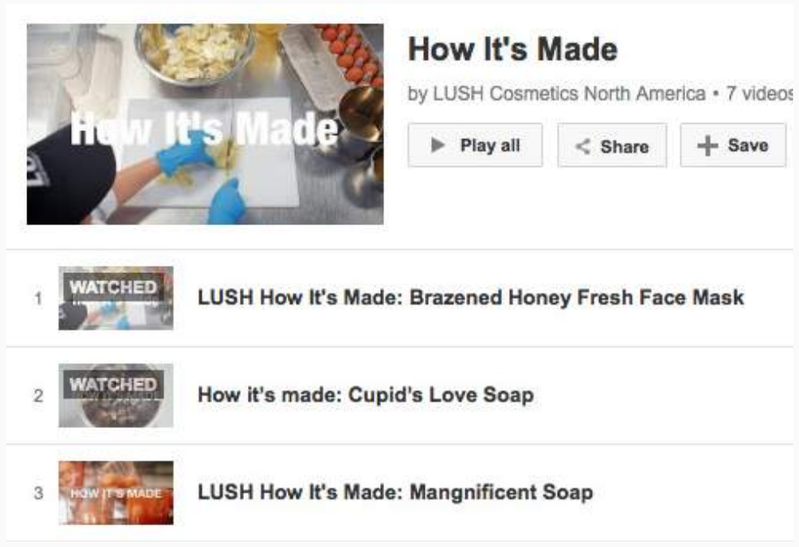


Figure 30 Lush Retail Ltd (2015) *How It's Made.* Available at: https://www.youtube.com/playlist?list=PL_G_OaIbOuAmPFX8IubCXOp18_TBKyzhZ (Accessed: 23/02/15)

Let The Good Times Roll

Short instructional and demonstrational videos published on the Lush Instagram feed provides more information on products for customers. The “Let The Good Times Roll” fresh clenser product is a product that I had come across in the store, and I had no idea how to use it or what it was for. This short Instagram video was enough for me to understand how the product can be used.

#BathoftheDay

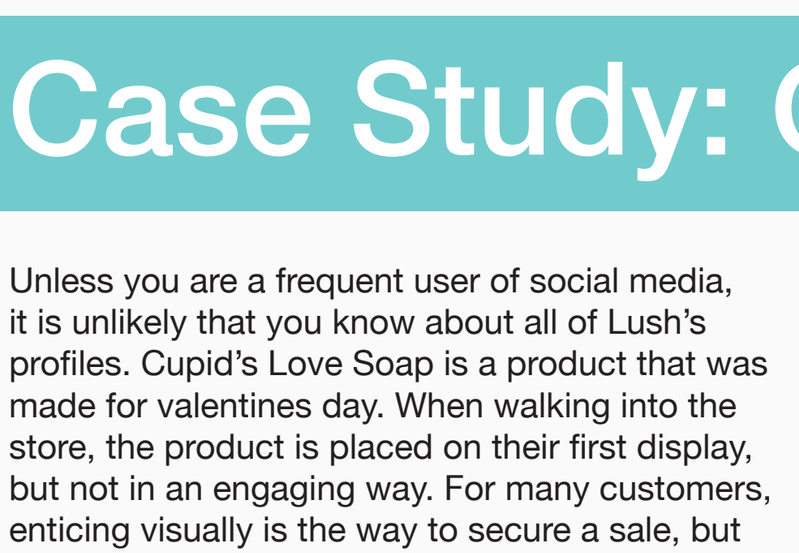
Lush currently use competition winning incentives for customers to share their Lush products on social media. The #BathoftheDay competition encouraged customers to share photos of their Lush bath bombs on Twitter or Instagram, which enters them into a competition to win a Lush gift pack. This encourages customers to visit the store or purchase online in order to enter the competition for a chance to win.

How It’s Made

Lush publish manufacturing videos on YouTube, which let customers in on the “secret” process that many other cosmetics companies do not allow you to see. This gives customers exclusive access into the company and allows them to feel more part of the brand. These videos also prove their USP showing the fresh ingredients that go into the products and the handmade aspect.

Case Study: Cupid's Love Soap

Unless you are a frequent user of social media, it is unlikely that you know about all of Lush's profiles. Cupid's Love Soap is a product that was made for valentines day. When walking into the store, the product is placed on their first display, but not in an engaging way. For many customers, enticing visually is the way to secure a sale, but I feel as if Lush could do much more to connect with their customers. For example, showing the YouTube video about how the product was made alongside the product itself. The Instagram image (Figure 31), gives no indication that you can view how it's made on Facebook or YouTube, one user expresses their curiosity - Lush have not exploited this opportunity by responding and prompting her and others to view their other social media sites.



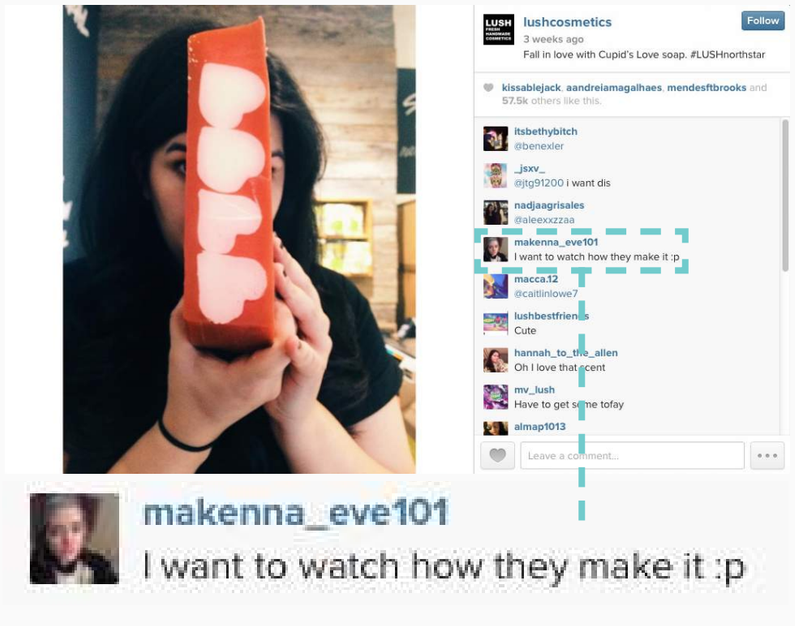
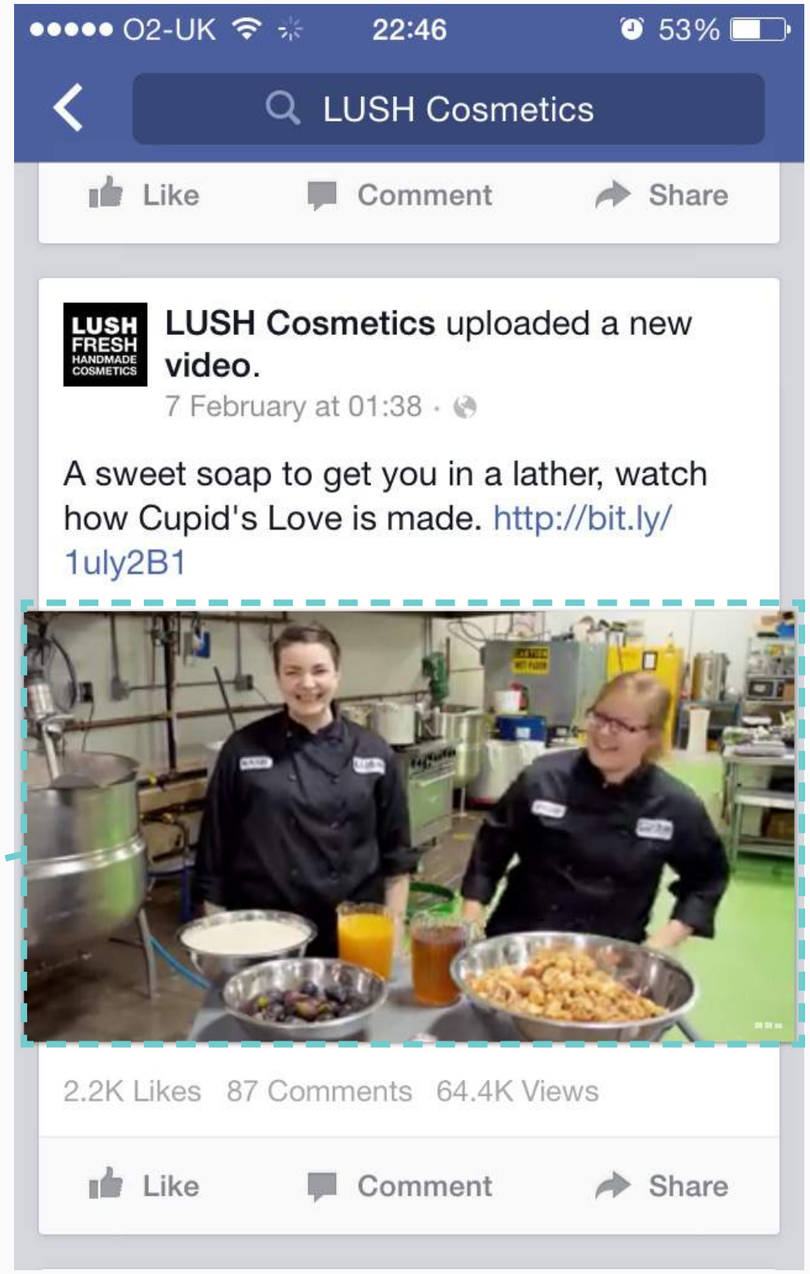
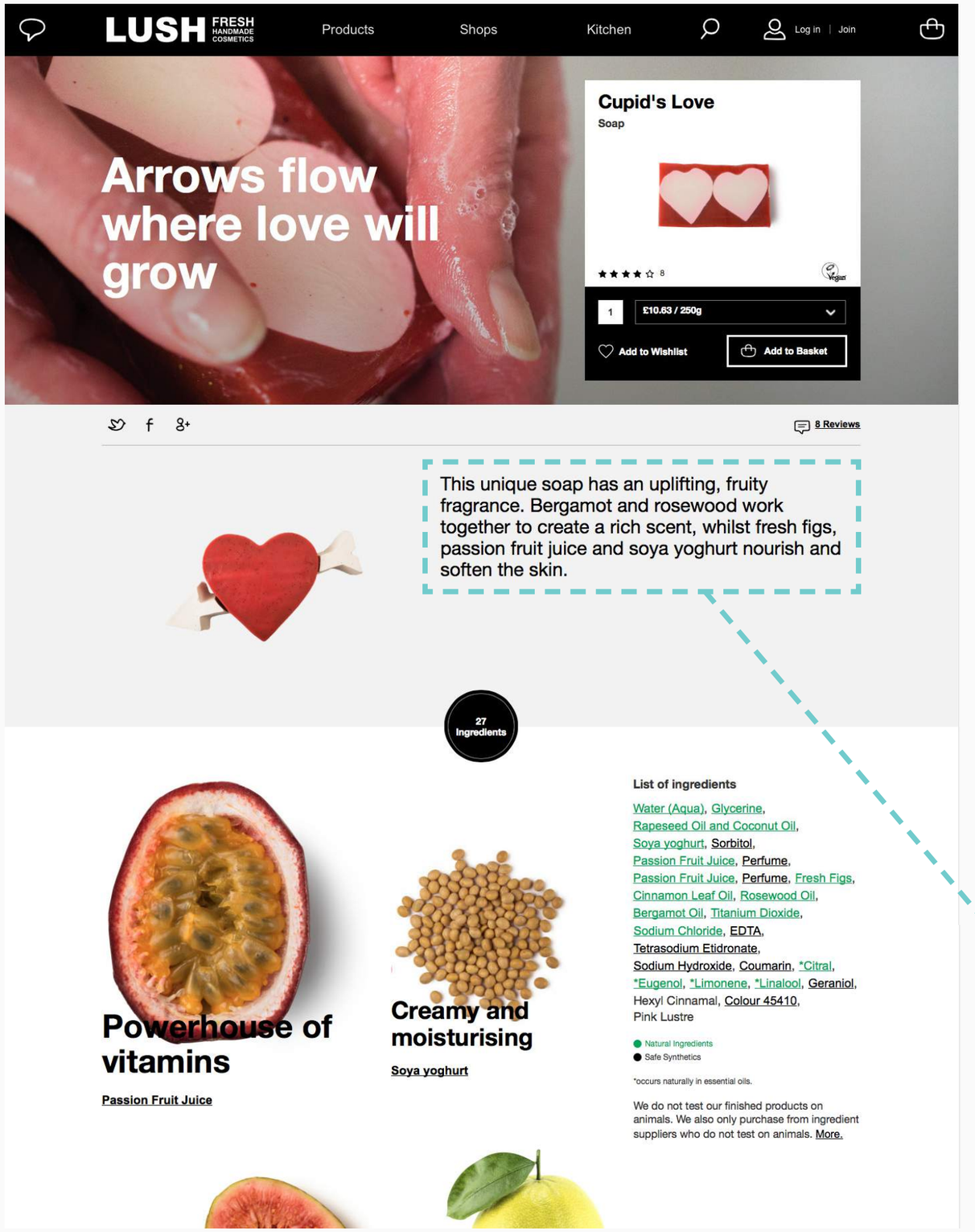


Figure 31 Lush Retail Ltd (2015) *Fall in love with Cupid's Love soap. #LUSHnorthstar.* Available at: https://instagram.com/p/yqEAjPt-m2/?modal=truet (Accessed: 23/02/15)

Figure 32 Lush Retail Ltd (2015) *LUSH Cosmetics North America.* Available at: https://www.youtube.com/user/lushvideos/featured (Accessed: 23/02/15)





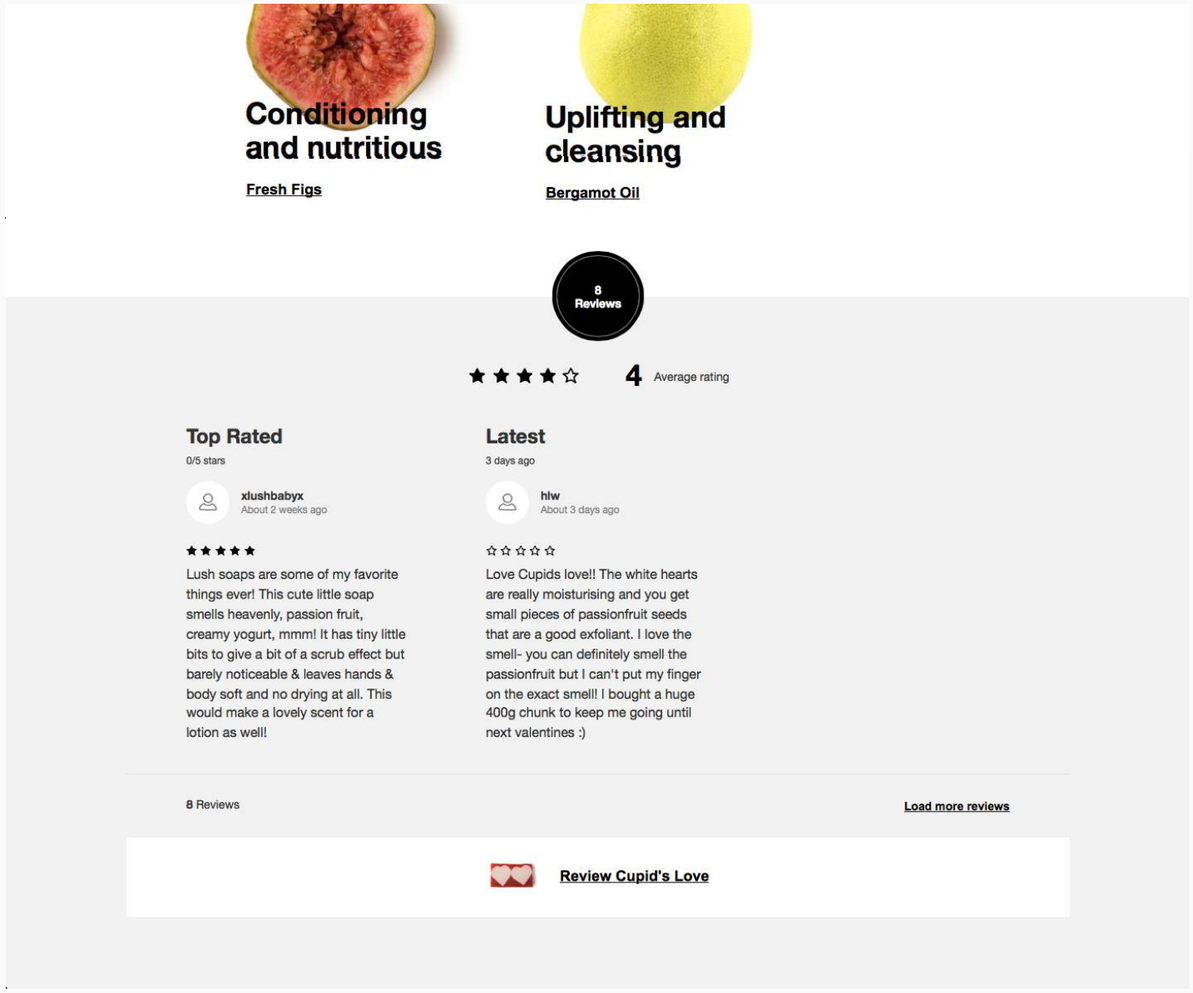


Figure 33 Lush Retail Ltd (2015) *Cupid's Love.* Available at: https://www.lush.co.uk/products/valentines-day/cupids-love (Accessed: 24/02/15)

The extent of the product description given in-store about the soap is "Deliciously fruity soap filled with fresh figs and passion fruit juice". The language used on the website is more persuasive and gives indications of the beneficial characteristics of the soap i.e. "nourish and soften the skin". Perhaps this is due to the fact that Lush believe the product "Speaks for itself" in-store, however I feel that not conveying the beneficial factors of the product is an error. The combination of the information from the online content is an unexploited dimension of Lush products. In-store, I feel that Lush don't take advantage of their customers curiosity.

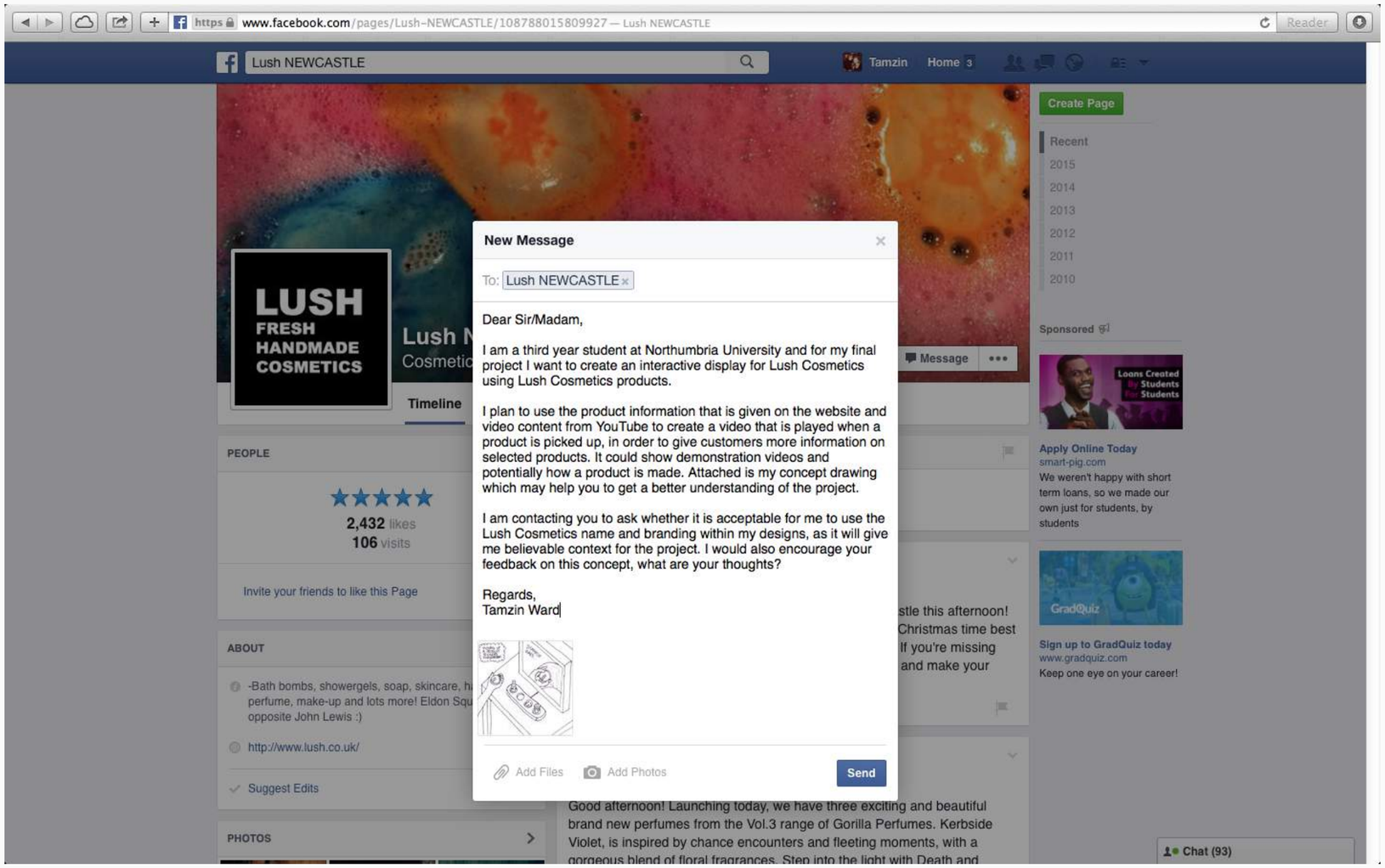
Permission

Because I intended to use Lush's content in my project, I felt that I should ask their permission. I eached out to my local Lush store, explaining my intentions and asking for feedback. Unfortunately, I did not recieve a response.

After a failed attempt to contact Lush over the internet, I visited the store to speak to some of the staff members. I was able to discuss my project with 3 staff members including the store supervisor.

The staff seemed very interested in what I had to say and gave me permission to use their products. They were very keen on the idea and said that it would be something beneficial for their stores.

If the project goes well and as intended, I may even contact Lush again to share my work with them.



Competitor Analysis: PERCH Interactive

PERCH

THE FUTURE OF RETAIL

Figure 34 PERCH Interactive (2015) *PERCH REEL.* Available at: http://www.perchinteractive.com/perch-reel/ (Accessed: 20/02/15)

According to Perch Interactive (2015), Perch is an interactive display technology designed for use in retail spaces. It turns any table surface into a dynamic, hands-on interactive display. PERCH encourages shoppers to touch and pick up products, and rewards them for doing so with relevant product information and brand-specific media. Perch displays can bring attention to featured products with digital spot-lighting and eye-catching animations. They can also provide detailed information about products, including technical specifications and product features, and data from online sources, such as user reviews and star ratings. Perch Interactive (2015) says that it combines the benefits of online shopping with the advantages of in-store shopping to create a seductive and entirely original experience for the customer.

> "PERCH brings a sense of wonder to brick and mortar by pairing products with compelling visuals and brand messaging. The result is an immersive experience resulting in increased dwell time and conversion." - Perch Interactive (2015)

Fundamentally, my concept is very similar to Perch's strategy. Both give information to customers with the aim of increasing customer learning at the point of contact with the products.

Perch worked with Kiehl's Since 1851 (Figure 35) to design an in-store customer experience for the launch of the Aromatic Blends fragrances. Each fragrance is associated with an exotic travel destination, and entices customers to pick up the bottles to reveal more information about the origins and ingredients of each scent. The campaign tried to emphasize the location of each fragrance and the two special ingredients after which the products are named. When the customer picks up a fragrance, a small biplane flies across the table, from the place where the fragrance was resting to the associated country on the map. This is followed by an animation featuring flowers, fruits and other ingredients in the perfume. In contrast to the Kiehl's display, my concept gives a wider selection of information about the products including how it was made.

Figure 35 PERCH Interactive (2015) *KIEHL'S.* Available at: http://www.perchinteractive.com/kiehls/ (Accessed: 20/02/15)

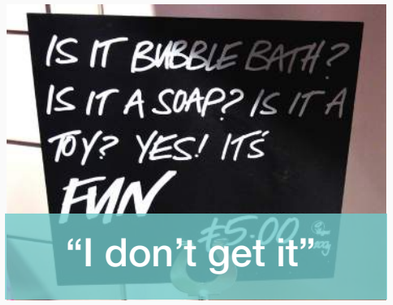
Positives	Negatives
Gives background information about the product.	Limited information.
Increases dwell time.	Same product type, restricted number of customers are interested in fragrance.
Encourages interaction with customers.	Could be easily overlooked, the flat surface may not attract enough attention & it also takes up a lot of unnecessary space.

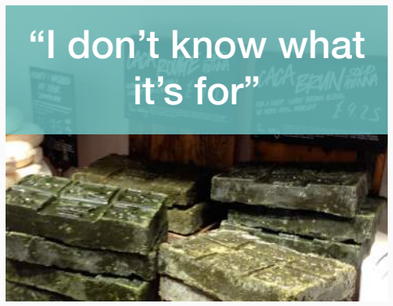
User Research: Observation

In order to gain a better understanding of the current shopping experience, I visited the Lush store with Ellie. Despite purchasing from Lush previously, she felt she was not fully aware of what they had to offer. By observing her behaviour I was able to see how my concept could improve the store and enhance the experience.

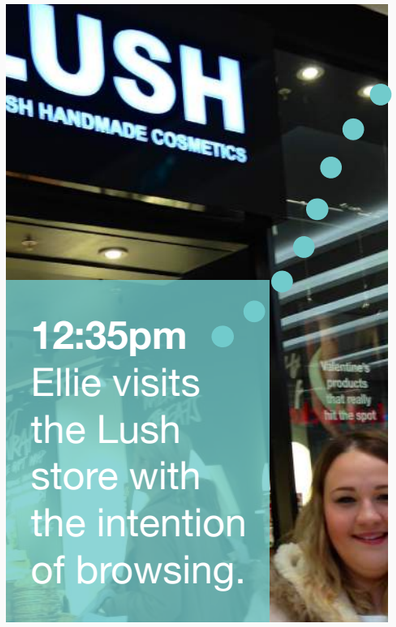
Insights

Ellie investigated each section of the store and tested many products via touch and smell. She asked many questions about products throughout, suggesting lack of information or clarity.



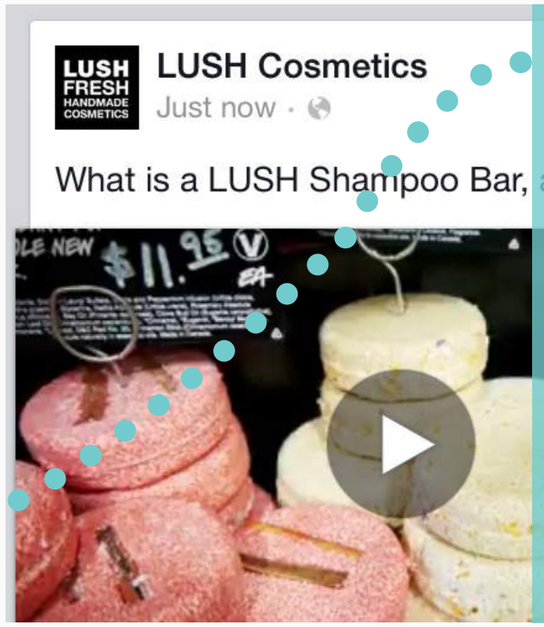


Existing Customer Journey

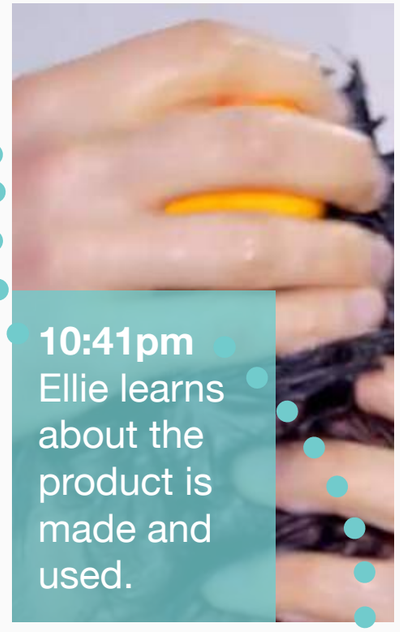


12:35pm
Ellie visits the Lush store with the intention of browsing.

12:48pm
Ellie comes across Shampoo Bars, she is intrigued, but she doesn't make a purchase and leaves the store.



10:39pm
While browsing social media on her mobile, Ellie discovers Lush have shared a video on the Shampoo Bar.

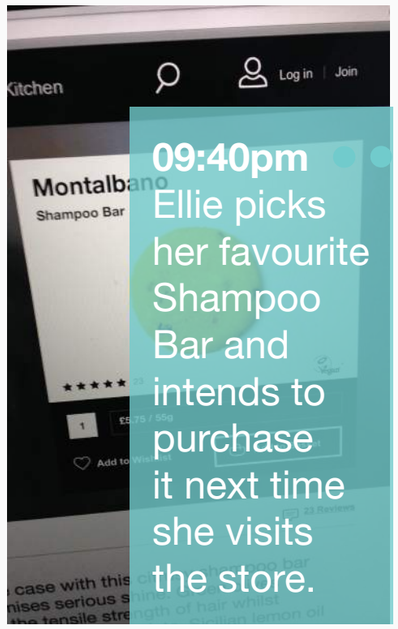


10:41pm
Ellie learns about the product is made and used.

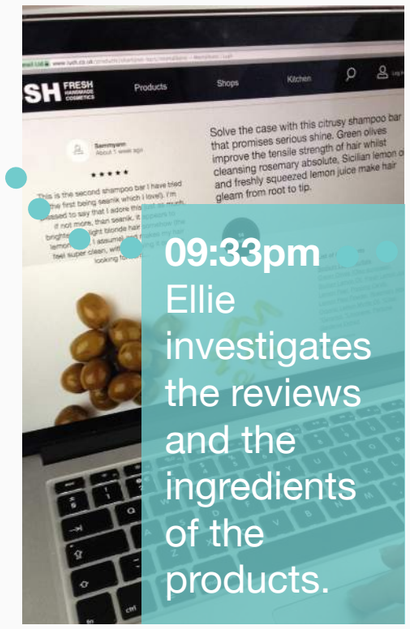
The customer journey outlines a set of events that occured when visiting the Lush store. The lack of visual explanation information resulted in confusion, and the online content was the factor that lead to a secured a purchase. However, when purchasing online, the standard delivery charge is £3.95, which is an incentive to purchase in-store.

Insights

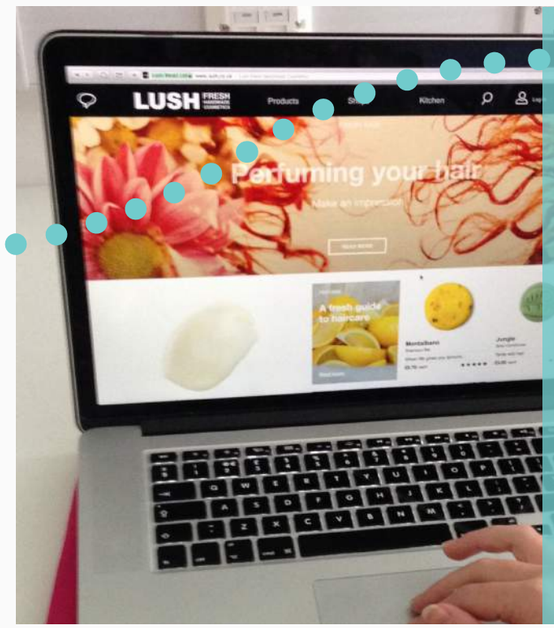
Content from the website, social media and in-store are required to secure a purchase. A combination of brick-and-mortar and ecommerce occur through visiting the store and website to complete the Lush retail experience.



09:40pm
Ellie picks her favourite Shampoo Bar and intends to purchase it next time she visits the store.



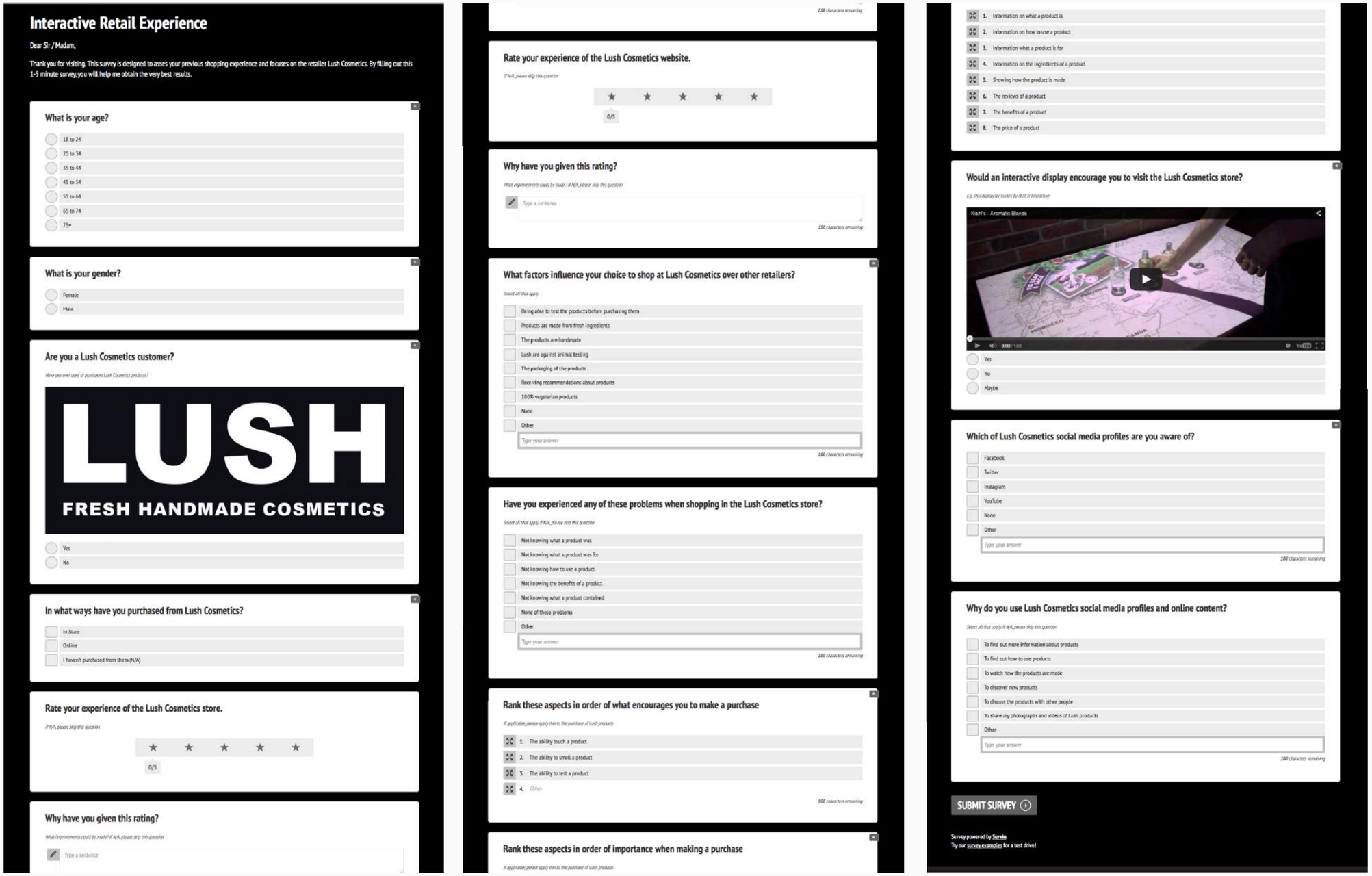
09:33pm
Ellie investigates the reviews and the ingredients of the products.



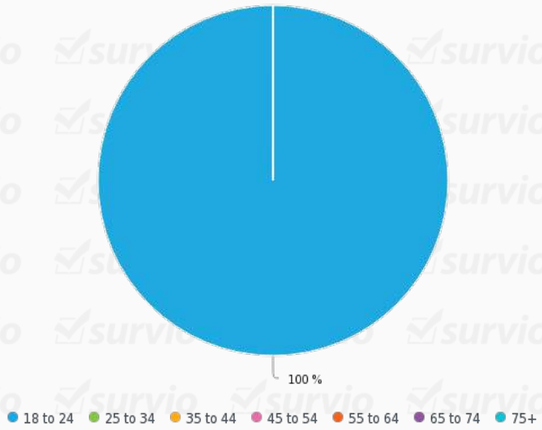
09:31am
After watching the video, Ellie is driven to the website to find out more about the Shampoo Bar product.

User Research: Questionnaire

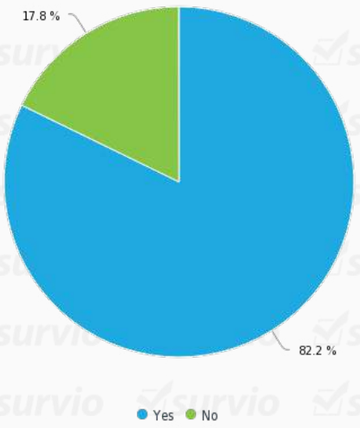
In order to asses whether the accuracy of the aspects of Lush's retail experience I believed to be true, I conducted a questionnaire. I took the opportunity to ask my target audience (18 to 24 year-olds) various questions designed to improve my knowledge of the existing customer experience of Lush and to help me discover the most important aspects of Lush products to customers. The survey also tested the viability of my intended concept.



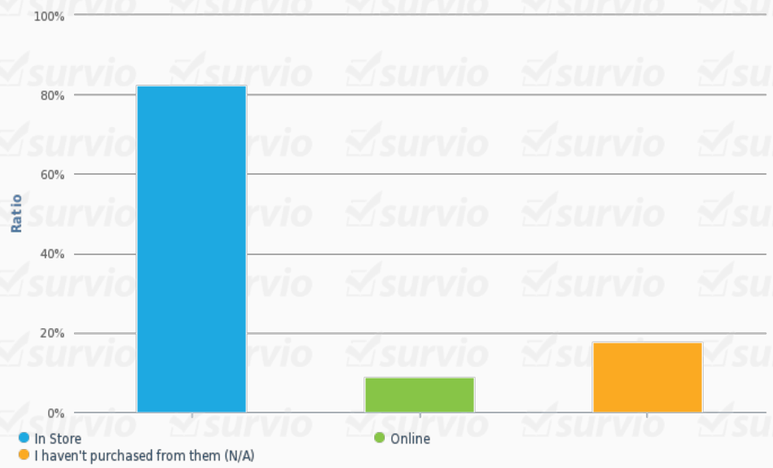
What is your age?



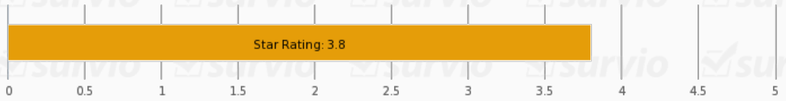
Are you a Lush Cosmetics customer?



In what ways have you purchased from Lush Cosmetics?

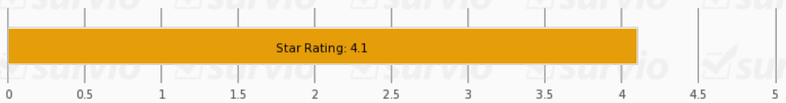


Rate your experience of the Lush Cosmetics store.



Nothing unique or memorable about the service but it was pretty adequate. To get 5/5 it has to really stand out and make me want to immediately go back. An example could be a nice little cafe where the owner makes the experience homely.	Staff are extremely overbearing and pester you non-stop. Yes staff should approach customers to see if they need help but if the answer is no then they should take no for an answer.	Even though I love the products, I find the staff very over bearing and can come on too strong at times. Kinda feel like a cornered rat whenever I'm in their store!	It has been a long time since I visited lush and I only visited a small branch that consequently did not have a large amount of variation/ products.
Smells nice in there and I like touching the things but I rarely purchase anything until I've read about what it is on their website	Customer service = brill. I even left a bag of shopping in there at the till and the staff kept hold of it and gave it me back the next day.	Although staff are only doing their job, it can be a bit off putting when they follow you around the shop and constantly check on wher you're doing	The products are great, when they're in stock, have been there less than a month, and the container is mostly filled. That doesn't always happen.
Staff is always super friendly and very knowledgable. They really do care about their customers.	Although I don't shop, I really like the in store experience and their visual merchandising in store.	I like being able to touch and smell the products but there's a lot of them and I don't know what they all are.	The staff are usually really helpful and are happy to give you lots of information about the products.
Not always sure how to use products even though i am intrigued by them.	Its great! All natural, smells good and the customer service is spot on.	Don't think products are clearly labelled on what they are for/what they do	The staff there are so nice and helpful. Also the store smells really good.
Always had good experiences with products but a little expensive	I like testing the products but I don't always know what they are	Friendly informative staff and there are lots of products to test.	AMAZING!! good ingredents and products that don't irritate my skin
The products are cool but are too fragrant for me	really good but a bit expensive. Smell is especially nice	Too busy, not enough staff to explain all the products to me.	Nice shop assistants, store smells nice, nice store style
Smells nice. Get to try products	Friendly staff and good range of products.	helpful staff good products sometimes expensive	Store looks good and staff are really helpful
	The smell is too overpowering	Friendly service, great products	Employees helpful but far too pushy.

Rate your experience of the Lush Cosmetics website.



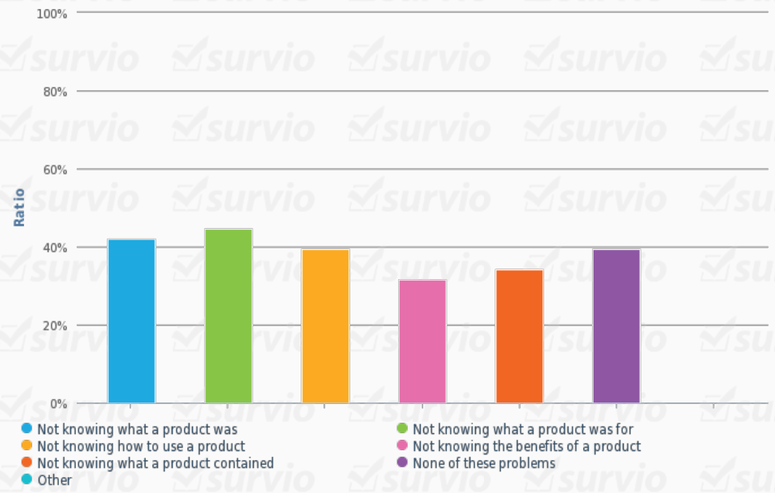
The first time was great; everything I ordered arrived quickly and intact. The next time I received completely the wrong order and it took two months to get the stuff I ordered and paid for.	It's well-structed and very beautiful. It's easy to use. I can easily find what I want.	Nice and responsive and has a current structure that is implementing current UI trends	Fast delivery, easy to use and I love the Auto-Refresh feature for auto ordering.
Lots of information for me to read about the products	It's great, but the shipping cost is a lot if you just want one thing	Wouldnt let me unselect a star. Ive never visited the webpage sorry	I love the design, it's very modern without proving too complicated.
Only used service once	Lots of useful information on the products as well as demos.	Easy to navigate but I haven't made a purchase	Again, a great website inkeeping with the instore branding
	I have never used it.	The website is nice	never shopped online with lush

What factors influence your choice to shop at Lush Cosmetics over other retailers?

Other:

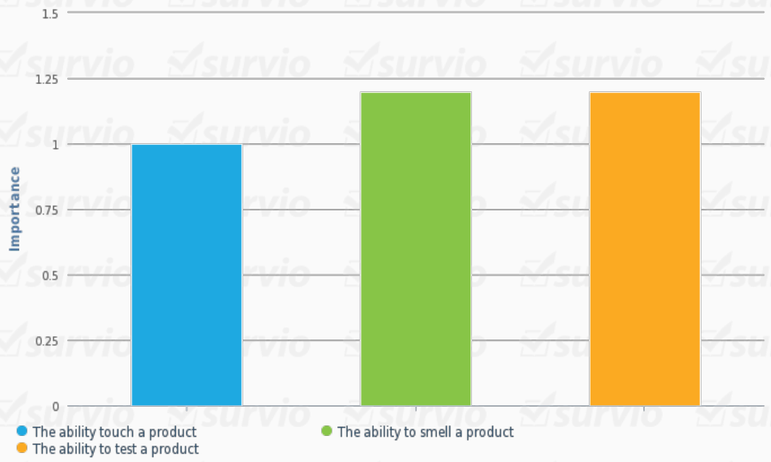
The people who work their, know what they are doing and know the products. So i trust theiir judgement	Women love cosmetics, potential for presents that will be gauranteed to be well recieved!!!	the smell gives me a headache so i don't really tend to shop there	No harsh chemicals are used which is better for my skin.
		Smells good!	

Have you experienced any of these problems when shopping in the Lush Cosmetics store?

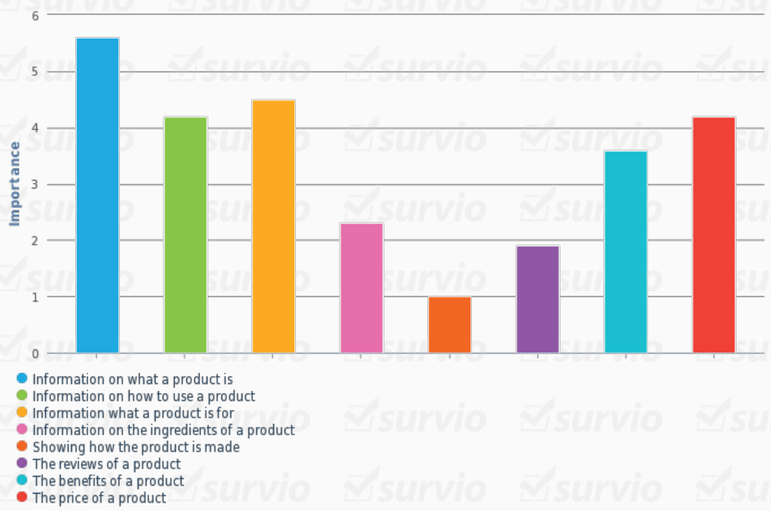


"Smells nice in there and I like touching the things but I rarely purchase anything until I've read about what it is on their website"

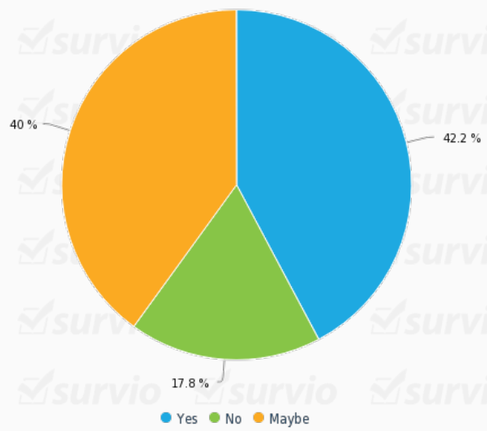
Rank these aspects in order of what encourages you to make a purchase



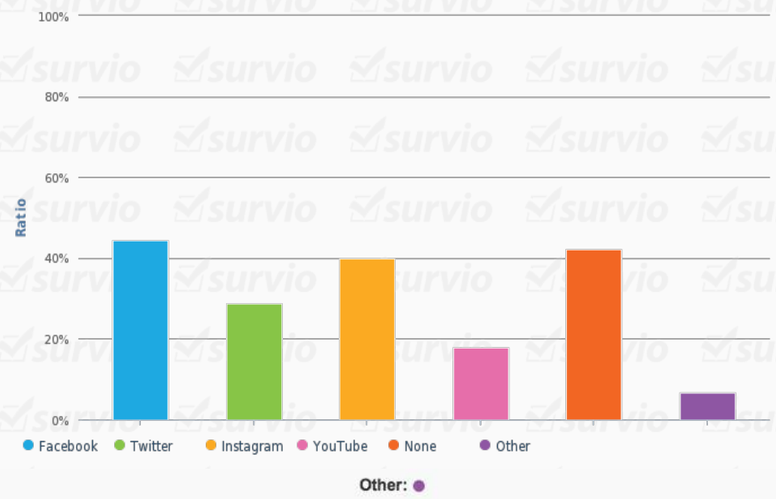
Rank these aspects in order of importance when making a purchase



Would an interactive display encourage you to visit the Lush Cosmetics store?

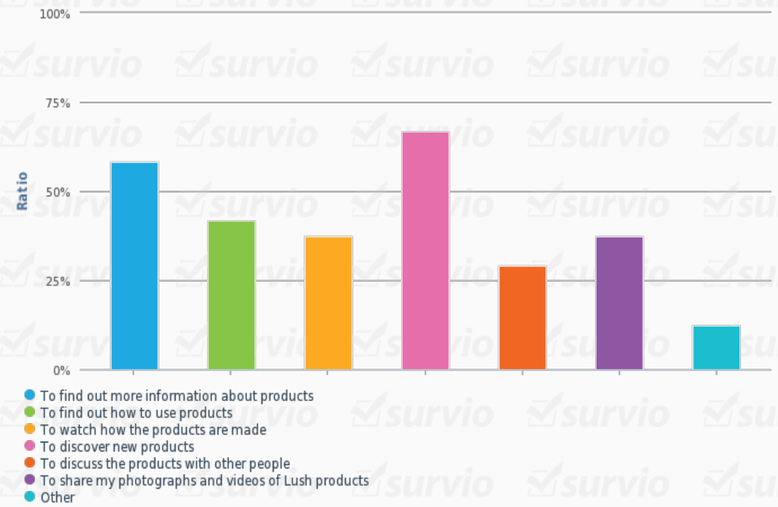


Which of Lush Cosmetics social media profiles are you aware of?



There is often a lot of reviews on blogloving, the blogging community loves lush products
Tumblr

Why do you use Lush Cosmetics social media profiles and online content?



Other:

Let's me know which products are most popular- these are more likely to be a better buy.	I don't	i dont

Insights

Out of the 45 participants, 82.2% were Lush customers yet only 8.9% had shopped online and 42.2% were unaware of Lush's social media profiles. This means that there is a high possibility that the current online content is being wasted. The most influential factors that separated Lush from other retailers were that the products are made from fresh ingredients, being able to test them before purchasing them and handmade products. 44.7% had experienced not knowing what a product was for, followed by not knowing what a product was and not knowing how to use a product. The most important aspects in order to make a purchase were information on what a product is, what it's for, how to use it and the price. 82.2% said that an interactive display would or could encourage them to visit the Lush store.

"Not always sure how to use products even though i am intrigued by them."

"Don't think products are clearly labelled on what they are for/what they do"

"I like being able to touch and smell the products but there's a lot of them and I don't know what they all are."

I need products that are gentle on my skin as it can be quite sensitive. I have eczema and Lush Products such as Dream Cream are great because their natural ingredients are soothing and hydrating.

Jess is a student from Newcastle who loves to shop. With a particular interest in health and beauty products, Lauren stays up to date with the blog posts of numerous beauty bloggers and watches countless YouTube tutorial videos. As an eczema sufferer, Jess finds that Lush products can ease her symptoms and make her feel more confident within herself. Because of this, Jess needs to know exactly what is in a product as it can have a negative effect on her body and happiness. Natural ingredients are important to Jess, and it helps that you can test Lush products before purchasing.

GOALS

Discovering products that are beneficial for her skin type.

Trying products that are recommended by popular bloggers on internet sources.

Natural ingredients in products.

AGGRAVATIONS

Products that falsley claim they are suitable for sensitive skin.

Unclear product information.

When the benefits of products are unclear.

Technology

Monthly Spare £

TOP 3 HOLY GRAIL PRODUCTS

I buy the same Lush products over and over again because I know I love them and they work for me. If I knew more about the other products I would consider branching out, but it's not worth the risk if I don't know if I'll like the product.

Megan works at an advertising company in Newcastle. Megan likes to take care of her appearance and ensures that she is always looking her best. Megan much prefers to shop alone and finds that, although helpful at times, the staff in Lush can be overbearing and push certain products that she is not interested in. Megan is quite picky and only buys products that are either recommended to her by a friend or she has seen demonstrated on social media. Megan likes that Lush allows you to test the products before you buy, but she'd have to really like a different product for her to purchase it.

GOALS

Researching product information and demonstrations online before making a purchase.

Buying the most popular products, often seen on social media

AGGRAVATIONS

Poor explanation of how a product is used.

Pushy shopping assistants.

Lack of digital advertising.

Technology

Monthly Spare £

TOP 3 HOLY GRAIL PRODUCTS

As a student I struggle with money but I like to treat myself occasionally. I stick with the cheaper products in Lush but I like splash out on a facemask from time to time because it really works for my skin type.

Erin is a first year student who is struggling to live off her student loan. Despite this, Erin will occasionally treat herself to a few indulgent outlets, purchasing products from Lush. Erin enjoys being able to touch and smell products in the Lush store, and that's what she mainly visits for. It is rare that Erin makes a purchase due to her lack of funds, but she has in mind several products she would like if she could afford them. Erin would only invest in a product if she was certain that it would benefit her, Erin finds the shopping assistants in Lush very helpful and she always listens to their opinions on products.

GOALS

Receiving value for money.

Finding out what a product is and how it's used for before purchasing.

Getting advice from Lush shopping assistants on what to purchase.

AGGRAVATIONS

When products are not clearly labelled.

Expensive shipping cost on online sites.

Buying products that are not suitable for her personal needs.

Technology

Monthly Spare £

TOP 3 HOLY GRAIL PRODUCTS

Research: Conclusion

My research gave me an insight into all things Lush Cosmetics. With increased knowledge on interactive retail and my target audience, I felt confident that I could continue to refine my concept from this point.

The main point that my user research raised was the lack of clarity of the products. For example, not knowing exactly what a product is for. 82.2% of the 45 questioned said that an interactive display could encourage them to visit the store.

I believe that I could drastically improve the Lush store environment with an interactive display, as their current stores feel very cluttered and confusing and their digital content is lacking. There is a lot of online content that Lush are not currently exploiting in-store, there is a clear opportunity to improve this.

Moving forward. one element that I needed to focus on more is the Arduino, as I would have to ensure that I could actually make my prototype work physically.

CONCEPT DEVELOPMENT

Mission Statement

The ultimate interactive, multisensory retail experience that increases customer learning at the point of product contact, allowing customers to make informed decisions before purchasing.

I want to create a tangible, memorable and worthwhile interactive shopping experience that engages customers and promotes increased interaction with Lush customers. I aim to aid the retailer in capturing customers when they're in the mood to buy in order to secure additional purchases. Impulse buying while shopping in-store is a key opportunity for retailers to exploit, increasing dwell time with an interactive display could lead to an increase in purchases.

Lush products can come at a fairly premium cost, so asking customers to purchase is a bit of an investment when they don't always know what they are getting. Customers must be sure that they will receive a positive experience with a product before purchasing. Being aware of all the information about a product and fully understanding the benefits, can encourage and ensure purchases; it allows shoppers to make an informed decision before buying.

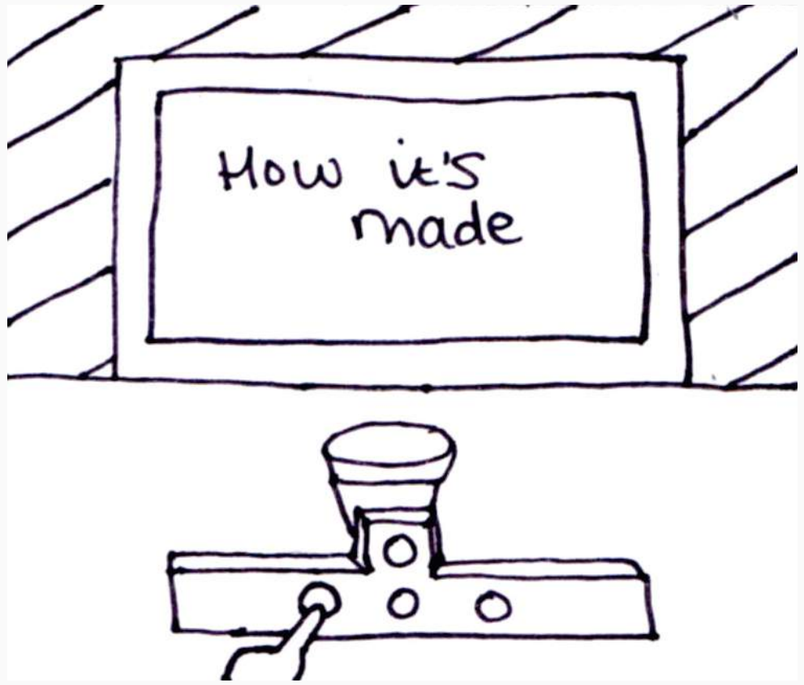
A media-rich display could drive sales and transform the way people connect with the in-store experience, while simultaneously educating customers about campaigns and products at the point of product contact. I believe that I can improve Lush's omnichannel marketing strategy by seamlessly connecting the digital and the physical.

In future developments, the display could be used to track which of the selected products have the most interaction, which would allow Lush to have an insight on shopper behaviour. It would also let Lush monitor the effect of the interactive display to see whether it is driving more sales.

This ultimately means that digital technology is being utilised and implimented in a way that creates an intrinsic value to consumers. Treating my brief as though it is for a client, Lush Cosmetics, gives my project some context and makes it much more believable.

Concept 1

This concept uses multiple motion sensors attached to a screen interface to play the information of different products. It uses PIR motion sensors to detect the presence of a person in front of each of the different products. To create a working prototype, I would have to ensure that the motion sensors are far enough apart to detect the correct product's sensor. This could potentially be an issue as I would require a prototype that is in quite a restricted area.



Concept 2

This concept uses 1 motion sensor and 1 product to play an overview of the information. 3 buttons attached to the sensor decide which video is played next, according to which aspect you want to know more about. These would be how the product is made, how the product is used, and the ingredients within the product. This could be beneficial for the individual displays throughout the store, but for a prototype that I am going to create, I'm not sure it is exciting enough.

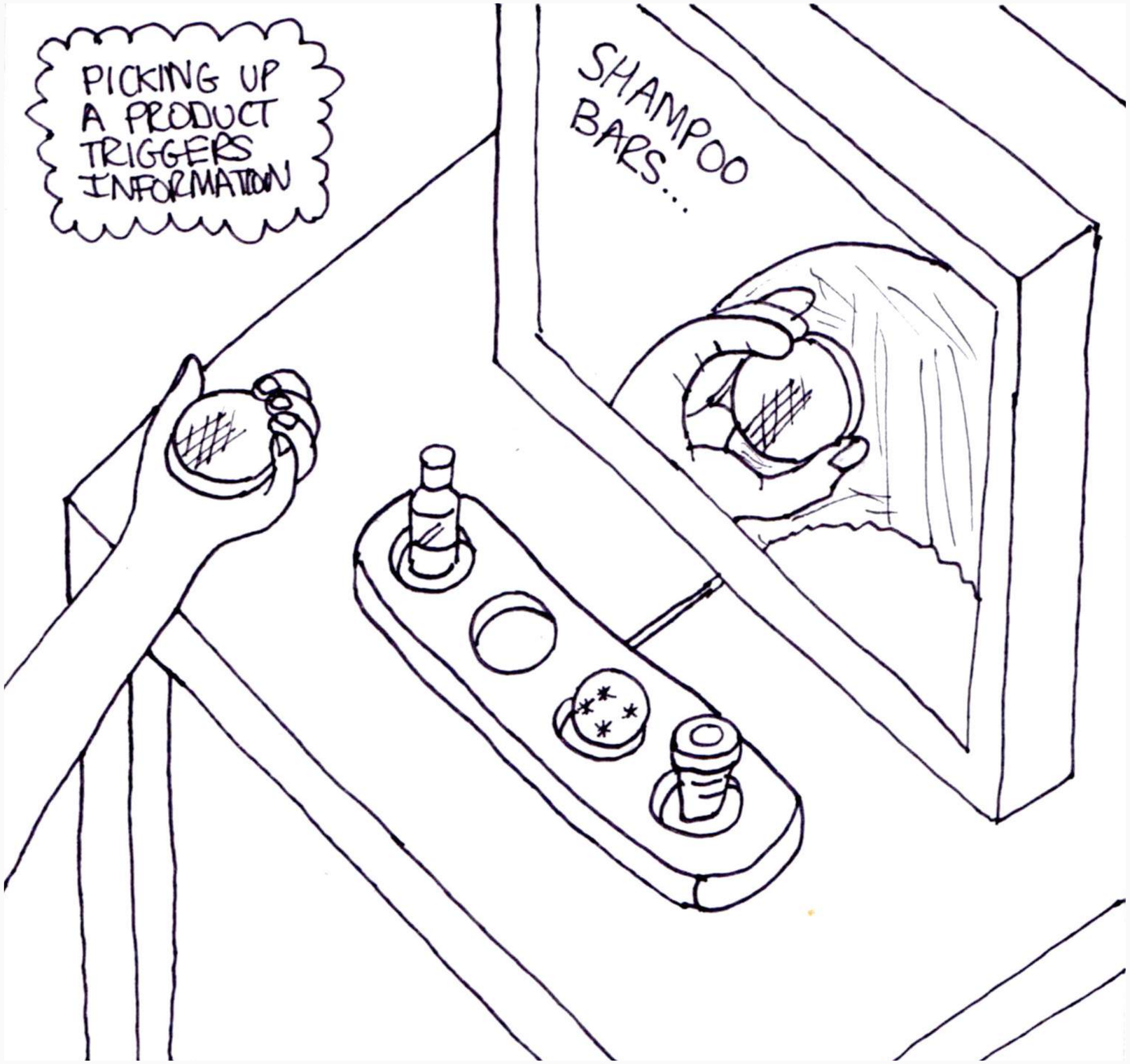
Concept 3

This concept uses 3 products with RFID tags attached. This would allow customers to scan the products to reveal the additional information about them. This could be interesting in the real-life implementation, but the complication of this concept for my prototype and Lush stores is that the Lush Cosmetics products tend to have little or no packaging, and to attach the RFID tags it would be difficult.

Chosen Concept

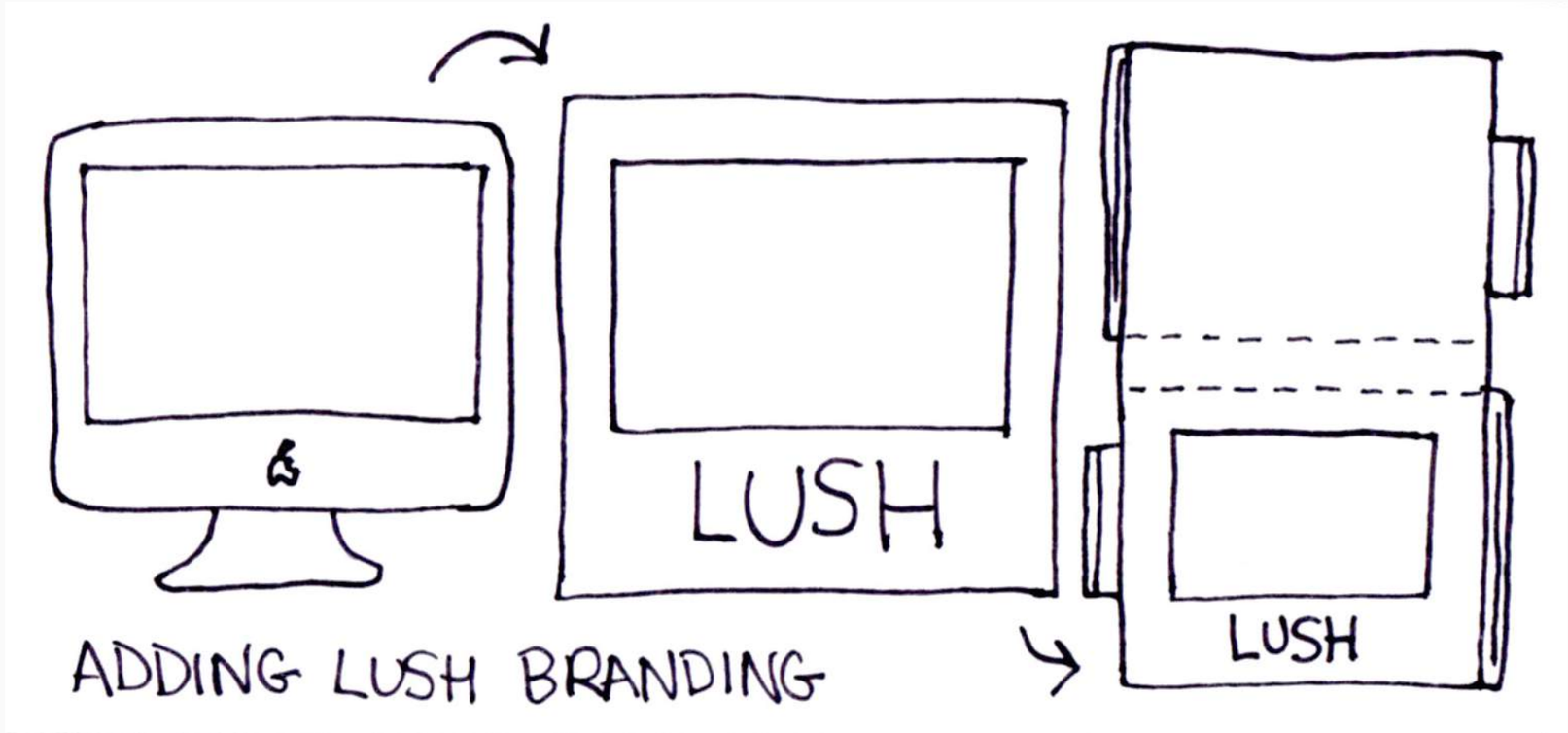
This concept uses piezo transducers with a panel to detect whether a product is picked up. When there is no pressure on the sensors and the product is lifted, the information about the specific product will play. This means that the customer can experience the product will through touch and smell and then view the additional information, from the online sources. If 2 products are picked up in quick succession, I would either have to ensure that each product video is played completely before the next starts, or cut off each video when the product is replaced. I also have to overcome to potential issue caused if 2 people pick up products at the same time. There is potential to add other sensors that trigger music.

Concept 4 is the concept I have chosen to develop and take forward for my project.



According to Evans (2014) Retailers that invest in experiential design can boost dwell time, see an increase in average basket spend, and build stronger relationships with their customers. Retailers will have to differentiate themselves from the competition through the way they serve customers to provide great customer experiences.

I have decided to exclude the social element of Instagram. I have also discounted the idea of using an iPad quiz to give personalised product recommendations as it could be quite expensive to require multiple iPads throughout the store. But it has potential for a future development. Instagram photo feed could still be implimented within their display screen, inbetween demonstrations.



Rather than building my own screen, I have chosen to use a Mac to display the video content. There is potential for me to record my own tutorial videos for the prototype. However, Lush do have an array of content that I can utilise.

Sound/music/vocals within my concept could be an issue, as the store is usually quite bustling, subtitles on the videos could solve this.

Branding

To increase the professional appearance of the prototype I had the idea of designing a carboard sleeve to place over the Mac which can be branded with Lush Cosmetics imagery. This ultimately would improve the appearance of the display and allow it to fit in seamlessly with the Lush store environment. Screen position in store is also key. Display, product positioning, environment, packaging, graphics, product design etc (plus my interactive display) should be chosen with attention to detail to maximise engagement.

Which Products?

To give my prototype display a theme, wanted to focus on products that contained the same ingredient. I chose to feature products that contain both sea salt and seaweed. This narrowed down the selection of Lush products to. In terms of the prototype, it means that I can feature on the aspects of the ingredient for the branding of the prototype. This could allow me to use certain colours or imagery relating to sea salt and seaweed.

The final choice of products is based on the suitability of them for prolonged use. I must chose the ones that are not “naked” for my particular prototype as it will be much simpler for me if I need to attach sensors to the products. Based on this, I have chosen 3 products that come in packaging: Sea Spray, Ocean Salt and Daddy-O. I wanted to have products of varying shapes and sizes to enhance the tactile experience.

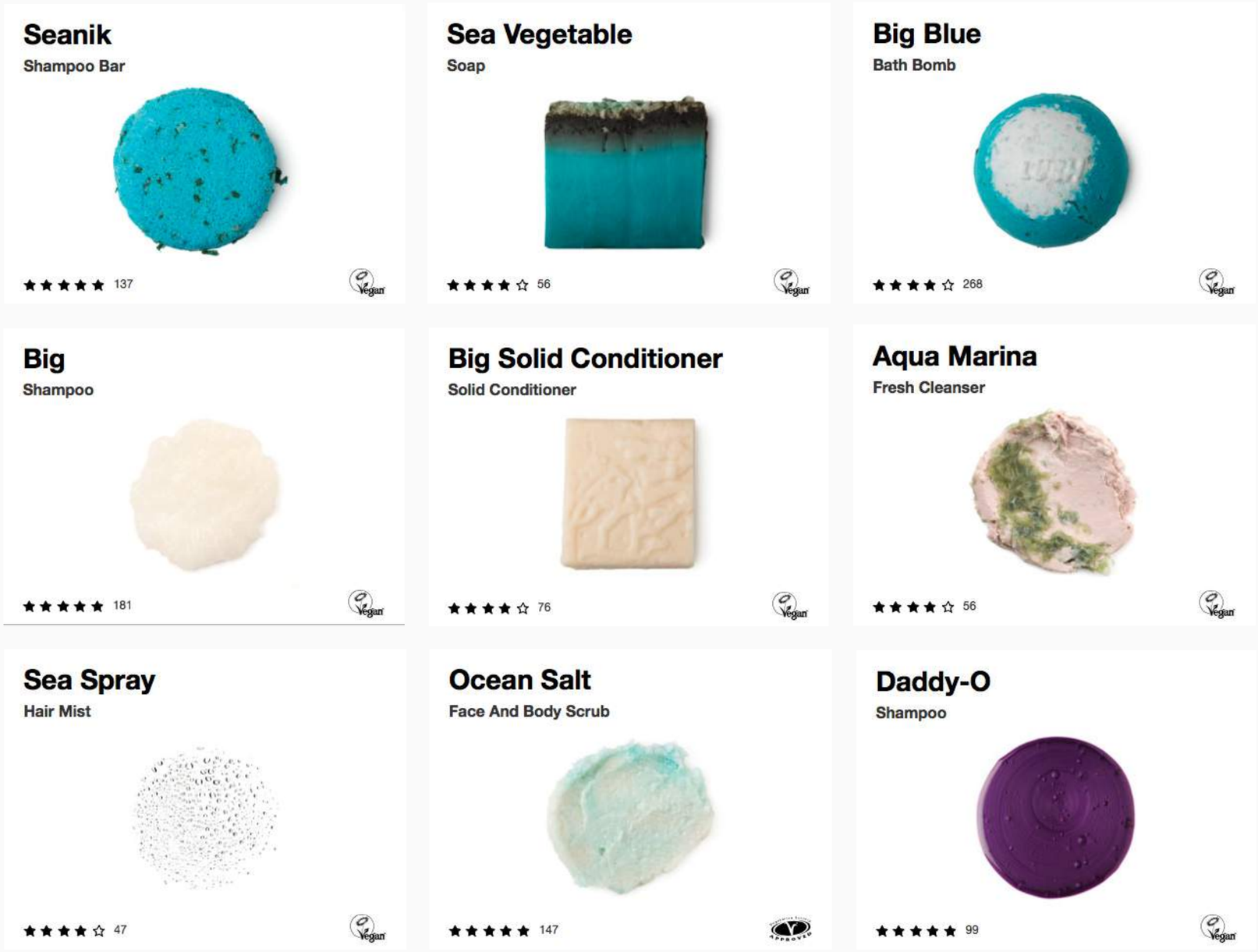


Figure 36 Lush Retail Ltd (2015) *Lush Fresh Handmade Cosmetics.* All images available at: https://www.lush.co.uk (Accessed: 12/03/15)

Sea Spray Hair Mist

"Get that beach hair look with this salty spray that gives a light hold and adds shine, leaving a neroli, orange flower, grapefruit and rosewood scent. We've used carrageenan, a seaweed extract, together with glycerine to hydrate the hair. Mineral-rich fine sea salt gives that volumised, beachy head look, counteracting the flattening effects of soft water and softens the skin on the scalp too."

I was able to find 2 videos online for sea spray. One gives product explanation while the other shows the manufacturing of the sea spray.

Figure 37 LUSH Cosmetics North America (2014) *LUSH Hair Mist: Sea Spray.* Available at: https://youtu.be/qTVpjuLcFK8 (Accessed: 03/03/15)

Figure 38 LUSH (2012) *Lush Manufacturing Presents: Sea Spray Hair Mist.* Available at: https://youtu.be/wv9CgEGYZI0 (Accessed: 03/03/15)

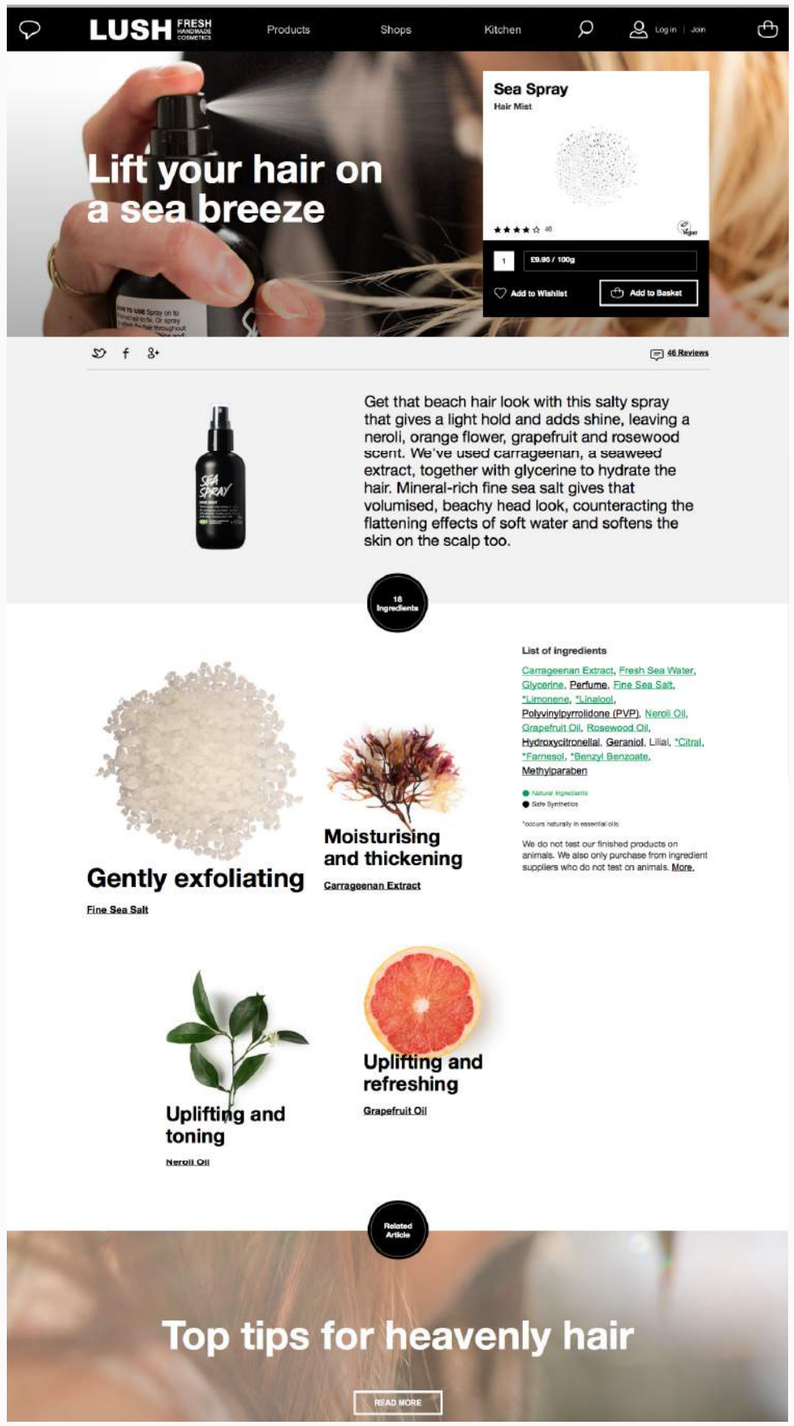


Figure 39 Lush Retail Ltd (2015) *Sea Spray.* Available at: https://www.lush.co.uk/products/sea-spray (Accessed: 01/03/15)

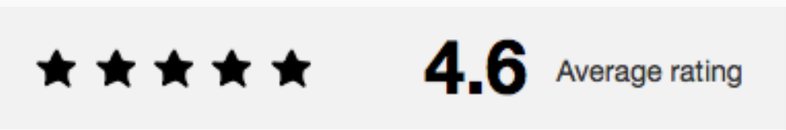
Ocean Salt Face And Body Scrub

"Limes steeped in vodka, grapefruit and lashings of salt go into this invigorating face and body scrub - now in a self-preserving formula. The salty, citrus fragrance is refreshing on the skin and mind, like diving into the cool blue ocean. Sea salt is rich in minerals and excellent for scrubbing away any dead skin. We also added rich, silky avocado butter, coconut oil and seaweed absolute to keep your skin soft, smooth and conditioned."

I was disappointed to find that both videos for ocean salt weren't as good quality as the ones for sea spray. However, they both gave a bit more information about the products and are workable.

Figure 40 Megan Brown (2014) *Lush Series: Ocean Salt | LushHarrogate.* Available at: https://youtu.be/nxf03NaS0xo (Accessed: 03/03/15)

Figure 41 LUSH Cosmetics North America (2013) *LUSH Quick Tips: Ocean Salt.* Available at: https://youtu.be/XAu4DzoSk-M (Accessed: 03/03/15)



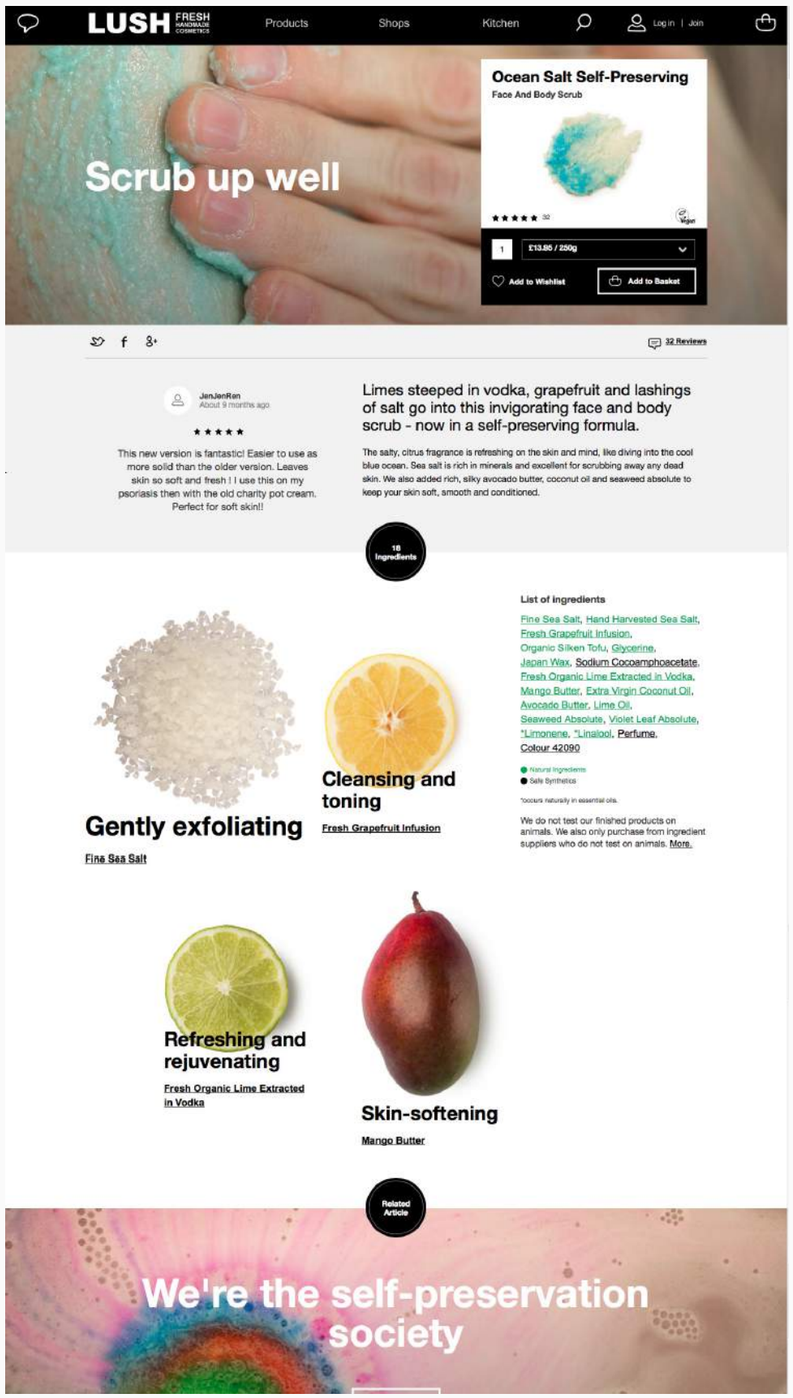


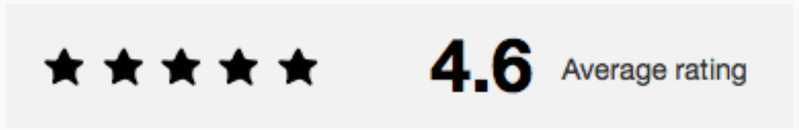
Figure 42 Lush Retail Ltd (2015) *Ocean Salt Self Preserving.* Available at: https://www.lush.co.uk/products/cleansers/ocean-salt-self-preserving (Accessed: 01/03/15)

Daddy-O Shampoo

"Daddy-O works to add volume and shine to your hair. It's the lemon and organic lime juice which allow the cuticles to lie flat and reflect more light, helping the hair to shine. We've created an infusion from toothed wrack seaweed and organic lemons, that cleanses and softens. Extra virgin coconut oil hydrates the hair, whilst fine sea salt gets to work by to softening and giving body to your hair. What makes this extra special is that it can revive your silver and blonde tones."

I was only able to find one video for daddy-o, but it was of good quality and provided good information as well as some demonstration of the use of the product.

Figure 43 LUSH Cosmetics North America (2014) *LUSH Shampoo: Daddy-O.* Available at: https://youtu.be/o_KbyCaWynQ (Accessed: 03/03/15)



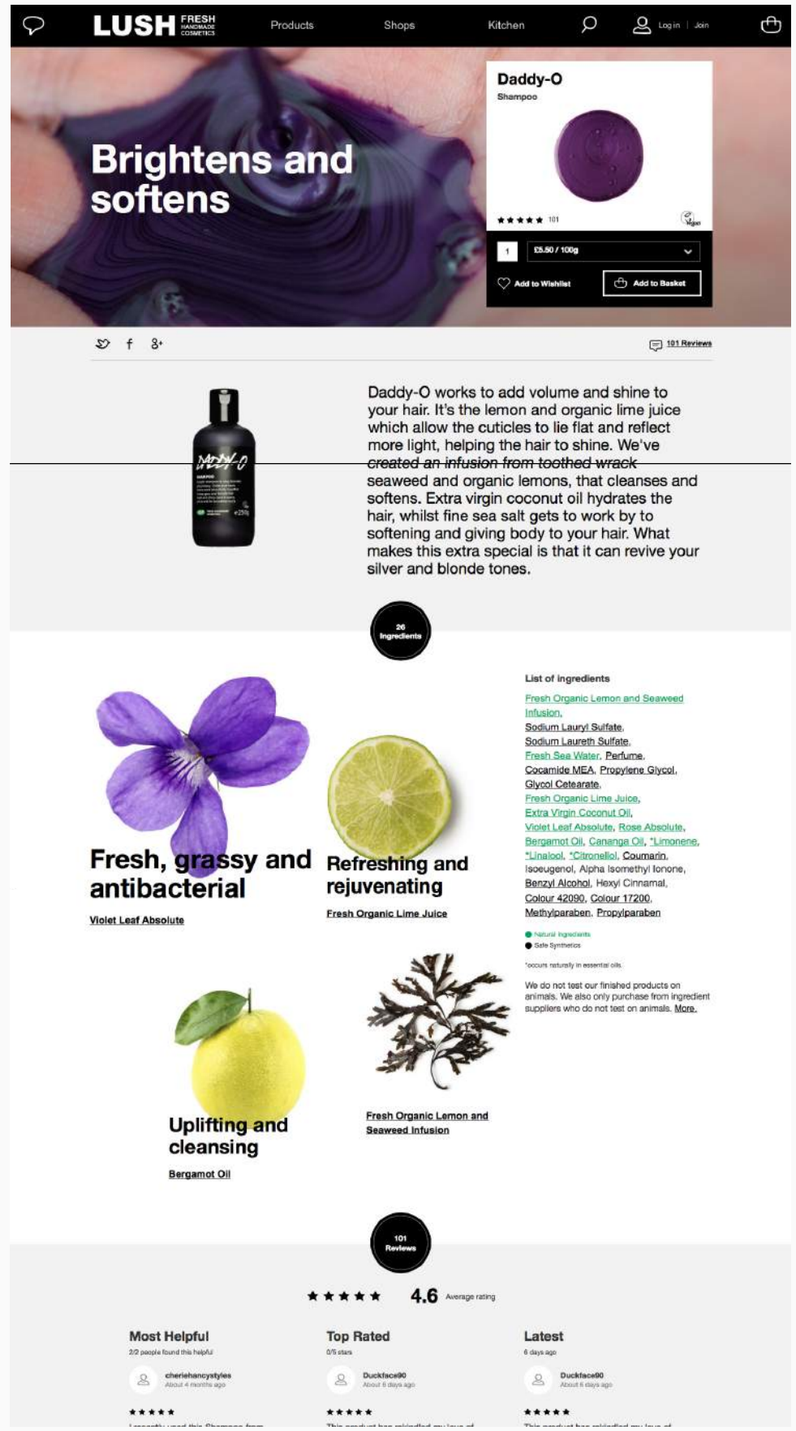
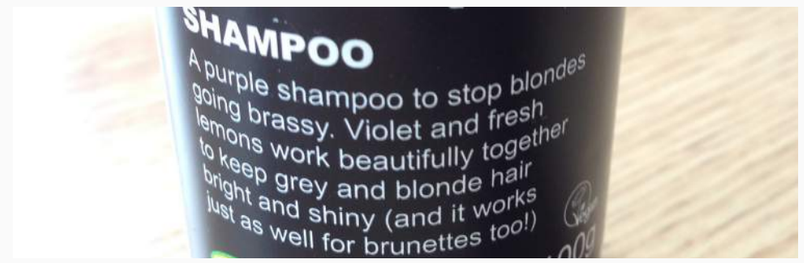


Figure 44 Lush Retail Ltd (2015) *Daddy-O.* Available at: https://www.lush.co.uk/products/daddy-o (Accessed: 01/03/15)



Sea Spray

Sea Spray gives you some direction on how to use the product, but I still felt that more explanation was required for me to understand fully how it should be used.

Ocean Salt

The Ocean Salt packaging is the most self-explanatory of the three, with clear instructions and description of the products.

Daddy-O

The Daddy-O shampoo is quite clear in description, but for people who do not know what a “purple shampoo” is, it is not as clear as it could be.


SEA SPRAY
HAIR MIST
FRESH HANDMADE COSMETICS
SELF-PRESERVING
OCEAN SALT
FACE AND BODY SCRUB
Does your face feel washed up and abandoned? Get it ship shape with coconuts and lime.
FRESH HANDMADE COSMETICS
DADDY-O
SHAMPOO
A purple shampoo to stop blondes going brassy. Violet and fresh lemons work beautifully together to keep grey and blonde hair bright and shiny (and it works just as well for brunettes too!)
FRESH HANDMADE COSMETICS
Recycled

SEA SPRAY
HAIR MIST
There's a sea mist rolling in – but this one leaves you fresh, uplifted and perfumed. A salty spritz that gives body, volume and hold.
LUSH FRESH HANDMADE COSMETICS
e100g

LUSH
FRESH HANDMADE COSMETICS
OCEAN SALT
FACE AND BODY SCRUB
Now in a self-preserving formula. Lashings of fine sea salt to scrub and clean, organic limes to brighten and avocado butter to soften your skin.
SELF-PRESERVING

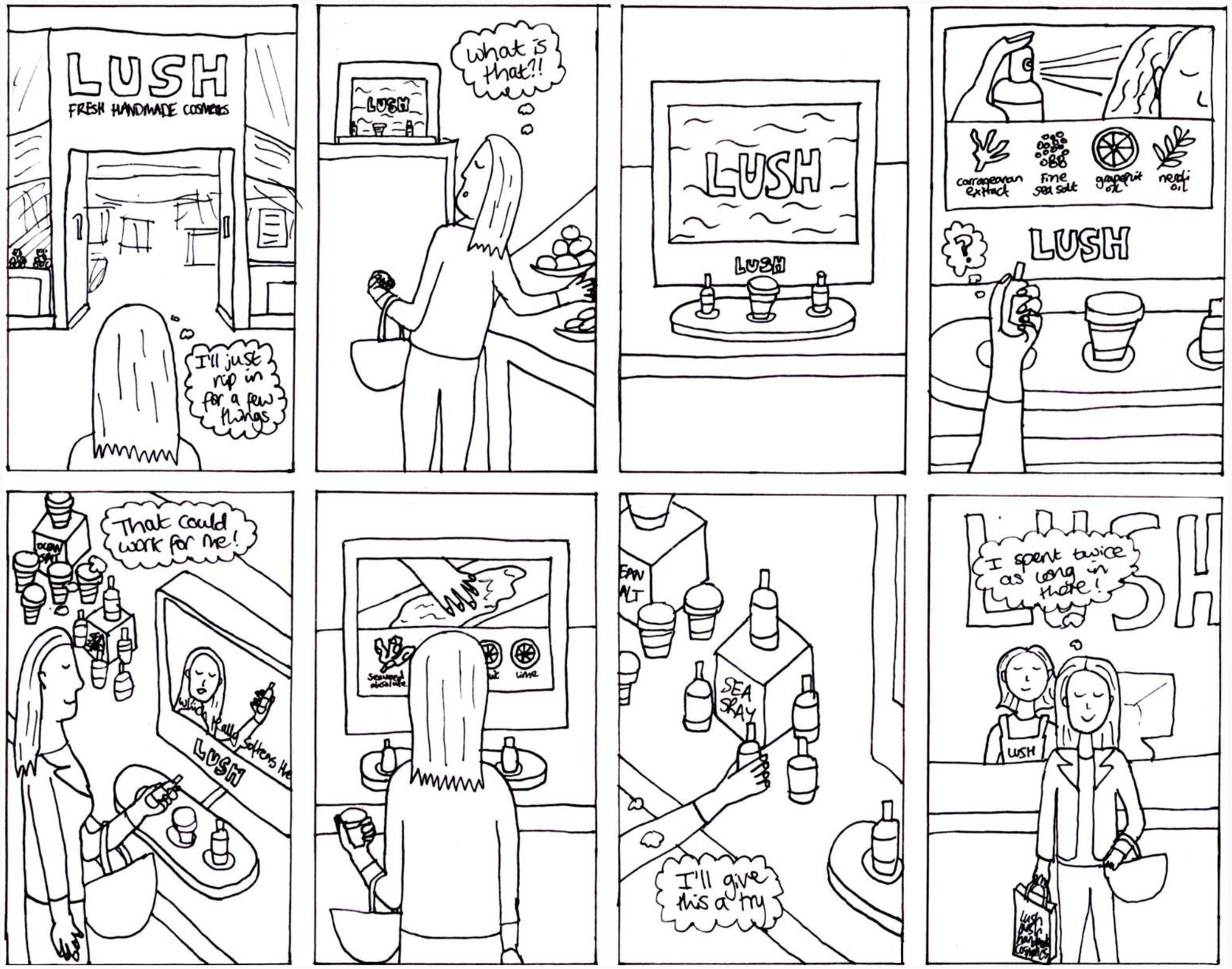
SELF-PRESERVING
OCEAN SALT
FACE AND BODY SCRUB
Does your face feel washed up and abandoned? Get it ship shape with coconuts and lime.
LUSH FRESH HANDMADE COSMETICS

DADDY-O
SHAMPOO
A purple shampoo to stop blondes going brassy. Violet and fresh lemons work beautifully together to keep grey and blonde hair bright and shiny (and it works just as well for brunettes too!)
LUSH FRESH HANDMADE COSMETICS
e100g

Proposed Customer Journey

Scenario

As a regular Lush customer, Megan visits the Lush store to pick up her regular Lush products. As she walks through the store, she spots a new digital display that it catches her attention. The installation displays 3 products that Megan has never seen nor considered purchasing before. Curiosity causes Megan to pick up one of the products, she likes the smell but she is not sure what it is. Because she has picked up a product, a video is displayed on the large screen behind the products. As the video plays, Megan learns about the ingredients, what the product is for and how the product is used. The video helps Megan to understand the product. Seeing the product in it's it's working state really intrigues her, because she is able to visualise how she could use it herself. Megan picks up each of the products on display and after watching the videos, she decides to purchase two of them. She proceeds to pick up the rest of her staple products and leaves the store with the 2 additional products after spending twice as long in the store.



The Store Environment

I envision my concept to be situated within it's own area the Lush store. This is to contrast with the current busy environment. Ideally it would be surrounded by products of the same time for quick and easy sales.

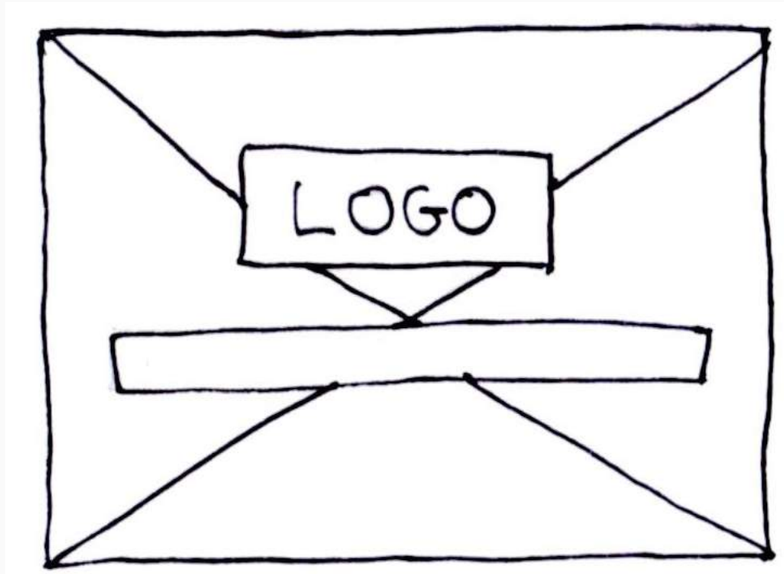
As the current store is very cluttered and overwhelming, my display provides a clear and simple arrangement to provide the customer with more information on selection of featured products.

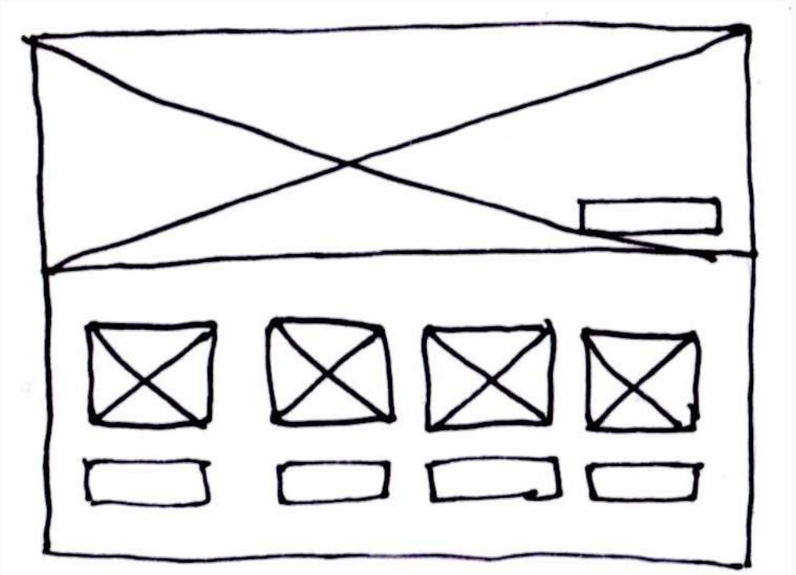
Visuals

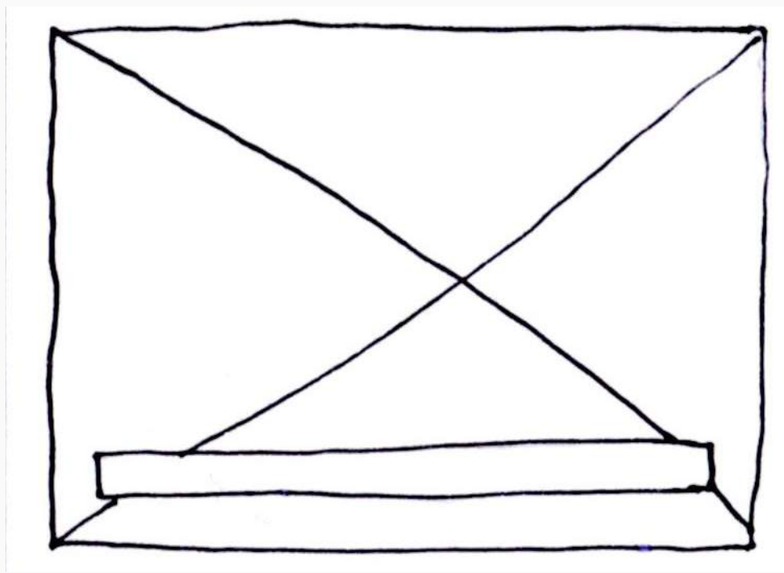
For the visual element of my prototype, I plan to create a different video for each of the products. These will have to be played at the correct time, alongside another that is played on a loop while there are no products being lifted. To create these videos, I believe that I will be able to use a combination of the information and video content from the existing websites to make a produce a video in Adobe After Effects. I want to utilise the space by having large graphics and full-size videos throughout.

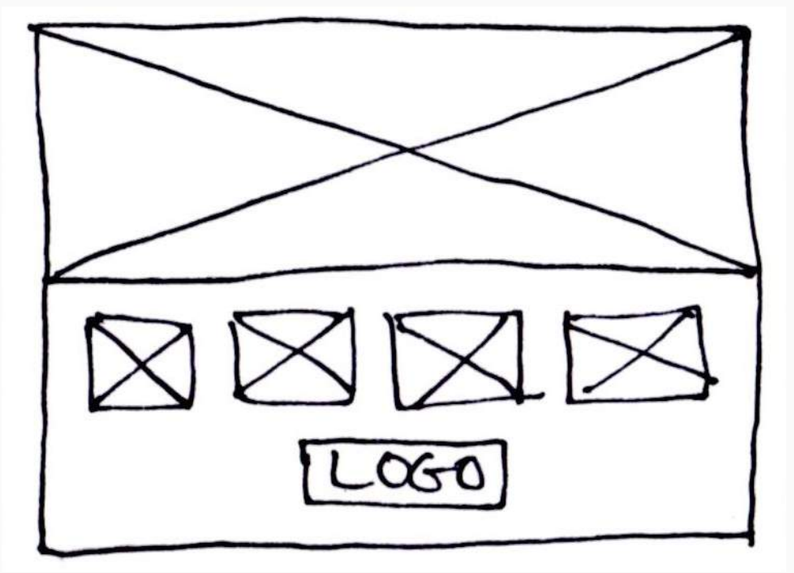
Additional videos consisting of high-quality close-ups, that may not be available to me, could be required. I may need to shoot my own videos showing demonstrations of how the product looks when it is used. I have also thought about the potential of creating animations displaying 3D representations of the products, zooming in on elements while it rotates. However, I do feel that my animating skills may not be as advanced as this, and I may be able to create the same effect by recording videos and overlaying text.

I will be focusing on promoting the fact that Lush's products are made from fresh ingredients, as well as what a product is and what it is for - as decided by my user research.







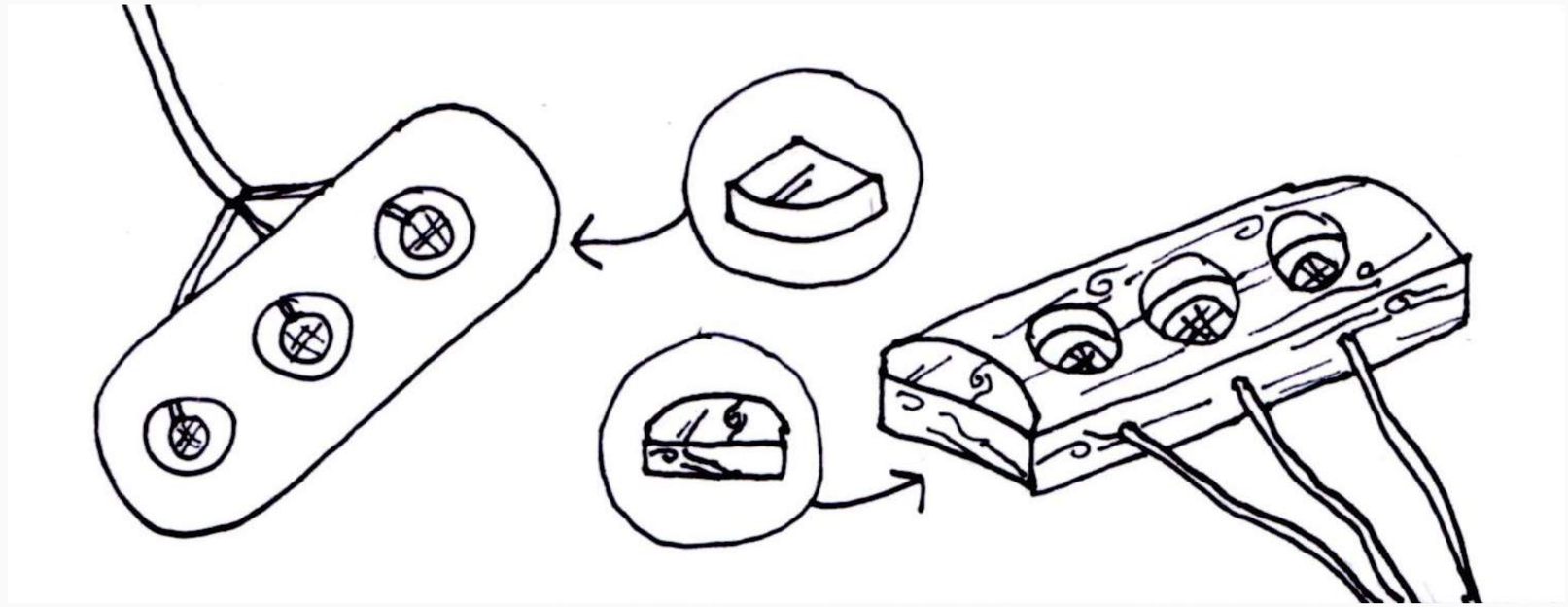


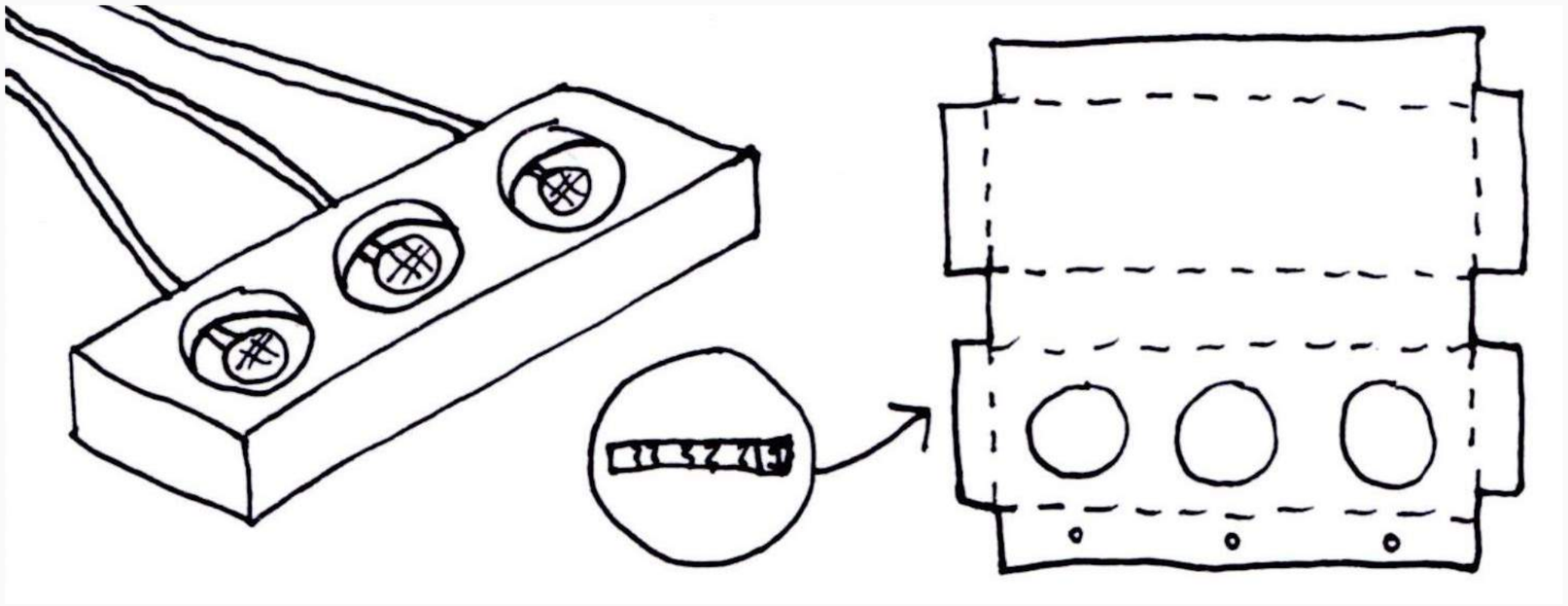
Panel Design

To house the electronics for the Arduino prototype, I will need to create a 3D planel for the products to sit on. This would allow the sensors to be placed inside spaces for the products.

I could create this in many mediums, for example from either laser cut acrylic or wood, as I think I could create reasonably high-quality models from both. I do however have to consider and take care when it comes to Lush's brand image, as a lot of their packaging is made from recycled materials. This could potentially influence the design of the prototype, as I want to create something that is representative of the brand at the same time as being aesthetically pleasing, versatile and attractive to customers.

This could therefore lead me to creating a cardboard model, similair in design to the mac cover. This would be more realistic for me to create also.





Arduino: What's Suitable?

In order to create a working prototype that would bring to life my concept, I required something that could detect when one of the products had been lifted and trigger a play a video accordingly.

I had first thought that I would be able to use several piezo transducers to detect the pressure removal, but I wasn't completely sure this was possible or a correct assumption. My other thought was about force sensitive resistors to work with detecting the removal of weight from the sensor. To resolve this, I seeked the advice from an arduino professional, Alistair MacDonald, who helped me to get a better idea of my options and how to proceed.

Alistair informed me that knocking the table would also generate a charge for the piezo transducer, which could mean that it the movement could be incorrectly detected. I therefore purchased a piezo transducer to test to see whether they would be suitable. Alistair also suggested that I use processing to get the video files to play, something that I had never worked with before.

Hi Tamzin,

Yes, a Piezo transducer converts movement in to a small electrical charge that the Arduino can detect. If you placed one under the objects so it flexed just slightly then a charge will be generated when an item is placed on it or removed from it. The charge would be small so just knocking the table would give the same effect electrically.

To work with weight you might be better off looking at a "Strain Gauge" or a "Load Cell" to detect the downward force of the object.

Also to keep things simple do consider other options. For example you could a through beam can be used with an IR emitter is placed on one side of the item and an IR detector on the other so the beam is obstructed by the item when not picked up. You can also use the same module as an IR proximity sensor facing up without any modification if the object reflects IR light. (http://www.ebay.co.uk/itm/Obstacle-Avoidance-Sensor-Module-Infrared-Reflection-Photoelectric-Sensor-Module-/350929080369?hash=item51b500d031) are the ones I have used

An inductive proximity sensor can be used for metal object but I am guessing that is not appropriate here. Also if you can attach something to the base of the items you can use things like magnets and reed switches, or even RFID stickers if you want to try something a little more advanced.

The video part can be done with Processing and you can find plenty of example code online.

I hope that helps and gives you a few more things to research in to.

Alistair

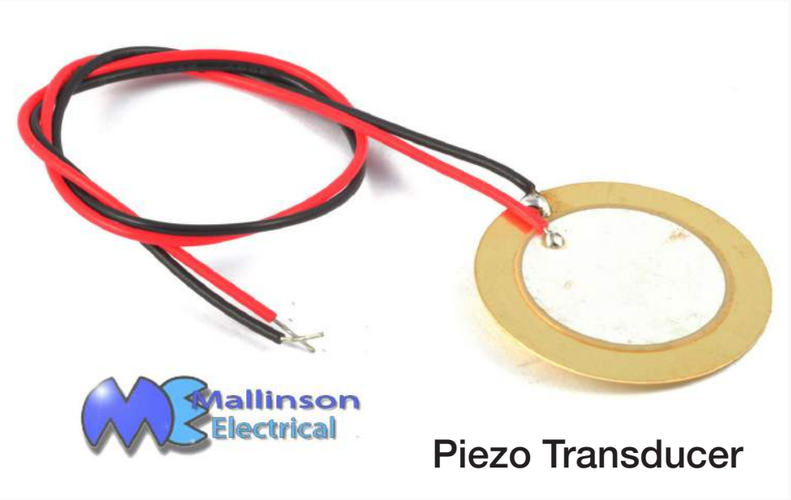


Figure 45 Mallinson Electrical (2015) *Uncased small piezo transducer element buzzer 26mm.* Available at: http://www.ebay.co.uk/itm/121592979892 (Accessed: 17/03/15)

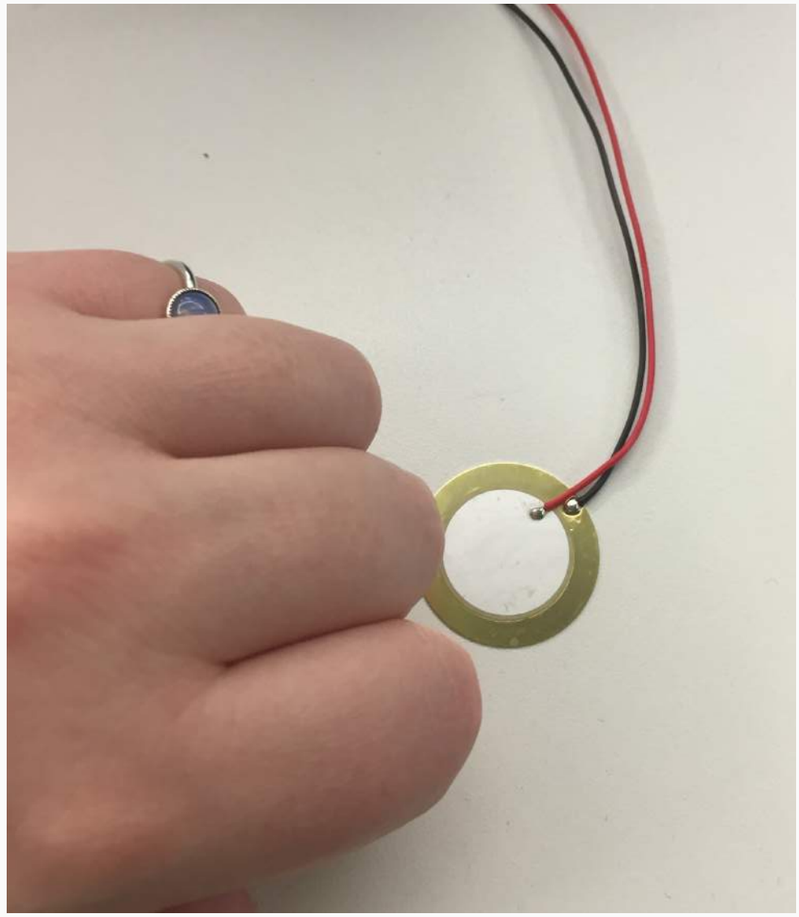
Figure 46 Adafruit Industries (2010) *FSR Tutorial!.* Available at: http://www.instructables.com/id/FSR-Tutorial/ (Accessed: 17/03/15)

Piezo Transducers

Despite thinking that the most suitable solution for my concept was going to be piezeo transducers, I discovered this was not the case.

Tapping and knocking on the surrounding area generated a result on the serial monitor. Through testing the sensor I found that it was prone to false positives and detected when nothing was actually moved, for example when the table was moved. It was therefore missing the actual movements that I required in order to cause videos to play.

This lead me to consider alternative options. After a discussion with my tutor, RFID was suggested.



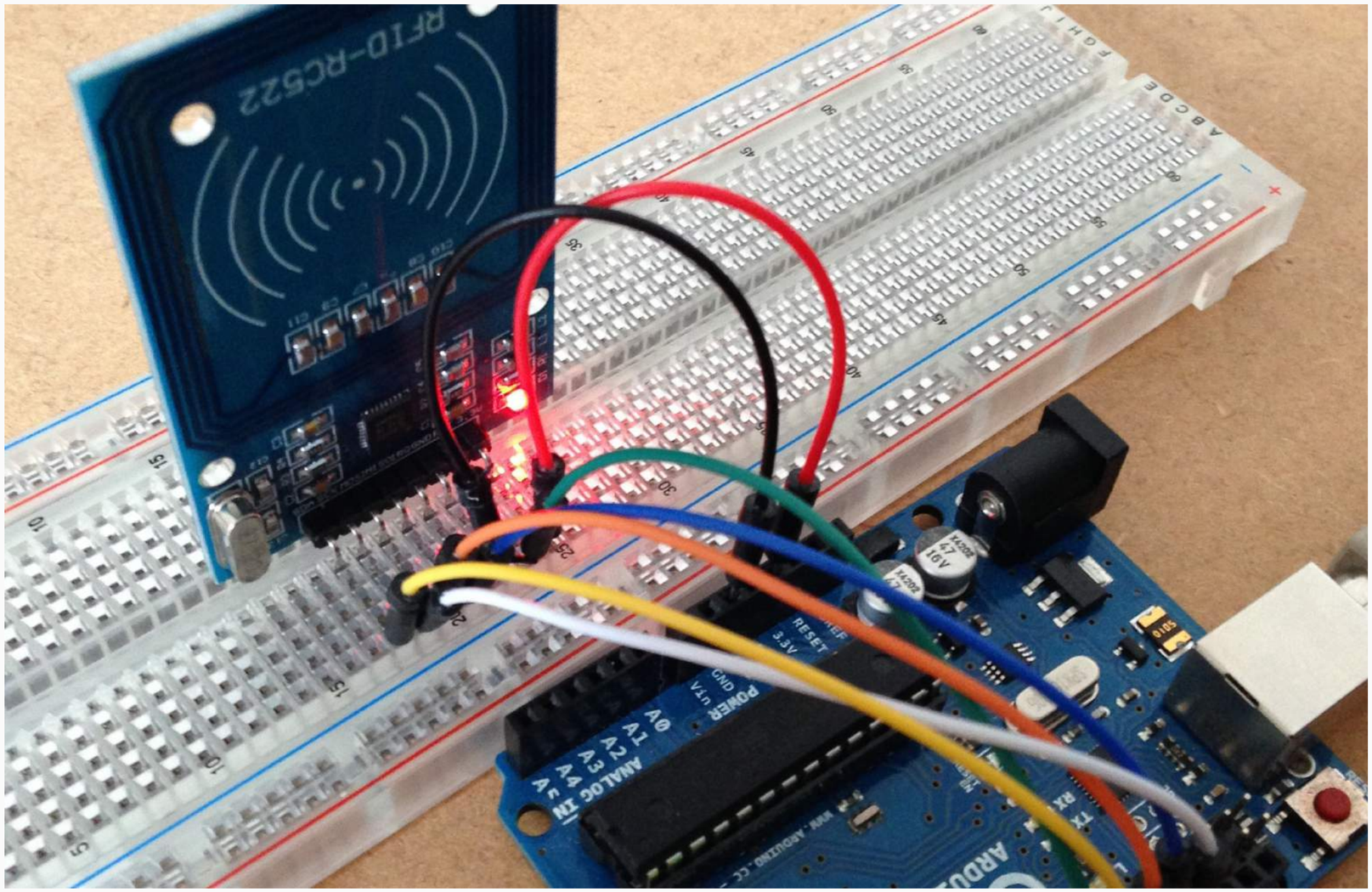
RFID

As the piezo tranducers were not going to be appropriate for my prototype, I had to search for another solution. I therefore chose to use RFID as I felt that it would be more reliable and feasable. Attaching tags to the products would allow an RFID scanner to read the tag and cause a corresponding video to play.

I decided that stickers would be the best option for me to stick onto the base of the products as they are quite inconspicuous. I therefore chose 29mm NTAG203's by RapidNFC, which are round and clear NFC Tags.

Subsequently, I tested the tags with an RC522 RFID scanner by testing to see whether I could get the serial port on the Arduino software to display the information on the blank tags. This confirmed that I would be able to attach the tags to the products, and when they came close to the RFID scanner, the information on the tag to be read.

For the actual prototype, I will need to reverse this effect, so that there will only be an action (video played) when the tag is moved out of proximity of the scanner.

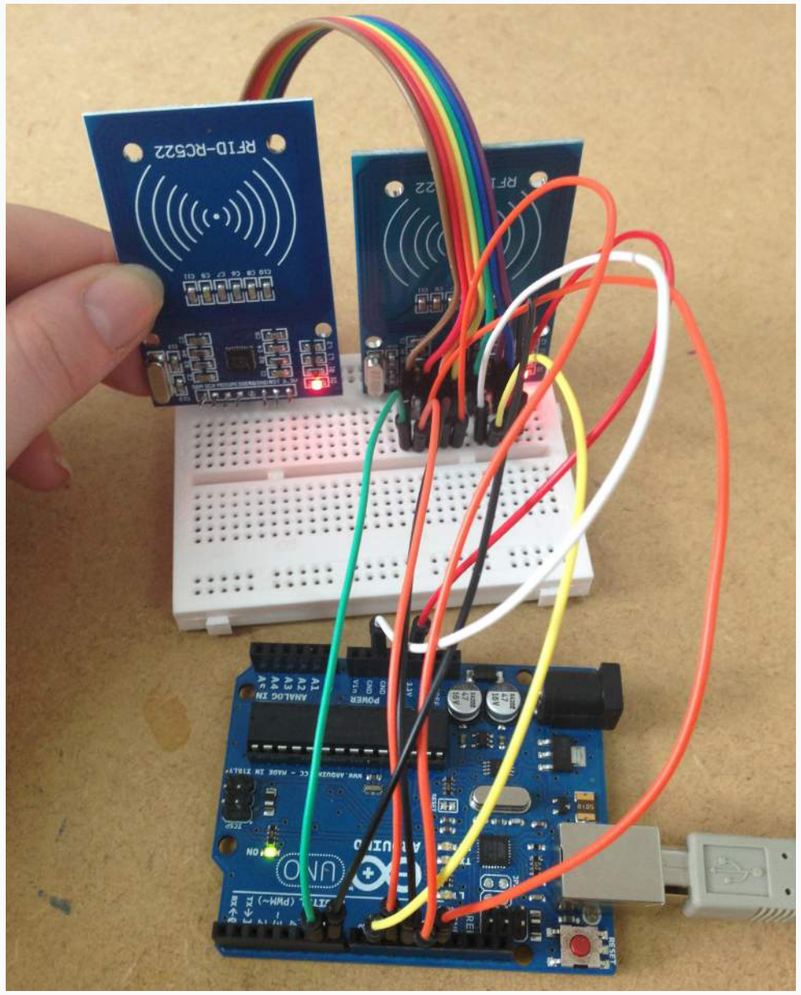


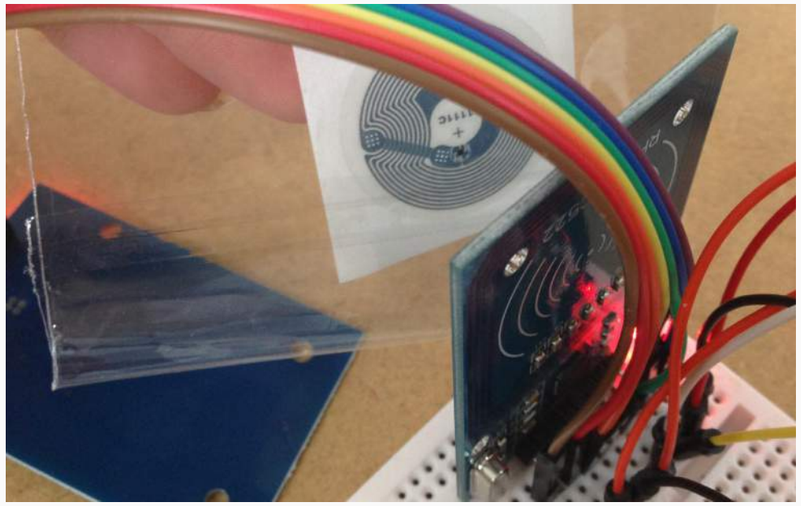
Multiple RFID Scanners

The next logical step was for me to see whether it was possible for me to have more than 1 RFID scanner running off one Arduino, working at the same time and being able to read the tags independantly.

I was able to duplicate elements of the DumpInfo code, asigning all instances to MFRC522 A and B (one to represent each scanner). The only pins on the scanners that required different pins from oneanother were reset and SCK - the others could be shared.

Placing 2 tags too close together over a single RFID scanner caused the scanner to pick up the strongest signal rather than reading both tags. In order for the tag to be read completely, I found that there had to be some distance between each scanner. It also had to remain in range for a number of seconds before the tag could be read fully. To avoid these issues, I will place the scanner's at a distance of at least 5cm apart.





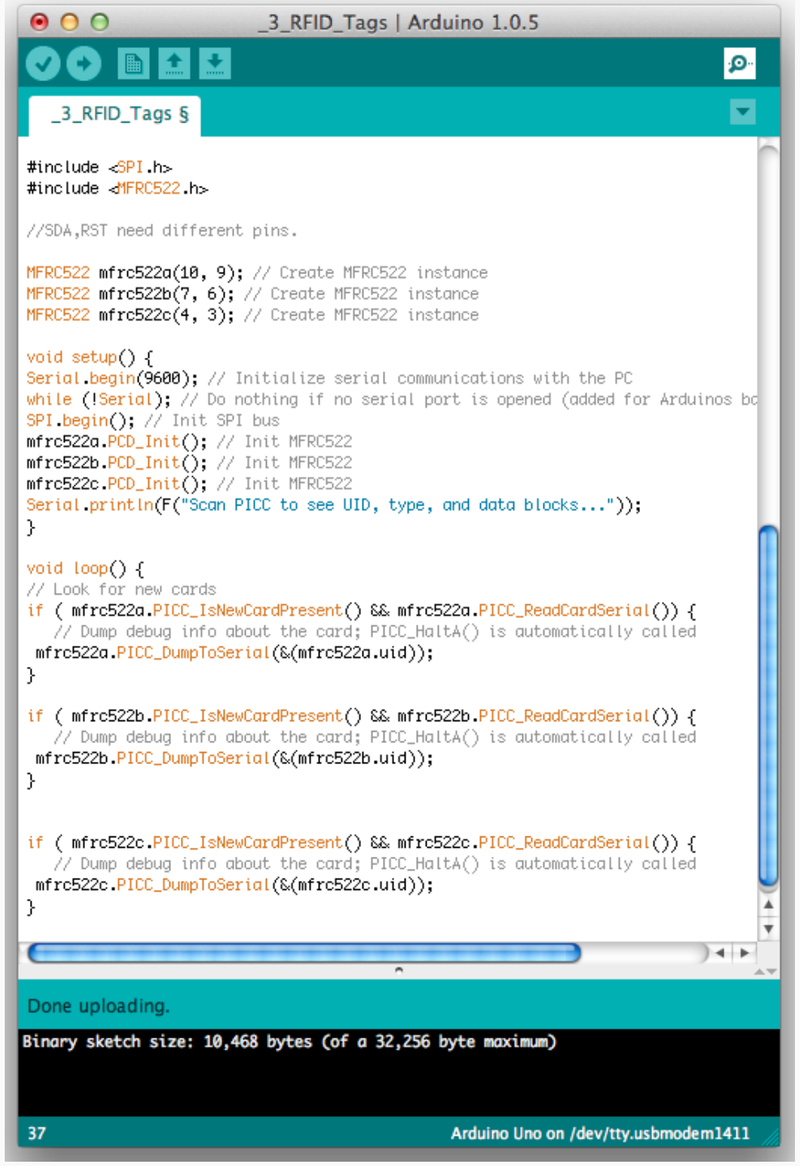
```
#include <SPI.h>
#include <MFRC522.h>

MFRC522 mfrc522a(10, 9); // Create MFRC522 instance
MFRC522 mfrc522b(7, 6); // Create MFRC522 instance

void setup() {
Serial.begin(9600); // Initialize serial communications
with the PC
while (!Serial); // Do nothing if no serial port is opened
(added for Arduinos based on ATMEGA32U4)
SPI.begin(); // Init SPI bus
mfrc522a.PCD_Init(); // Init MFRC522
mfrc522b.PCD_Init(); // Init MFRC522
Serial.println(F("Scan PICC to see UID, type, and data
blocks..."));
}

void loop() {
// Look for new cards
if ( mfrc522a.PICC_IsNewCardPresent() && mfrc522a.
PICC_ReadCardSerial()) {
  // Dump debug info about the card; PICC_HaltA() is
automatically called
 mfrc522a.PICC_DumpToSerial(&(mfrc522a.uid));
}

if ( mfrc522b.PICC_IsNewCardPresent() && mfrc522b.
PICC_ReadCardSerial()) {
  // Dump debug info about the card; PICC_HaltA() is
automatically called
 mfrc522b.PICC_DumpToSerial(&(mfrc522b.uid));
}
```

A Trio Of RFID Scanners?

After I was sure that I would be able to use multiple RFID tags with one Arduino Uno, I adapted the code for 3 RFID scanners.

This also allowed me to test that I had correctly soldered the wire to the scanners and that I had wired up the Arduino board correctly.

Opening the serial monitor allows me to see what is going on electrically. I placed a different tag over each RFID scanner, showing me that I could read and view the information on each one independently. The “UID” (user identifier) of each tag shows that each tag is different, which means that I will be able to assign the UID to play a specific video.



Card UID: 04 CC D3 82 C2 29 80

PICC type: MIFARE Ultralight or Ultralight C

Page	0	1	2	3
0	04	CC	D3	93
1	82	C2	29	80
2	E9	48	00	00
3	E1	10	12	00
4	01	03	A0	10
5	44	03	00	FE
6	00	00	00	00
7	00	00	00	00
8	00	00	00	00
9	00	00	00	00
10	00	00	00	00
11	00	00	00	00
12	00	00	00	00
13	00	00	00	00
14	00	00	00	00
15	00	00	00	00

Card UID: 04 CB D3 82 C2 29 80

PICC type: MIFARE Ultralight or Ultralight C

Page	0	1	2	3
0	04	CB	D3	94
1	82	C2	29	80
2	E9	48	00	00
3	E1	10	12	00
4	01	03	A0	10
5	44	03	00	FE
6	00	00	00	00
7	00	00	00	00
8	00	00	00	00
9	00	00	00	00
10	00	00	00	00
11	00	00	00	00
12	00	00	00	00
13	00	00	00	00
14	00	00	00	00
15	00	00	00	00

Card UID: 04 CA D3 82 C2 29 80

PICC type: MIFARE Ultralight or Ultralight C

Page	0	1	2	3
0	04	CA	D3	95
1	82	C2	29	80
2	E9	48	00	00
3	E1	10	12	00
4	01	03	A0	10
5	44	03	00	FE
6	00	00	00	00
7	00	00	00	00
8	00	00	00	00
9	00	00	00	00
10	00	00	00	00
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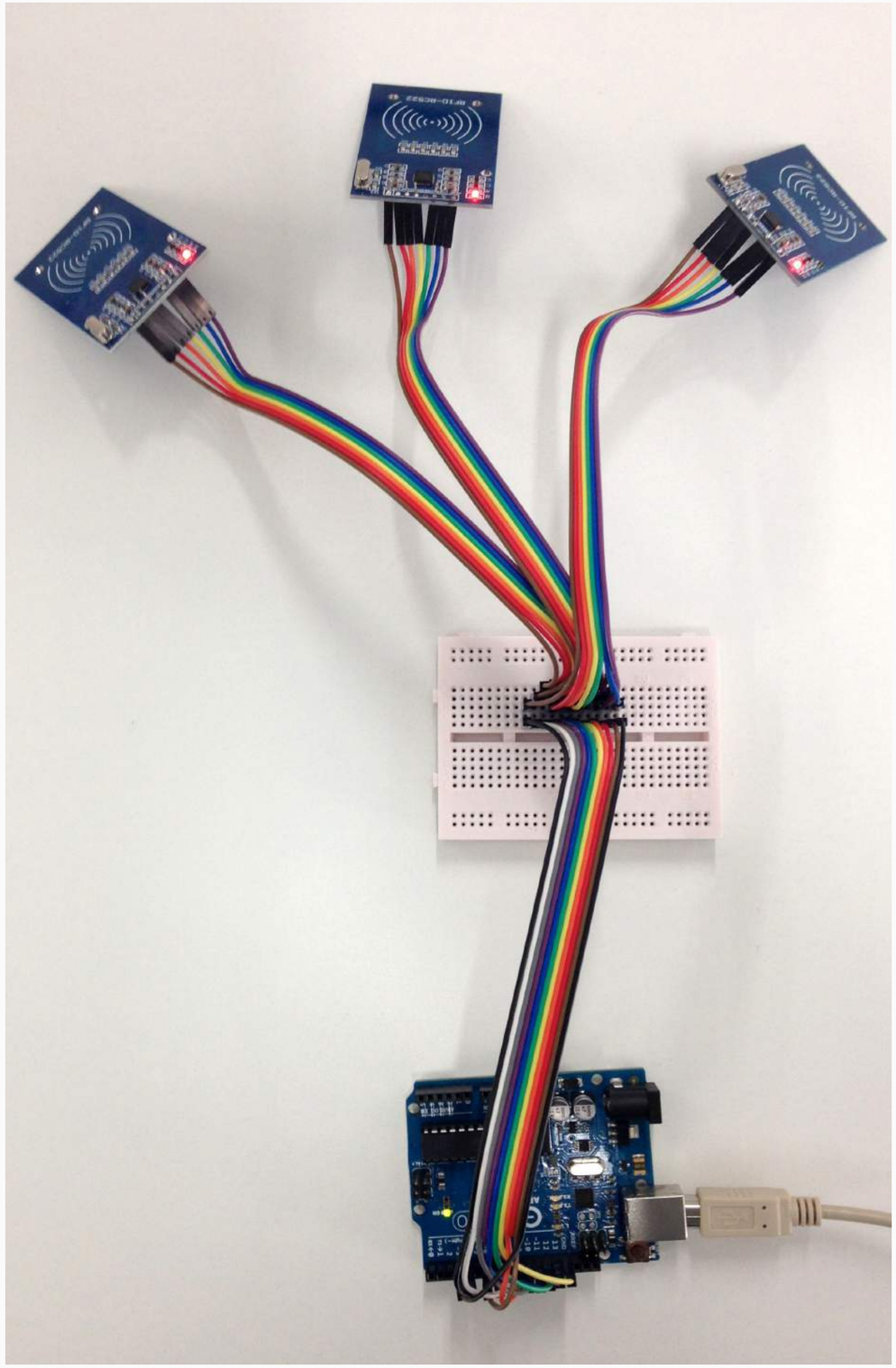
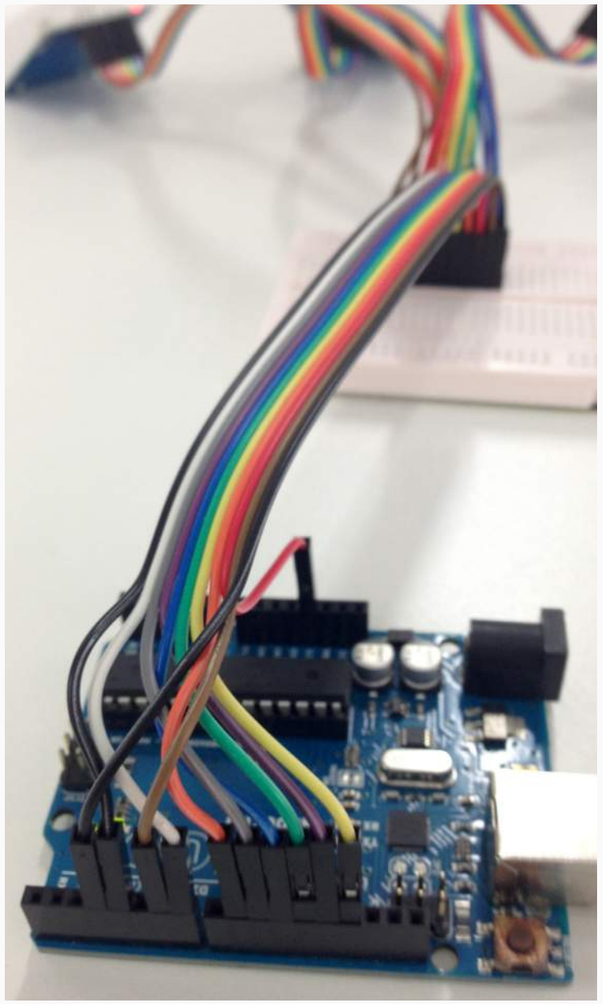
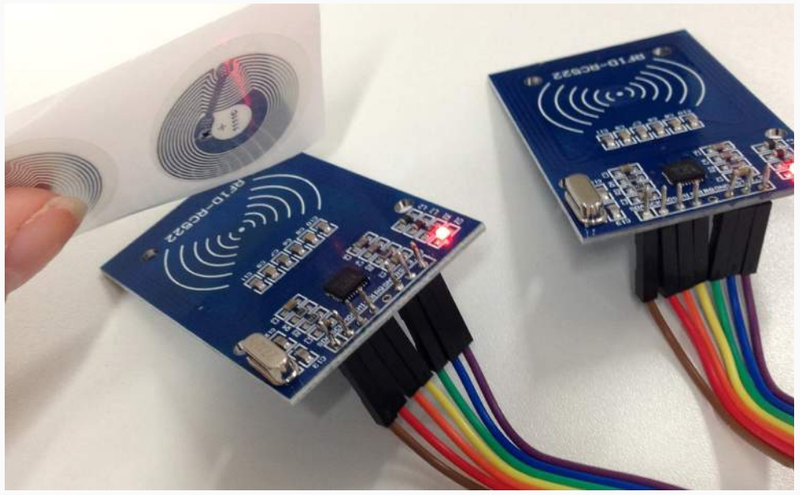
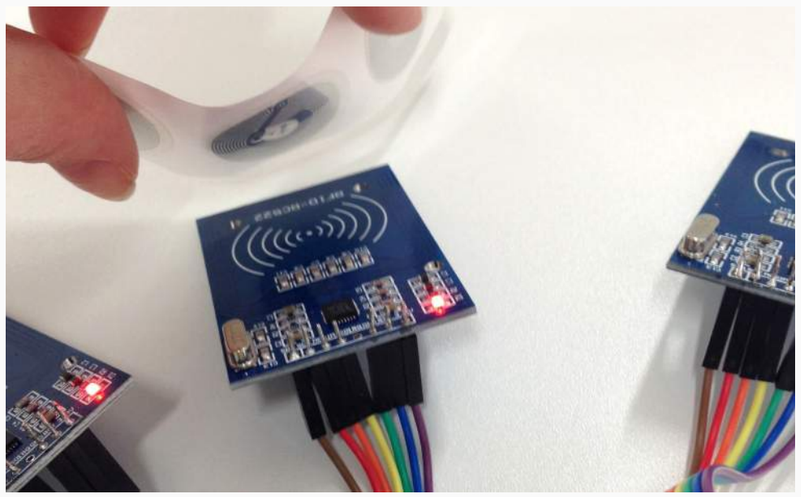
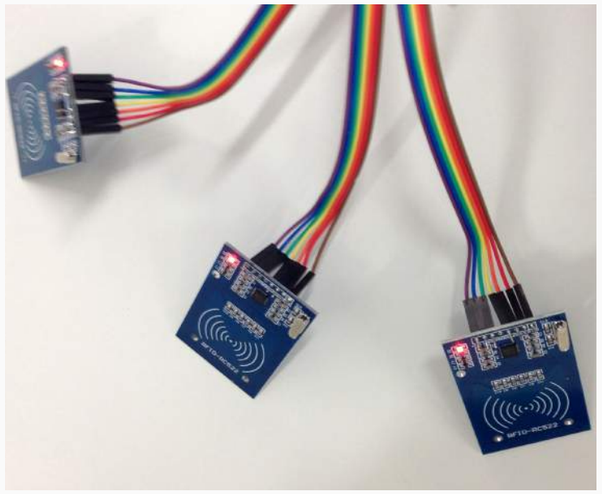
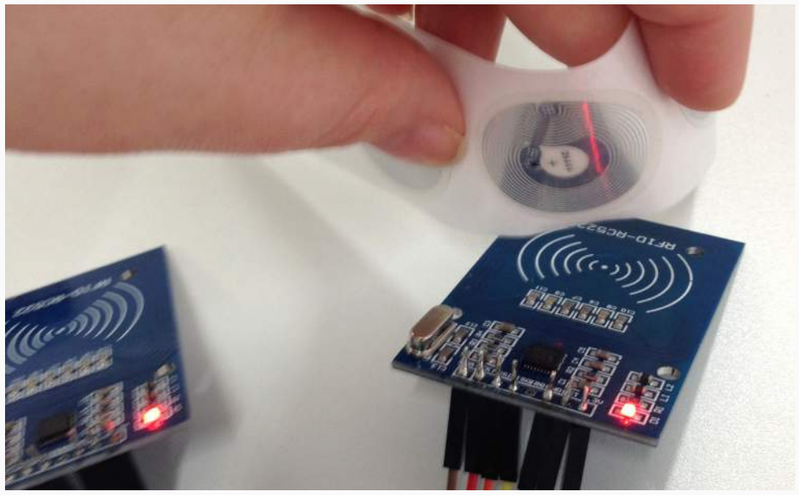










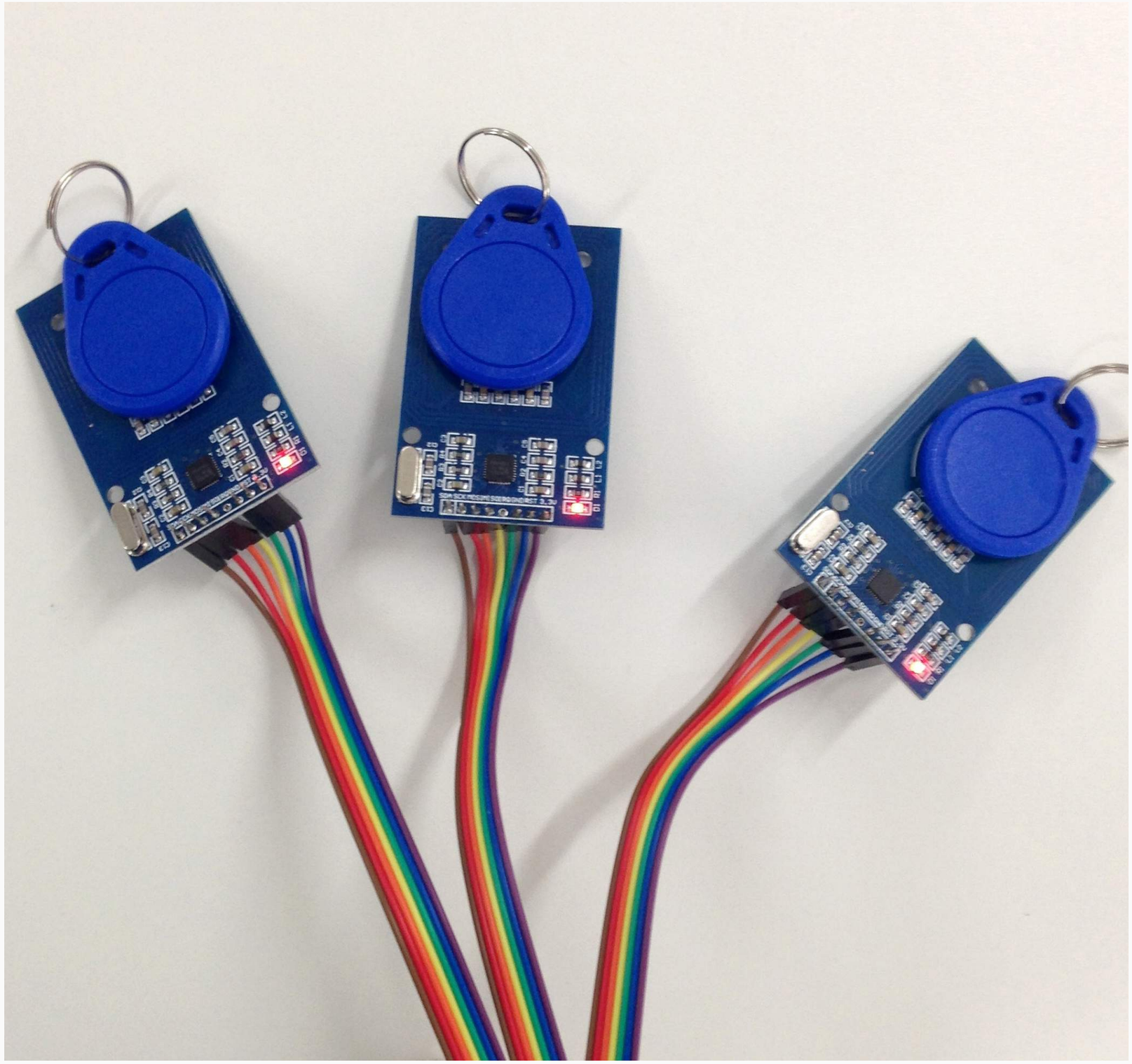


A Trio Of RFID Scanners?

I decided to experiment with the 3 RFID scanners to see what would happen if 3 tags were attempting to be read at once.

I found that the individual data from each tag was being read sequentially. The serial monitor showed that each tag was being scanned a single time, and then all activity stopped.

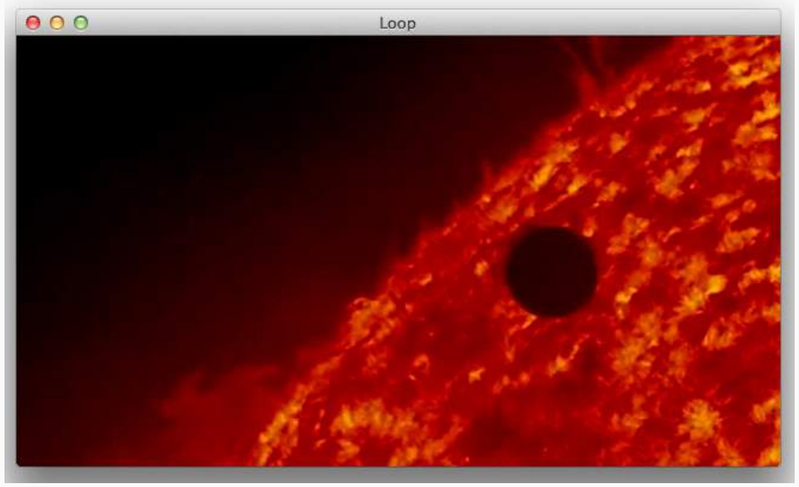
This gave me hope that it would be possible to work with 3 tags at the same time, causing a video to play by removing an RFID tag.



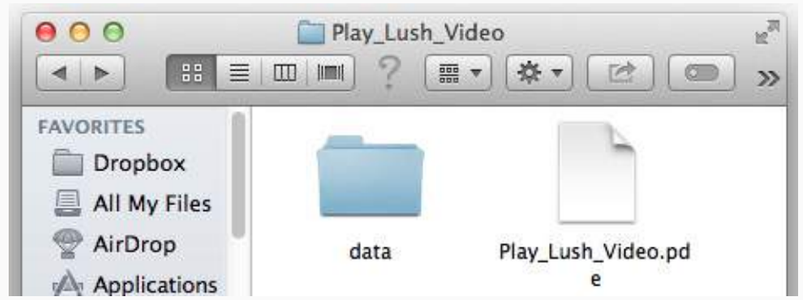
Processing

This was the first time I had used the Processing software and I was pretty unsure on how it worked. I found that the Processing software had an example sketch that caused a QuickTime video to be loaded and played. This helped me to understand how I could use this code to write my sketch to make my videos play.

I then adapted this code to play a video of my choice. To use my own video file I had to place a copy of it in the data folder of the project. I was able to cause an existing Lush video to play on a loop.




```
void setup() {
  size(640, 360);
  background(0);
  // Load and play the video in a loop
  movie = new Movie(this, "Lush Shampoo Bar.mp4");
  movie.loop();
}
```

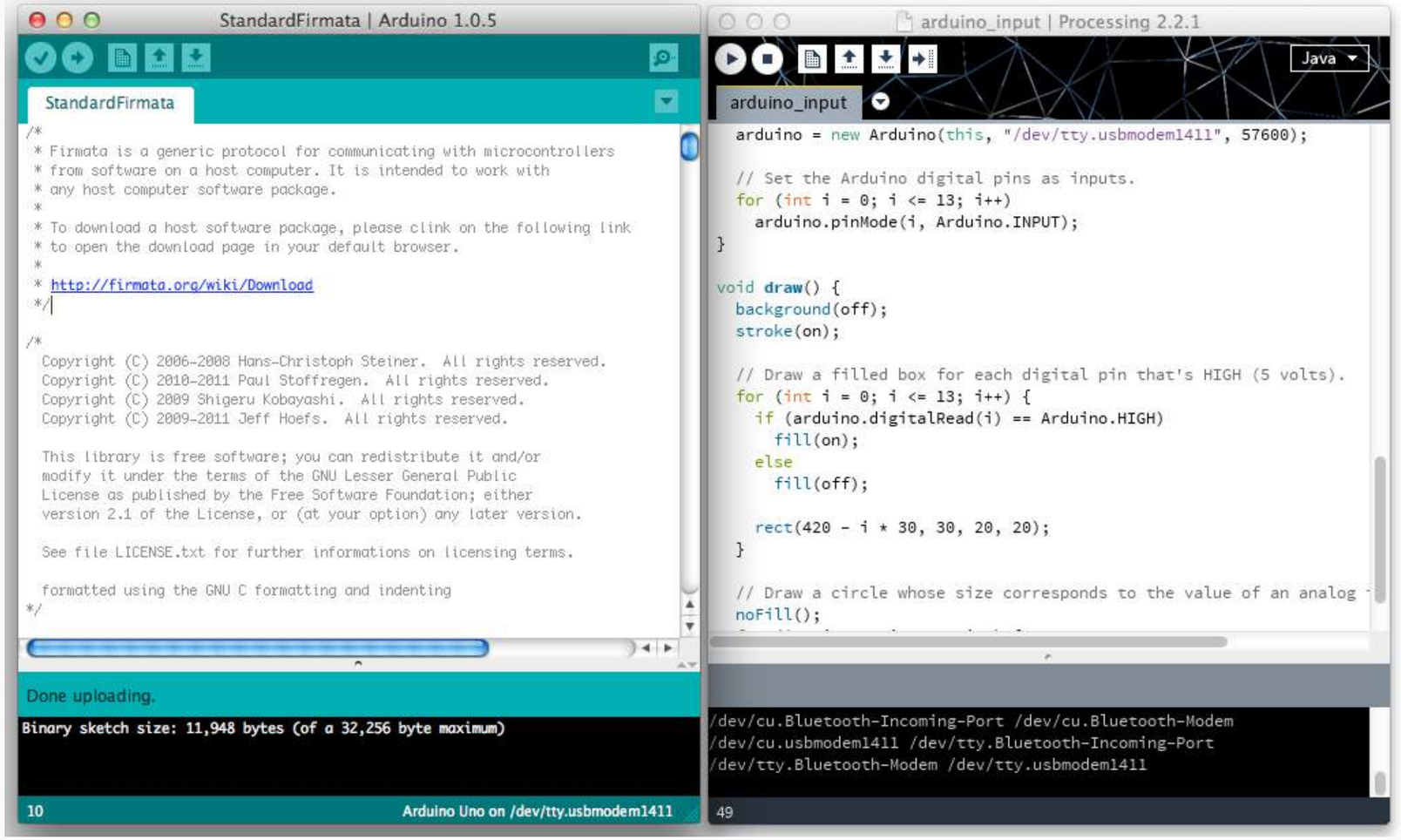


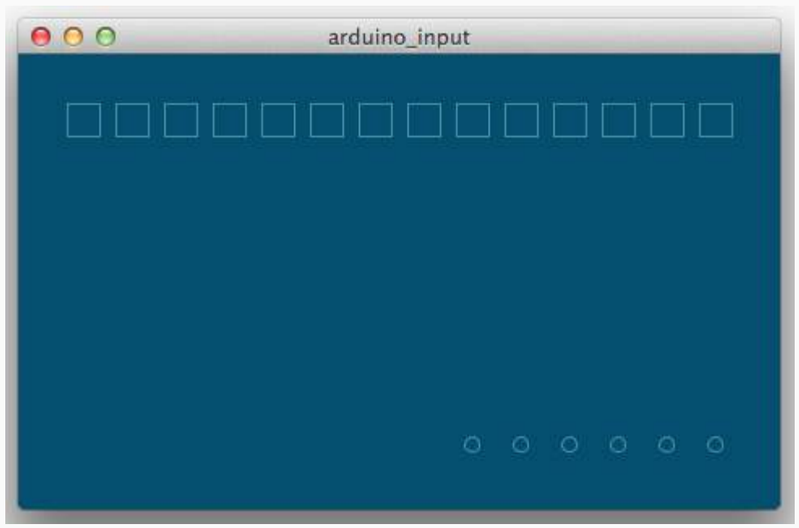
Arduino + Processing

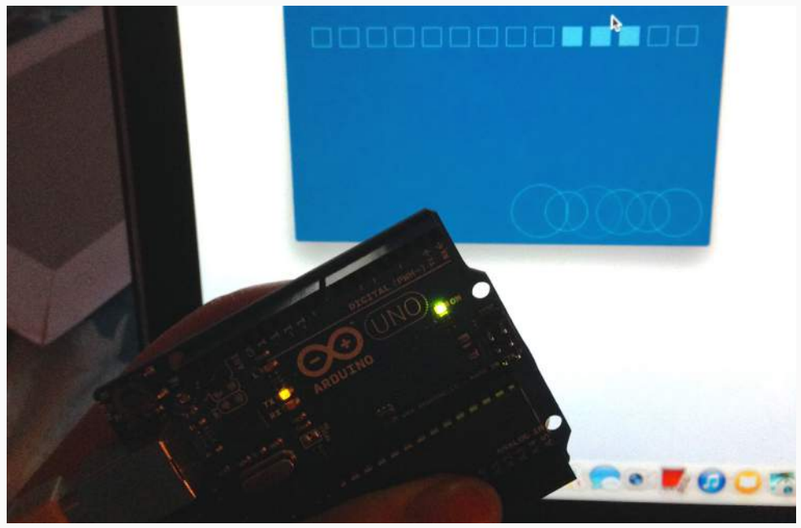
My next step was to combine the Arduino and Processing programmes, in order to get the different them “talking” to one another.

Arduino (2015) explains that the library allows you to control an Arduino board from Processing without writing code for the Arduino. Instead, you upload a standard firmware (program) to the board and communicate with it using the library. The firmware is called Firmata, and is included in the Arduino software.

I used the “arduino_input” processing sketch to demonstrate the reading of digital and analog pins of an Arduino board by running the “StandardFirmata” firmware on the Arduino Uno. Running this sketch produced an image that represents the Arduino, the squares showed the values of the digital inputs (HIGH pins are filled, LOW pins are not). The circles showed the values of the analog inputs (the bigger the circle, the higher the reading on the corresponding analog input pin).





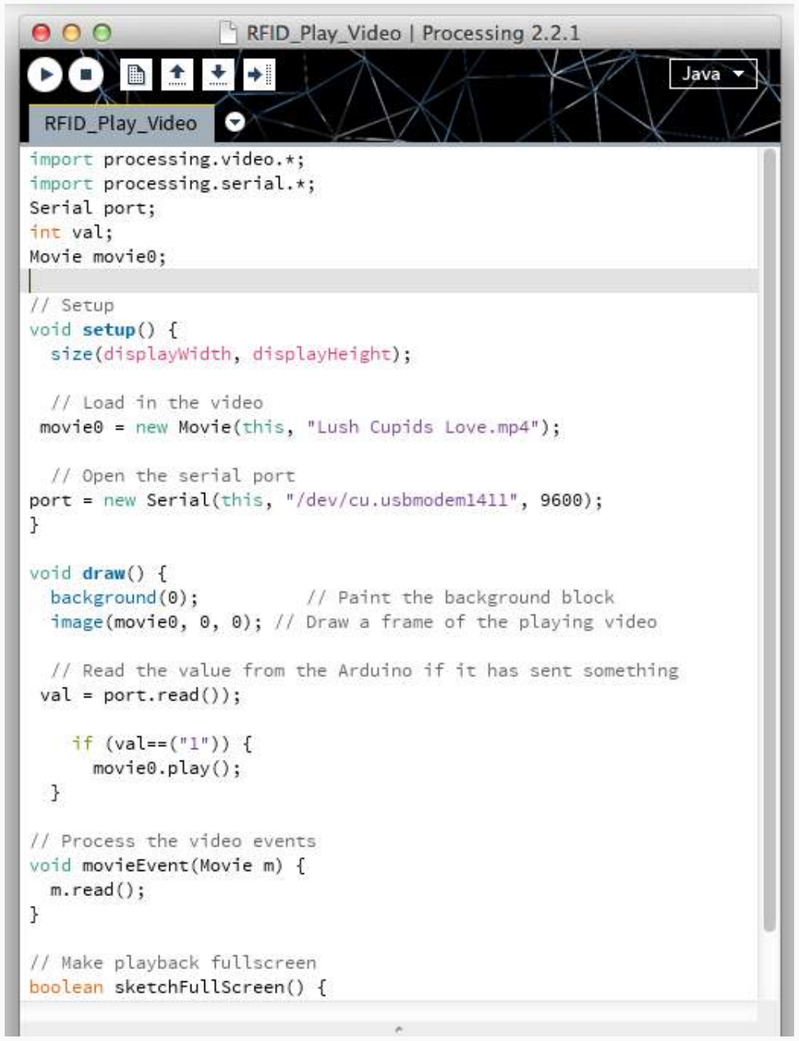


RFID + Arduino + Processing

I wanted to test whether I could use RFID to cause a video to play in processing. Using Arduino software, the code told the Arduino to detect whether a card was present, and print a number 1 on the serial monitor.

I then used the serial input from the RFID card to trigger a video to play in the Processing software. If a card was present, a number 1 would be sent to the serial port and this would cause the video to play.

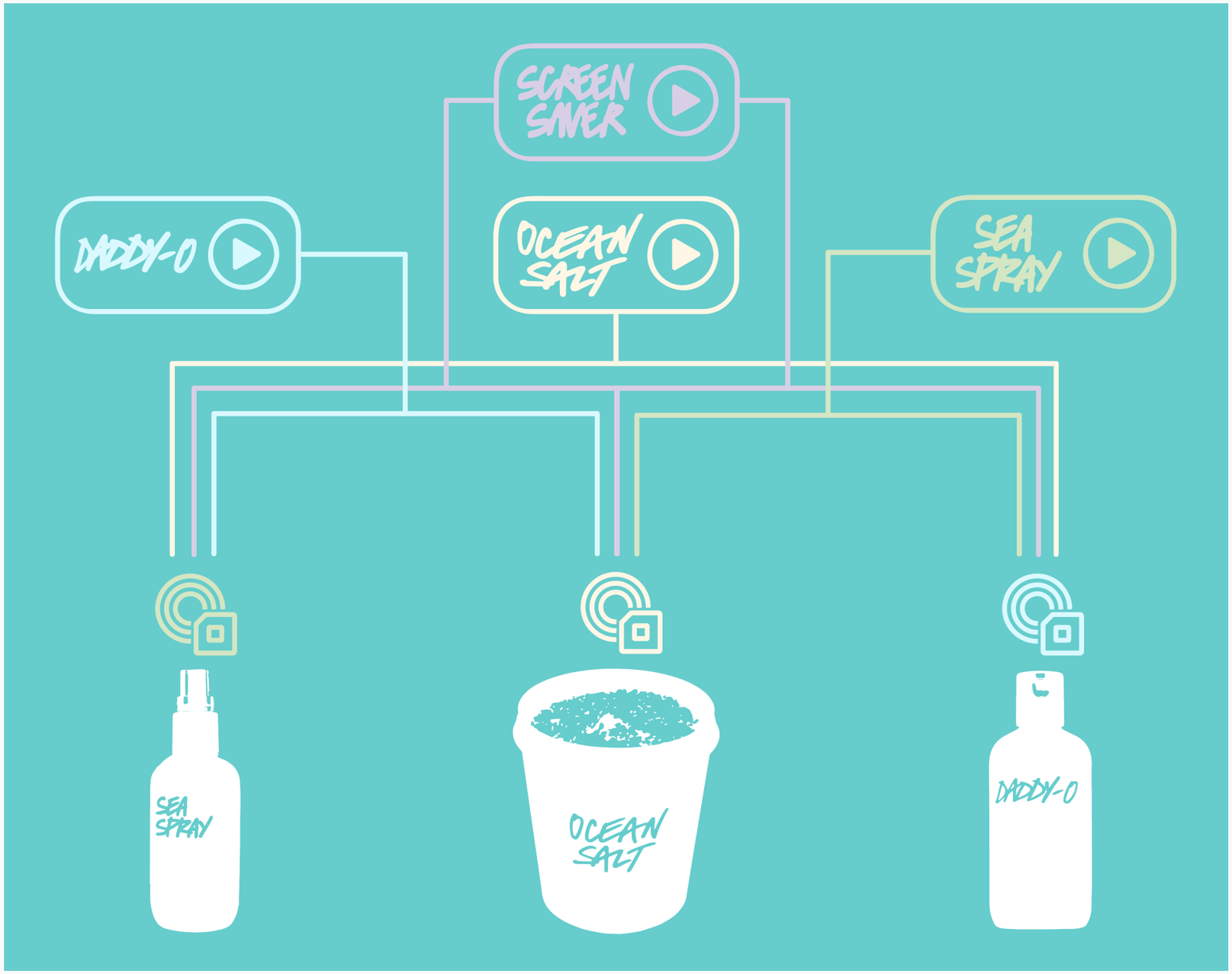
I chose one of Lush's existing videos to test with, and I was able to successfully cause a video to play with an RFID card.



System Architecture

In order to simply illustrate how the electronics are designed to cause each video to play, I created a system architecture.

Each product has it's own RFID tag, when each one is removed, a different video is played. For example, if the Sea Spray RFID tag (green) is removed i.e. the product is picked up, then the Sea Spray video will play. If all RFID tags are in contact wih the readers, the screen saver video will play and so on.



Concept Development: Conclusion

The concept generation phase helped me to form a solid concept with a purpose. After some testing and feedback from my tutors and peers, I made some changes to my concept, such as using RFID to play the videos.

I decided to feature 3 products with an ocean theme. This meant that I could create content with the same visual style throughout. Having a theme for the featured products would allow Lush to create a “screensaver” video that is relevent to each individual display.

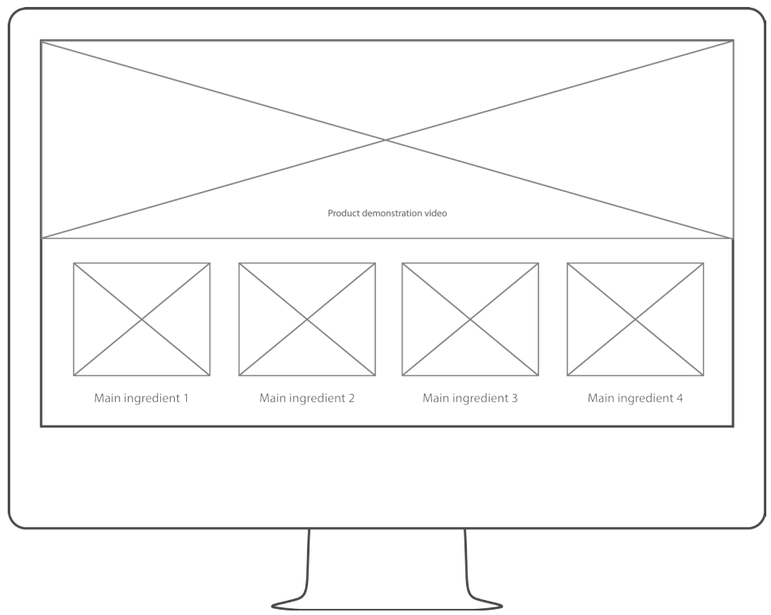
The feedback I recieved informed me that I had good background research and good rationale for why it is needed, which gave me confidence that I would be able to create a prototype that was meaningful and fit for purpose and use within the Lush Cosmetics brand.

DESIGN DEVELOPMENT

Interface Design

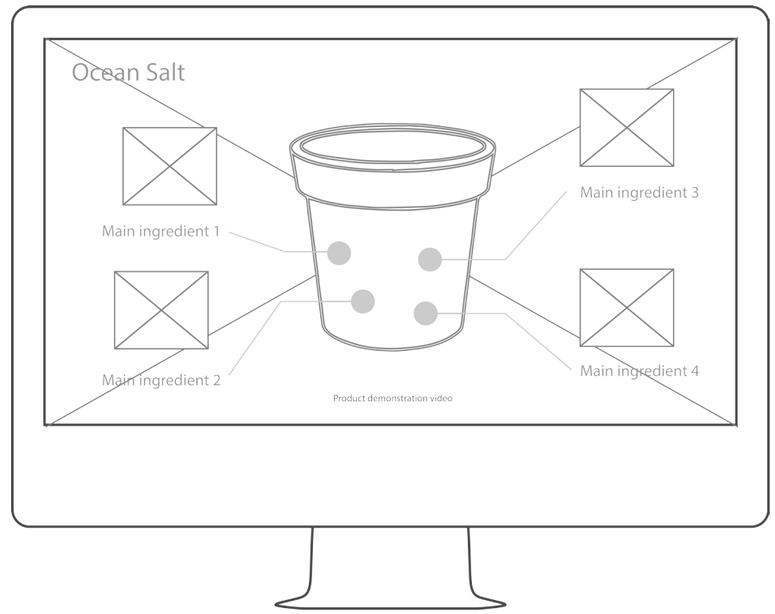
Inactive Screen

While the display is not in an active state, I want to attract users to entice them into interacting with the display. I will do this with a compilation of videos on a loop. I feel that, as I have chosen a sea salt and sea weed theme, I could use ocean imagery. For future installations for the business, this could be adapted to each theme of the products such as seasonal; failing that the demonstration clips could be played sequentially.



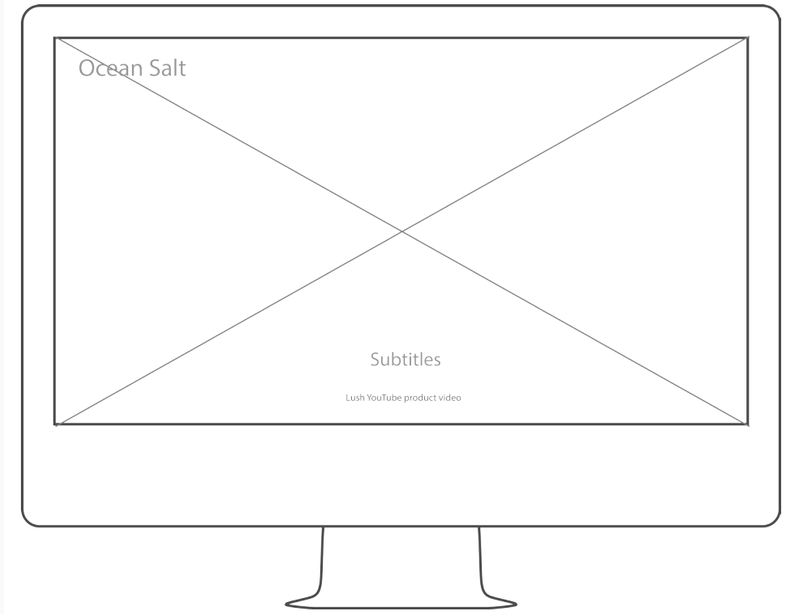
Screen 1 Concept 1

Screen 1 shows how a product is used and gives some indication of what's inside. It displays the video demonstration of the product showing it in use at the same time as promoting the 4 key product ingredients. This gives an introduction to the product, and lets users know what the product is by communicating it visually. This layout is in the same style as the website, which maintains the Lush branding throughout.



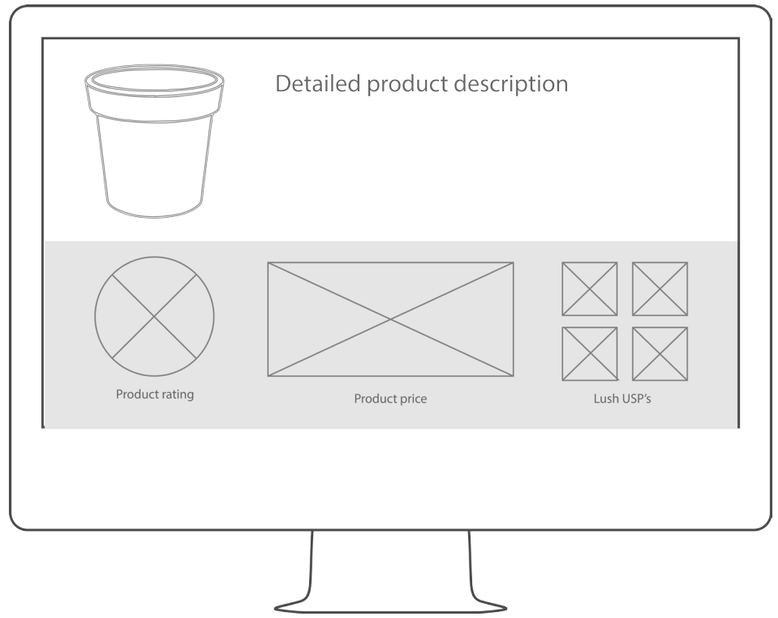
Screen 1 Concept 2

For this concept, the demonstration video would be shown initially, with an image of the product and details on the key ingredients appearing as an overlay. Whether this would be too overbearing on the user is uncertain, but I feel like it could be visually quite interesting.



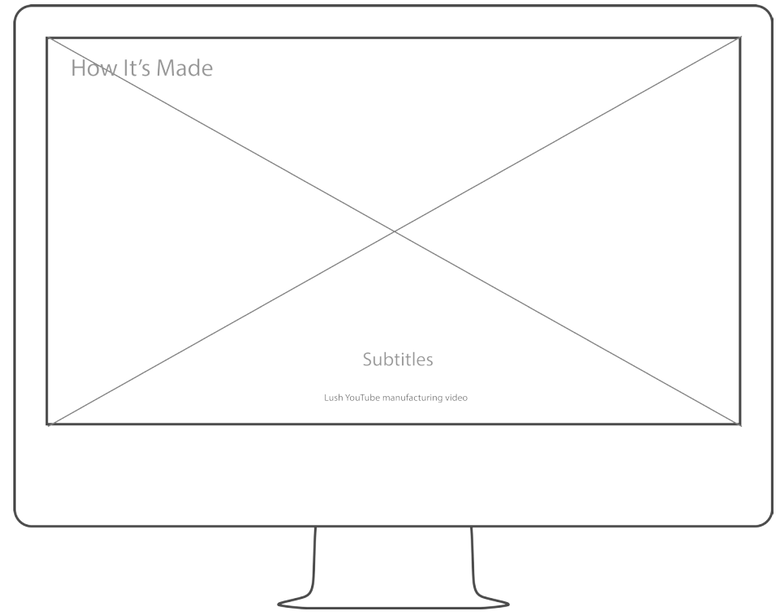
Screen 3

This screen shows the existing videos from Lush to give more information on what a product is, what it's for and how and why a product is used, as well as the benefits of the product. This will consist of the full-screen video with the name of the product, it will also require subtitles as the store environment can be quite loud.



Screen 4

Screen 4 shows an image of the product, the price of the product and the rating of the product. The price and rating would be updated in real-time. This could also create more desire for customers to rate the products online. This screen also displays the long description of the product from the Lush website. This page is essentially a summary of the product and designed to secure the sale.



Screen 5

If possible, and Lush have created this content, the fifth screen would show the customer how the product it's made. My research indicated that this was the least important factor for making a purchase, hence why this is the last information being displayed. It acts as a bit of a "behind the scenes" moment for customers, giving them the opportunity to discover more about the process. It also promotes the handmade aspect of the products and the company.

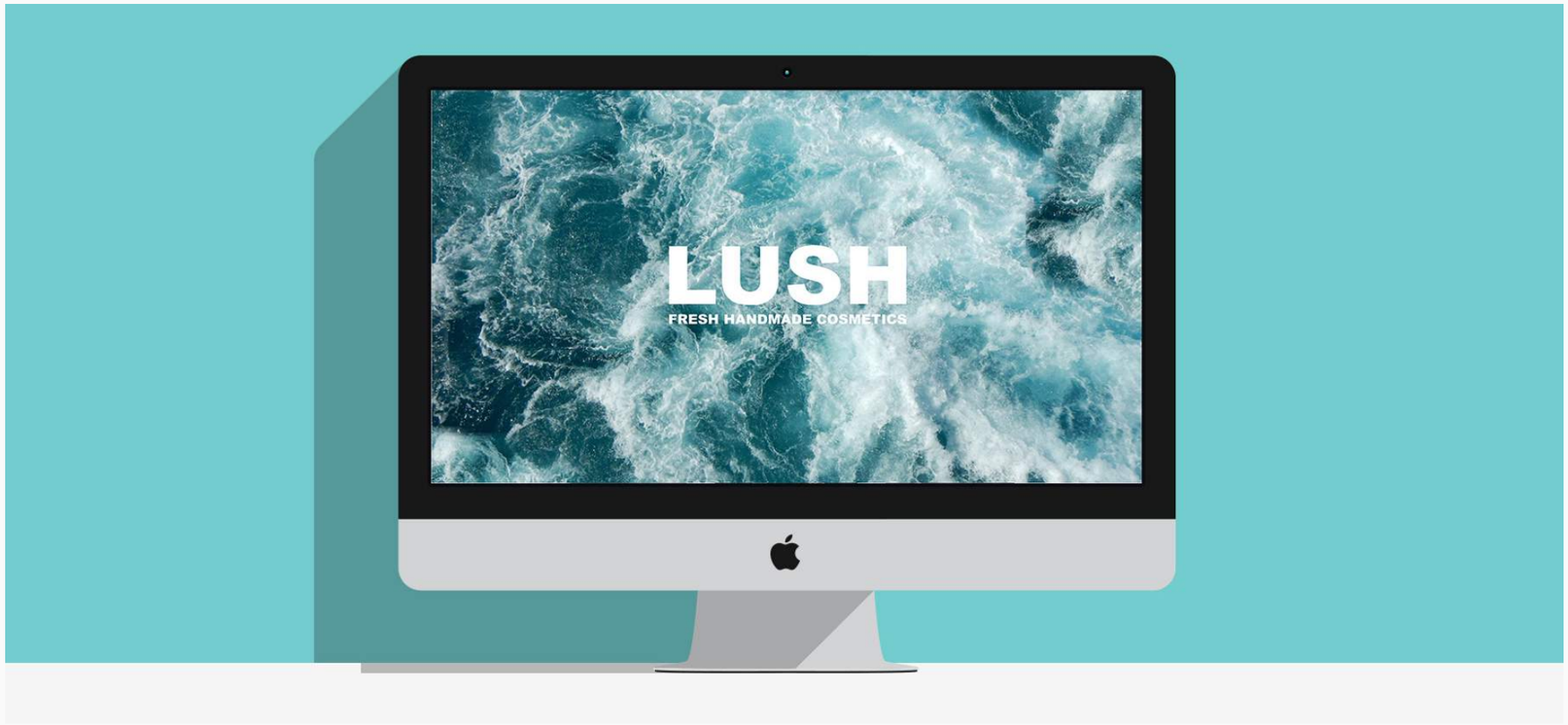
Inactive Screen Mockups

The inactive state of the display (when all 3 RFID scanners are in contact with their tags) causes the “screensaver” movie to loop until an interaction is detected. For the mockup design, I chose an image of the sea to represent the sea salt and seaweed theme of the products.

Beneath the logo I placed the phrase “Lift a product to reveal it’s secrets...” rather than “Pick up a product to begin” as I felt it was more enticing.

In the second iteration, I removed the instructions from the image as I felt that it didn’t necessarily require a direct indication that the display would react. This could also give the element of surprise to the customer if they are just picking up a product to smell or touch it and do not realise it will trigger information. Rather than putting the instructions on the screen, I could put them on the plaque to store the products.

User testing will help me to decide which design is more appropriate, as I want the display to be self-explanatory and also promote interaction.



Screen 1 Concept 1 Mockups

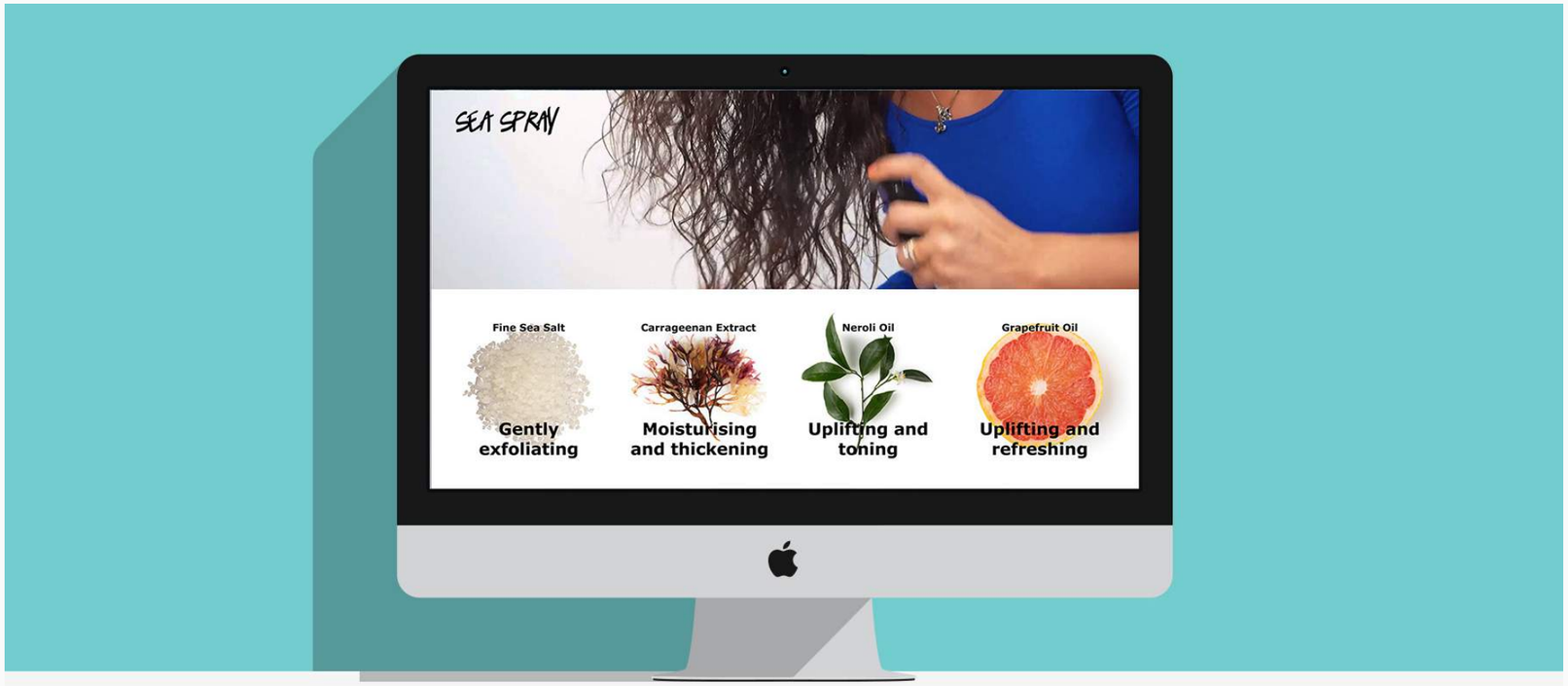
I want to use the first screen to highlight the 4 main product ingredients and their benefits, this lets the customer know a bit more about what's in the product and highlights the fresh aspect, as this was an element my research told me was important.

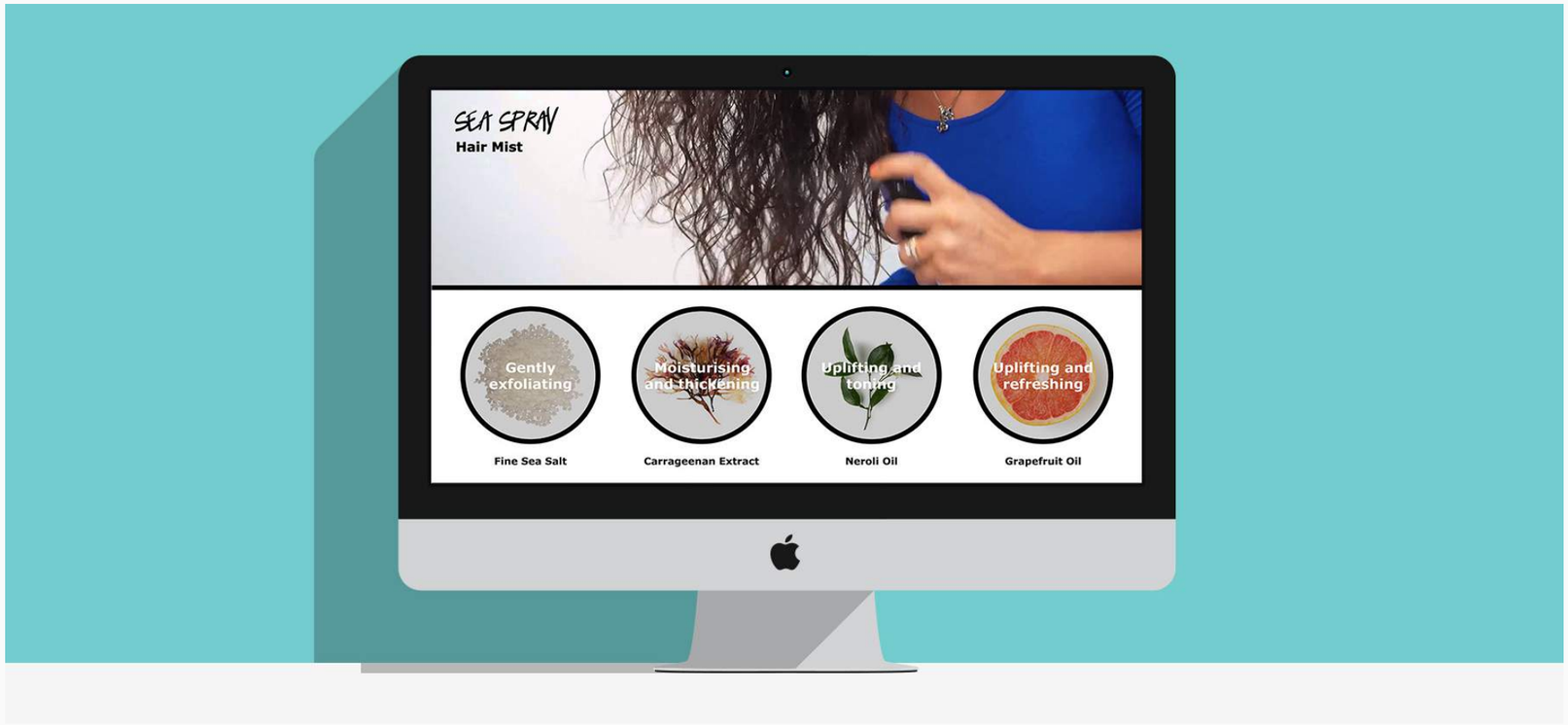
The video in the top half of the screen is intended to show a close-up of the product in use. After closer inspection of the existing Lush Cosmetics footage, it looks like I will have to create the content myself.

After mocking up the first design, I felt that it lacked a little refinement and it looked a little untidy. To overcome this, for the second iteration, I put the photographs of the ingredients within circles. I also added the product "type" beneath the name of the product, as the Lush Cosmetics product names are not always self-explanatory.

In the video design, I envision that the ingredients will appear one by one. In the second iteration, after each ingredient has appeared, the benefit of the product would appear as an overlay over the top to give it emphasis.

This screen is followed by the video content by Lush, which gives further information about how to use the product.

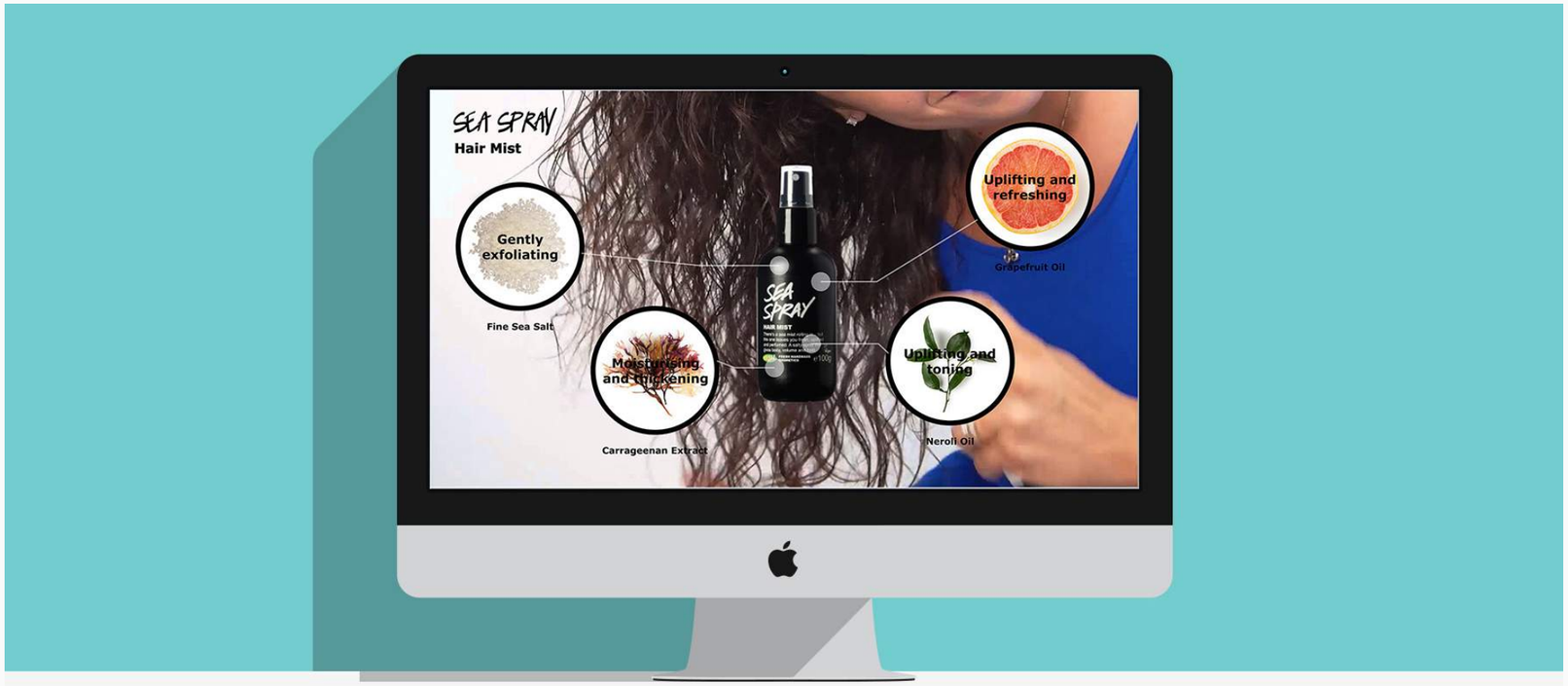




Screen 1 Concept 2 Mockup

After mockuping-up the second concept, I realised that it was overcomplicated and an overload of visual information. The fact that the background would be moving is another factor that will be distracting from the customers point of view.

I want to focus on both elements of the product: the ingredients and the demonstration showing how the product is used. This has left me thinking that concept 1 is more suitable for the first screen.



Screen 4 Mockup

After the Lush video is shown in full-screen, I want to end the video display with the remainder of the available information about the product.

My research told me that price was a very important factor for making purchases, and while I feel that displaying the high price could discourage some buyers, hopefully the rest of the information allows them to make more informed decisions and make the purchase with more confidence. I ordered the rest of the information according to the research insights, highlighting that the products handmade, cruelty free and 100% vegetarian.

Lush Spotlight

I mocked-up a few of my logo designs for the branding of my prototype, using the existing typefaces of Lush Cosmetics. I chose to use a combination of these typefaces as I felt that it would be much more in-keeping with their branding.

I want my prototype to feel like it was created explicitly for a Lush Cosmetics store, and bespoke-made for their products.

As I feel that I am putting a magnifying glass over a selection of products, I have decided that the most suitable name for the concept is Lush Spotlight.

Video Design

For the screensaver movie, I will use existing footage of the ocean and seaweed. As Lush Cosmetics is a British company, I had to ensure that the feel of the movie was not too exotic and reflective of the business. This meant that I have chosen scenes with a slightly darker feel, but that does not necessarily mean that it will be sombre.

As there is only one manufacturing video available to me, I may add this to the movie loop as this could potentially attract customers and ensures that the opportunity to share the “behind the scenes” process does not go to waste. There is the chance that the manufacturing video could put off some customers. As the products come at a premium, the factory scenes reveal the setting as less of a luxury and professional environment.

However, for those customers who are interested in the handmade element of the product it may enhance their view of the company and be of great intrigue to them. It also gives the products a more personal feel, which can be quite satisfying for customers to feel that they are receiving something that has been made especially for them. The brand holds the personality and personal touch of the factory workers in high regard, so this element could be to tool to convey such factors in-store.

Figure 47 Fair, F. (2013) Bladder wrack (Fucus vesiculosus). Available at: https://vimeo.com/63088052 (Accessed: 01/03/15)

Figure 48 Kontiainen, M. (2013) *WAVES.* Available at: https://vimeo.com/53335973 (Accessed: 01/03/15)

Seaweed

I looked at the ingredients of sea spray, ocean salt and daddy-o to find the specific types of seaweed that were contained within them. I then found video footage from internet sources accordingly.

Sea Salt

To represent the sea salt contained in the products, I chose varying video footage of the ocean containing scenes of waves and views from beneath the water.

Figure 49 Brown, T. (2014) *Herring Spawn at Palm Beach.* Available at: https://vimeo.com/89460674 (Accessed: 01/03/15)

Figure 50 Thies, H. (2014) *Seaweed - Europe's vegetable of the future?.* Available at: https://vimeo.com/72415653 (Accessed: 01/03/15)

Figure 51 Mueller, E. (2014) Chief Resource Management Officer Series: Seaweed*.* Available at: https://vimeo.com/83177372 (Accessed: 01/03/15)

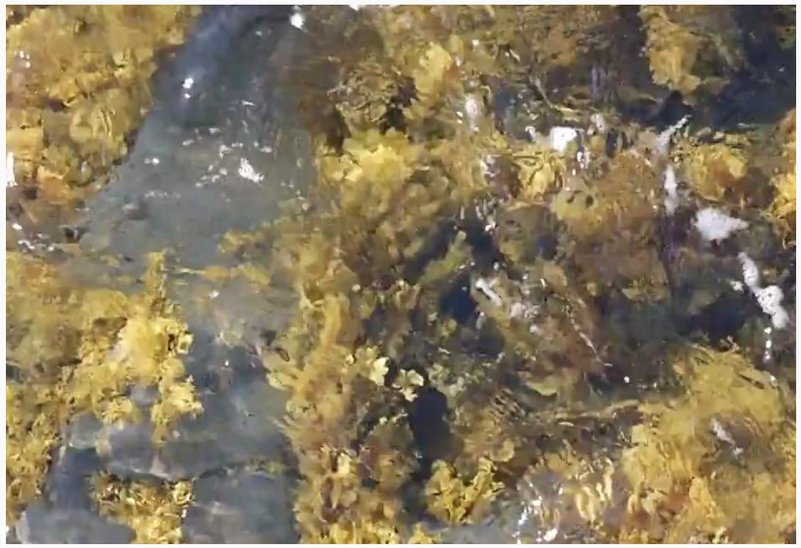


Figure 52 Killingtveit, A. (2011) *Tarfield - Geoduck and cover.* Available at: https://vimeo.com/19784075 (Accessed: 01/03/15)

Figure 53 Mode Stories (2015) *Foraging Seaweed.* Available at: https://vimeo.com/113631518 (Accessed: 01/03/15)

Figure 54 Royal Galactic Media (2013) *Lost at Sea.* Available at: https://vimeo.com/42665561 (Accessed: 01/03/15)

Figure 55 Snell, J. (2013) *Sea // Sky*. Available at: https://vimeo.com/42532869 (Accessed: 01/03/15)

Figure 56 Maglio, L. (2014) *Ocean Waves v02.* Available at: https://vimeo.com/85726064 (Accessed: 01/03/15)

Figure 57 LUSH (2012) *Lush Manufacturing Presents: Sea Spray Hair Mist.* Available at: https://youtu.be/wv9CgEGYZI0 (Accessed: 03/03/15)



















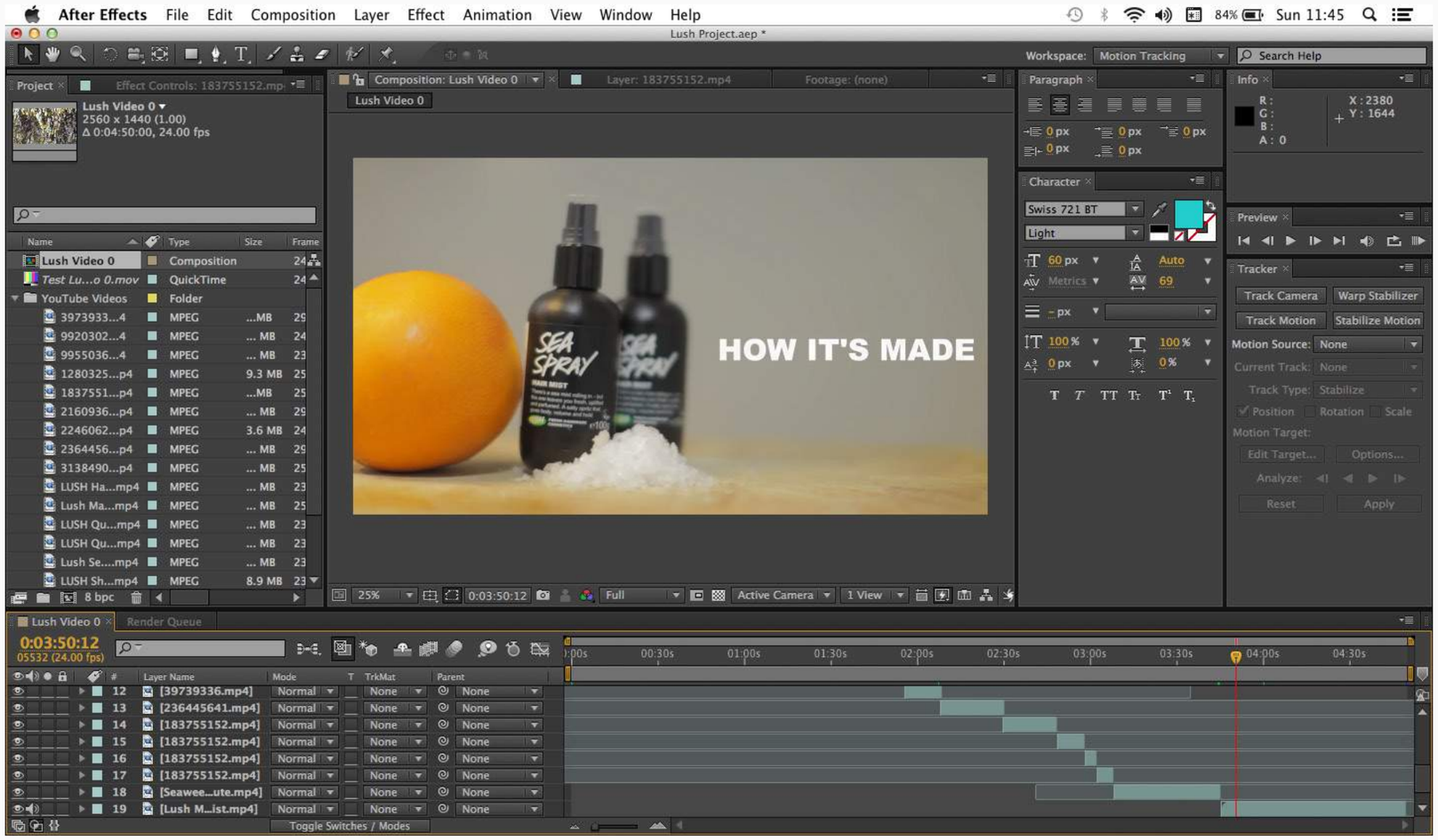

Taking a various footage from the videos found on Vimeo, I created a 3 and a half minute video in After Effects. I used a balanced mixture of clips of the ocean interspersed with seaweed scenes to create a calm and unintrusive film for my screensaver video.

A Waste Of Manufacturing Footage?

Initially, I put the manufacturing footage of the Sea Spray product at the end of the video I created from the clips of the sea and the seaweed. I found that this felt much like a completely seperate entity. It was a bit detatched from the rest of the video and this lead me to consider removing the footage alltogether, but I had an idea.

I deduced that I could still include the footage if I split it up the manufacturing fottage, keeping only the close-up shots. These could then be scattered between the manufacturing clips in between the clips of the ocean.

This would mean that the screensaver video would have a little more context in terms of reflecting the Lush Products, and the manufacturing clips would not appear too out of place.



Once I had made the decision to use only a selection of the manufacturing footage, I created one video without factory clips and one with them, applying my Lush Spotlight logo as an overlay. For the video including factory clips, I chose to use only the clips that focused on the product rather than the people as the subject. For both videos, I adjusted the speed of the clips to form a cohesive video with a steady pace.

User Testing

To asses whether a screensaver video with or without the factory scenes was the most suitable for my prototype, I asked a potential user for their feedback. I played both the videos, one with factory scenes and one without, and then asked a set of questions. This was to aid me into making an informed decision about which video I should use.

The user testing exercise lead me to proceed using the video with the factory scenes, as despite my user raising some concerns, I felt that the consensus was that the factory scenes were interesting and informative. Because the factory scenes are shorter and fewer, being comparatively “less attractive” than the ocean scenes is not an issue. Getting feedback left me feeling much more confident about the videos I had created.

It also gave me something to think about when it came to making the intention of the ocean scenes clear within the prototype. While it is obvious to me, it may not be as self-explanatory to users. To combat this, I could add text onto the cardboard casing for the computer screen. For example, a simple line such as “products inspired by the sea” could help to provide clarity.

Which video do you prefer?

“I personally like the factory one, but I question whether people would be less attracted and drawn in to the factory scenes over the sea stuff.”

Which would attract your attention more?

“On a first glance, probably more the sea and the seaweed because of the colours. The colours would catch my eye in a shop environment.”

Are you interested in seeing how a product is made?

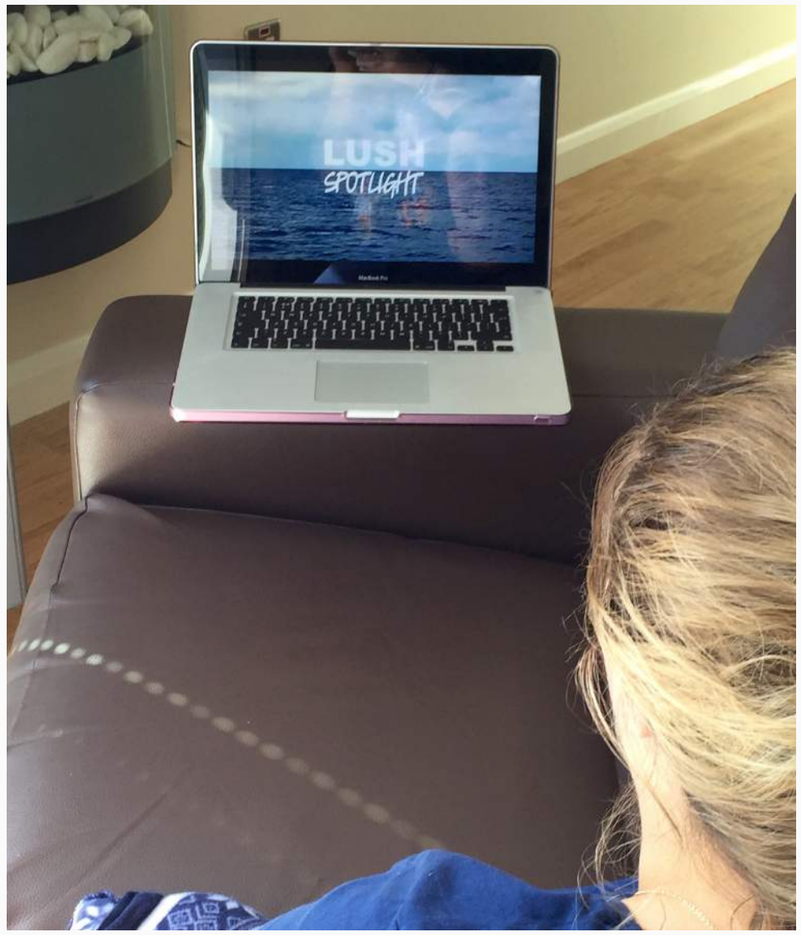
“Yes, and I feel like that’s why I prefer the factory video.”

Do you think the context of the display is clear?

“Yes, but possibly could have a sign above it to give a bit more information, something along the lines of “seaweed products” then the visual would seem clearer. But then again, I feel if you added more text to the video it could lose more first glance attraction. But then perhaps people would read the Lush Spotlight and say “what’s that?” so maybe you don’t need anything that says “seaweed products.”

Any other comments?

“I thought it was definitely attractive and an attractive video, I liked the sea colours. It would quickly draw my attention if I saw it in the store.”

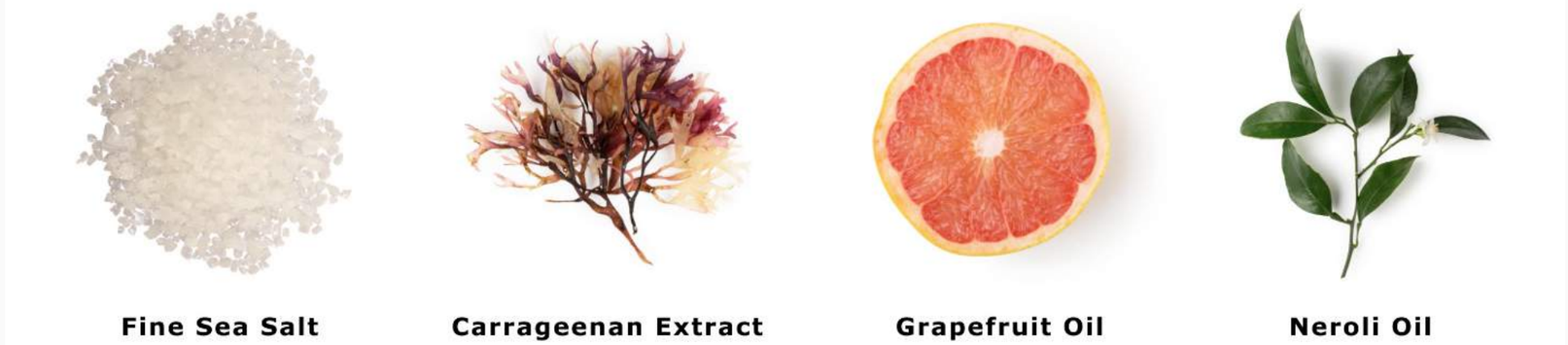


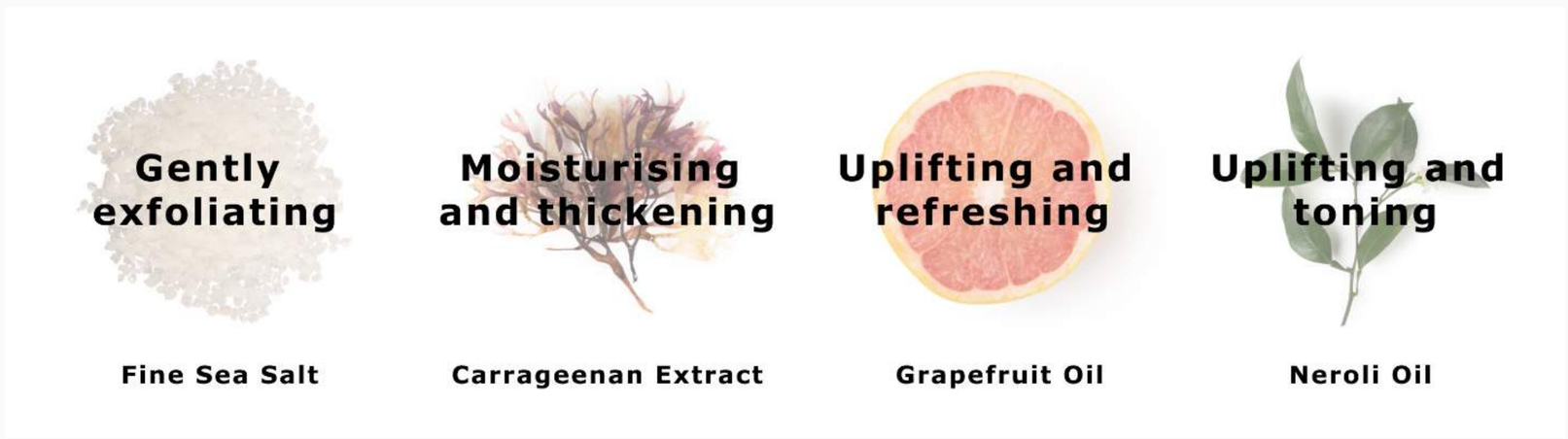
Demonstration & Ingredients

As I had decided to create my own content but had not yet filmed demonstration clips, I created an image in the correct dimensions so that I could create the rest of the content in appropriate proportions for the interface.

Despite creating two high-fidelity wireframe concepts for screen 1, I decided against both designs and combined elements from each. Rather than placing circles over the images and using thick strokes, I opted for using a blur. I wanted a clean and simple layout so that the ingredients and benefits were the focus rather than a “fancy design” that distracted away from the key information.

Each key ingredient appears sequentially from left to right. Once all 4 have appeared, the images blurr simultaneously to allow the text overlay to be read easily. I ensured that I left enough time between transitions to allow for the images and text to be taken in completely before moving to the next screen.





Test Shots

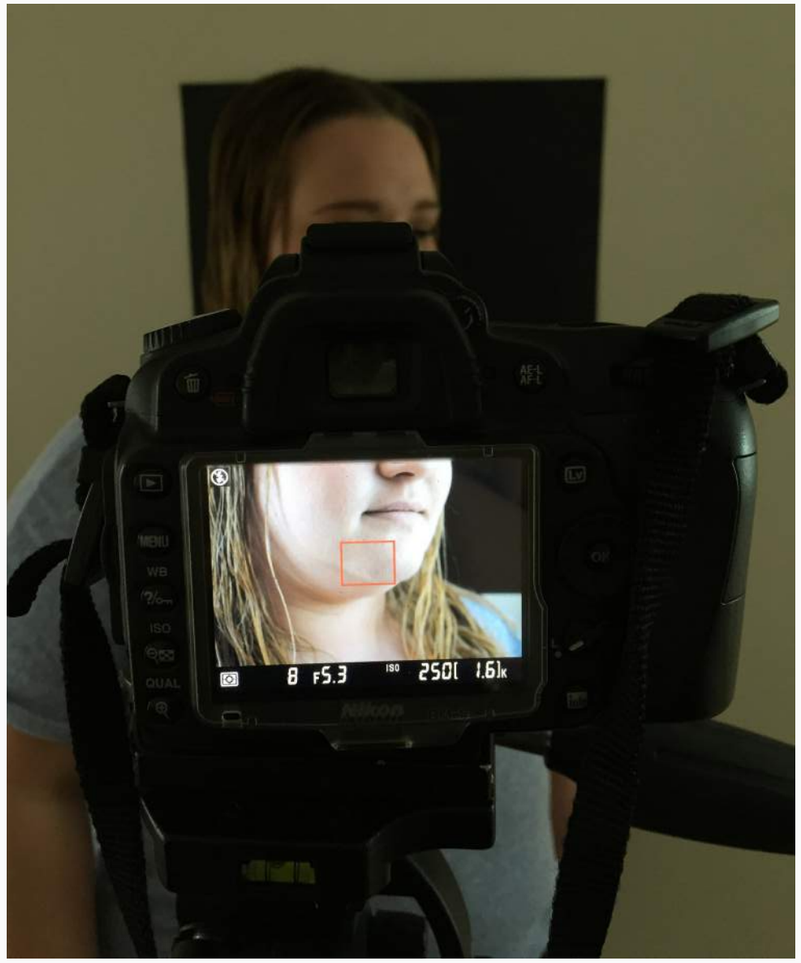
To get the highest quality clips for my prototype, I took some test shots with a variety backgrounds and lightings to see which would be the most suitable before recording the footage.

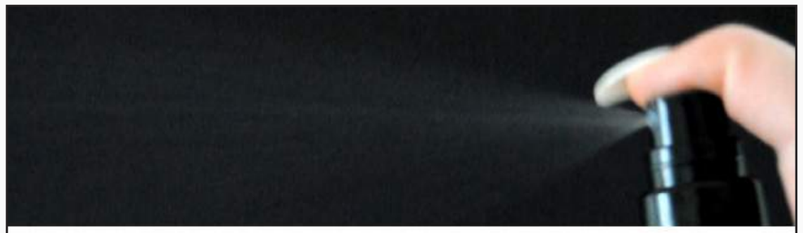
I found that the most visually appealing, as well as providing the best clarity for close-up detail, was using a black background in natural light.
It gave the most contrast which meant that the subject would be the most visible, and it was also appropriate for my split screen layout.

Recording My Videos

For the demonstration clips I wanted to record the products in an “up close and personal” way. The idea of these videos is to better explain visually how the product is used, which is lacking from the current store environment.

I made sure that I showed the product in action, as I feel this is something that helps customers to envision themselves using the product in that way. Seeing it for themselves could secure a sale, as they have all the knowledge required to use the product before purchasing.





Fine Sea Salt

Fine Sea Salt | Carrageenan Extract | Grapefruit Oil | Neroll Oil

Gently exfoliating | Moisturising and thickening | Uplifting and refreshing | Uplifting and toning

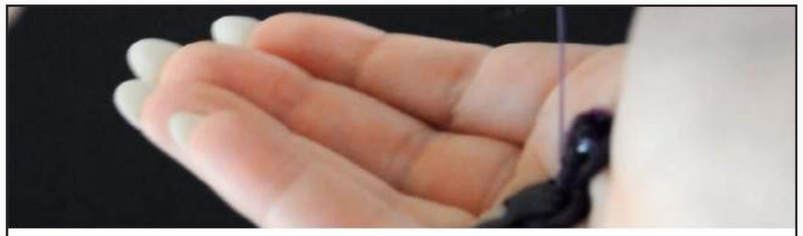
Fine Sea Salt | Carrageenan Extract | Grapefruit Oil | Neroll Oil

Fine Sea Salt

Fine Sea Salt | Seaweed Absolute | Fresh Grapefruit Infusion | Fresh Organic Lime Extracted In Vodka

Gently exfoliating | Nourish and protect skin | Cleansing and toning | Refreshing and rejuvenating

Fine Sea Salt | Seaweed Absolute | Fresh Grapefruit Infusion | Fresh Organic Lime Extracted In Vodka

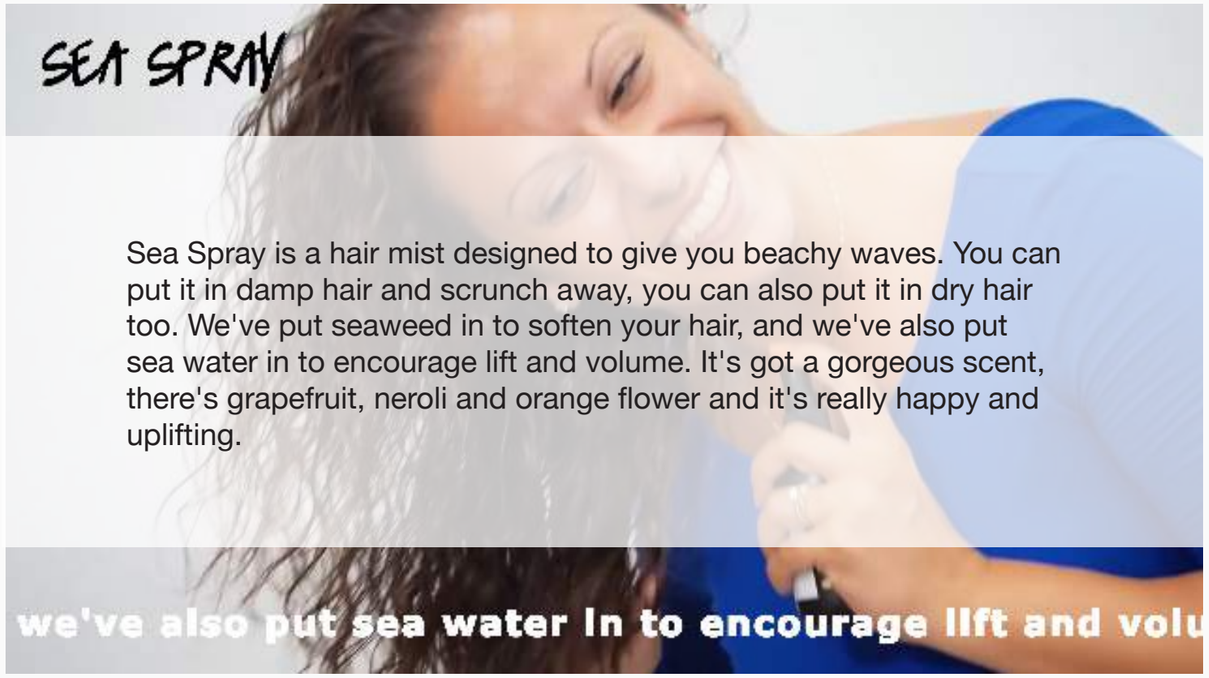


Fresh Sea Water

Fresh Sea Water | Fresh Organic Lemon and Seaweed Infusion | Violet Leaf Absolute | Fresh Organic Lime Juice

Mineral rich | Conditioning and softening | Fresh, grassy and antibacterial | Refreshing and rejuvenating

Fresh Sea Water | Fresh Organic Lemon and Seaweed Infusion | Violet Leaf Absolute | Fresh Organic Lime Juice

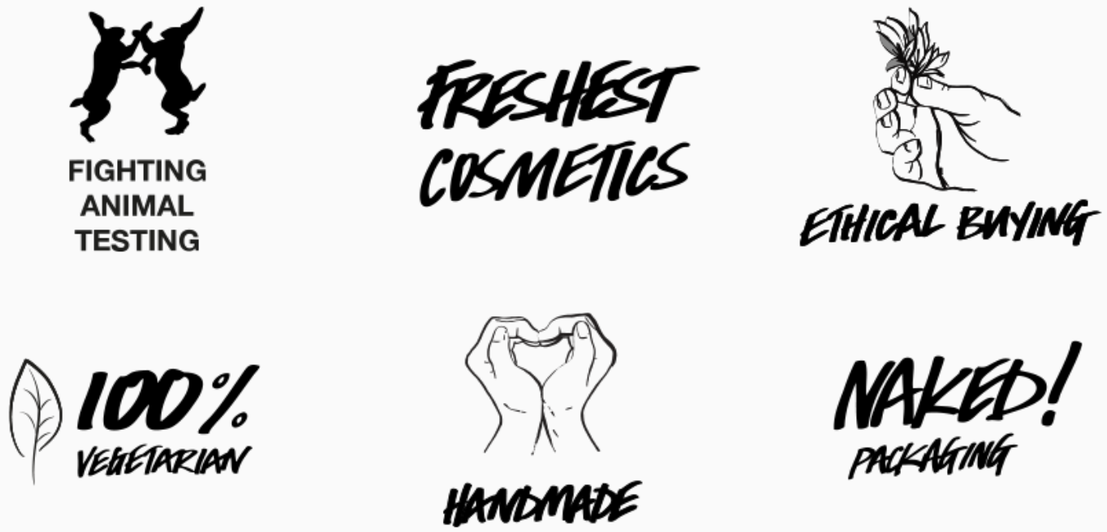


Subtitling

When creating subtitles for the Lush footage, I transcribed the whole speech and applied it to the video so that it would scroll from right to left. But there was a problem, the text appeared to appear in conjunction with the speech, it moved so rapidy that you couldn't read it.

For the second iteration I tried to rectify this by cutting down the text into more concise sentences, but it was still too fast to be legible despite moving in time. I did however feel that changing the typeface increased the legibility.

For the third iteration, I reduced the amount of text once more. This time, only the most essential information was displayed. I also highlighted the key words to give them more emphasis. As the presenter speaks, the text appears in a "write-on" effect with each word appearing individually. I decided to display the text in a random layout as I didn't want it to feel too regimented.



Final Screen

For the last screen of my video, I developed my high-fidelity wireframe to produce this design. I kept the split screen format like the first screen, but decided to have one half black for some contrast.

I used Lush's existing logos to remind customers of what they will be getting if they purchase the products. I chose the logos which were relative to the products, for example I did not dispkay the Naked! Packaging logo as each of my products have packaging. I placed the logos in the order of importance to the customer, from what my research told me.

I reduced the amount of text that was displayed on screen from the initial wireframe design. On the second iteration I put less emphasis on the star rating as it was drawing too much attention and it is not that relevant to the customer, according to my user research. I made sure that the price was given clearly and that this screen just summarised the product information.

Introductory Videos

After I was satisfied with the design of my product videos and I exported them for testing, I realised there was something missing. To better introduce the videos, I thought that I should create an introductory clip for each product. This would play before the main videos to loosley inform the customer about what was about to happen next.

Rather than using any of the footage that I had already had, I wanted should pick something that was directly associated with Lush. I had discovered that Lush collected their sea water from Studland Bay on the south coast of England, and I therefore searched for footage of the coast in that area. I was able to find a suitable video on Vimeo and I used a section of their footage to create background imagery.

To contrast with the Lush Spotlight logo on the screensaver video, I used a black version of the logo and added the word “presents” - which essentially informs the customer that they are about to be presented with information pertaining to the product they have picked up.

Figure 58 Dimension2 (2013) *National Trust Studland.* Available at: https://vimeo.com/53947940 (Accessed: 10/04/15)

Testing & Feedback

I decided to test the videos on my tutor and fellow students in order get some feedback. I wanted to ensure that the visuals were on the screen for the appropriate amount of time and the feedback confirmed that this was the case. Text speed is fine over the video. Black text on videos is a little hard to read at times, but as you can hear the speaker it's fine. Not too difficult to concentrate on both.

My tutor suggested that I change the text, to make it less bold and reduce the kerning as it's distracting from the content. Aside from that, I was told that visuals were "looking good" and it said what I need it to. In other words, the videos were fit for purpose.

I had previously thought that sound on the videos would be unnessary for a shop environment, but for displaying my prototype I felt that it was something it might be needed. As suspected, some people felt that I should add soundtracks to the videos, as it almost felt like there was something that wasn't working correctly. I therefore chose sounds of the sea for the screensaver loop, and a happy and uplifting tune for the product videos.

Figure 59 SoundBible.com (2009) *Sea Waves Sound.* Available at: http://soundbible.com/885-Sea-Waves.html (Accessed: 01/05/15)

Figure 60 SophonicMedia (2015) *Uplifting Inspirational Background Music by Sophonic.* Available at: https://www.youtube.com/watch?v=dVDW2oLH6G0 (Accessed: 01/05/15)

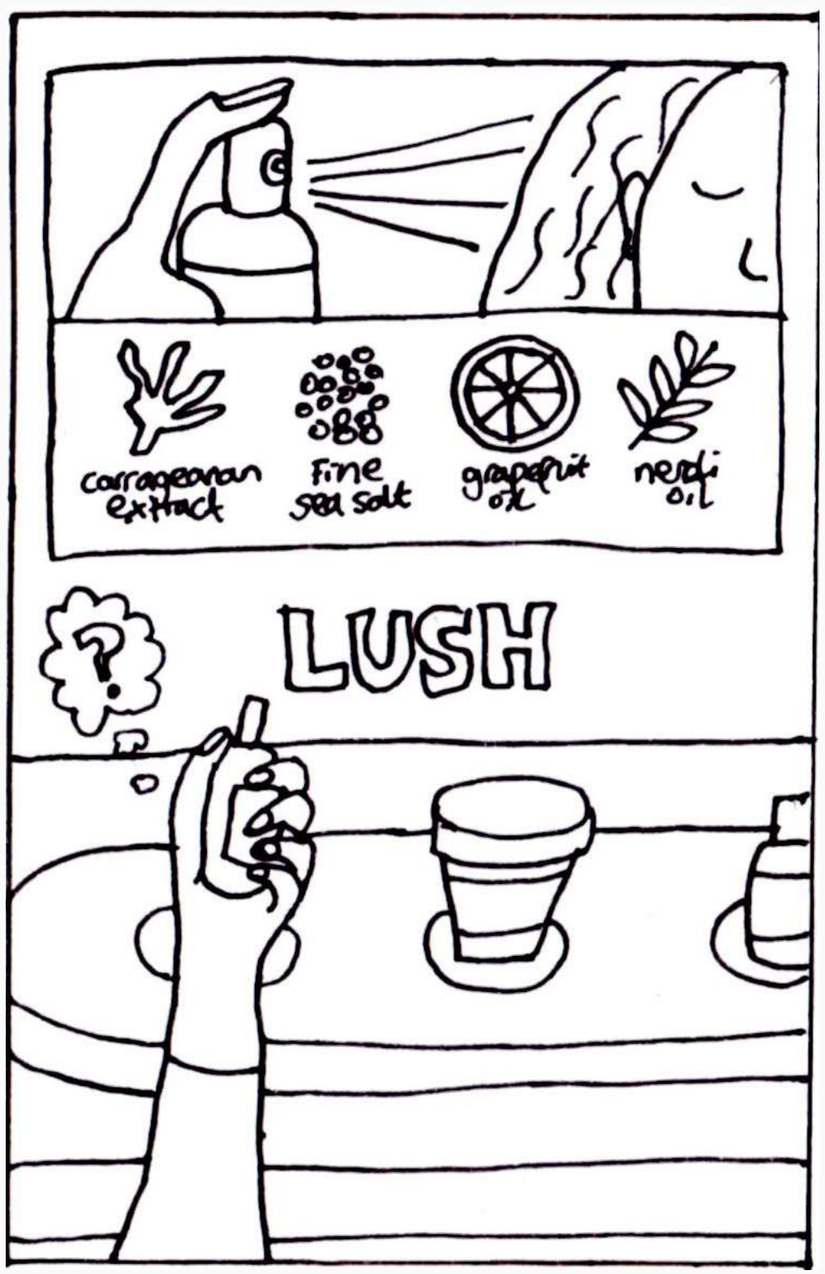
The Finer Details

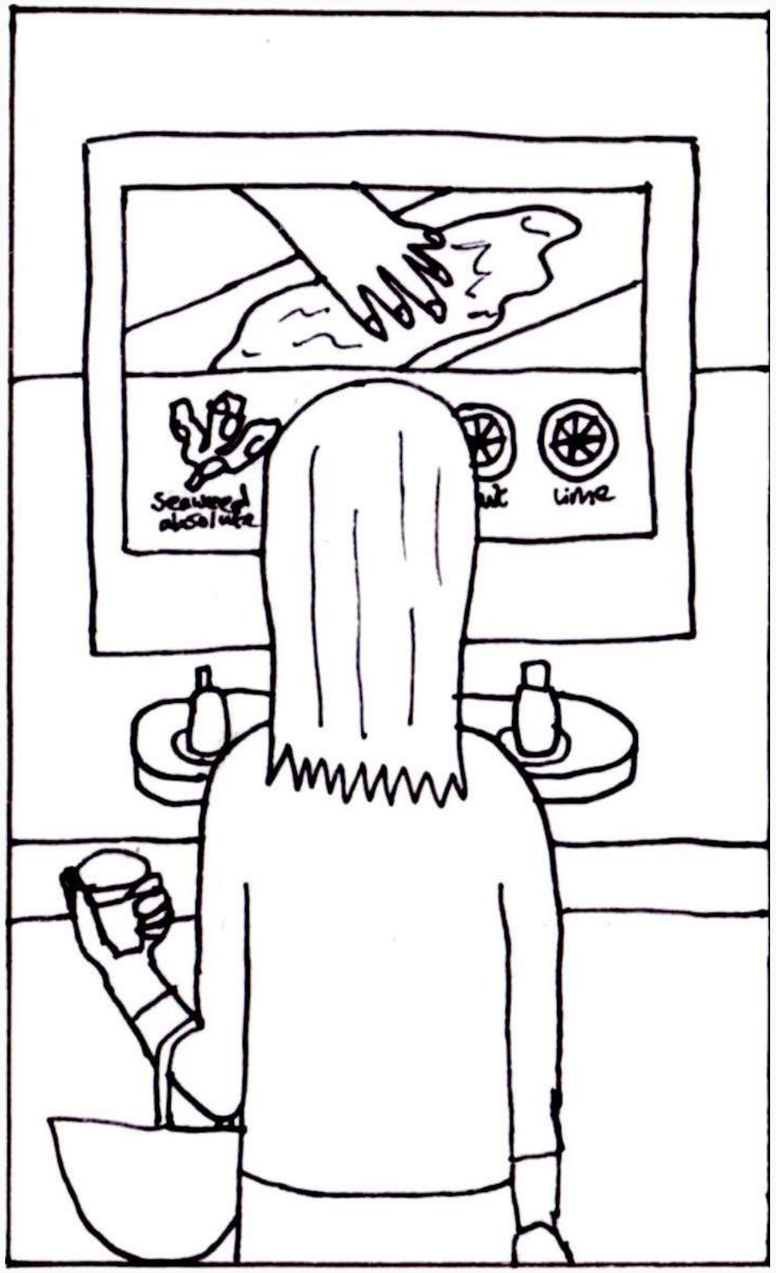
The videos should be looped repeatedly when a product is lifted, until a change is made.

If 2 products are picked up in quick succession, I either have to ensure that each product video is played completely before the next starts, or cut off each video when the product is replaced. I also have to overcome to potential issue caused if 2 people pick up products at the same time.

If possible, when product 1 is lifted, video 1 will play. When product 1 is put back down, screensaver will play but video 1 will remain paused for 30 seconds in case they want to pick it back up and resume the video. If product 2 is picked up and 30 seconds has passed, product 1 video will go back to the beginning.

If I can’t pause the video, replacing the product will cause video 1 to go back to the beginning. Placing the product back down will stop the video and return it to the beginning, if the product is not replaced then the video will loop indefinitely.





Arduino: Making It Work

The Final Code

For the final code I adapted the code that I had created that simply read the data off all 3 RFID cards at one time. For my prototype to work, I needed the Arduino to be able to detect when a any of the RFID tags had been removed from the circuit, and cause the corresponding video to play.

In order for the Arduino to detect a change in the RFID cards, I had to tell the Arduino that if a “new card” is detected, or in other words there has been a change to the RFID tags being read by the scanner, to cause a different number to be printed in the serial port. If there is no change and the RFID tags are present a 0 will be sent, which causes the video 0 to play through processing, in this case it is my screensaver video.

I used the unique number on the RFID tag to assign an instances to them, and depending on which is removed a 1, 2 or 3 is sent to the serial port. This means that a specific video could be triggered by a specific tag, which actually means that the correct video will be played regardless of which RFID scanner the product is placed upon.

Essentially. this code tells the Arduino to print a number between 0 and 3, which can be used as the input by the processing code and cause the correct video to play in real-time.

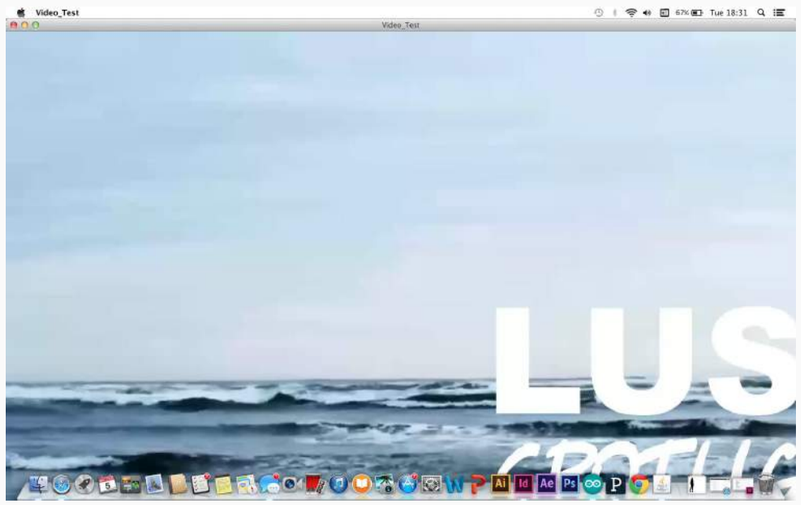
```
#include <SPI.h>
#include <MFRC522.h>

//SDA,RST need different pins.

MFRC522 mfrc522a(10, 9); // Create MFRC522 instance
MFRC522 mfrc522b(7, 6); // Create MFRC522 instance
MFRC522 mfrc522c(4, 3); // Create MFRC522 instance

void setup() {
Serial.begin(9600); // Initialize serial communications with the PC
while (!Serial); // Do nothing if no serial port is opened (added for Arduinos based on ATMEGA32U4)
SPI.begin(); // Init SPI bus
mfrc522a.PCD_Init(); // Init MFRC522
mfrc522b.PCD_Init(); // Init MFRC522
mfrc522c.PCD_Init(); // Init MFRC522
Serial.println(F("Scan PICC to see UID, type, and data blocks..."));
}

unsigned int oldCardA = 0;
unsigned int oldCardB = 0;
unsigned int oldCardC = 0;

void loop() {

  unsigned int newCardA = 0;
  unsigned int newCardB = 0;
  unsigned int newCardC = 0;

    // Look for new cards

  if ( mfrc522a.PICC_IsNewCardPresent() && mfrc522a.PICC_ReadCardSerial() ) {
    newCardA = mfrc522a.uid.uidByte[1];
    newCardA += mfrc522a.uid.uidByte[0] *256;
  }
  else if ( mfrc522a.PICC_IsNewCardPresent() && mfrc522a.PICC_ReadCardSerial() ) {
    newCardA = mfrc522a.uid.uidByte[1];
    newCardA += mfrc522a.uid.uidByte[0] *256;
  }
  else {
    newCardA = 0;
  }

  if ( mfrc522b.PICC_IsNewCardPresent() && mfrc522b.PICC_ReadCardSerial() ) {
    newCardB = mfrc522b.uid.uidByte[1];
    newCardB += mfrc522b.uid.uidByte[0] *256;
  }
  else if ( mfrc522b.PICC_IsNewCardPresent() && mfrc522b.PICC_ReadCardSerial() ) {
    newCardB = mfrc522b.uid.uidByte[1];
    newCardB += mfrc522b.uid.uidByte[0] *256;
  }
  else {
    newCardB = 0;
  }

  if ( mfrc522c.PICC_IsNewCardPresent() && mfrc522c.PICC_ReadCardSerial() ) {
    newCardC = mfrc522c.uid.uidByte[1];
    newCardC += mfrc522c.uid.uidByte[0] *256;
  }
  else if ( mfrc522c.PICC_IsNewCardPresent() && mfrc522c.PICC_ReadCardSerial() ) {
    newCardC = mfrc522c.uid.uidByte[1];
    newCardC += mfrc522c.uid.uidByte[0] *256;
  }
  else {
    newCardC = 0;
  }

  if (newCardA!=oldCardA) {
    sendChange(oldCardA);
    oldCardA = newCardA;
  }

  if (newCardB!=oldCardB) {
    sendChange(oldCardB);
    oldCardB = newCardB;
  }

  if (newCardC!=oldCardC) {
    sendChange(oldCardC);
    oldCardC = newCardC;
  }
}
void sendChange(unsigned int oldCard) {
  switch (oldCard) {
    case 0x04CC : Serial.print("1");
      break;
    case 0x04CB : Serial.print("2");
      break;
    case 0x04CA : Serial.print("3");
      break;
    default:
      Serial.print("0");
  }
}
```

The Processing Code

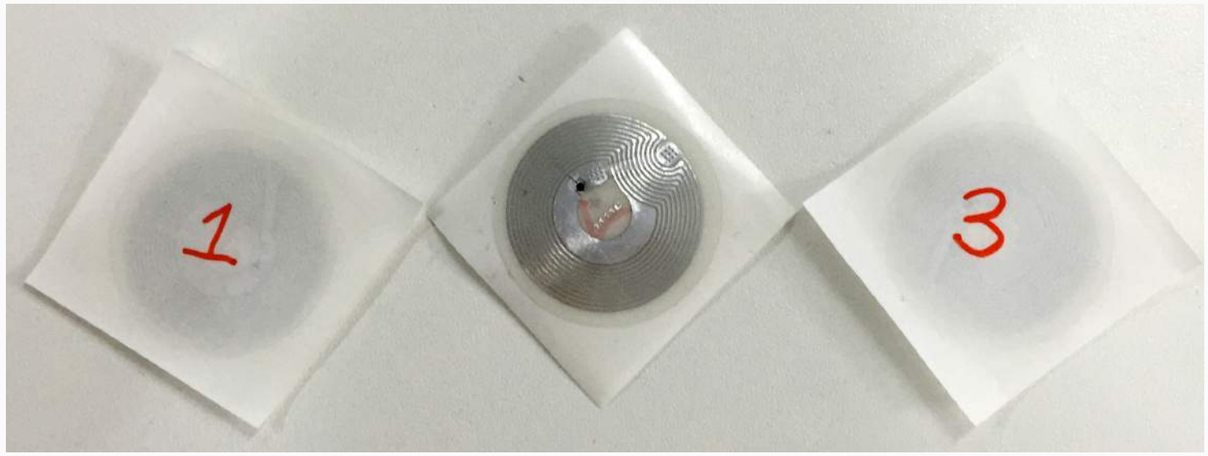
This Processing sketch uses the numbers generated and printed to the serial port by the Arduino to play videos according to the value. When you plug in the Arduino board and run the Processing sketch, because the videos have already been loaded by the computer, the correct video will play in Java. The video file only changes when a change is made to the input (when an RFID tag is removed).

The “BaseMovie” is the video that plays immediately when the sketch is run. This is ideal for my Lush screensaver video, and this code tells it to play on a loop indefinitely until a change is made to display the videos for the products - which is perfect for my desired shop environment.

At this point, because I have created the videos in the specific dimensions for my Mac screen, the video display is too large for my laptop. I will be able to fix this easily so I can test the prototype effectively.



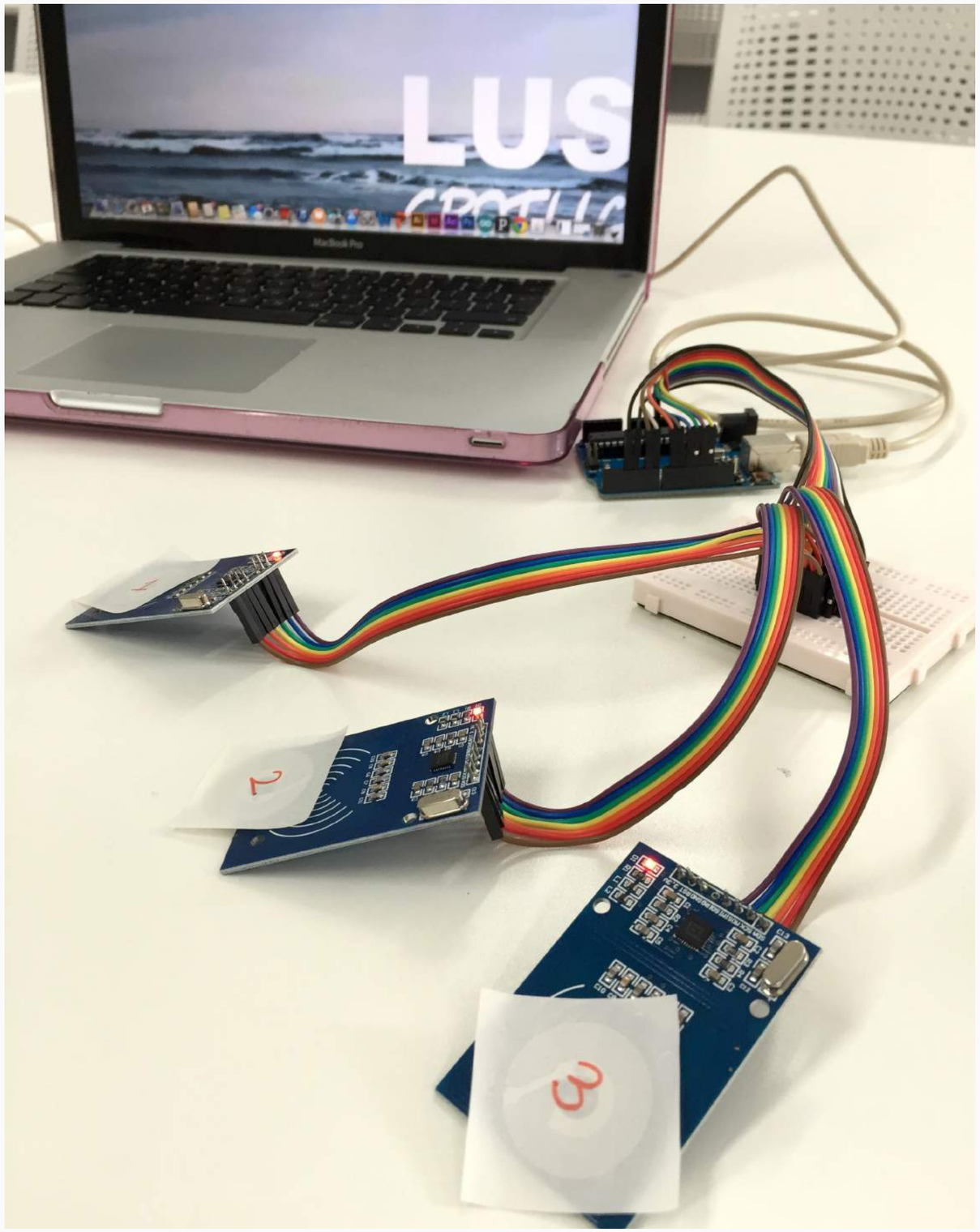
```
import processing.video.*;
import processing.serial.*;
Serial port;
String val;
Movie baseMovie, movie0, movie1, movie2, movie3;

// Setup
void setup() {

  // Set the screen size
  size(displayWidth, displayHeight);

  // Load in the video
  movie0 = new Movie(this, “Lush Video 0 - Factory.mp4”);
  movie1 = new Movie(this, “Sea Spray Video 1.mp4”);
  movie2 = new Movie(this, “Ocean Salt Video 2.mp4”);
  movie3 = new Movie(this, “Daddy-O Video 3.mp4”);

  // Switch to the default video
  baseMovie = movie0;
  baseMovie.loop();

  // Open the serial port
  port = new Serial(this, “/dev/cu.usbmodem1411”, 9600);
  //port = new Serial(this, “COM22”, 9600);

}

// Function to swap the video if required
void switchMovie(Movie newMovie) {
  if (baseMovie!=newMovie) {  // Only swap if not already playing
    baseMovie.stop();        // Stop the old video
    baseMovie = newMovie;
    // Make baseMovie refer to the new movie now
    baseMovie.jump(0);       // Jump to the start of the new video
    baseMovie.loop();        // Play the new video in a loop
  }
}

void draw() {
  background(0);          // Paint the background block
  image(baseMovie, 0, 0); // Draw a frame of the playing video

  // Read the string value from the Arduino if it has sent something
  if ( port.available() > 0 ) {
    val = trim(port.readString());

    // Compare the sctring against the known commands
    if (val.equals(“0”)) {
      switchMovie(movie0);
    }
    else if (val.equals(“1”)) {
      switchMovie(movie1);
    }
    else if (val.equals(“2”)) {
      switchMovie(movie2);
    }
    else if (val.equals(“3”)) {
      switchMovie(movie3);
    }
  }
}

// Process the video events
void movieEvent(Movie m) {
  m.read();
}

// Make playback fullscreen
boolean sketchFullScreen() {
  //return true;
  return false;
}
```

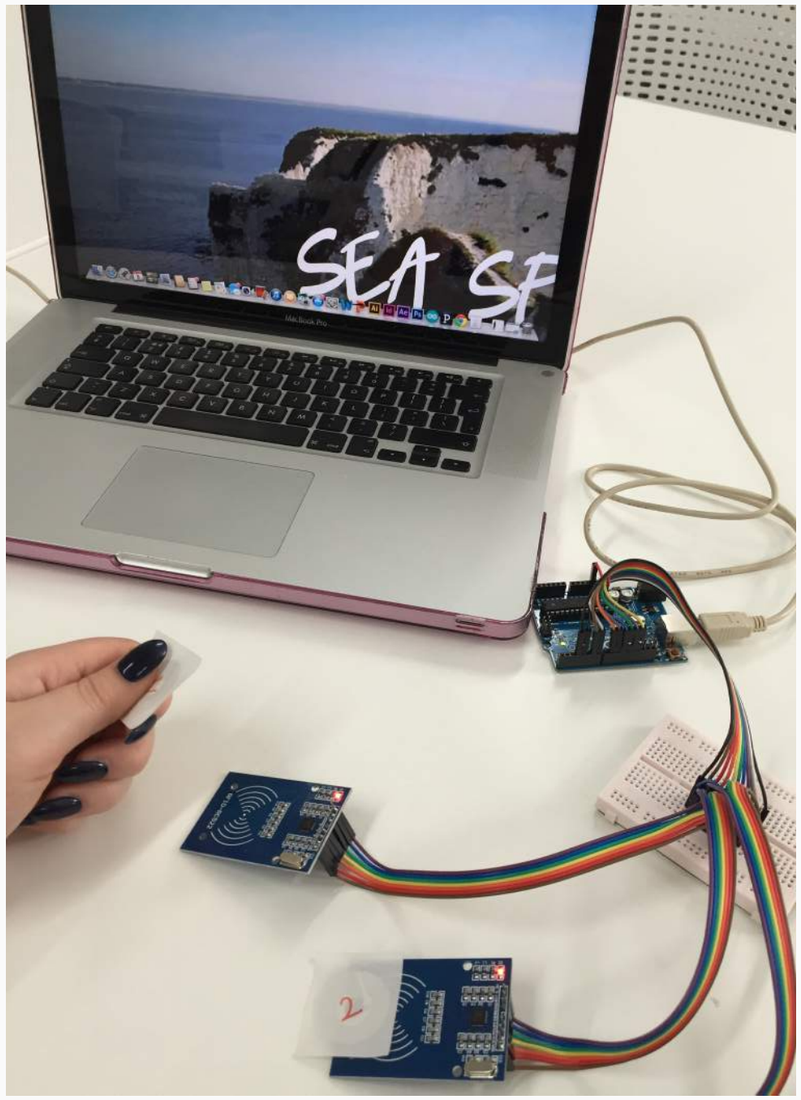


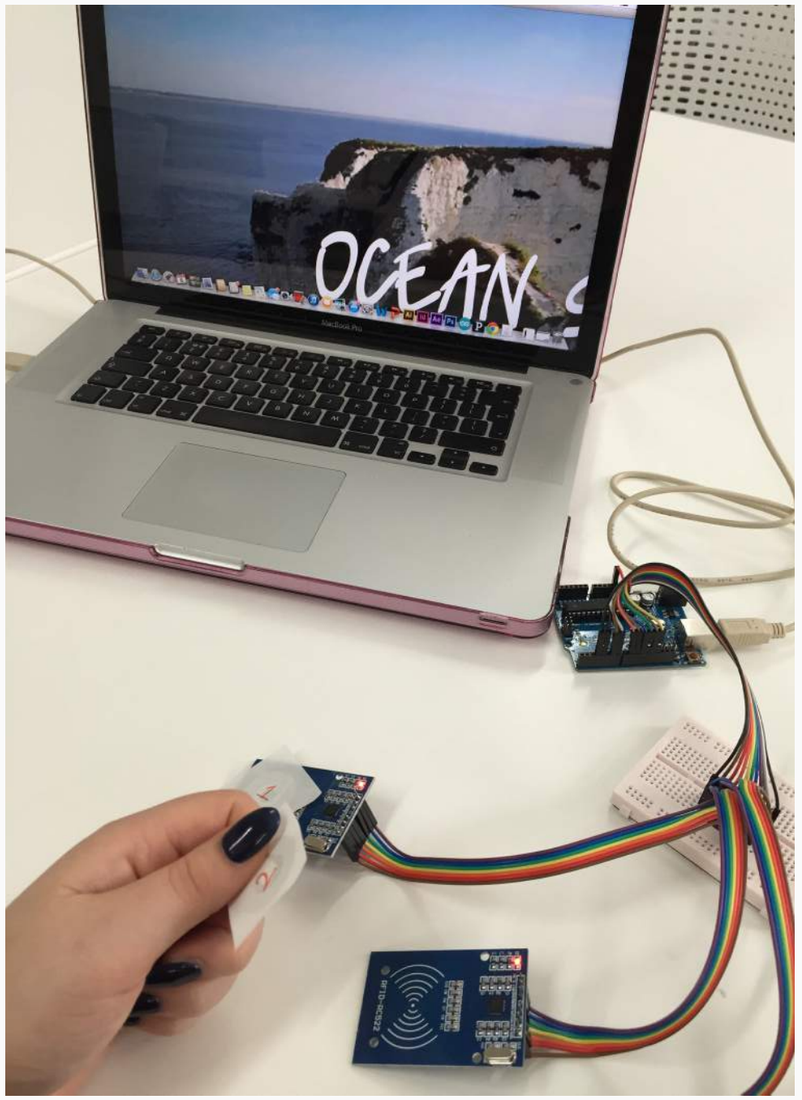
Does It work?

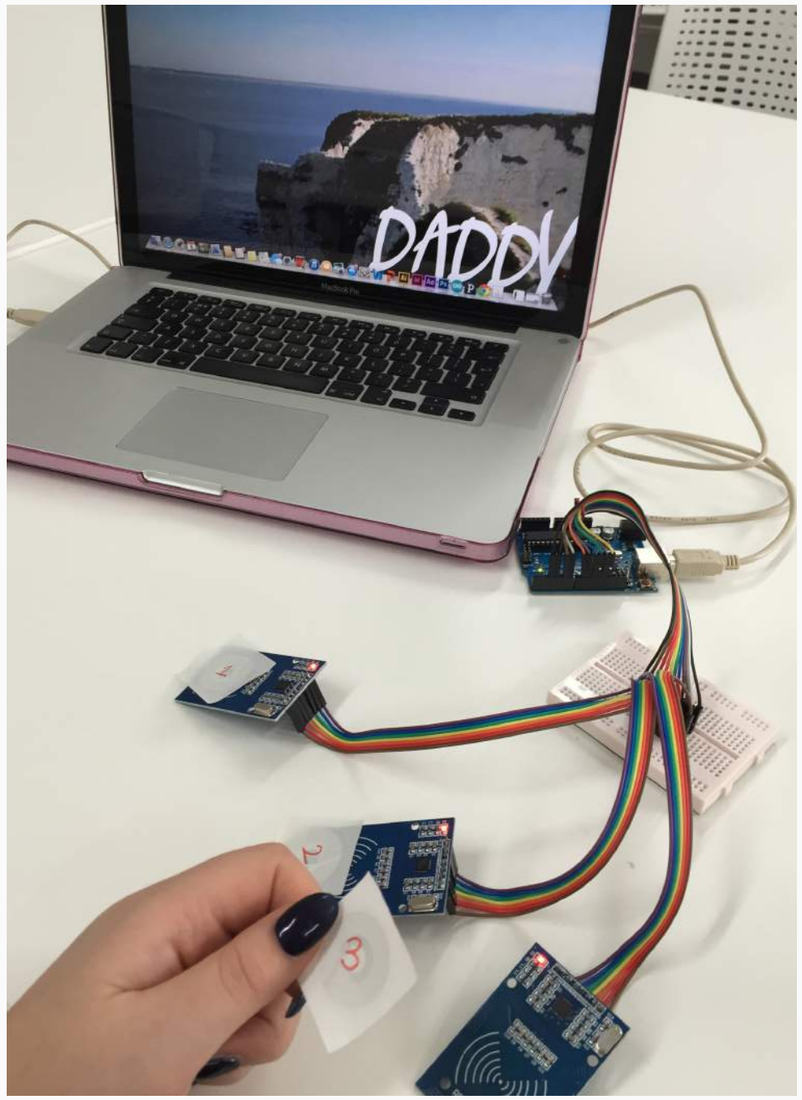
To put it simply: Yes. I uploaded the Arduino code and ran the Processing sketch to see if everything was in working order. I found that it ran smoothly without much error. When all 3 RFID tags were present, the screensaver video ran through seamlessly and on a loop. In order to help me differentiate between the RFID tags and which video they were going to trigger, I numbered them 1 to 3.

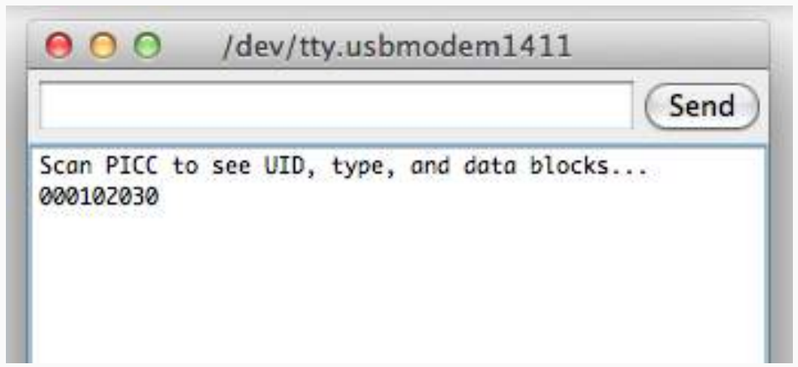
1 = Sea Spray
2 = Ocean Salt
3 = Daddy-O











Does It work?

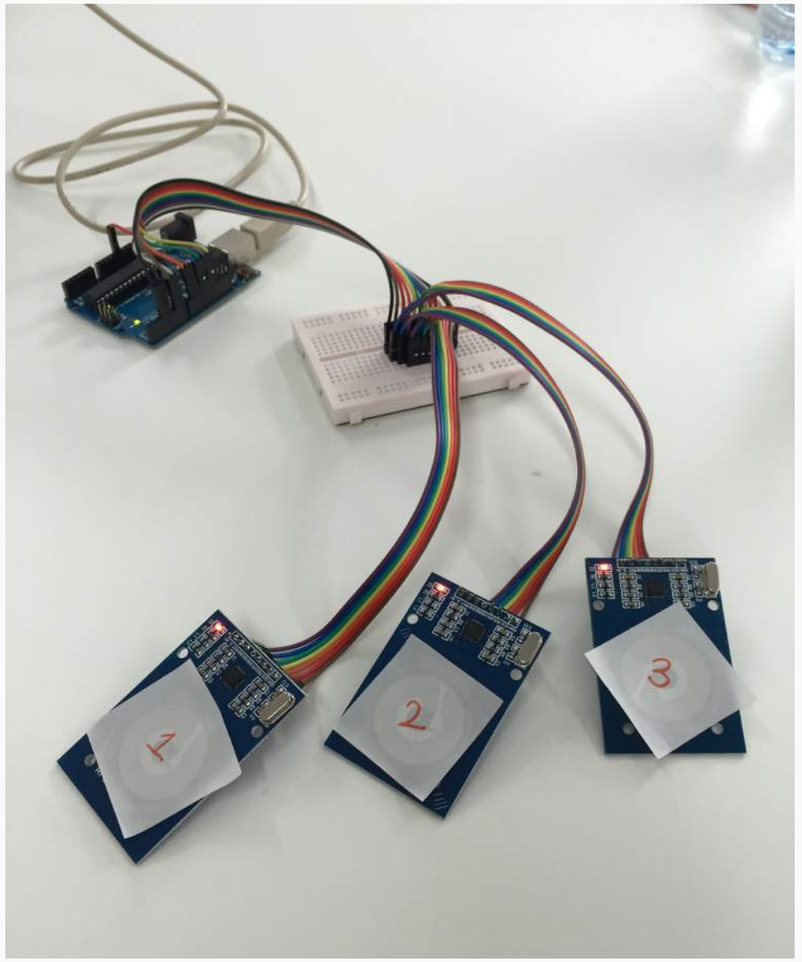
I was successfully able to play each video by removing the corresponding RFID tags from in range of the scanners. To ensure that it was working correctly, I checked the serial monitor on the Arduino software, which confirmed to me that I could play the videos in succession by replacing each RFID tag before picking he next one up. When more than one RFID tag is removed, the video that plays is the one from the tag that was removed first.

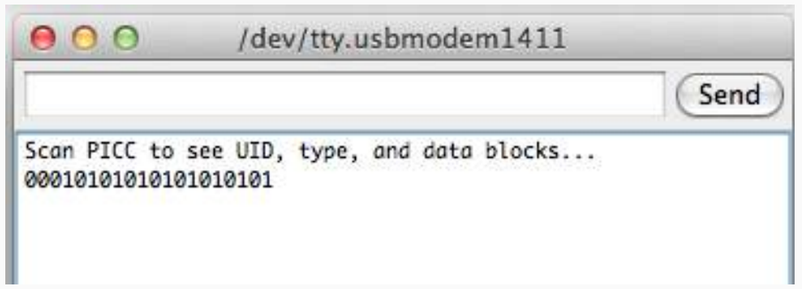
Troubleshooting

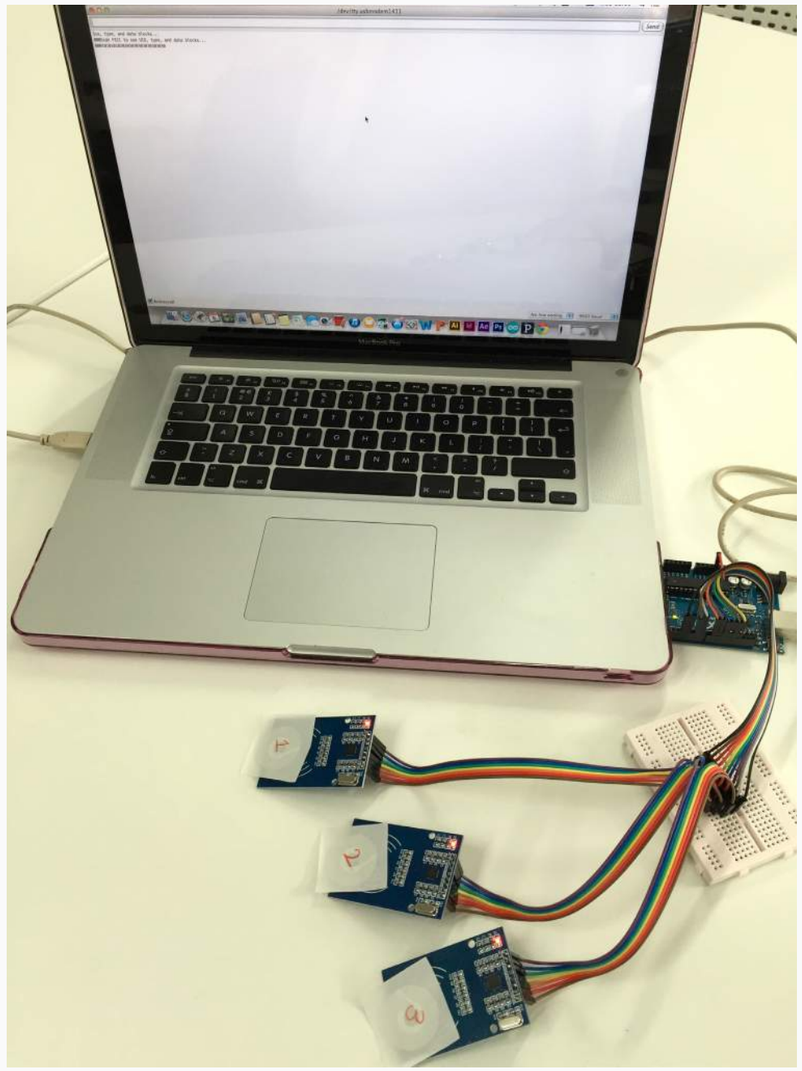
During the testing I found that occasionally the screensaver video had a tendency to alternate between one or more of the videos in quick succession, to find out what was causing this issue I opened the serial monitor on Arduino software.

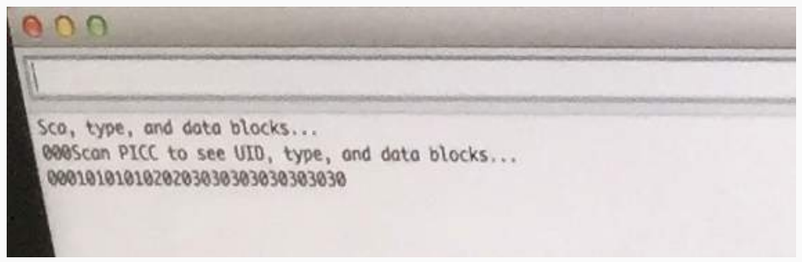
I found that if you picked up 1 tag, and did not move it far enough away from the RFID scanner, the videos would flip between the screensaver video and the product video. This can be solved by ensuring the tag is moved out of range of the scanner so that the Arduino does not get “confused”.

I also found that there was an issue when the RFID scanners were too close together. It seemed as if it didn’t know which video to chose so flicked between them. Increasing the proximity between the scanners seemed to resolve this problem.





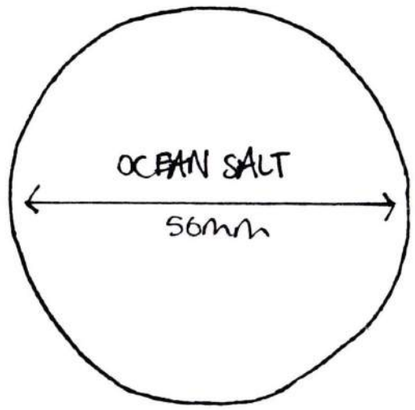


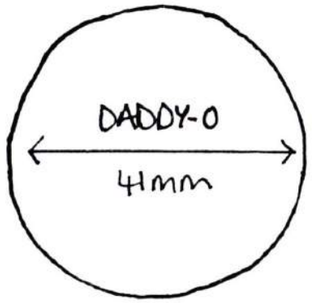


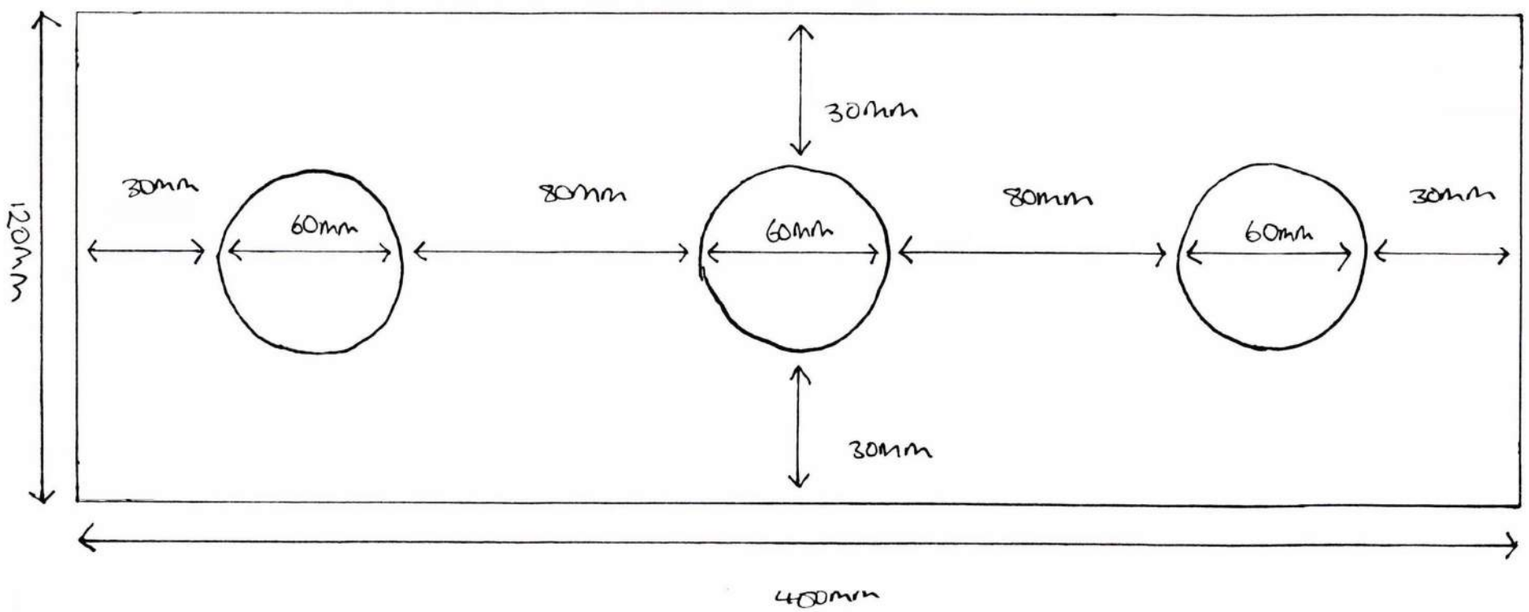
The Panel

I wanted to ensure that I made a panel prototype that was appropriately proportioned and of good quality.

I measured each product to assess the most suitable size for the product holes. When creating the I had to ensure that there would be enough space between the RFID scanners so that their signals do not interfere with each other, and that there was space for each one to fit inside the box.







What's The Plan?

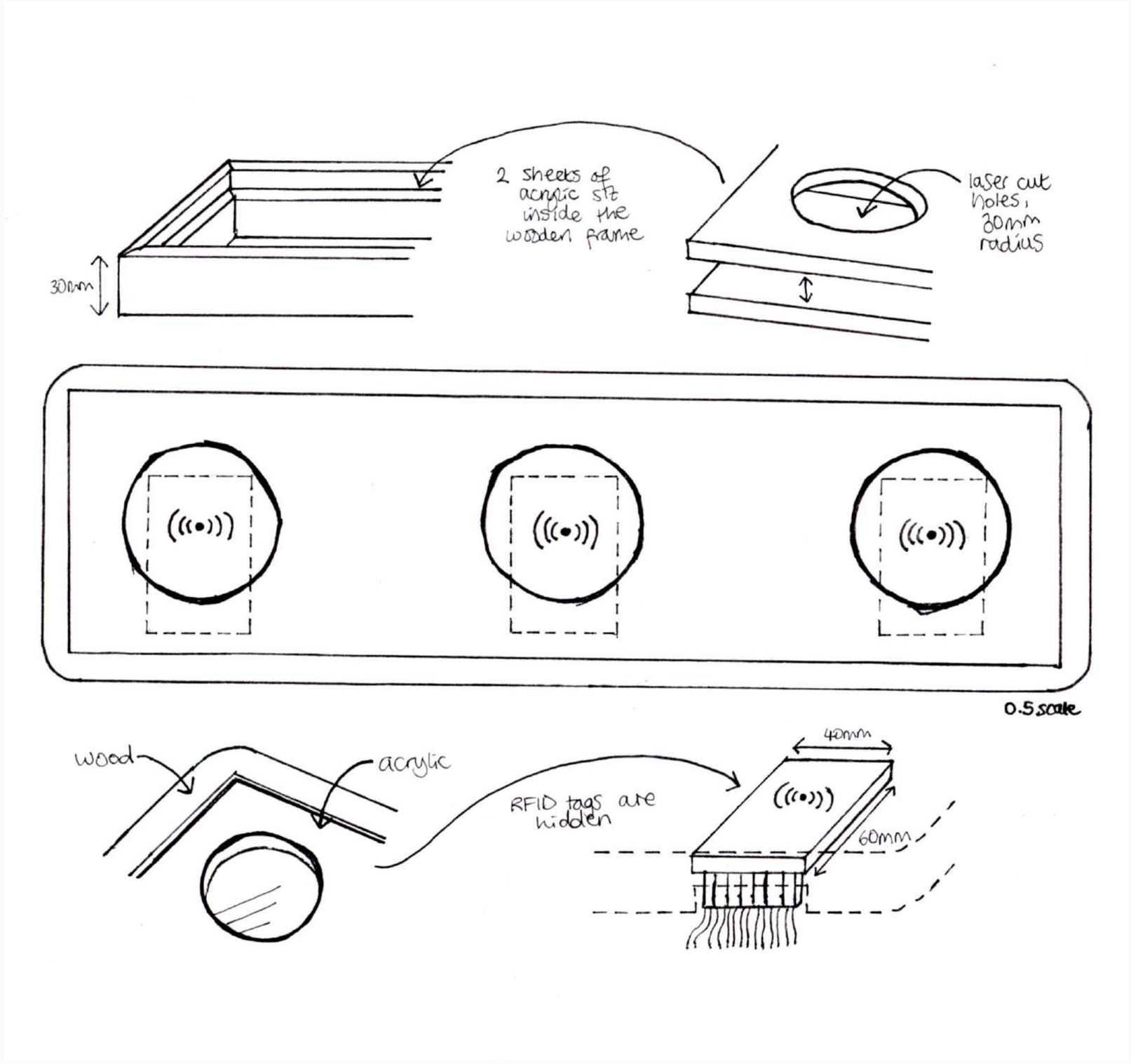
After previously thinking that I would create the panel out of cardboard, I opted for a more sturdy concept. I felt that I could produce a prototype with a more professional standard using a combination of spray painted wood & acrylic plastic.

The plan uses 2 layers of acrylic plastic sheet to create the cover for a wooden box. One acrylic rectangle of 400mm x 120mm sits below another sheet of the same dimensions, with circular holes removed for the products to sit in. Both sheets will be glued together to form once piece of acrylic.

The acrylic panel can then sit inside the wood housing, concealing the RFID scanners within the box. By creating a double layered edges, the acrylic can fit within the box, creating a flat surface.

After testing the signal strength of the RFID scanners, I am confident that the RFID tags will still be able to be read with 1 thin layer of acrylic.

The back of the box provides exit access for the wires. This means that the wires will be able to easily connect to the Arduino board, even at a distance.

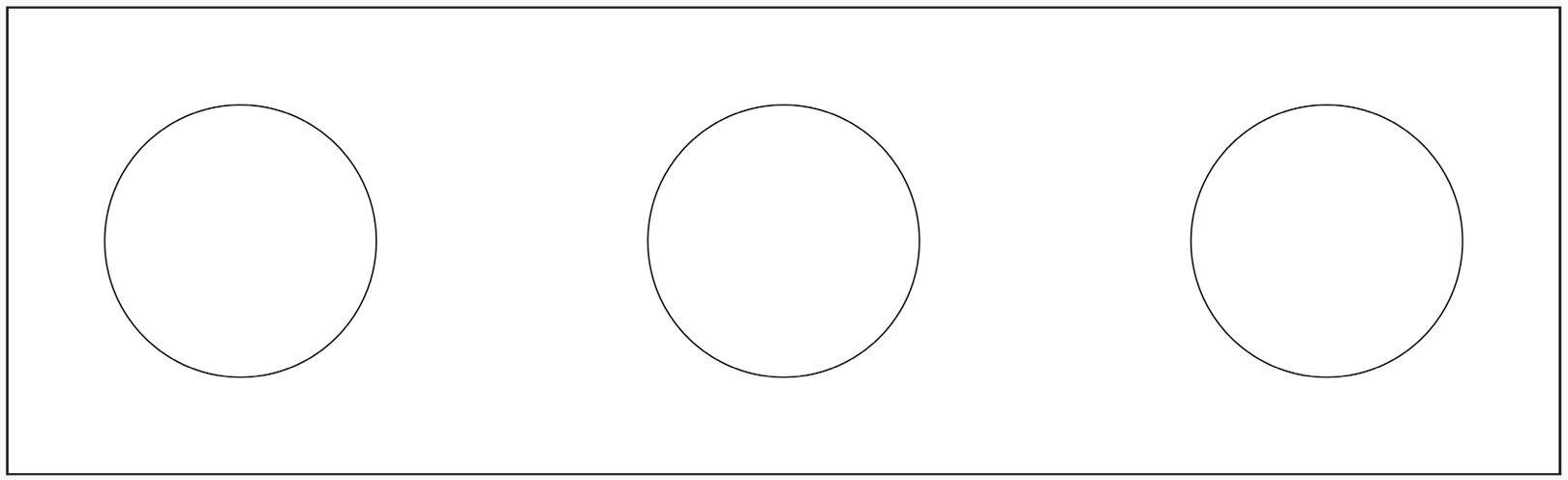


Testing The Theory

To ensure that the panel design would be of an appropriate size, I created a cardboard prototype. This allowed me to test the suitability of my design and whether it would work in a store environment.

I felt that the panel was the correct size, however found that the Ocean Salt packaging sat a little too snugly within the circle. In the “real-life” situation, where different products would be featured in Lush Spotlight, the holes should be able to hold larger products also.

This lead to me increase the diameter of the circles by 1cm. Despite changing the dimensions of the circles, I did not enlarge the overall size of the panel as I felt that this change did not impact the rest of the design in a negative way.

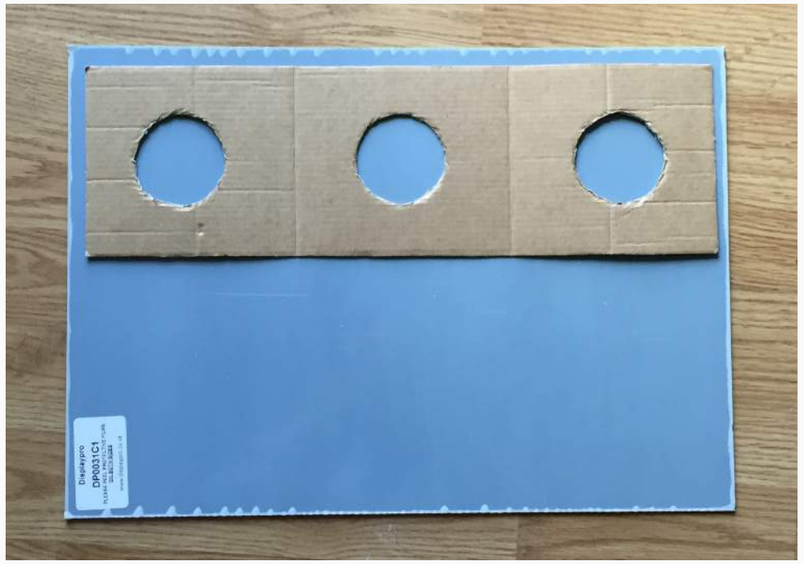


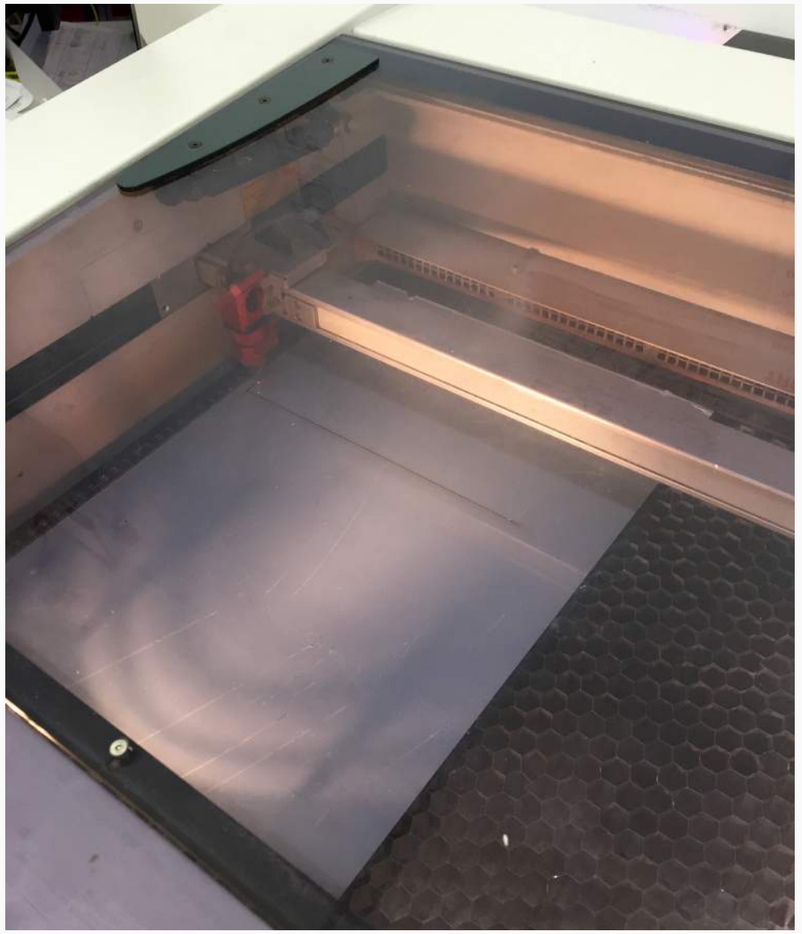
Laser Cutting

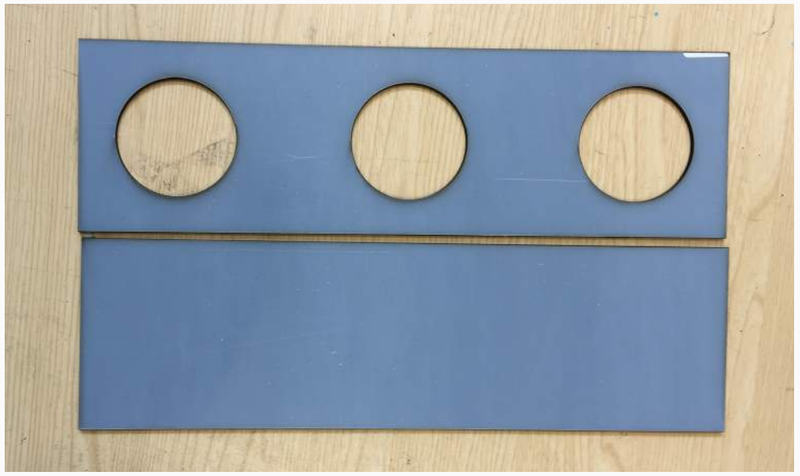
I ordered a sheet of 3mm glossy black acrylic to create the top part of the panel.

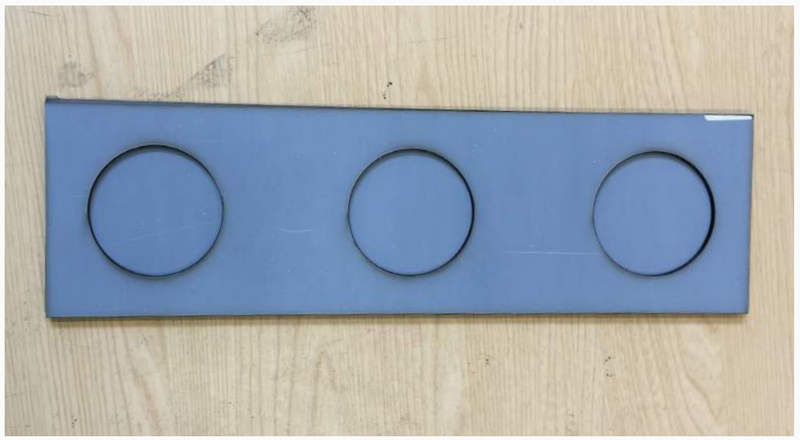
I felt that laser cutting could provide me with the most professional and accurate results for my acrylic panel.

I was able to cut both of the required pieces to perfect size in order to subsequently glue them together to form the complete panel 6mm thick panel.





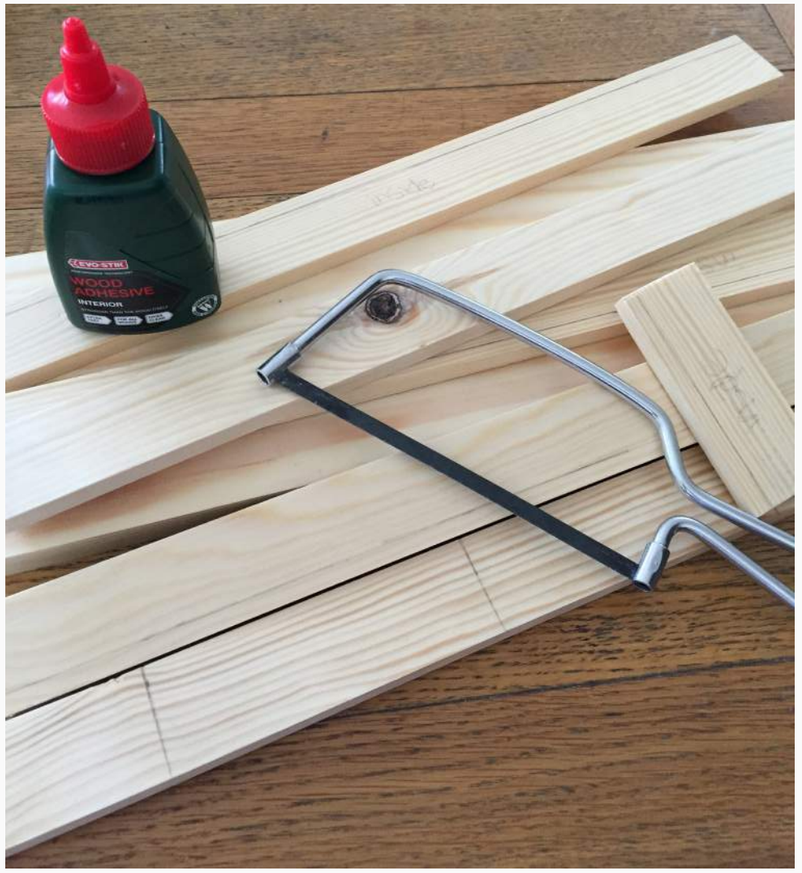




The Box

To create the box I used pine strips which I cut to the sizes according to my design. To create the base of the box I glued 2 larger pieces of pine together, and the panels for the sides were 10mm thick pieces.

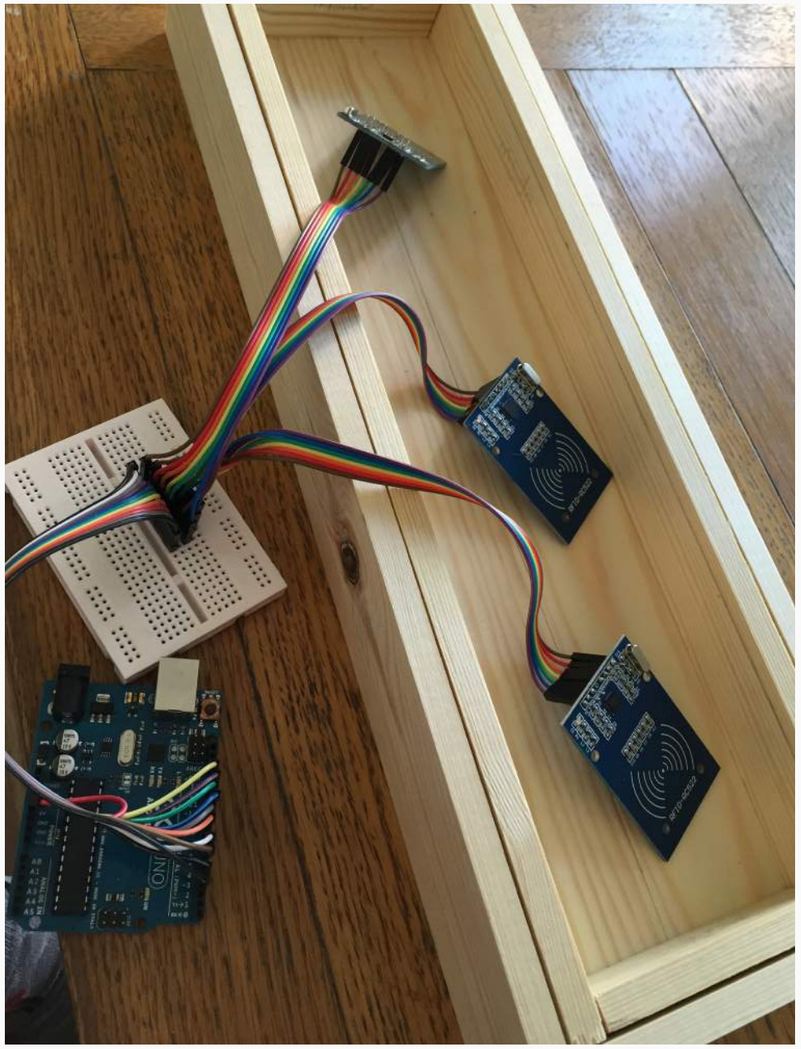
After sawing the wood to the correct size, I knew that I would have to do some polishing for it to fit together seamlessly. I was determined that I would create my prototype to a high standard.



RFID Scanners

I had to ensure that there was enough room within the box for each RFID scanner to function without interrupting the signal of eachother. I found that, as expected, the box was very spacious and large enough for all of the RFID scanners.

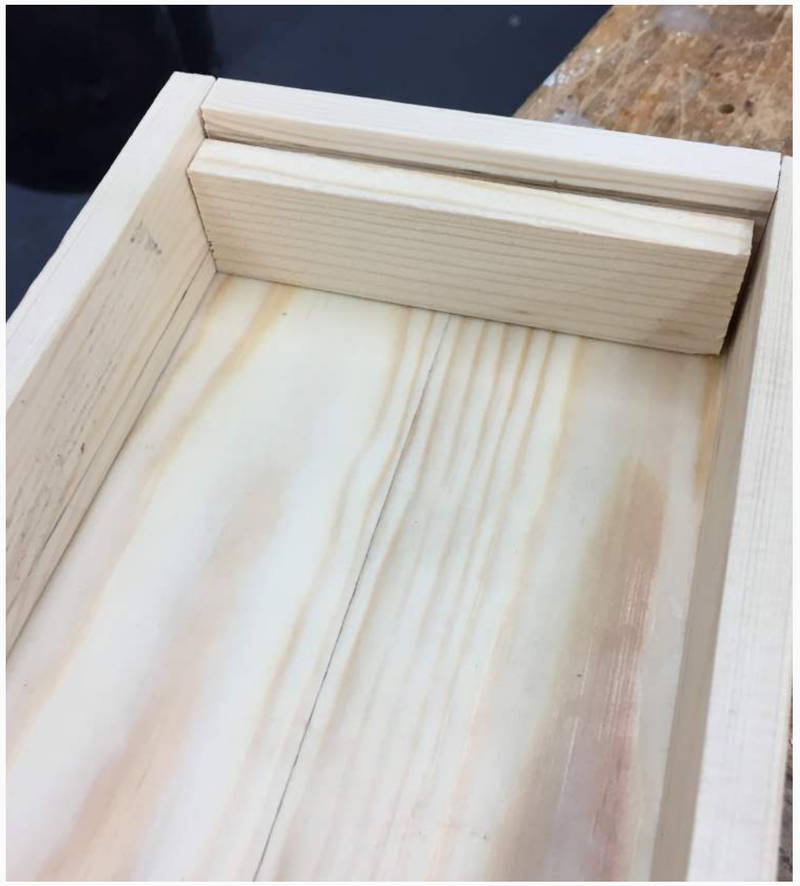
For the scanners to lay flat and close to the suface (under a 3mm thick acrylic sheet), pieces of wood will be used to raise them and also provide a surface for the scanners to be glued to.



Construction

To ensure that the box edges were all straight and flush I used a belt sander. This meant that I could fit the box together with ease.

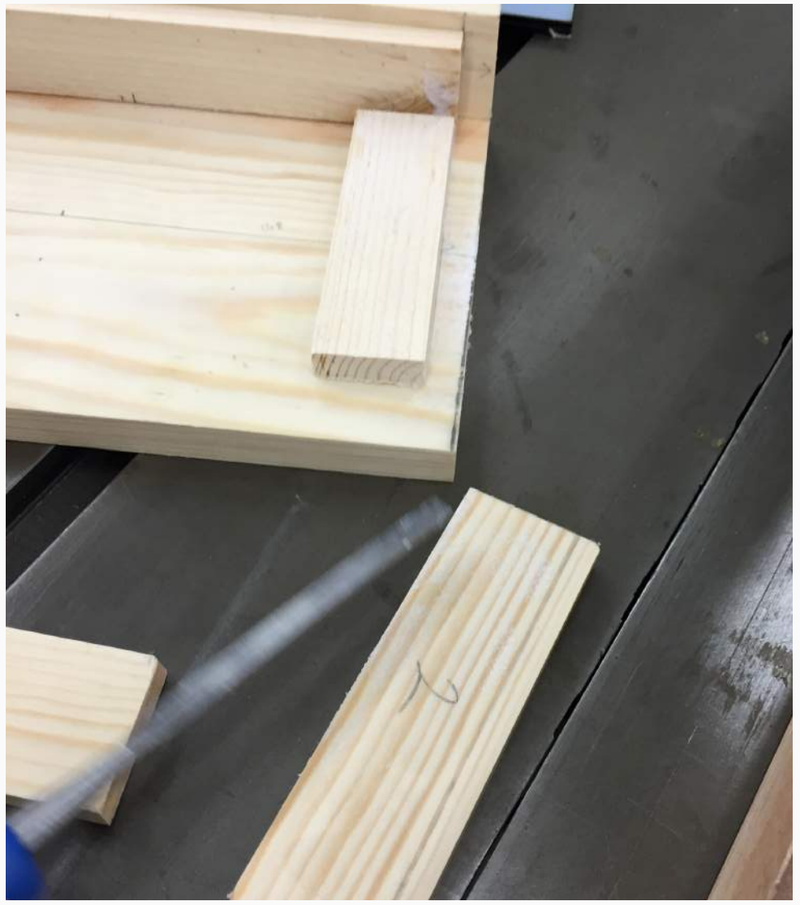
Once I was happy that everything was going to fit together perfectly, I assembled the box and left it to dry.



Problem Correction

Unfortunately I had slightly underestimated the size of the side panels and once I'd glued them I realised sides of the box were not flush.

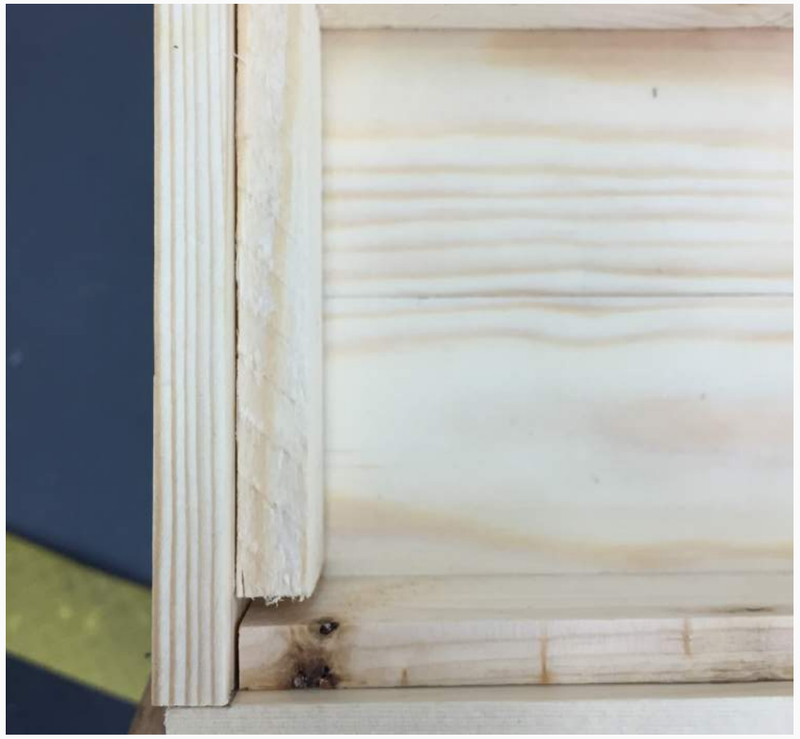
To rectify this issue I was able to seek help from one of the workshop technicians, who cut me two new pieces that fit perfectly.



Problem Correction

As it happened, I had also underestimated the size of the inside pieces by the same distance as the others.

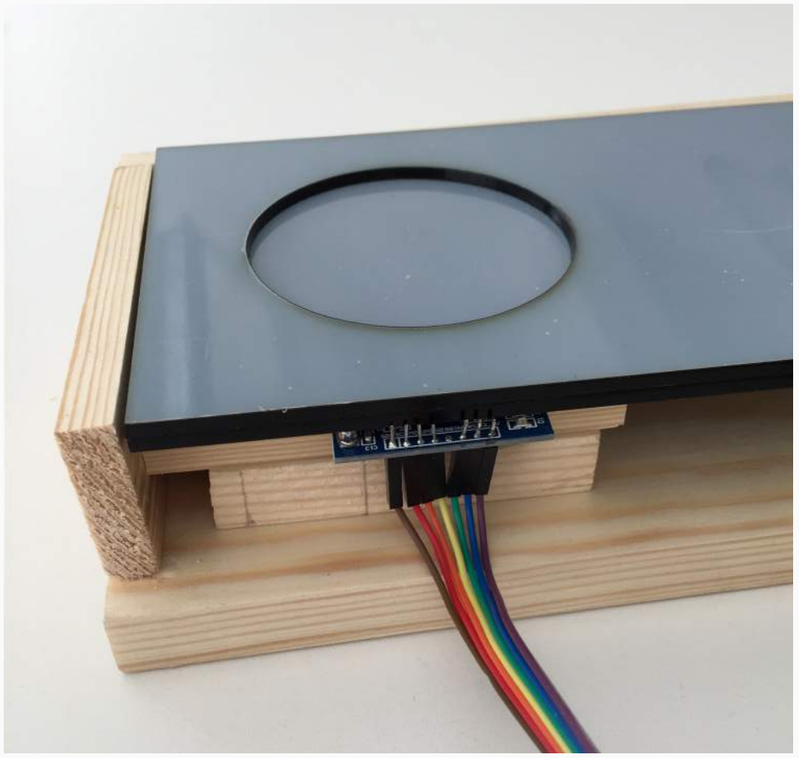
However, I realised that they were not actually necessary for the box as the acrylic was secure enough on the long inside pieces. Rather than cutting new pieces, I decided to remove them entirely.



The Next Step

Once I had checked that the acrylic panel fit within the box, I drilled a hole in one side for the wires to exit the box with ease.

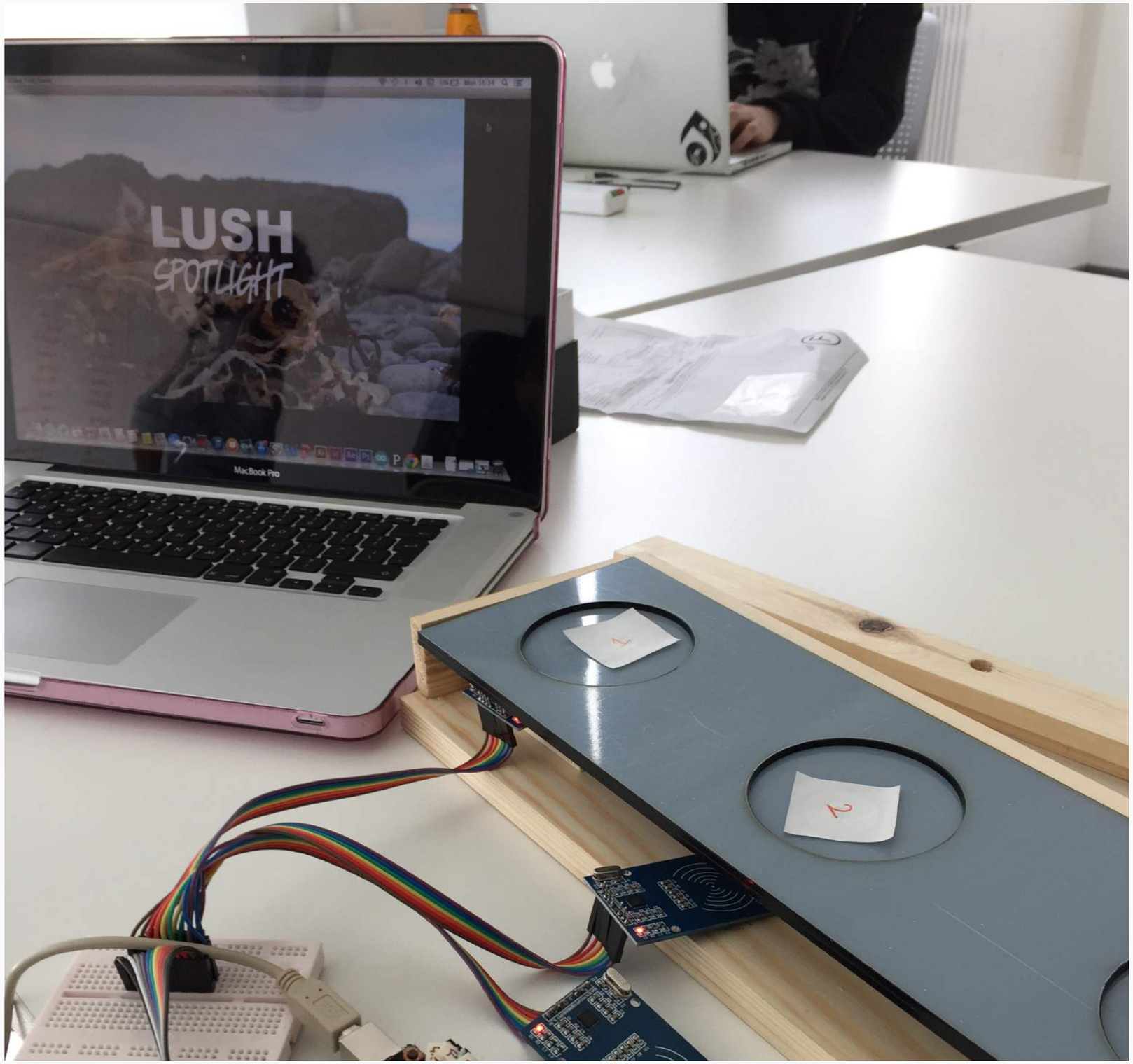
The next step was to make sure that I could raise the RFID scanners to a height that would allow them to still read the tags on the products.



Testing

To ensure that the RFID tags could still be read through the acrylic panel I set up the prototype to do some testing. I was pleased to find that all tags could be read through the acrylic panel.

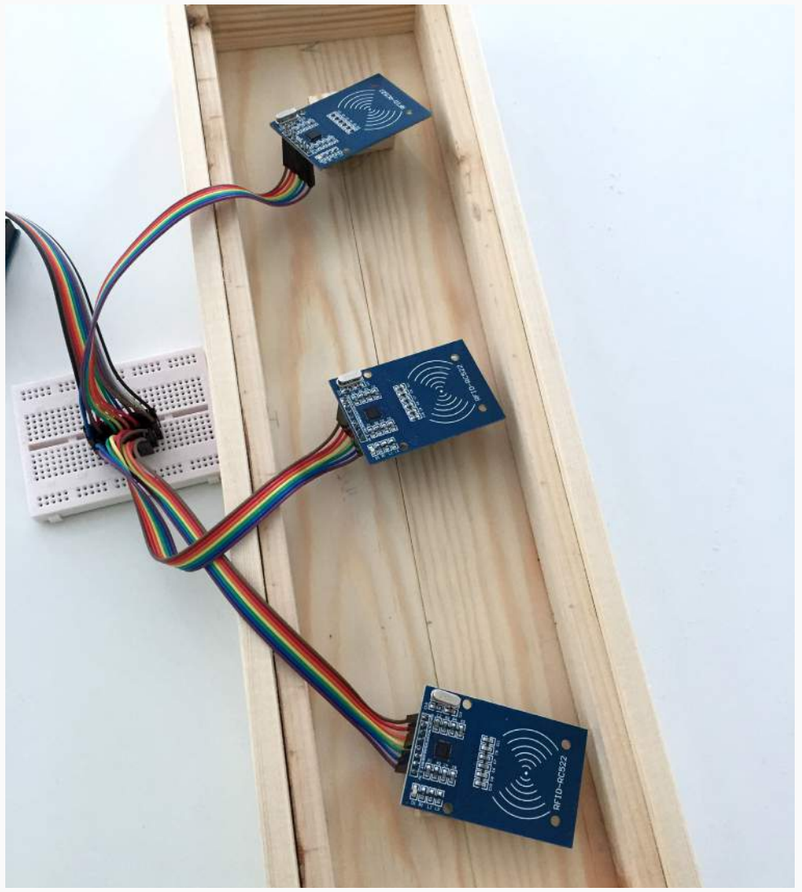
All videos played successfully without error.



Positioning

To aid me towards securing the RFID scanners in the correct position, I marked out the ideal places for them to be secured for maximum signal strength.

I then cut 3 pieces of wood to the optimum height for the RFID scanners to be applied to. I was satisfied that this was going to be ideal positioning for me to secure the scanners into place.

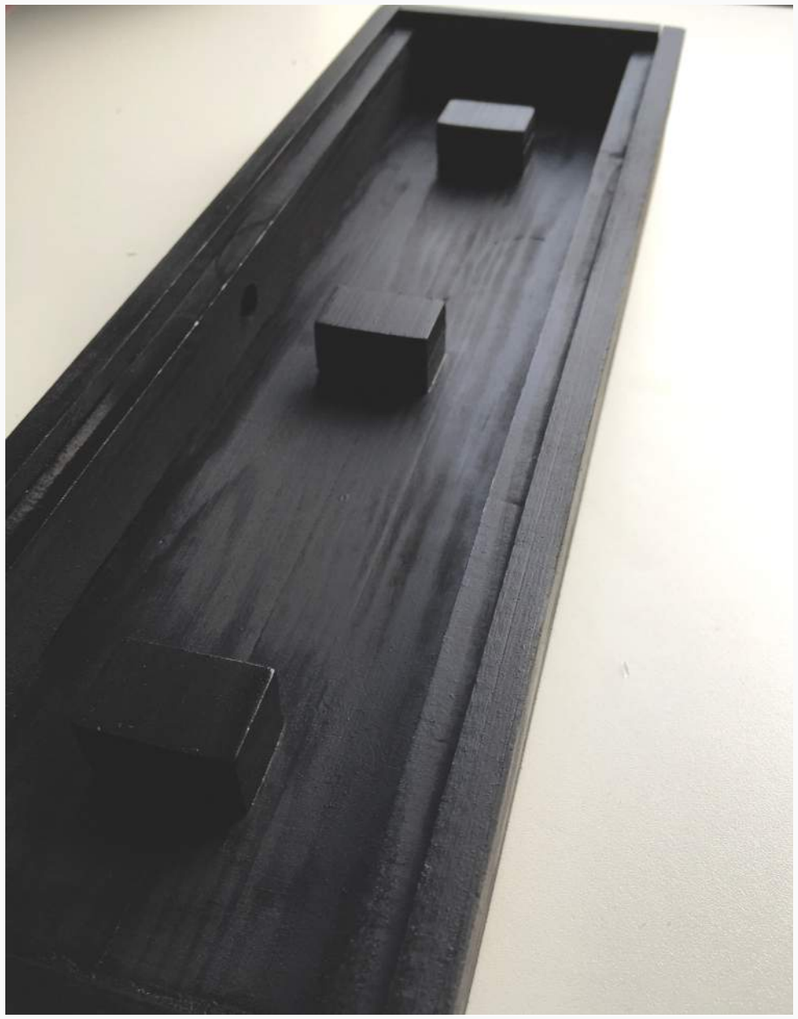


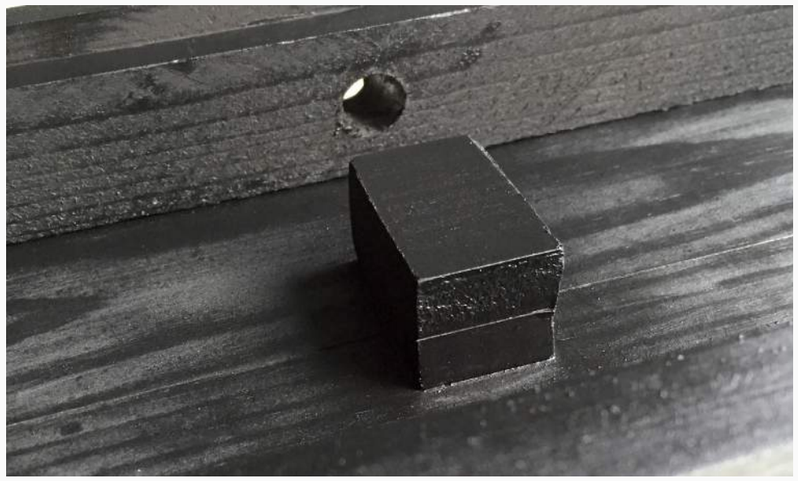
Spray Painting

After constructing the box, I chose to spray paint the exterior to give it a more professional finish.

I felt that matt black was the most suitable colour choice for Lush Cosmetics, and I also thought that a matt finish would contrast with the gloss finish of the acrylic panel.

I think that the spray painted finish brought the project together and gave it an overall more realistic feel.

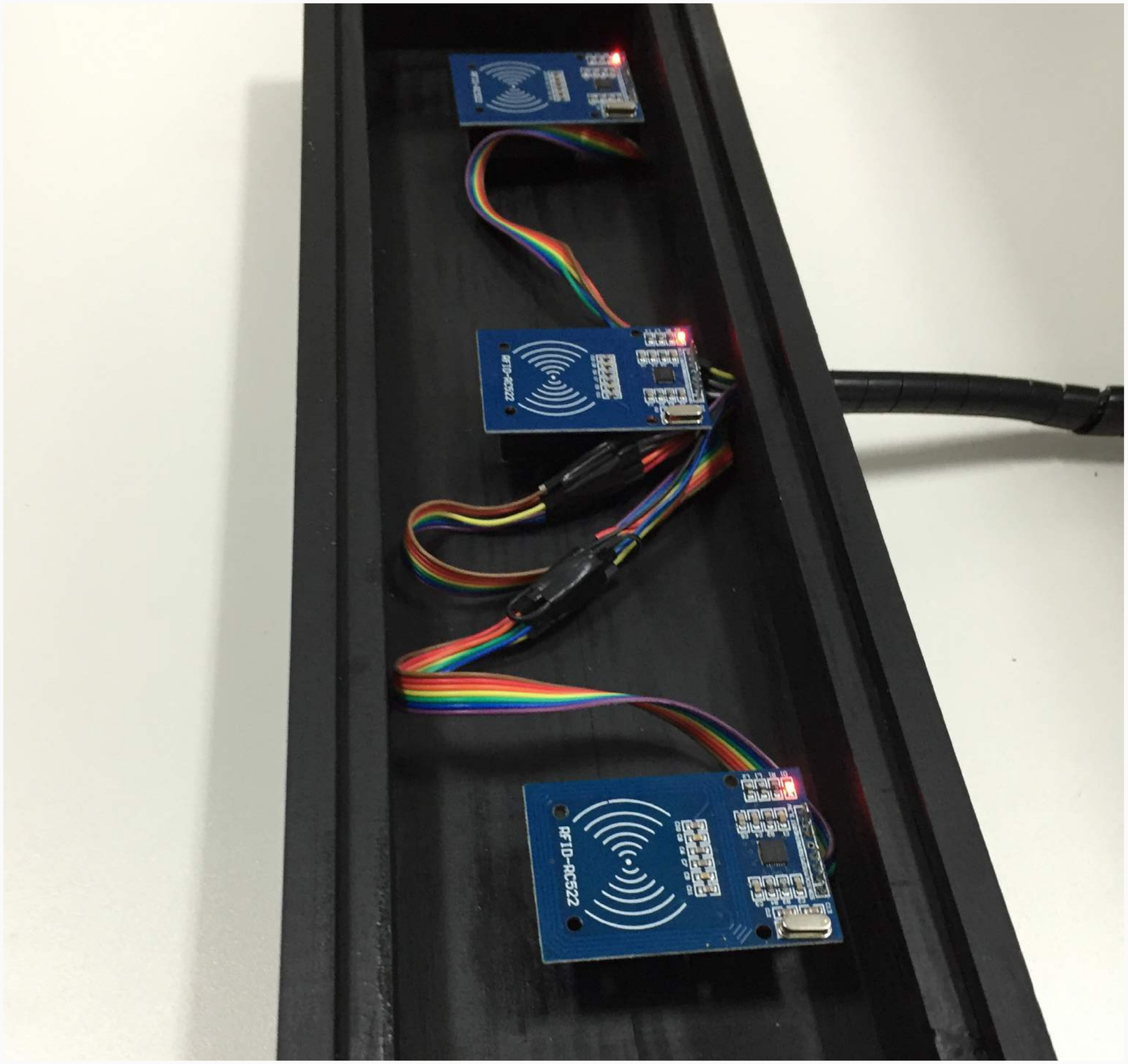




The Final Touches

The last stages of the build consisted of sticking the RFID scanners securely within the box and removing the protective coating from the acrylic.

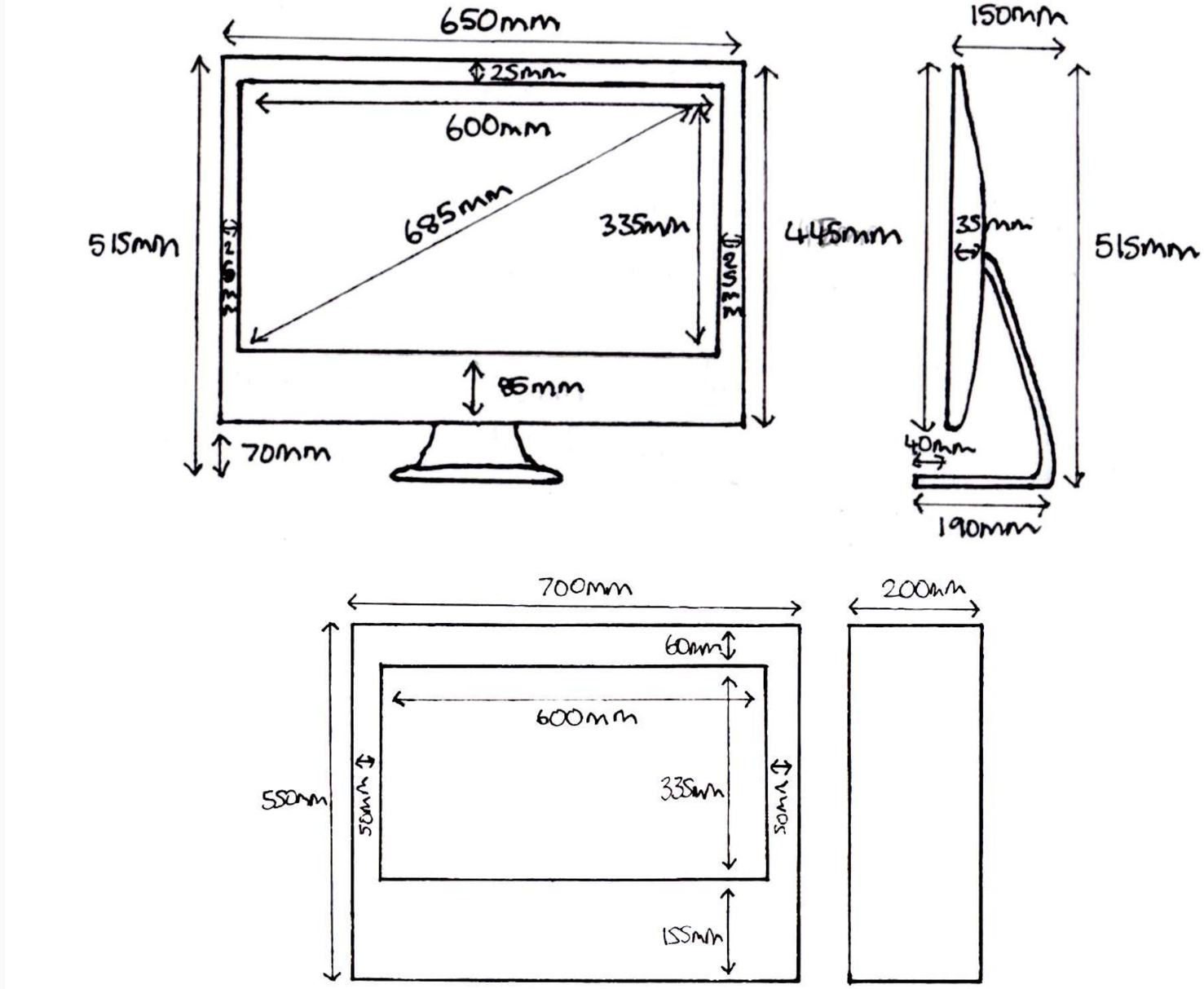
I also needed to exchange the wires for longer ones. Also adding a cable tidy to secure the wires between the panel and the screen would also give it a more professional finish.



The Mac Cover

In order to create a cover for the Mac that would fit over the top of the desktop seamlessly, I measured each dimension of the Mac screen to produce a box with dimensions that I believed would cover the entirety with ease.

I want to ensure that the user's focus is attracted by the screen, followed by the product display. I feel like the cover will help to draw attention without being the sole attraction of the display. I do not want the cover to be too much of a distraction and therefore want it to be simply designed.



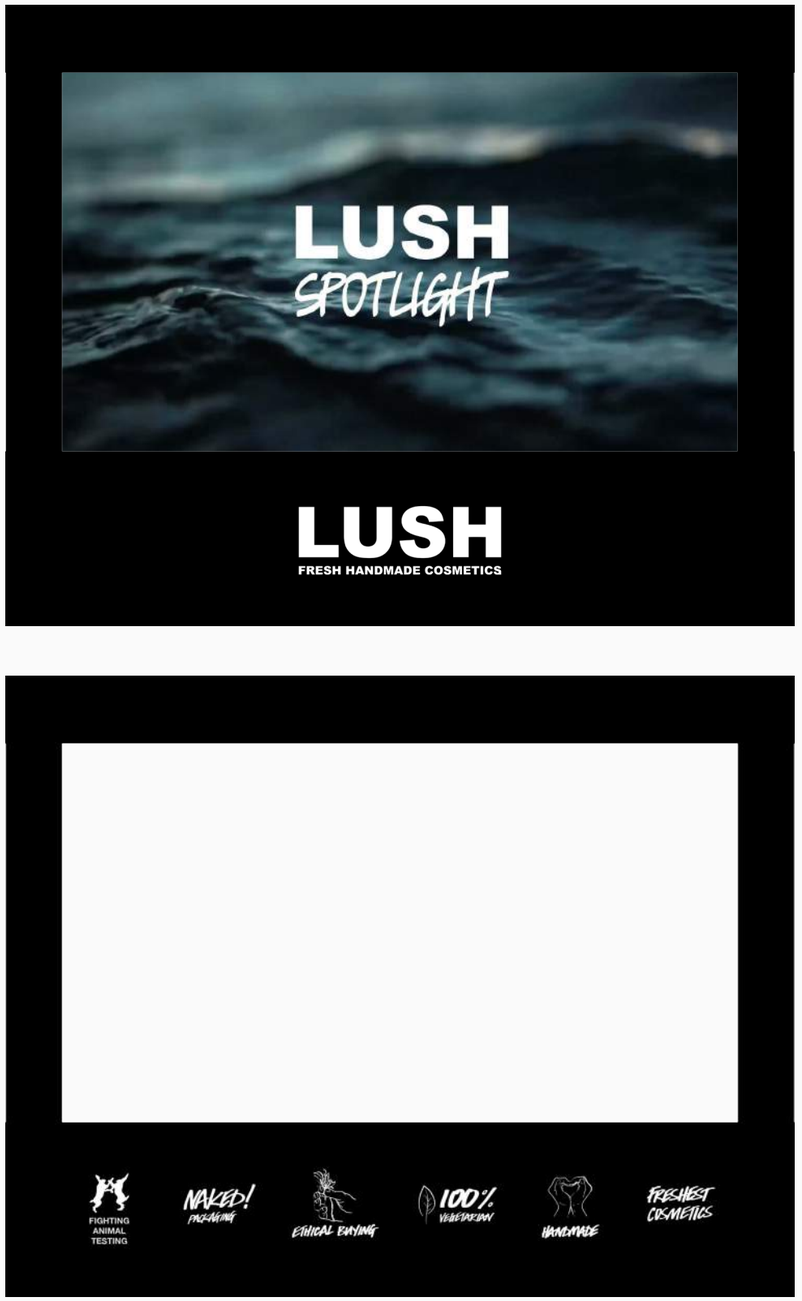
Box Design

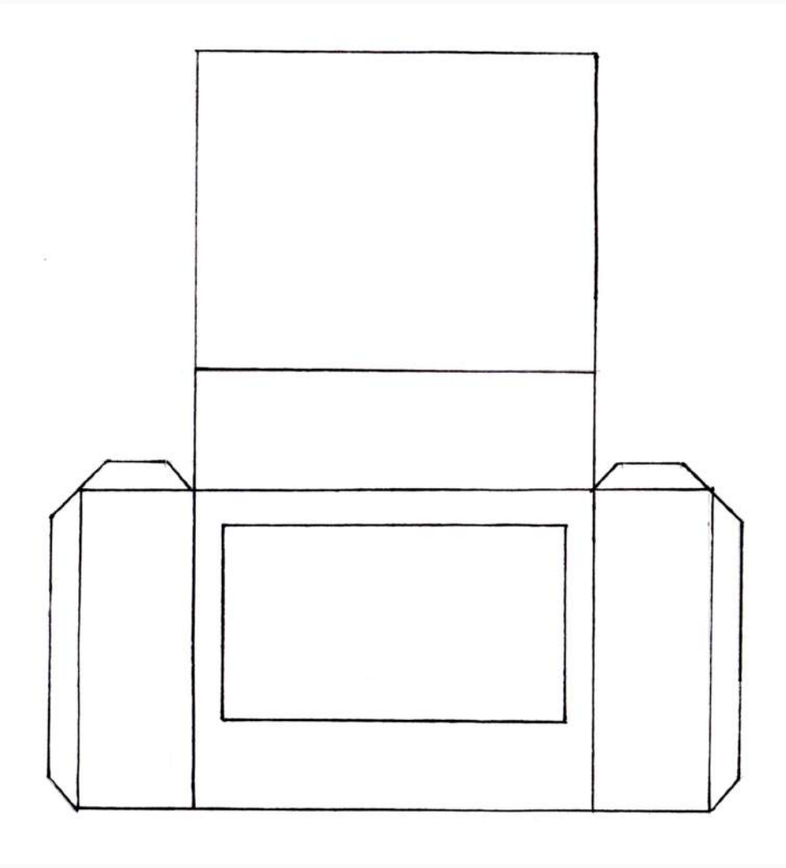
For the visual design of the box, I wanted to keep it simple and felt that a black background would be the most fitting in terms of a store environment and also most suitable for the display of my prototype.

Initially I thought that branding the box with the Lush logo was going to be the most appropriate, but as the video loop featured the Lush Spotlight logo throughout, it was a little overbearing.

I therefore felt that if I was going to put anything on the box at all, it should be a reminder of the USP's. However I am not convinced that it even requires any text at all due to the screen being the focus and primary attraction.

I created a net for the box design with the dimensions of 1.3m x 1.2m, which meant that I would have to find a suitable material of which I could cut from 1 piece.





Box Material

After failing to find any suitable cardboard material, I decided that I would create the box out of correx sheet. It is a form of corrugated plastic and I felt that it would be ideal for my needs.

The bonus of this was that it came in black, and once constructed it was likely to be stronger than cardboard, but the downside is that it will not be as malleable.

I ordered a sheet that was 2.4m x 1.2m, and the first task was to cut it down to size.

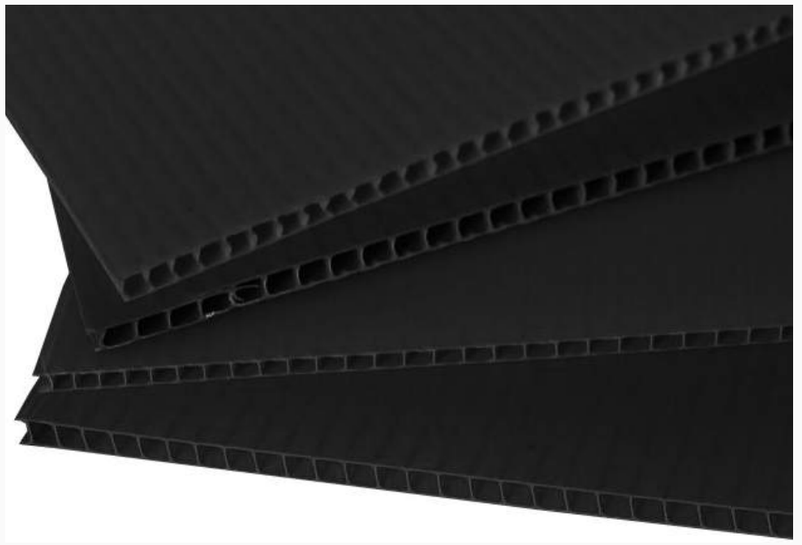
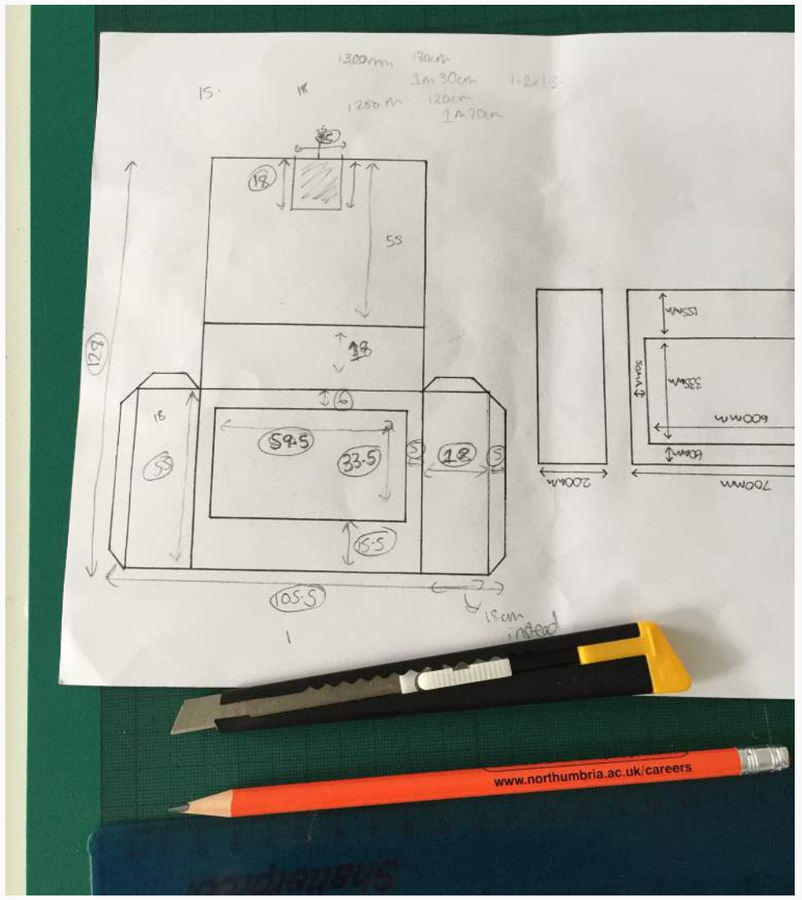


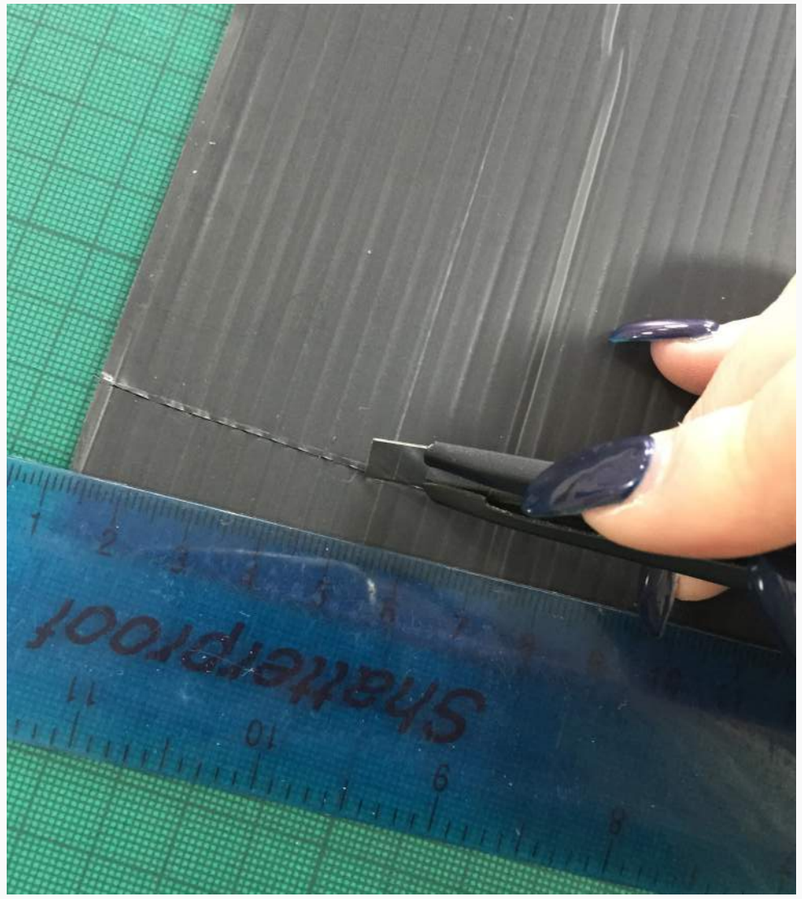
Figure 61 Polarity Magnets. (2015) *SportChek-13.* Available at: http://www.magnetick.co.uk/Item/correx-black-3mm (Accessed: 12/05/15)

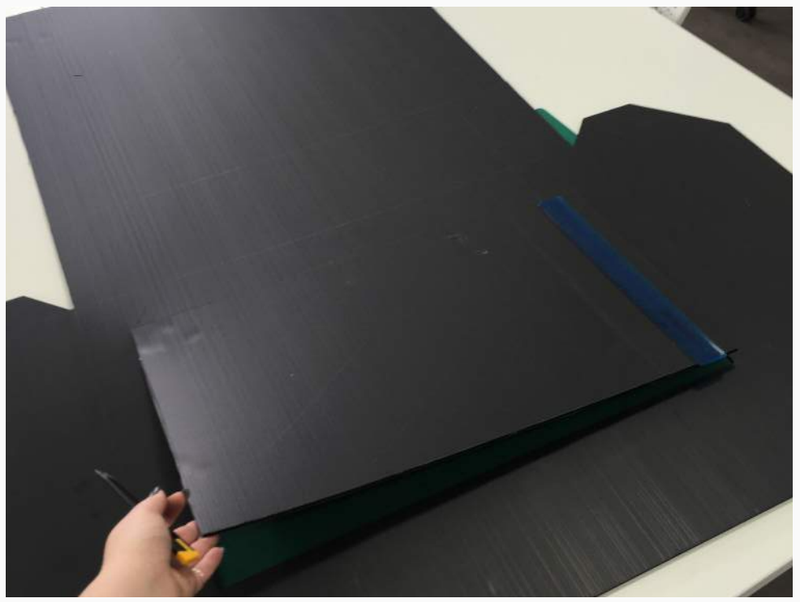
Creating The Shape

To ensure that my estimated measurements were accurate, I re-measured the Mac screen and altered the distances accordingly before making any permanent marks.

I drew out each measure with pencil before cutting them using a scalpel. I was pleased to find that I had produced the net in the correct size.



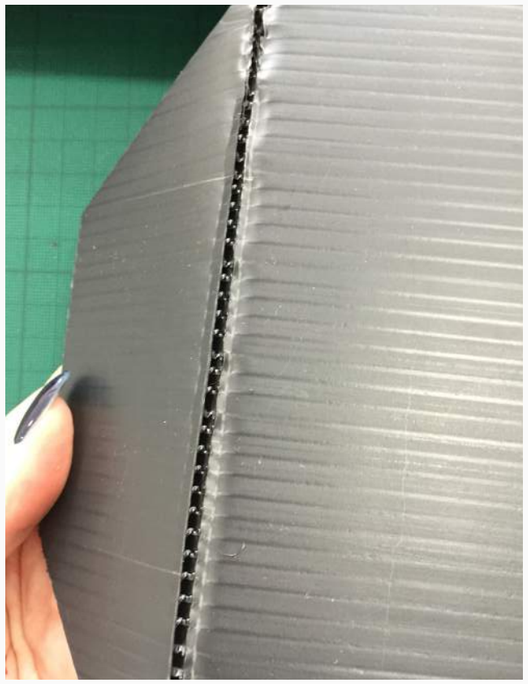


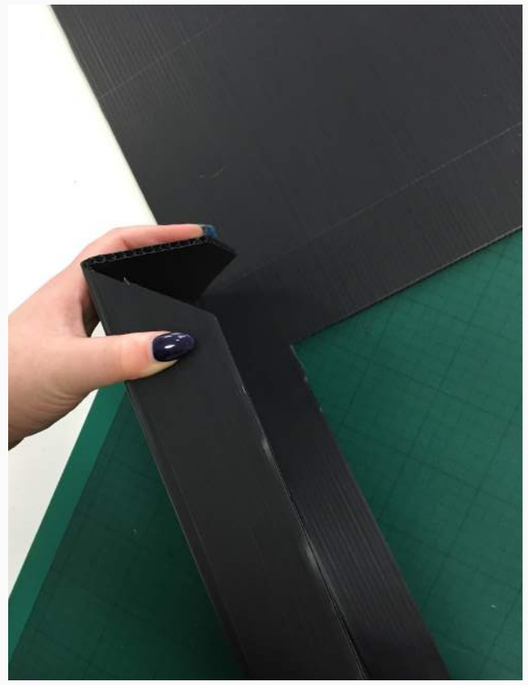


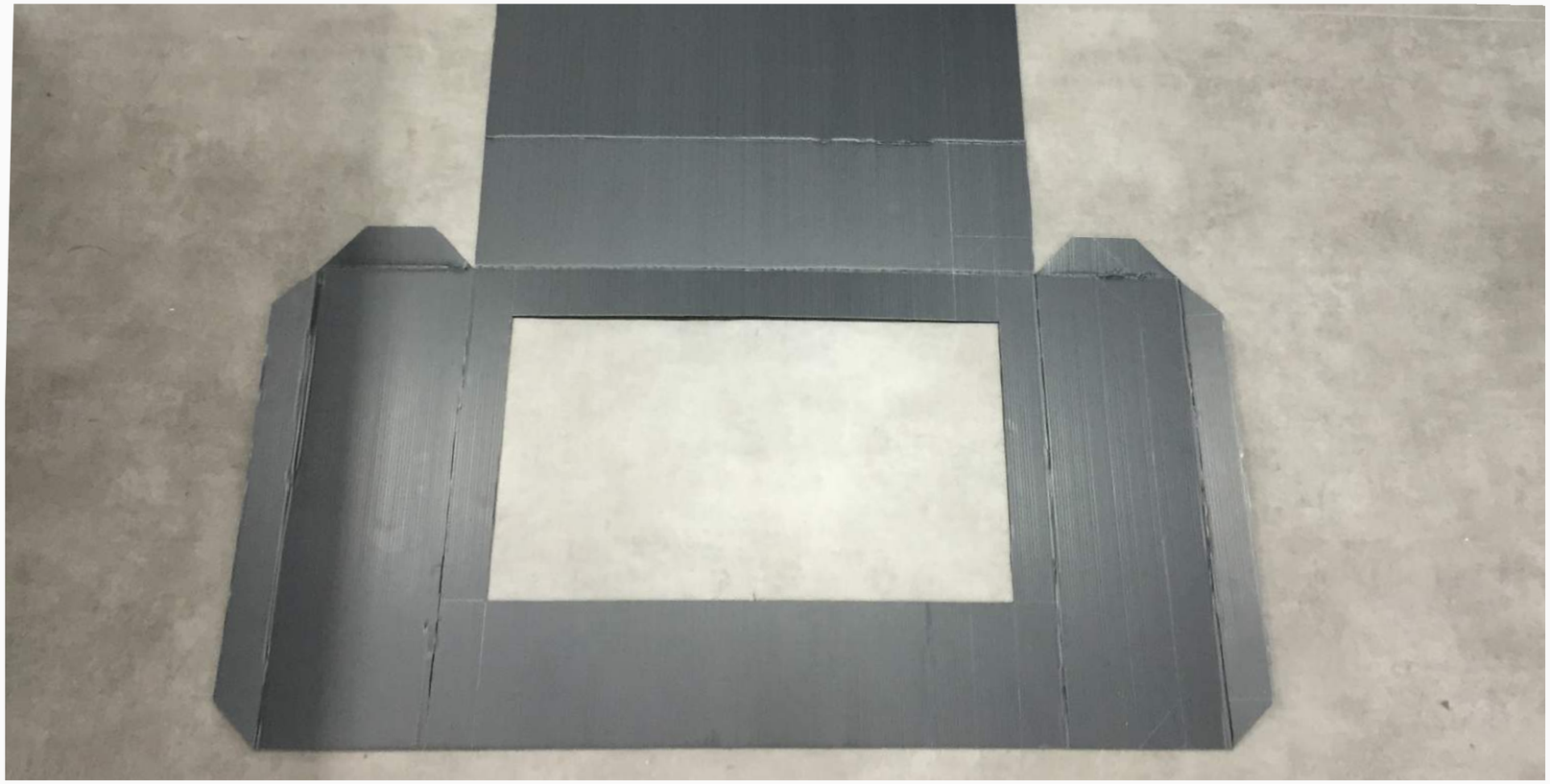
Scoring

In order to create the box shape, I scored the plastic and bent it into shape.

To my relief, it worked just as I had imagined and came together to form a box that would effectively cover the Mac screen.







A Successful Vision?

To check whether my calculations were correct before securing the box I tried it for size. The box covered the whole screen, and disguised the fact it was a Mac screen as I had hoped.

In an ideal situation, I envision Lush to create flat screen LCD screens that are fit for the purpose.

After consideration, I decided that I would leave the box plain black. This is due to the fact that I was concerned that any additional graphics may have overcomplicated the design and made it look tacky.

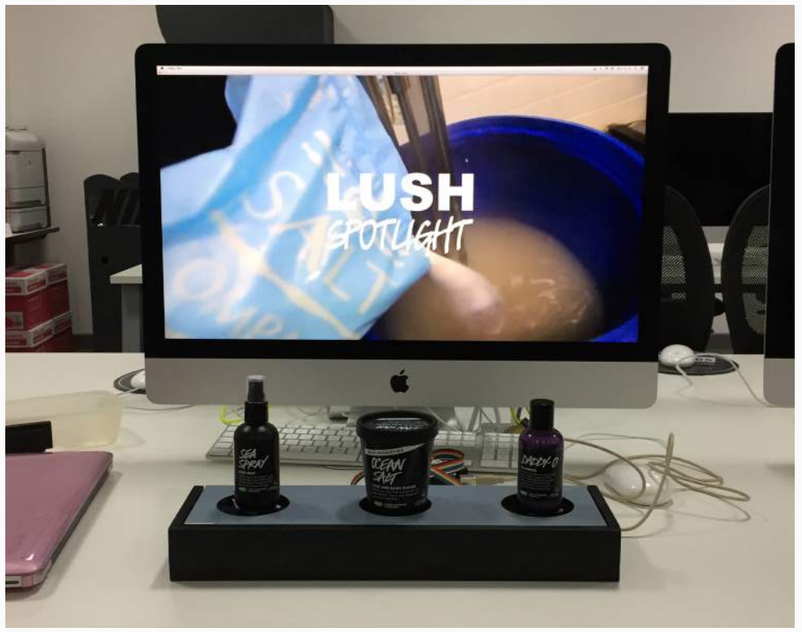
Final Tests & Alterations

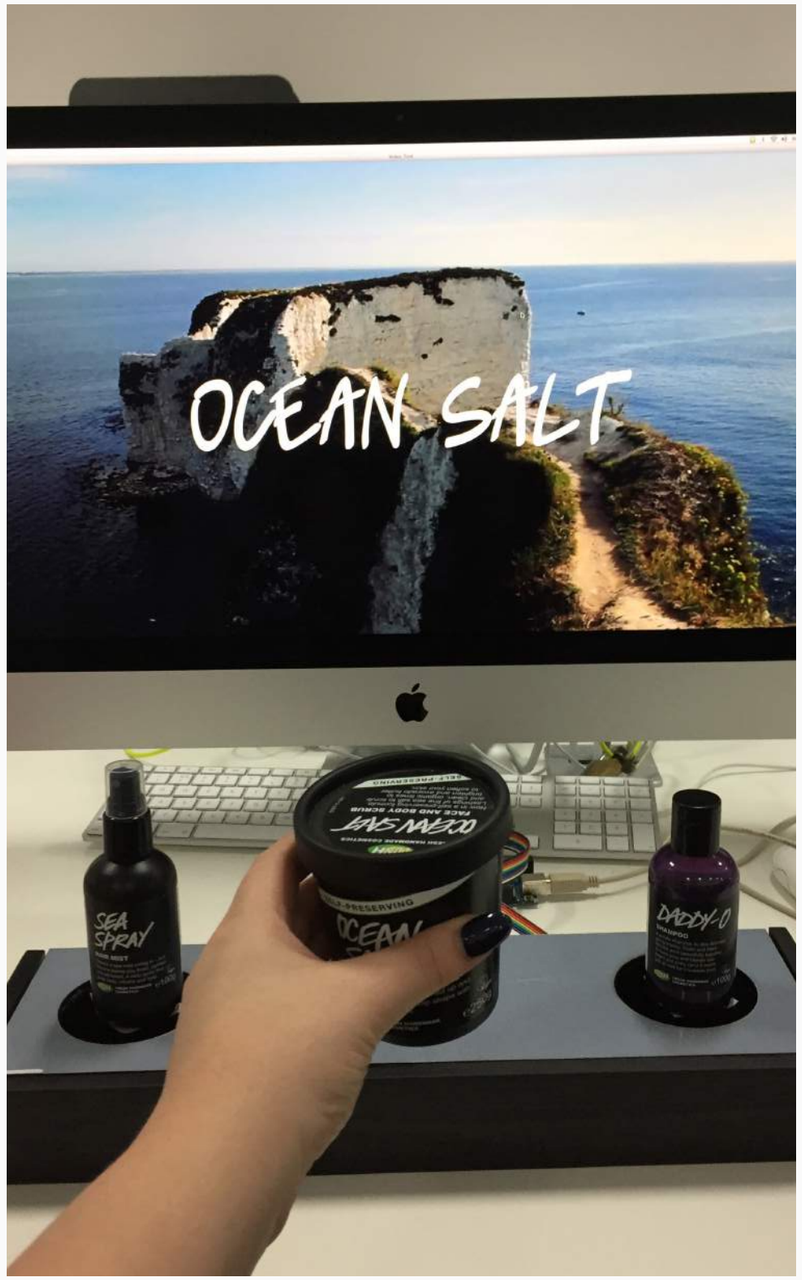
The next step was to test the videos on the full size Mac screen. I found they ran perfectly despite the occasional lag, reducing the file size did not fix this, and I found it difficult to pinpoint the issue. I therefore decided that it was a problem I could live with, as it was barely noticeable.

Another issue was that the videos were not appearing in full screen. I subsequently discovered that it was a simple error I found when reviewing my code.

I also altered the sound volume according to feedback I was given, and added a fade effect to make the transition between videos more smooth and unnoticeable.

The RFID tags were being read with no issues and I was satisfied that my prototype was in full working order.



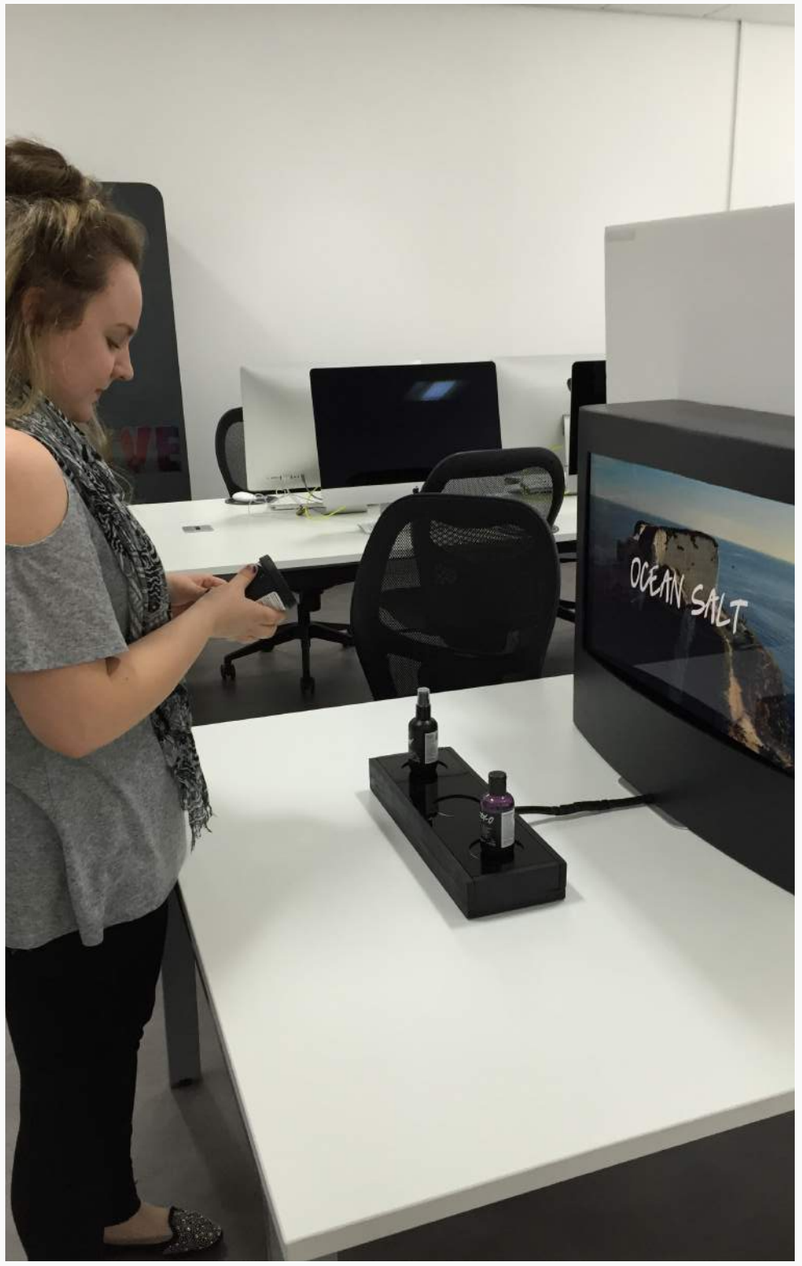


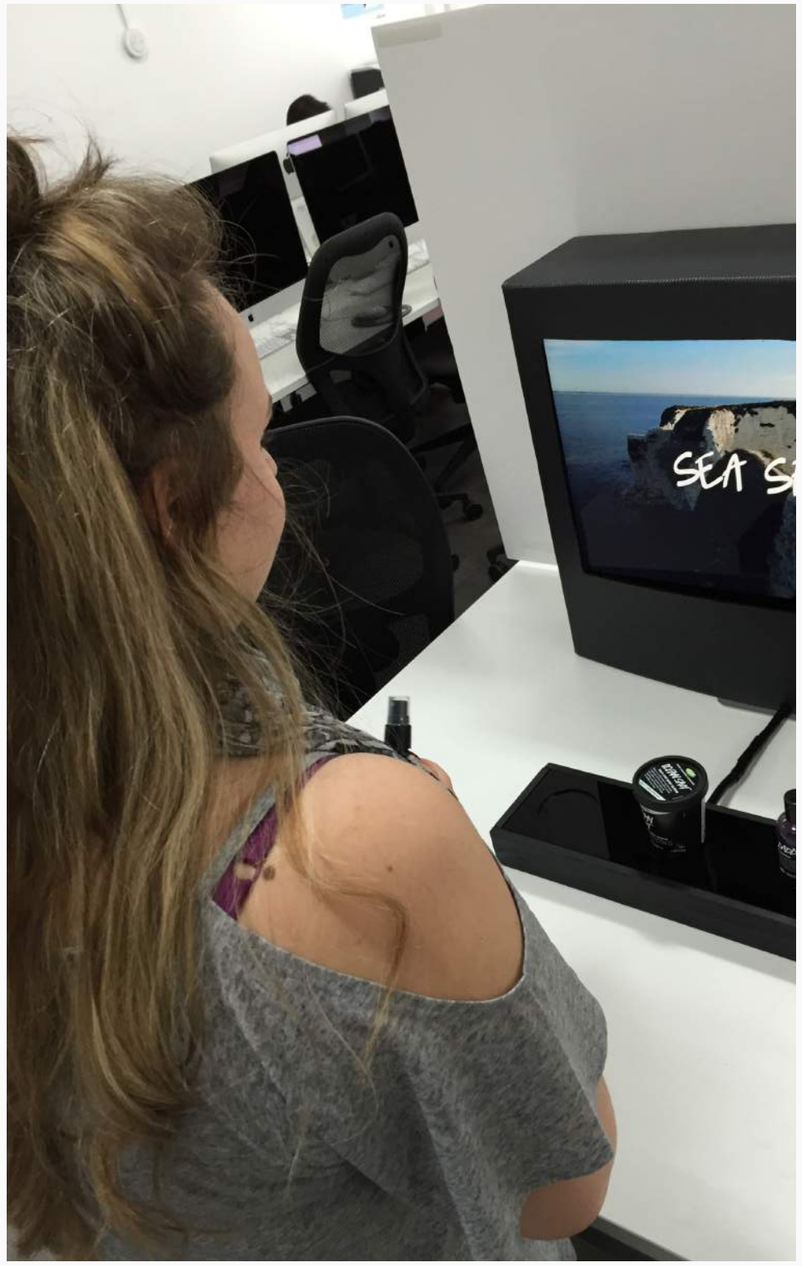
User Testing

To ensure that my prototype was self-explanatory and worked reliably, I tested it on a selection of users. This would allow me to pinpoint any flaws that I could rectify before the final prototype.

I gave minimal instruction so that I could accurately monitor the true behaviour of the users. I found that, to my delight, everything ran smoothly.

I received positive feedback and observation allowed me to see that users tended not to watch the full video at first, but once they had worked out what would happen, they watched each video through.





Design Development: Conclusion

I feel that the design development phase of my project went very well for me. At the end of the concept phase I had a very clear idea of what I wanted to create, and I believe I was able to bring that into fruition. The outcome is a piece of work that I am truly proud of.

The feedback I was given said that I had good prototype idea generation and very thorough design development. My concept was well presented and a good idea with a problem that I had solved.

Unfortunately, I was unable to implement the pausing of the videos when products are lifted, but I actually feel that this was better in a sense as if you missed the first 30 seconds of the video when trying a product, you would want to view it from the start rather than skip the first 30 seconds.

The next task is to determine how to present my concept and final prototype in a way that successfully conveys the intention of the display as well as the purpose.

FINAL PROTOTYPES


LUSH
SPOTLIGHT

LUSH SPOTLIGHT...

Is a media-rich display designed to drive sales.

Designed to increase dwell time and footfall within brick-and-mortar stores.

Transforms the way people connect with the in-store experience.

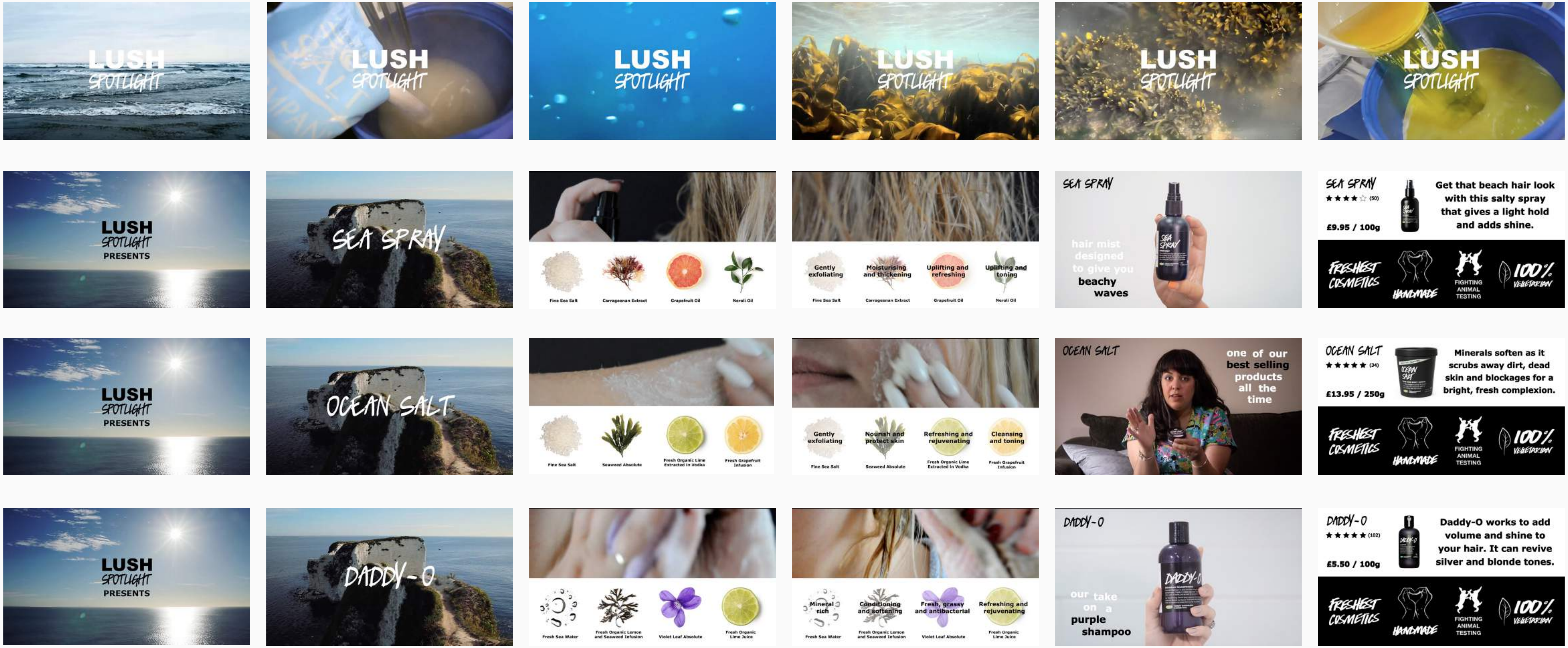
Educates customers at the point of product contact.

Improves lush’s omnichannel marketing strategy.

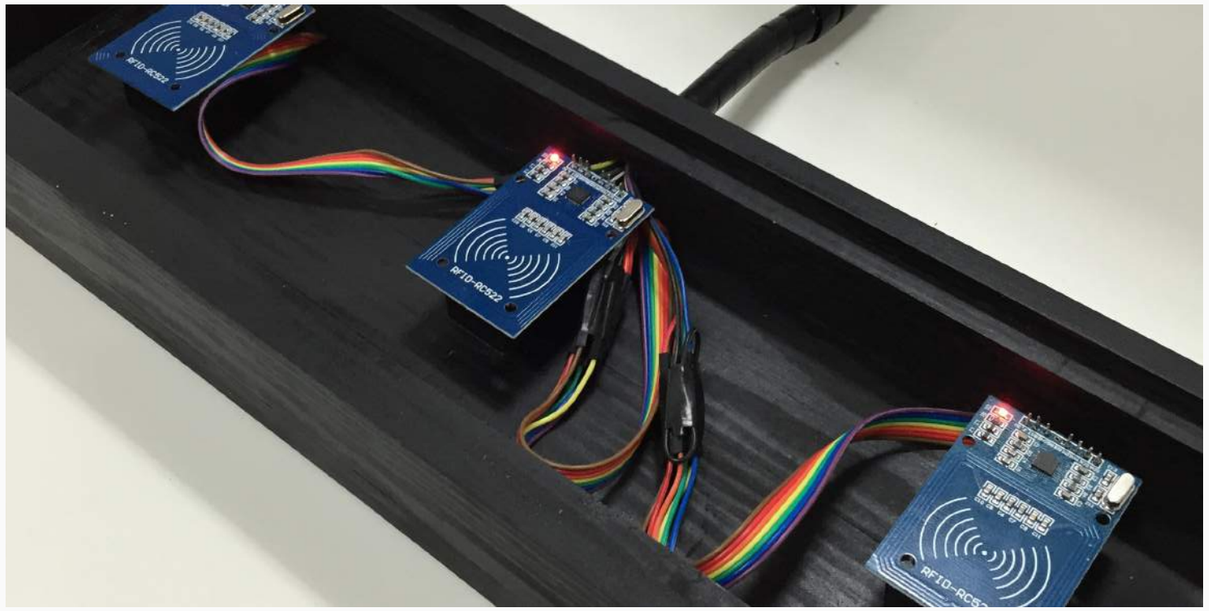
Seamlessly connects digital and physical content.

LUSH SPOTLIGHT

Final Visuals



The Physical Prototype




LUSH
SPOTLIGHT
SEA SPRAY
OCEAN SALT
FACE AND BODY SCRUB
SELF-PRESERVING
OCEAN SALT
DADDY-O

Concept Video

As it was not going to be possible to record my video in the store environment due to the requirement to use a Mac screen, I opted for a more educational concept video.

Although I typically prefer to record and display my videos in a narrative form, the Lush Spotlight video demonstrates how the concept works and provides information about the technicality of the prototype. I attempted to communicate the concept in a simple way, so that it could be easily understood by experts and novices alike.

I chose to add a voice over to provide explanation of the concept without the requirement for excessive text. Ultimately I produced a simple yet productive video to showcase the Lush Spotlight concept.

REFLECTION

Evaluation

Throughout this project I pushed myself to achieve and fulfil my true capabilities; I wanted to come to the end of my degree feeling proud of what I had produced. I set out on the project with a strong work ethic, as I was determined to feel accomplished and satisfied with my efforts.

Out of each and every project I have worked on throughout my degree, I am pleased to say that I have managed my time the most effectively in this case. I finally felt in control and I was able to explore an area I was really interested in.

Through detailed planning and weekly meetings with my tutor and peer group I was able to manage my time effectively, producing new content each week to receive feedback on. Continuous feedback allowed me to create a concept that I was confident was going to have purpose. Furthermore, regular advice and suggestions helped me to form a project that I felt had real value.

I consider one of my strengths to be my detailed research strategy. I spent a lot of time on careful and considered research as I wanted to ensure that I fully understood every aspect of interactive retail and existing displays, the Lush Cosmetics brand and my target market to aid me towards creating a solution to a real problem. I used my research insights to inform every aspect and decision throughout my project, which ultimately brought me to a solution that was carefully considered and backed by my findings.

I feel that my personal strengths lay within the realms of UX research and design, rather than UI design. Although I chose to design my video visuals in the style of Lush's existing branding to fit with their brand identity aesthetically, I could have potentially pushed myself to create something completely new and different. An aspect I intend to improve on in my future career is to work towards producing interfaces that truly reflect the thorough process that has been put into the UX aspect.

I believe that my concept is reflective of the Lush brand, as well as being suitable for the current store environment. Treating Lush as my client, I feel that I created a bespoke service for the brand. I worked tirelessly to produce a commercially viable concept, designing with both the brand and customer in mind to create intrinsic value to both. I am happy with the standard of my physical prototype, and I am very pleased that I was able to bring my vision into fruition. However, visually I would consider changing the colour of my prototype from black so that it stands out more against the products, as they typically come in black packaging also. In a store environment, the display could be (hopefully not) overlooked. But I do believe that my "Screen Saver" video is eye catching and engaging while also being unintrusive.

If I was to work on this project once more, I would have liked to further explore the Processing aspect to see whether I could have had the opportunity to implement the video pausing. Unfortunately my experience of the software was at zero, as this project was the first time that I had encountered it. I feel that I did well to create a fully working prototype, considering the challenge I set myself to tackle both Arduino and Processing software with limited knowledge; plus the use of RFID technology for the first time.

I have exposed myself to new challenges, and emerged feeling pleased with my achievements and performance during the module. I listened to feedback, adapting my vision as I progressed. I believe that I have fulfilled the brief that I set for myself, and although feeling that I was initally being quite ambitious, I have found that I underestimated my capabilities. I will be leaving University with more confidence in my abilities and increased hunger to develop my skills exponentially.

Future Developments

Shopper Behaviour

My first consideration for the future development of Lush Spotlight is the tracking of shopper behaviour. I envision the display to produce statistics on levels of interaction between each product, detecting which products have the most interaction. This would then allow Lush to see whether the display is generating increased sales of the featured products.

It would also let Lush measure the effect of the interactive display to see whether it is driving more sales overall. It would also be possible to see whether the display is responsible for generating increased turnover or impacting on the number of purchases. This data could then be used to target their users in a more productive way.

You could also monitor whether the display does in fact increase dwell time within the store. All of these techniques could give Lush an insight into their customer behaviour, bringing the customers and the brand closer together, providing further intrinsic value to the brand.

The Lush Store

The number of displays within the store environment could be increased. Developing from the display of featured products alone, to multiple throughout store. For example, the best selling products for each product category. This could modernise the Lush Store while still paying close attention to their brand identity.

The number of products per panel could also be increased. With the correct technology a wider variety of products could be presented; the products with “naked packaging” could be showcased on the Lush Spotlight display without the requirement to attach an RFID tag to an unsuitable surface.

I feel that Lush could improve their existing online content. For example, the manufacturing videos for Lush products could also be produced in a more professional manner, meaning that they could be implimented within the display. Currently there is not content available for each and every product, which would be necessary for the Lush Spotlight to have the greatest effect in-store. That way, any product could potentially be brought to the display to discover more about it.

The Spotlight Concept

The Spotlight concept could be applied to any retailer that wants to promote their products in an innovative and interactive way. Giving shoppers an increased insight into the product gives the shopping experience a more valuable feel, and allows shoppers to envision themselves utilising products in their own lives, leading to a more personal experience.

The multisensory aspect of the Spotlight concept could be expanded further by potentially implementing scent. Despite not being stricty necessary for Lush Cosmetics due to the store environment being strongly smelling anyway, and the products on display having the opportunity to smell and test them, this could be explored in other retailers. Scent retailing is an increasing trend within shopping environments, and could be an interesting route to develop the Spotlight concept into.

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