



# MAC MODIFIED

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Interactive Media Design  
DE0972 Personal Project 2 & Final Project  
Documentation



## BRIEF OVERVIEW

The aim of this module brief is to begin to engage with a new design problem. The exact subject material for the project is self-determined but the module 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. You are required to create your prototype into a completed project, created using the most appropriate tools to resolve your design problem and to write a document critically justifying your approach and methodology taken. You must communicate and present your prototype in a professional manner - i.e. in a video prototype.



# “The new and innovative way of learning”

<http://www.dailymail.co.uk/sciencetech/article-3938508/Will-virtual-reality-headsets-alter-children-s-BRAINS.html>

## Concept

A VR display for children to be immersed in an environment to inspire learning through story telling.

## Goals

To encourage more engagement of learning in schools and at home.

## Audience

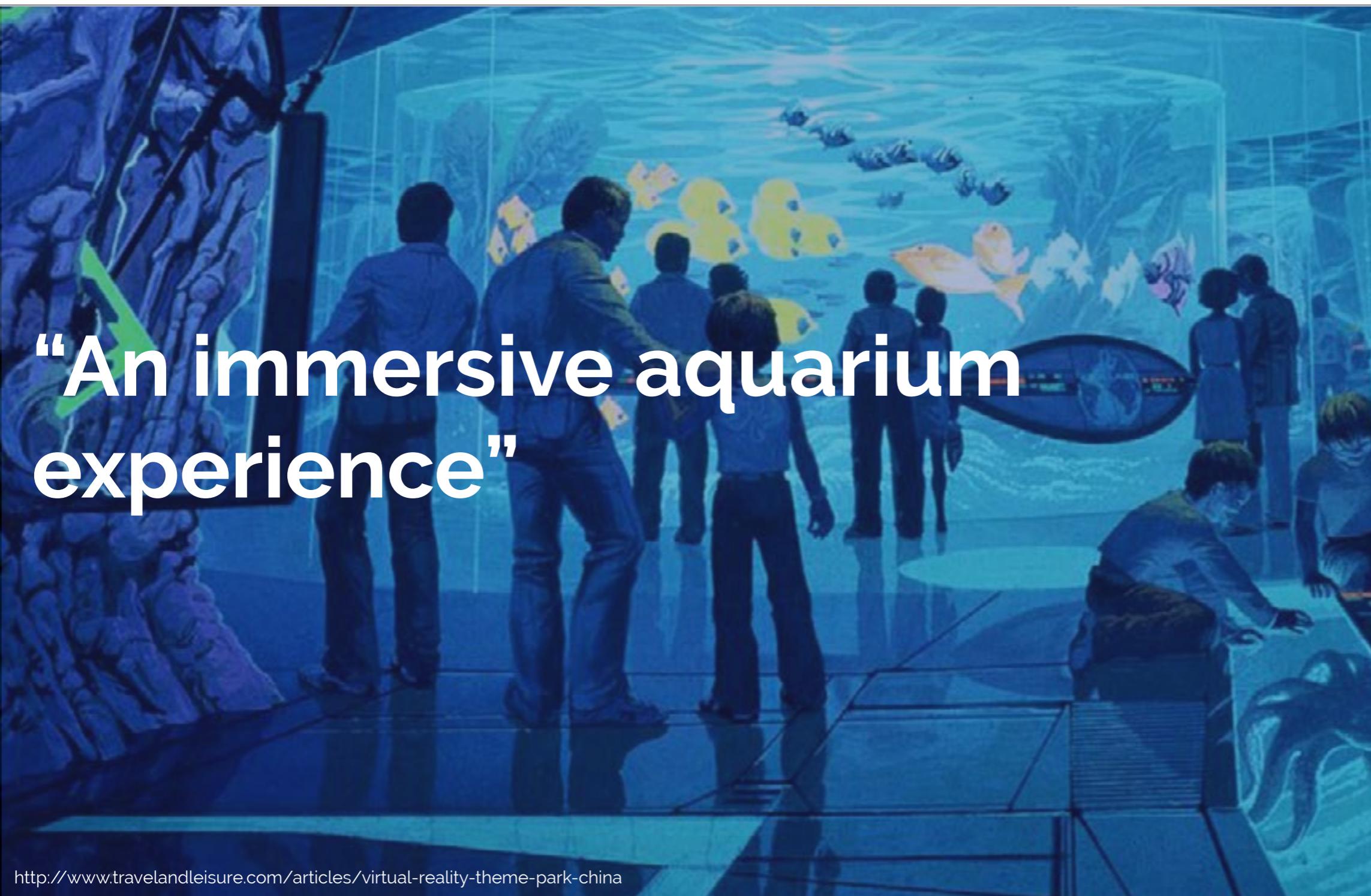
Young primary school children.

## Design Requirements

VR headsets, Unity software to create 3D designs and Adobe After Effects to create 2D animations

The idea of using VR with children to help raise engagement and revolutionise schooling practices, using a combination of animation and real life footage. The concept would be geography focussed, allowing children to be immersed in environments in different areas of the globe whether it be in the past or present. This is a subject that differs from your average VR gaming techniques and focuses on education rather than entertainment. Many studies are currently being done regarding children using VR headsets and how dangerous it could be. However taking different spin on the average VR gaming techniques and using VR as a learning asset could be revolutionary for education. The idea is for the user to state their age and an appropriate story will play, depending what key stage level they are at, answering questions along the way.

# "An immersive aquarium experience"



<http://www.travelandleisure.com/articles/virtual-reality-theme-park-china>

This concept's aim is to encourage more visitors into aquariums using augmented reality technology. This idea was inspired from David Attenborough's Blue Planet to help raise awareness of the harm of dumping plastic in the ocean can cause. Each visitor can download the aquarium app onto their smartphone and through using the camera and scanning objects they can see the harm that the human factor has on marine species, allowing them to see what marine life should look like in comparison to what polluting the ocean causes.

This concept will include designing an aquarium application that features an 'AR Mode'. The user will be navigated around the aquarium learning about marine species as well as showing the dangers that they face.

## Concept

Making an aquarium experience informative raising awareness of how pollution affects their habitats using augmented reality technology.

## Goals

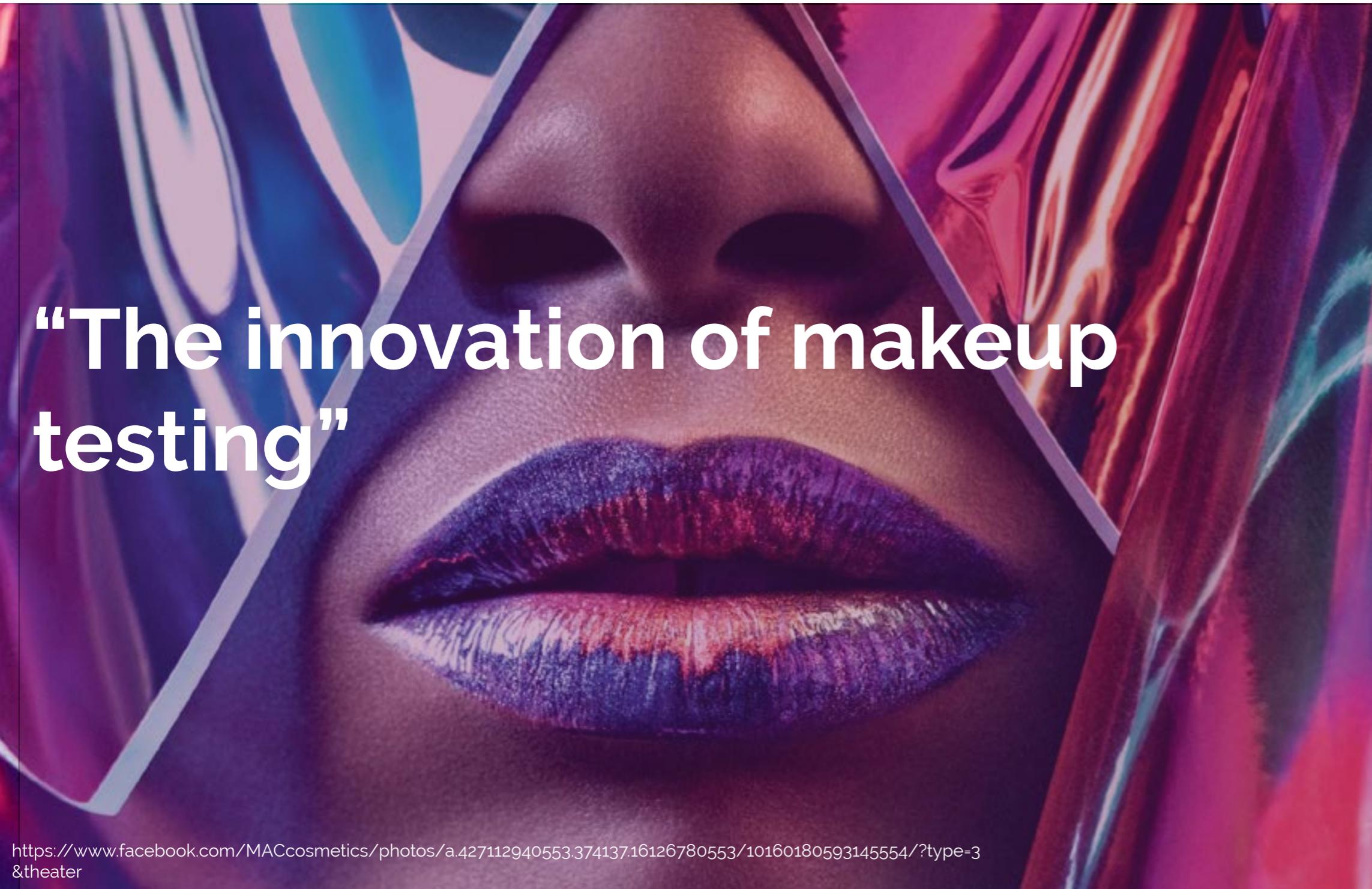
Encouraging people of all ages to visit aquariums, through innovative technology, as well as raising awareness of the polluted sea.

## Audience

Any age interested in marine life incl. families and schools.

## Design Requirements

After Effects to create animations, Sketch to create an application design and a prototyping software. Unity software to create the augmented experience.



# “The innovation of makeup testing”

<https://www.facebook.com/MACcosmetics/photos/a.427112940553.374137.16126780553/1016018059314554/?type=3&theater>

This concept demonstrates a real time augmented reality 'mirror' in a retail store. The idea is to display makeup on the users face using technology for them to test out the product colours etc. This is to make makeup testing more hygienic, rather than a number of people trying on makeup in stores in the form of 'testers', which can be seen as very unhygienic if numerous customers are trying on one lipstick. The augmented reality makeup will be displayed through an iPad screen using innovative face tracking technology. The product will work, as each product will have an RFID tag attached, when the user places this product down onto the RFID scanner, this will trigger a video to play either as an advertisement or a tutorial of how to use the product. This product will then be displayed on the users face to test out..

**Concept**

The innovation of testing out and discovering makeup products using hi-tech devices and softwares..

**Goals**

Used as an advertisement, saving companies money and promoting hygienic makeup testing.

**Audience**

Makeup brands and stores, hygiene conscious customers

**Design Requirements**

iPad screen, Unity Vuforia for face tracking software and a 3D sketching software

## Personal Statement of Intent

Cosmetic testers in stores may sound like a great way to 'test before you buy', but there are many disadvantages that come along with them. Firstly the obvious that it costs companies a lot of money to supply these tester products. Secondly the bacteria and germs on makeup testers is a lot more than people like to believe.

The aim is to choose a target market and design a new and innovative in-store retail experience. Define a target market and design the product to suit the users needs and wants.



# 1

## Initial Research



The initial research stage of my project includes looking at retail and technology trends, competitor and user research. Going on to look at some more focussed background research on my chosen target market.

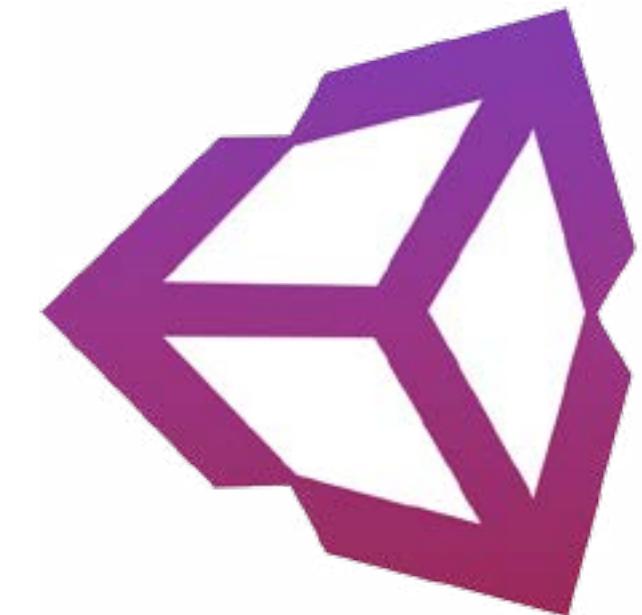
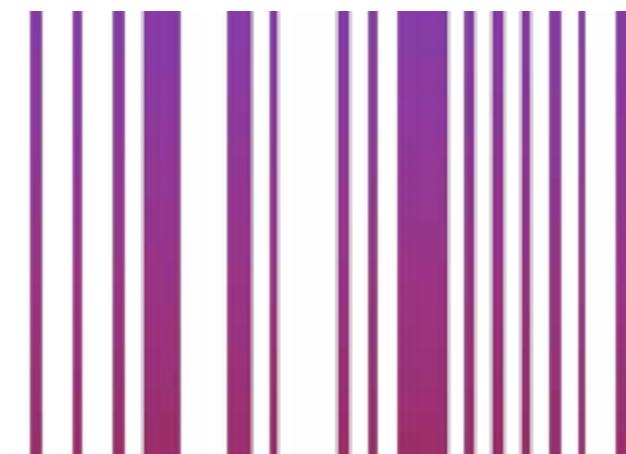
## Technology Trends



**Facial Recognition** is the innovative form of biometric technology currently mainly being used to unlock phones, for security purposes. It can be compared to other biometrics such as fingerprint scanning and iris recognition. Facial biometric scanning is now being used to create 'filters' in the popular phone applications Snapchat and Instagram. These filters work by modifying facial features in real-time.

**RFID** (radio-frequency identification) tags have digital data encoded in them which is captured by a reader via radio waves. They can be used by manufacturers to track consumer products or even tracking the whereabouts of pets. However the most popular use of RFID technology today is through contactless card payments.

## Options to use

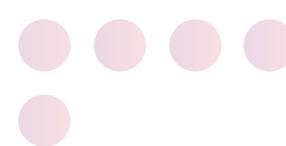


**Barcodes** are representations of data able to be read by machine technology. When thinking about the technology I could use for my this product design I thought about using RFID tags, however, each makeup product already has an identification barcode on it. Therefore if I could programme the scanner to pick up the barcode this could be more cost effective.

**Unity Vuforia** is a widely used software platform for augmented reality applications with the ability to attach digital content to physical objects. The 2017 update for Vuforia now has the option to compile live face tracking in real time.

## Retail Trends Of 2018

Shortly after iOS 11 was released, Ikea introduced their new AR application 'Ikea Place' an app that leverages Apple's AR Kit, allowing the customer to see what the furniture would look like in their home before buying.



The rise of Instagram Stories, Facebook Live, and messenger apps will fundamentally change how retailers interact with consumers online.

1

"Chore" shopping will become easier, but the demand for "cherish" retail will be stronger than ever

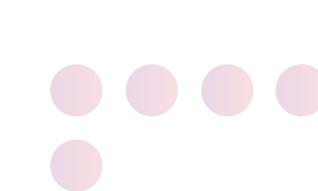


3

**Augmented reality technology will get even more sophisticated**

5

Retailers that step up their **social media strategies** will thrive



2

Retailers will increasingly rely on **robots**



4

Retailers that enable shoppers to build and **customize products** will prosper



Online robots are trending in the form of chatbots. There will be a rise in using platforms to talk to customers.

6

**Healthy and environment-friendly lifestyles** will be a focus for many consumers



When shoppers purchase tangible products, they want those items to either tell a story, fit into their lifestyle, be completely unique, or all of the above.

Including hygienic environments. More and more shoppers are choosing products that are sourced responsibly and are good for their bodies and the environment.



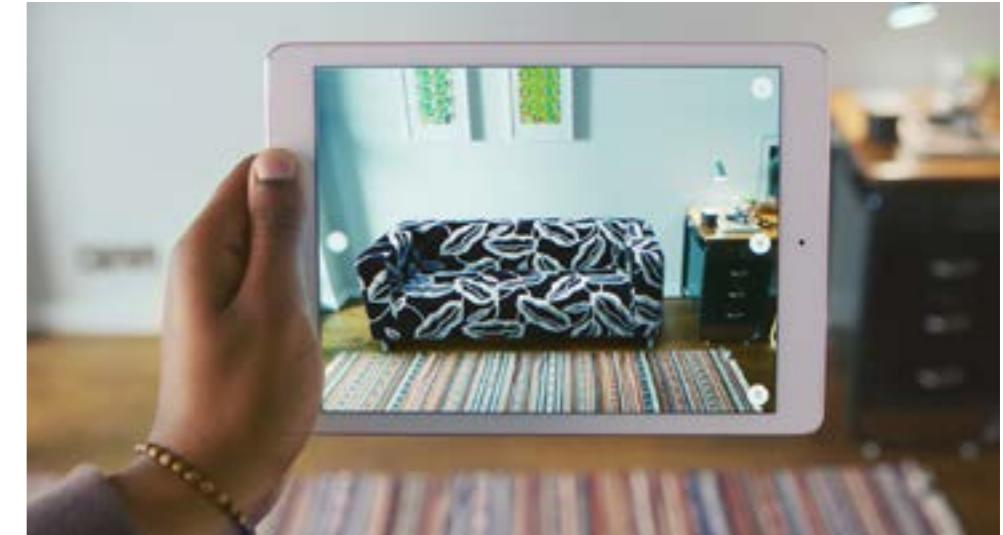
### InstaScent Sephora

**Fragrance IQ** is to be featured in Sephora's concept store, with the first-to-market sensory technology called InstaScent, which lets you explore different scent families through a dry-air delivery system. Scented air from the selected scent categories is emitted from a nozzle. Sephora also offers a bottle engraving option for a more personalised experience.



### Ted Baker's Virtual Store

Users can buy anything they want from their own home. The 6,000 sq ft concept store opened in June 2015 to showcase the brand's licence products, including footwear, watches, jewellery, glasses and sunglasses, bicycles and audio products. However they closed the store two years after it opening as it didn't fit with the stores portfolio.



### Ikea's Augmented Reality App

**Ikea Place** is using augmented reality to let customers preview how furniture looks on their smartphones before they buy. Customers can view 3-D renderings from different angles of over 2,000 products before reserving the ones they want in the app, which directs to the Ikea site to complete purchases.



### Lego's Digital Box

Customers simply needed to hold up the box in front of the screen of the kiosk, and the finished Lego will appear on top of the box on the screen.



### Uniqlo UMood

In Australia they are currently trialling innovative **neuroscience** technology which analyses the users brainwaves to identify an appropriate t-shirt to suit the users current mood.



### Converse 'The Sampler' App

The app again operates on the simple premise that people like to try things out before buying them. However nearly a year after it's realise it was taken off the app store because only a small number of styles could be tried on.

# “Retail is going digital”

The following information is based on KPMG International survey of 18,430 consumers in 51 countries to find out how different shopping preferences differ looking at 3 age groupings:

**Millennials (age 16-30)**

**Generation Xers (age 31-55)**

**Baby Boomers (age 56+)**

Consumers no longer 'go' shopping, but are shopping at ever moment and everywhere. In a recent survey, consumers need to know when and where their customers are making purchase decisions. But attitudes and behaviours can vary significantly by generation, making it difficult to target customers.

Percentage of consumers who use their smartphone to look up a product while out shopping

77% of Millennials

70% of Gen Xers

50% of Baby Boomers

Percentage of customers that agree a simple and seamless checkout is very important

25% of Millennials

57% of Gen Xers

62% of Baby Boomers

Percentage of customers more likely to share a product review online

34% of Millennials

29% of Gen Xers

28% of Baby Boomers

Percentage of customers that think mobile shopping apps are more appealing than any other platform

25% of Millennials

23% of Gen Xers

17% of Baby Boomers

Percentage of customers that agree excellent customer service is very important

59% of Millennials

68% of Gen Xers

74% of Baby Boomers

Percentage of customers likely to shop in store to avoid delivery wait times

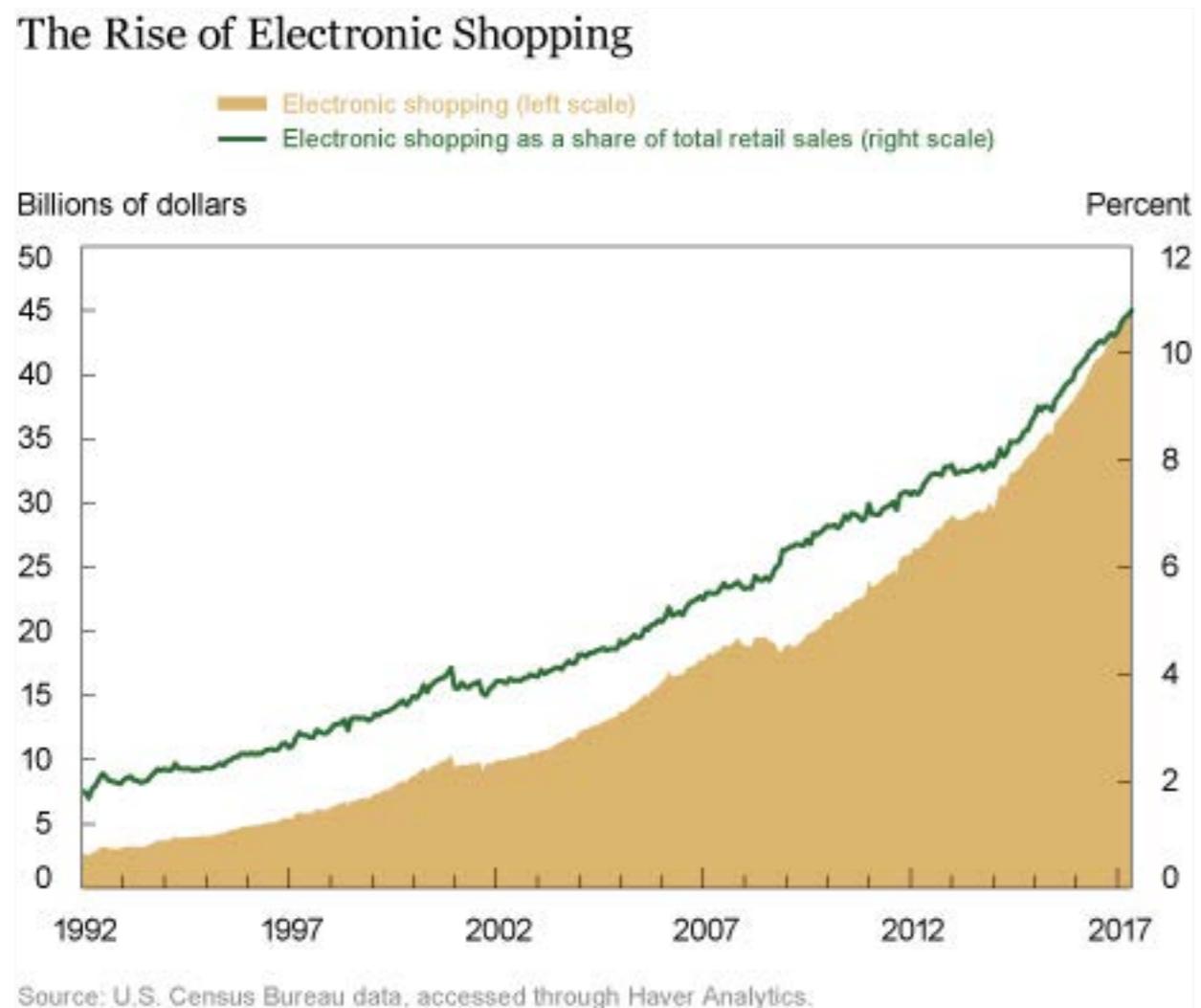
39% of Millennials

27% of Gen Xers

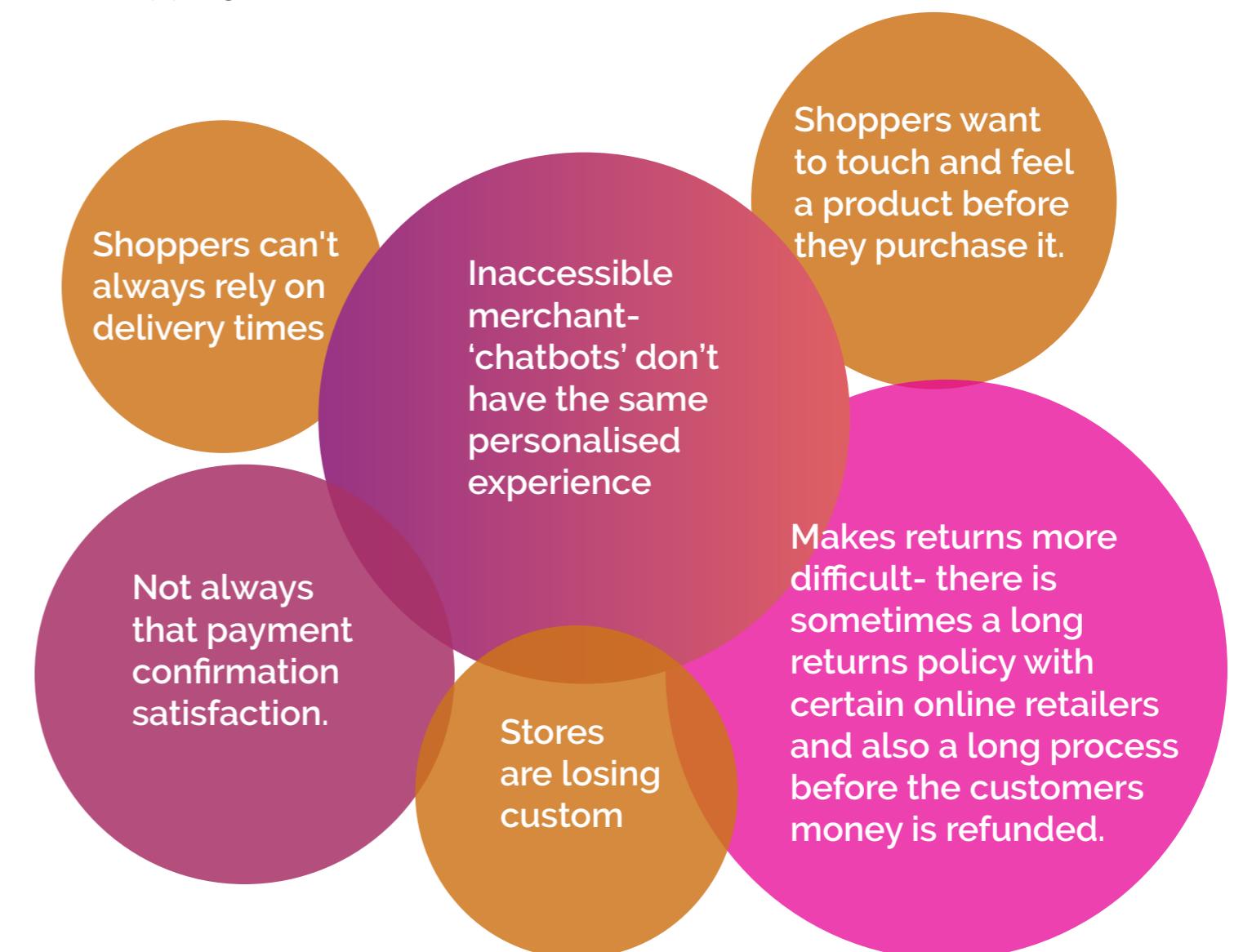
23% of Baby Boomers

# The Rise in E-Commerce

## The Rise of Electronic Shopping



The general reason customers decide to shop online is for the convenience. The idea of having a virtual shopping bag and not having to pay 5p for it. It's a personalised service, there's something satisfying about having your shopping delivered to your door. Online shopping is always evolving, with possibilities to virtually try on cosmetics and clothing at home, there's no need to leave the house. However there are also many downsides to online shopping:



## Charlotte Tilbury Magic Mirror

Charlotte Tilbury's augmented reality 'magic mirror' was created by Holition, combinatory innovation agency of scientists, in Nov 2017. Each full view touchscreen Magic Mirror lets customers 'try on' virtually each one of Charlotte's famous 10 Makeup Looks. The full range of products are available for try on including foundation, blusher, eye shadow, eyeliner, mascara, lipliner, lipstick and contouring techniques. The mirror won the 2017 Retail Week Tech Award for best In-Store CX Initiative of the Year. It allows users to, "connect with the brand on a new playful level" (Magic Mirror, 2017) In real-time, lips, eyes even make-up on the skin is transformed and mapped to the individual's features so they can turn their heads, look closer, even close one eye to appreciate the shades even more.

The aim is to sell the makeup products that the 'mirror' is representing.

### Benefits

- Highly advanced real-time tracking and a recommendation process for suggesting a best look.
- Takes into account the customer's skin colour and tones, thereby achieving a perfect natural blend
- Provides a realistic augmented experience

### Drawbacks

- Customers could feel disconnected from the shopping experience
- It only shows certain looks the user can't choose the product to display on their face
- Its brand new, there is not many critiques



**"Breaking boundaries in retail"**

## L'oreal Makeup Genius Application

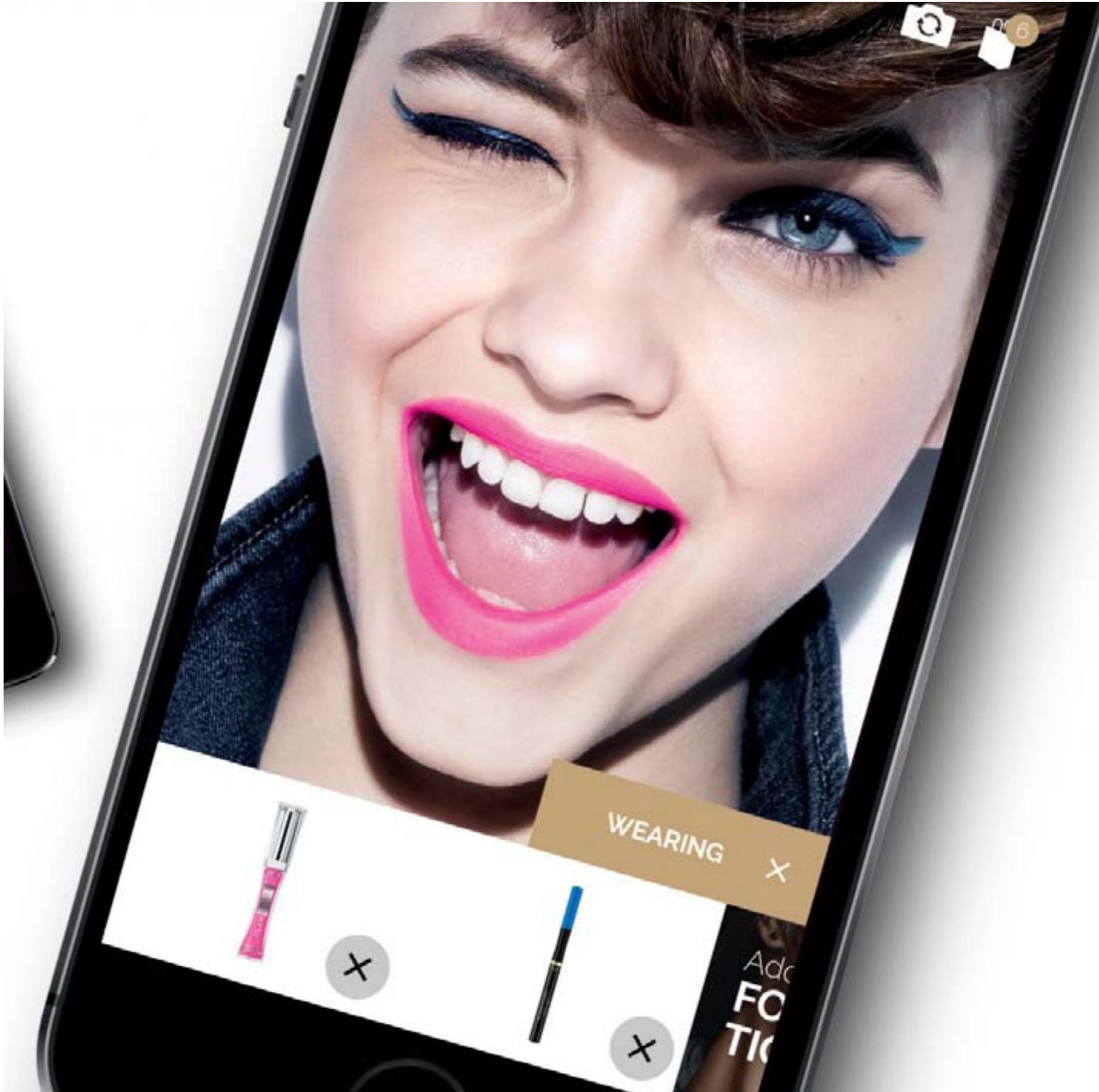
The beauty industries first virtual makeup app. It is important to look at how virtual apps work as well as a 'magic mirror' in a store to get a feel for the different features they include. The app gives the user a personalised experience to create the 'perfect selfie'. As well as being able to try on singular products, the app suggests possible 'looks straight from the runway' the user might like and the products used to create that look.

### Benefits

- There is a before and after tool, to see the transformation of the makeup
- Allows the user to test out the makeup at home

### Drawbacks

- Takes the shopping experience away from stores, the stores could suffer in profits because of this
- The disadvantage of not having it live in a store means that the product can only be seen through a screen, there is not an option to touch the products or see the true colour in person, as screens can sometimes deceive the colour.



**"A makeup artist in the palm of your hand"**

## Sephora Virtual Artist

A product design that was originally in the form of an app. In 2017, Sephora brought augmented reality into store.

The application uses a colour matching technology, this allows the user to scan a colour, for example scanning the colour of a t-shirt and the application will show the lipstick colour that will match.

Using social media, the user can save their 'look' and share with friends through other social media platforms.

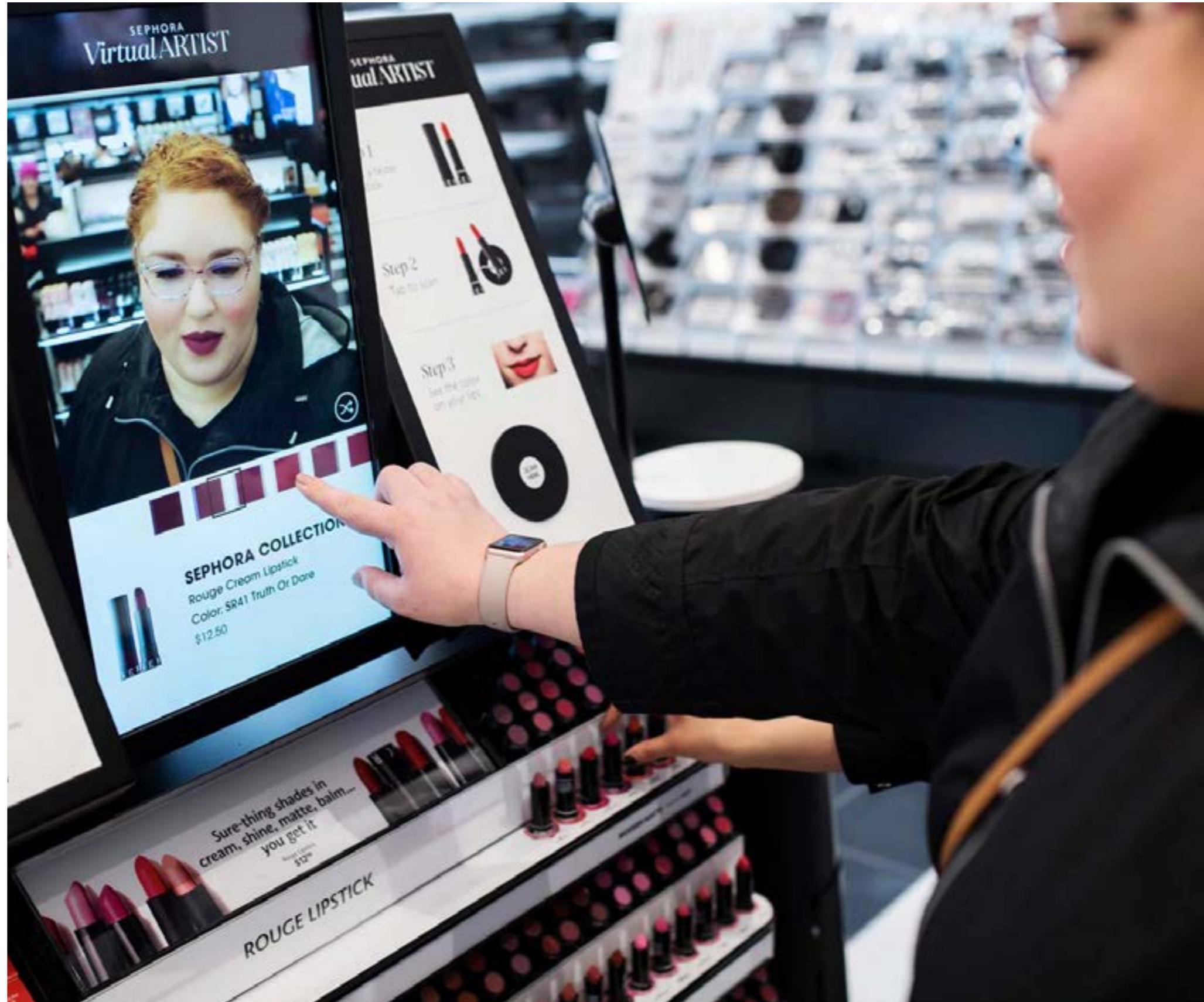
From what the user has 'saved' or looked at, the application then recommends products that could go with the products chosen or similar ones.

### Benefits

- Allows users to try on specific products, rather than just a certain 'look'

### Drawbacks

- This product is not yet in all stores, it is mainly an application
- It allows customers to try on makeup from home, however this takes away the physical shopping experience
- There is nothing encouraging customers to go into store to use it when they can sit at home and use it as an application



**"Try-more-buy-more ethos to get customers to spend"**

## The Mary Kay Experience

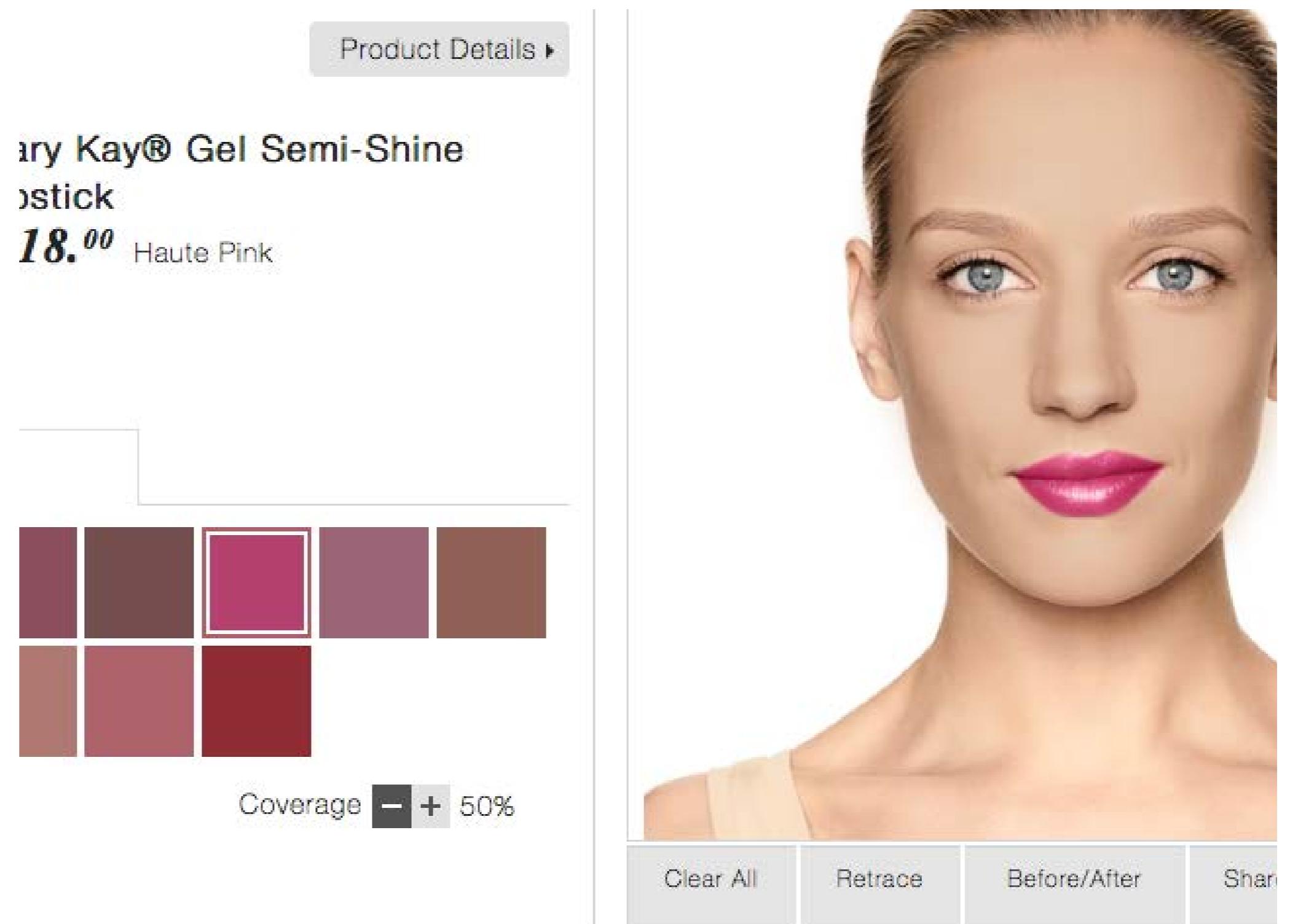
A free online and mobile game that lets you customise trend looks with endless combinations of eye makeup, lip colours, hairstyles, hair colours, and accessories for every season and skin tone.

### Benefits

- User can upload a photo and test products on their own face
- There is an option of how much coverage to apply
- Hairstyles and accessories are available to add the finishing touches
- For those who would rather try out the new look on a model, the app offers 19 images of models of various skin tones, hair colour, eye shape and ages

Product Details ▾

Mary Kay® Gel Semi-Shine Lipstick  
**18.00** Haute Pink



### Drawbacks

- Not in real time
- Relys on the customer to upload a photo with good lighting etc, otherwise the products may not look as expected.

**"women can try a new look while standing in line for their morning coffee"**

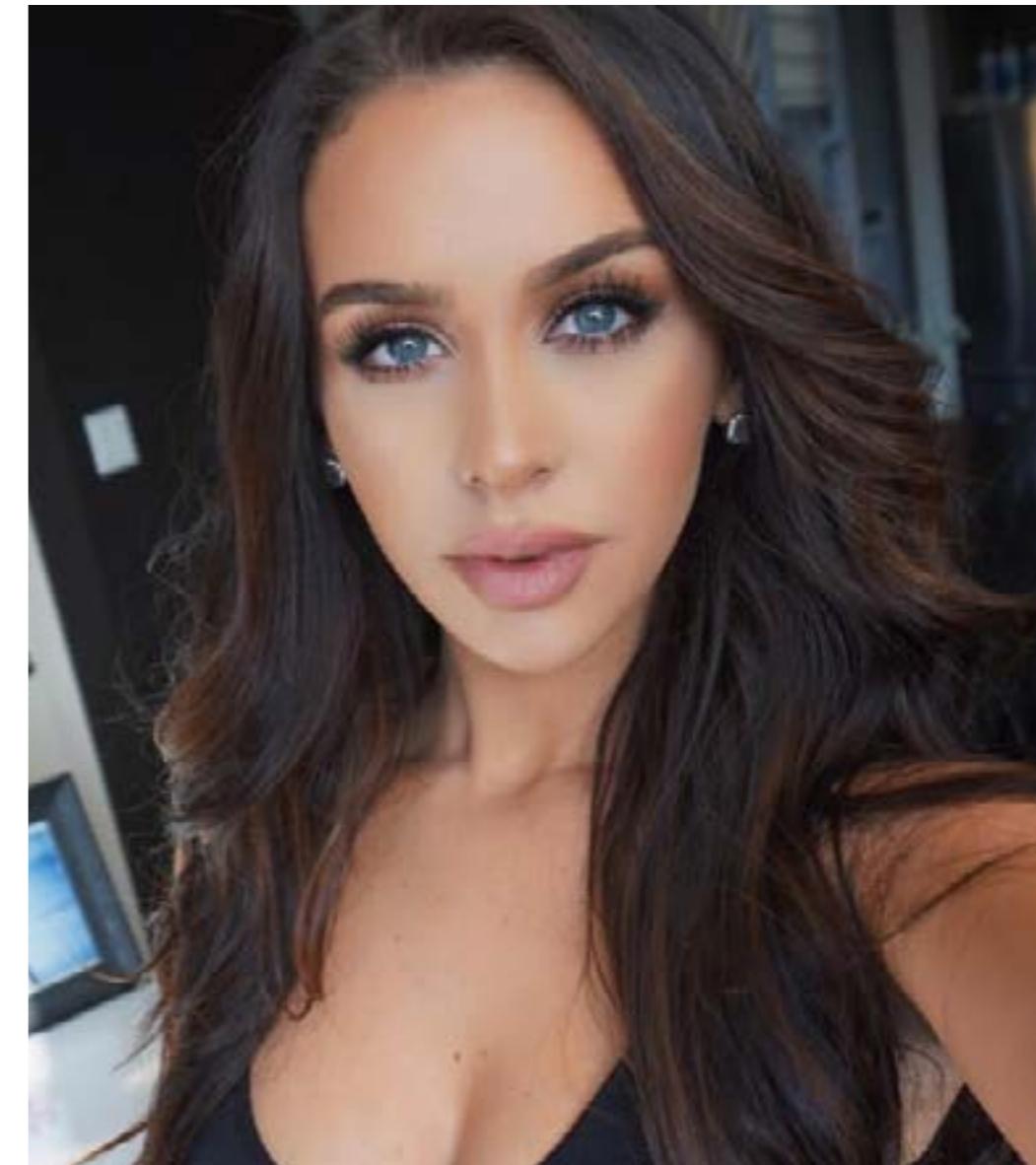
## User Persona's

At this stage I have started looking at a wide range of users. Not quite knowing what my niche market will be yet, this will allow me to steer some idea generation. Looking at primary, secondary users and stakeholders, my design will not be able to cater to all of these needs, but at this stage it is necessary to look at all the possible users involved.

### RACHEL

who works in Mac makeup store in Newcastle

**"sometimes  
there's just  
not enough  
staff to  
attend to all  
customers  
needs"**



#### Traits

- Rachel is 24 and has worked at Mac for 3 years
- She is **really passionate** about makeup and is **highly qualified**
- She is always looking for **new tips and tricks** to tell her customers

#### Goals

- Selling as many products as she can to **reach her targets** and **receive her bonus** at the end of the month
- She wants to be as **less stressed** as possible on a busy day at work when many customers are wanting served

#### Pains

- Rachel really thinks that **more staff** are needed for a busy Saturday as she **can't always attend to every customer**

## ASHLEIGH

is a hygiene conscious customer

**"I love buying makeup but I would never try it on in a store"**



### Traits

- Ashleigh is a 18 year old student who loves buying makeup and **buying all the new products**
- She is a **hygiene conscious** individual
- Because she is a vegan will only buy **animal friendly makeup** products

### Goals

- Ashleigh needs to know whether the products she is buying are animal friendly
- Ashleigh wants a way to be able to **try** on makeup **hygienically**

### Pains

- She often buys makeup without testing it out first and realising when she gets home it's **not the right colour** and she **can't return it** which is a pain
- Ashleigh has previously suffered from an **eye infection** from using a **mascara tester** in store.

## CHARLOTTE

is the founder of Charlotte Tilbury makeup brand

**"Magic Mirror becomes active makeup selling tool"**



### Traits

- Charlotte is the **founder and creative director** of her eponymous beauty and skincare brand, Charlotte Tilbury Beauty Ltd.
- The Charlotte Tilbury brand has already introduced an augmented **Magic Mirror**, Shoppers can book makeover sessions to **recreate** one of the **10 signature looks**

### Goals

- She needs to **compete** against other makeup brands
- Wants to sell as many products as possible and **increase profits**

### Pains

- As a company, they **spend a lot of money on tester products**

## SUSAN

Is a new makeup store user

**"I wear makeup nearly everyday, but I don't know if I'm applying it right"**



### Traits

- Susan is 60 year old and **recently retired**
- She loves going shopping and going for lunch with her friends
- Susan **wears makeup** on a **daily basis** but isn't sure about the top trends or if she is **applying it correctly**

### Goals

- Susan needs to find out what products are **best to use** for her age and **skin type**
- She wants to **show off** to her friends her new look and **new makeup products**

### Pains

- Susan often buys expensive makeup but **lacks the product knowledge**

## SOPHIA

is a young aspiring makeup artist

**"I hate shopping in stores it's just too busy!"**



### Traits

- Sophia is a 16 year old school student
- She loves makeup and always **watches tutorials** online how to use the products and has built her **own YouTube channel**

### Goals

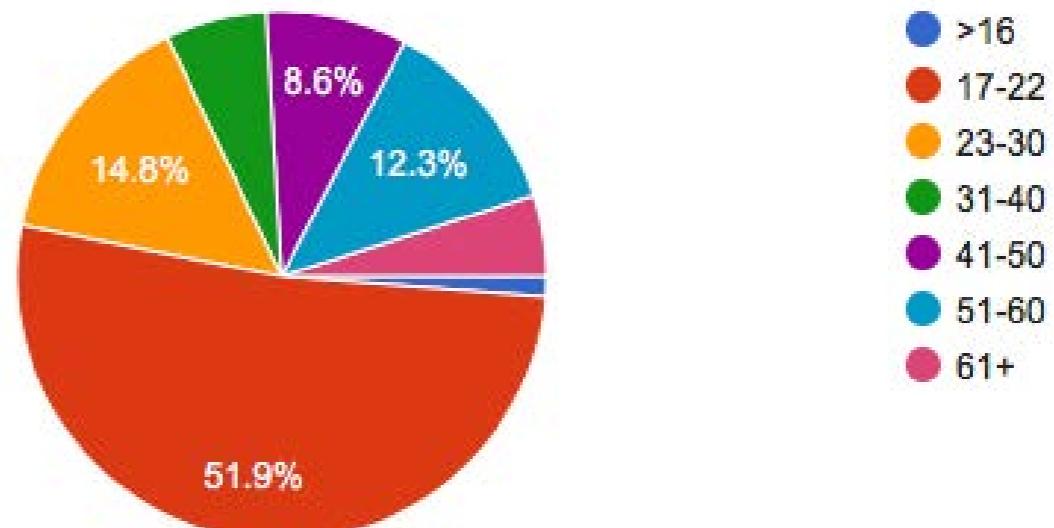
- Wants to be a makeup artist so needs to find out about all the **top makeup trends**
- Sophia is always up for trying **new technologies** and ways to **get her work noticed**

### Pains

- Sophia often **shops online** because going into store can be a pain as it gets **very busy**
- She often **wastes a lot of money** on buying random makeup products online to test, however when they arrive she doesn't like them.

### What is your age?

It is important to feedback from each age range to at this stage to eventually specify what target market my product design will be best for.



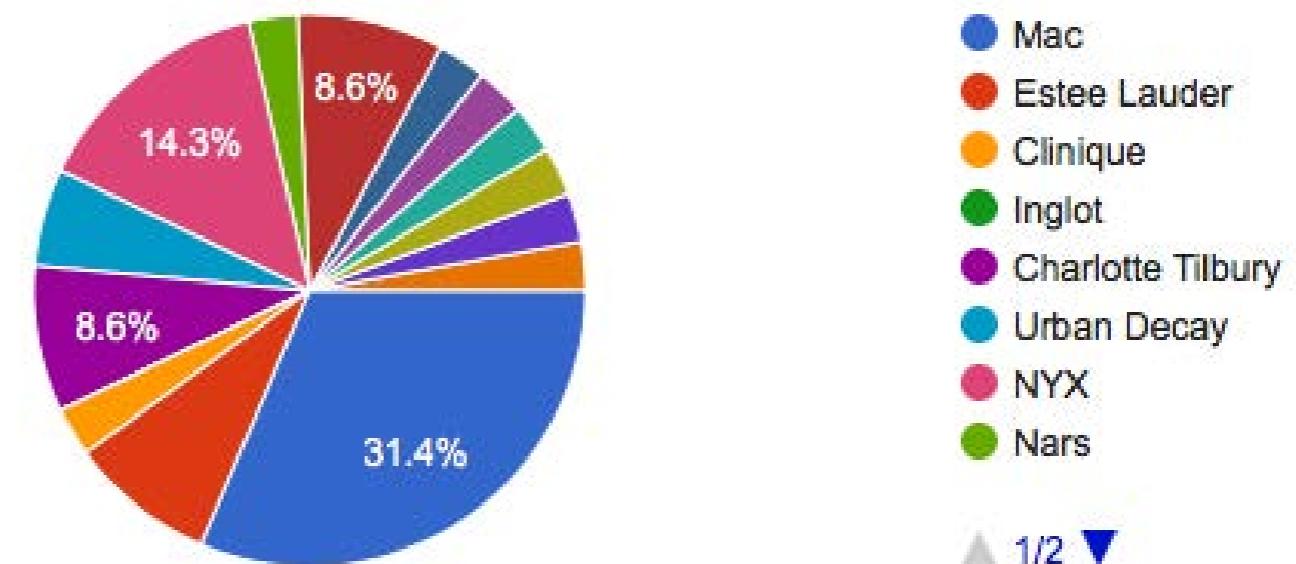
### 'Makeup Testing Questionnaire'

After looking at some possible users for this product design I decided to do a short questionnaire in order to find the most popular make up brands and further information on how people feel about testing makeup in store.

**The following were the questions asked to a wide age range:**

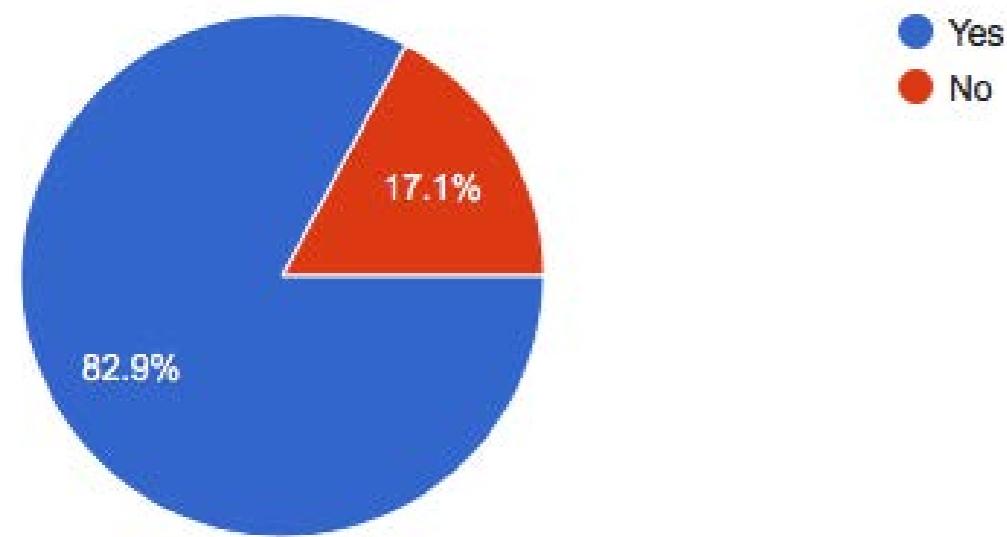
### If you had to choose, what is your favourite makeup brand?

This would give me an idea if certain ages use certain branded products



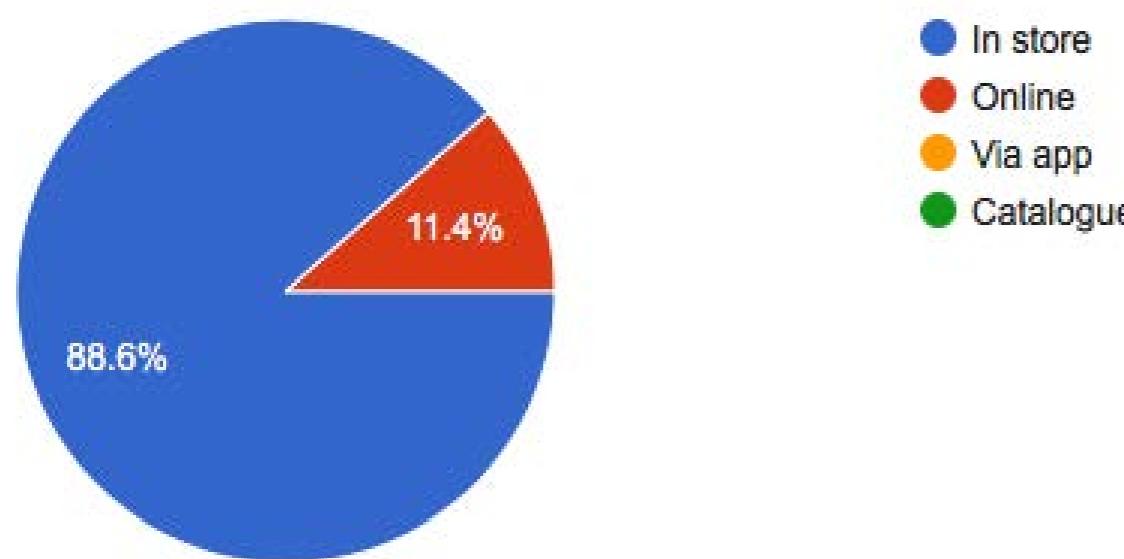
### Would you try out a makeup tester in store, if no explain why?

It is interesting to see if certain age ranges test out makeup products unhygienically



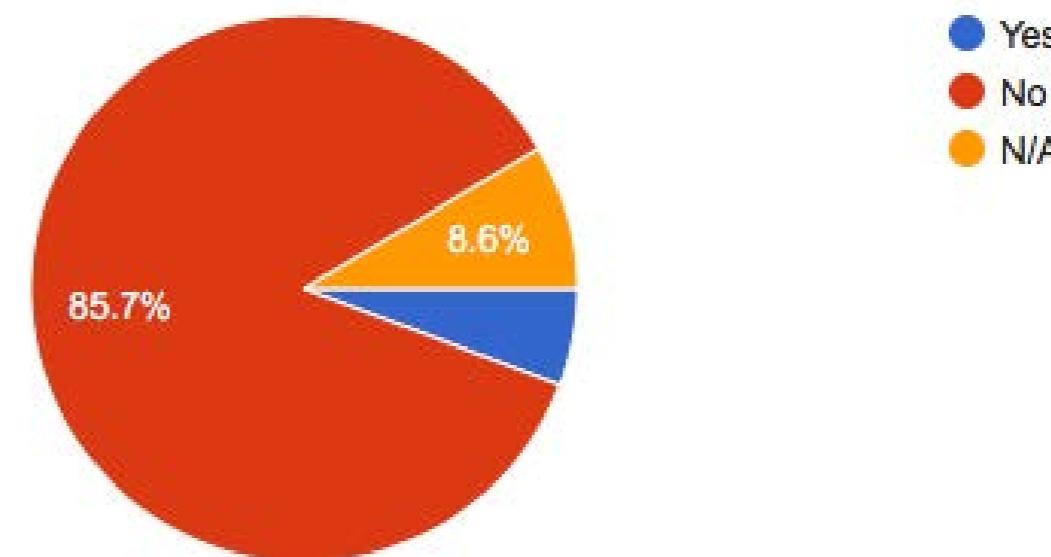
The users who said no, explained it's unhygienic because of germs and bacteria, or only if it is applied by the staff, assuming it has been cleaned before use.

### Where would you usually buy makeup products?



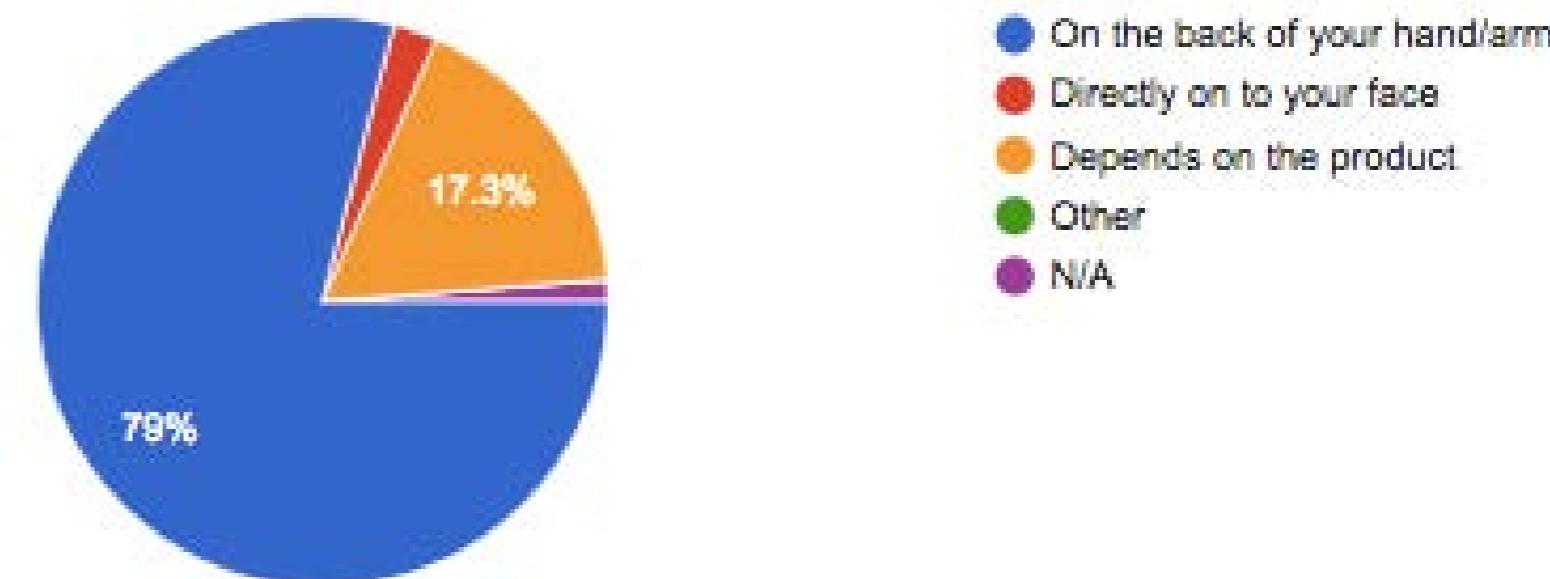
### If you are testing in store products, do you ask the sales assistant to clean the product first?

This is not something that is done enough and many people aren't aware of the bacteria that many testers have on them



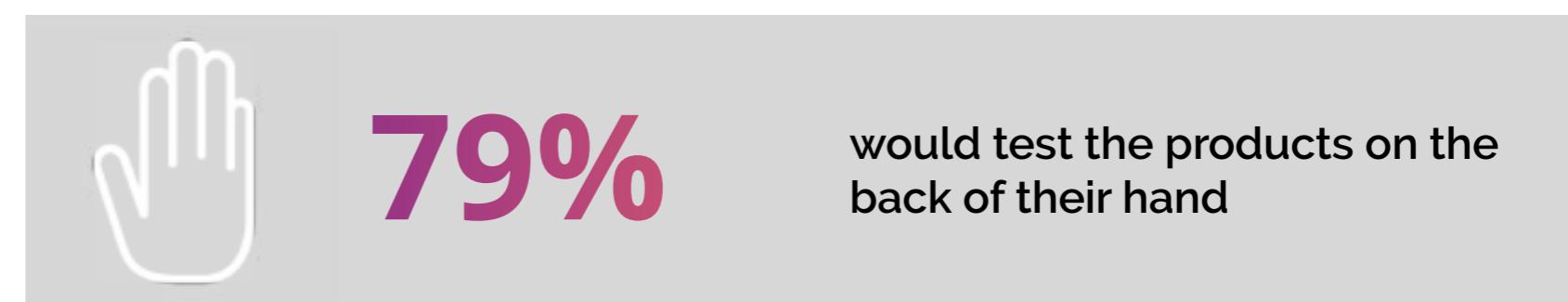
### Where do you test the products?

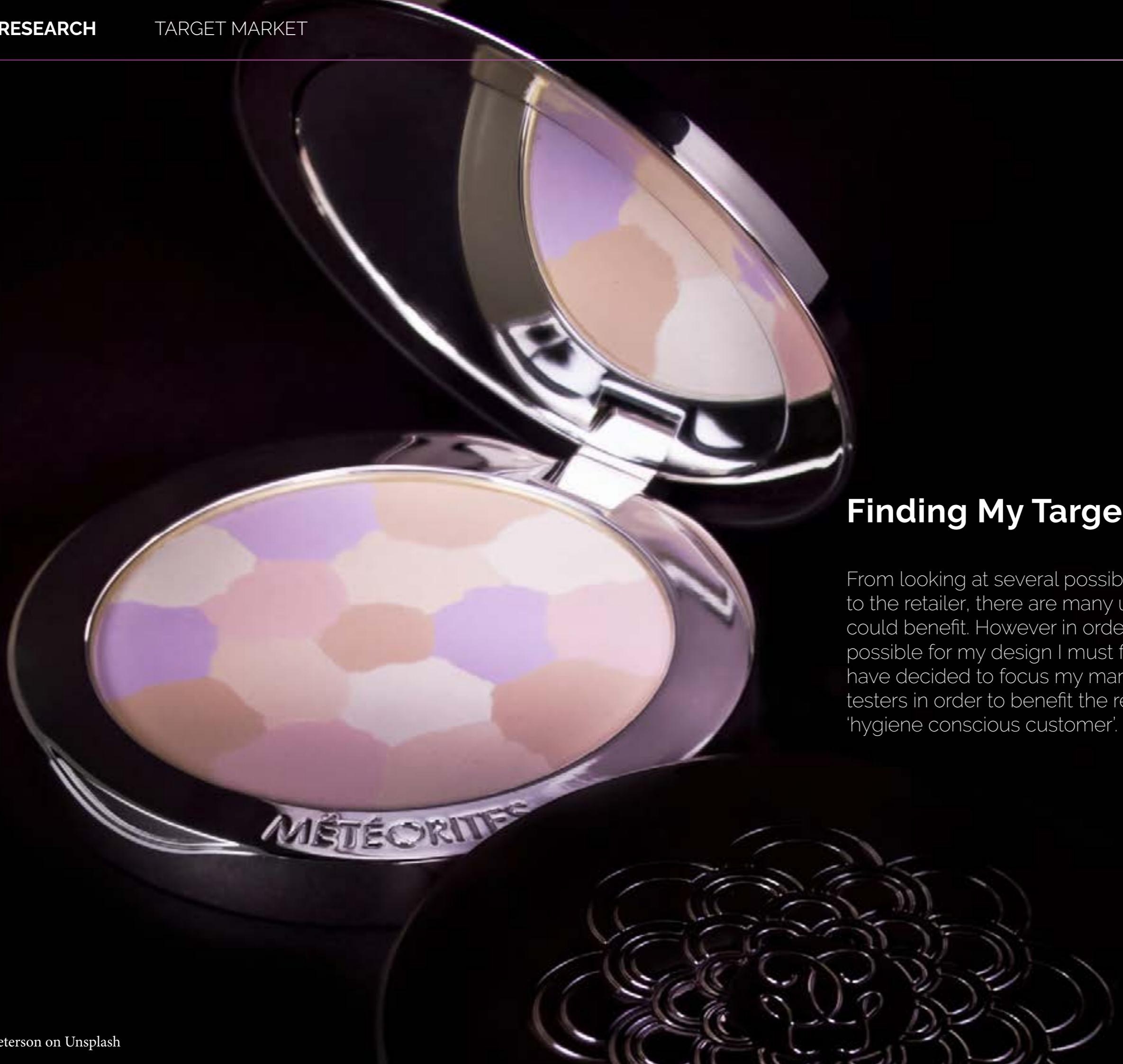
Many people test products on the back of their hand, which is one of the most bacteria prone areas of the body.



## Questionnaire Insights

From this questionnaire I found that the majority of younger shoppers, aged **17-30**, shop in **Mac and NYX**, whereas customers aged **30-60+** tend to shop in **Estee Lauder and Charlotte Tilbury**. It was also interesting to see the amount of people, varying in age that still shop in store rather than online.



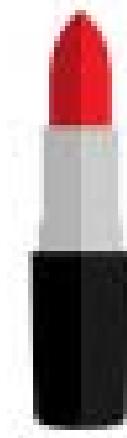


## Finding My Target Market

From looking at several possible users, from the customer to the retailer, there are many users that this product could benefit. However in order to get the best outcome possible for my design I must find my target market. I have decided to focus my market on eliminating physical testers in order to benefit the retailer as well as the 'hygiene conscious customer'.

# Is There a Hygienic Way To Test Out Makeup Products?

Studies show that despite there being several germs contaminating makeup testing products, there is a possible hygienic way to test them out, as makeup artists use the same products on several people.



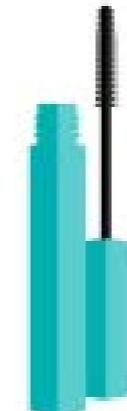
## Lipstick

Dip it in alcohol, then scrape off the top layer, and use a new, disposable applicator—not their finger—or a brush sprayed with alcohol



## Eyeliner Pencil

Since all of the contamination is on the surface layer, sharpening works fine



## Mascara

Use a separate brush to apply



## Powder

Powders can be just as germy as creams, so you can try bringing your own makeup alcohol wipes to clean them, making sure you wipe the entire surface of the tester, and the salesperson scrape it afterward.

## Makeup Testing Studies

Elizabeth Yesuratnam Brooks, a former professor of biological science who ran a Rowan University study on makeup tester germs. Who stated that in her studies:



**"More than half of all testers were contaminated, and we found staph, strep, and E. coli bacteria from faeces, meaning you can contract pink eye, infections, or even viruses like herpes or hepatitis"**

## Makeup Tester Bacteria And Germs

In October 2015, a woman sued the American makeup brand Sephora claiming a lipstick gave her Herpes.

**"The store failed to warn customers of the risks of unsanitary testers"**

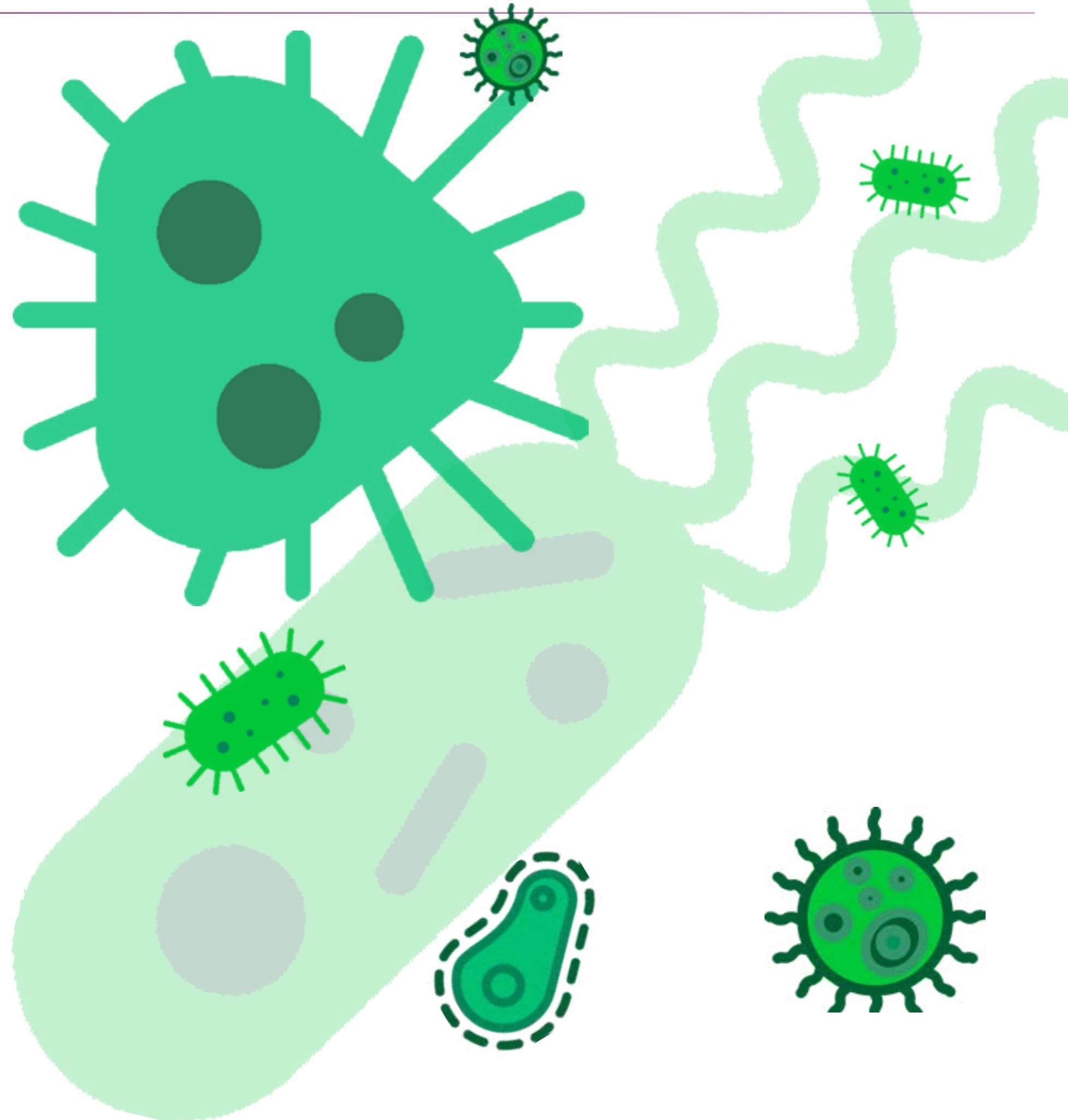
Despite cosmetic products containing preservatives to help slow down the growth of microbes, it still happens. After this statement was released, tests were done on Sephora's products, which were tested positive for:

**Herpes** virus, droplets of saliva can infect a lipstick

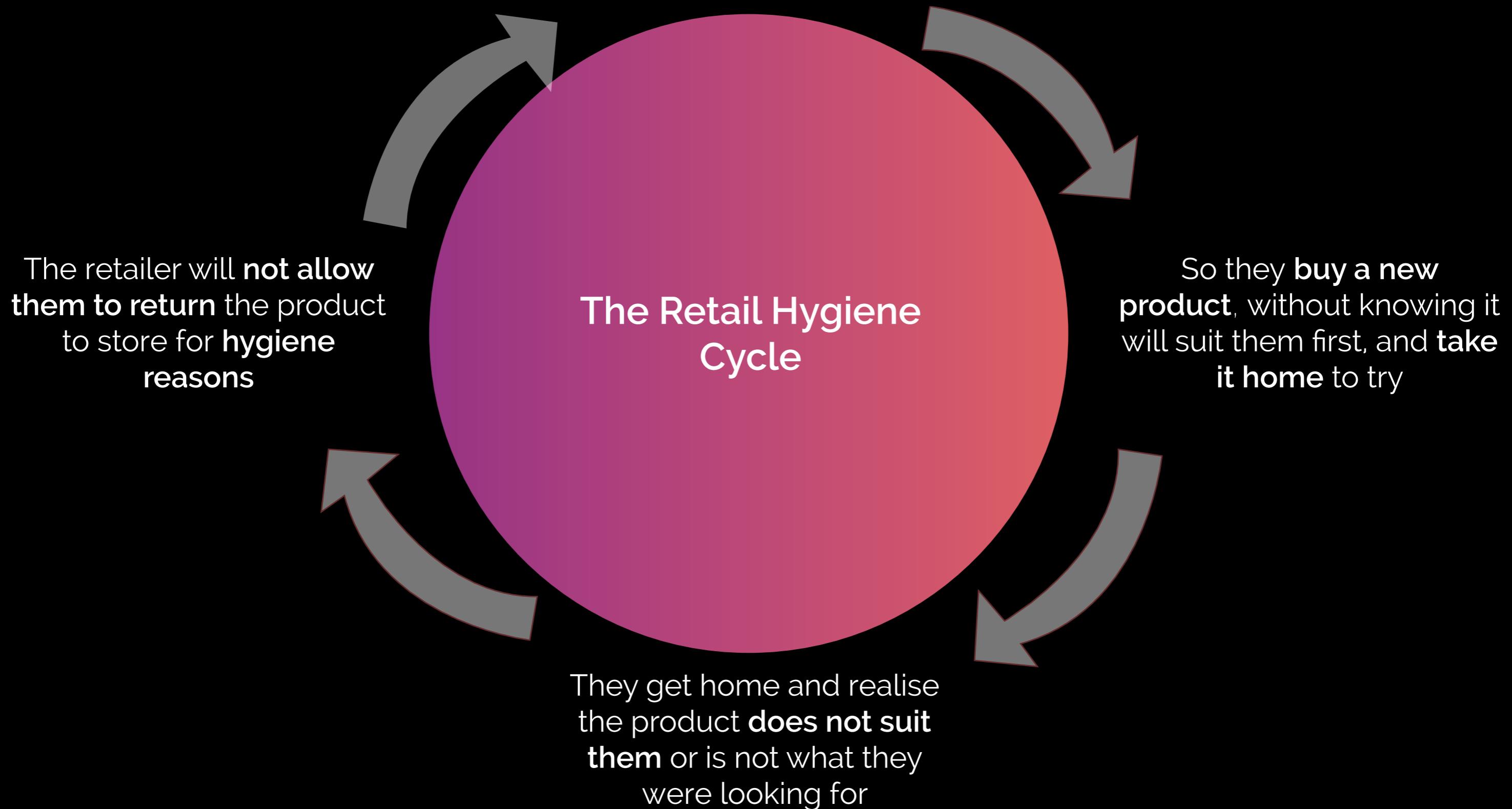
43% of eyeliners and mascara wands contain contaminants which can cause **Conjunctivitis**

*Staphylococcus Aureus* can cause infections with symptoms like **boils, pneumonia and food poisoning**.

E.Coli and Klebsieua Pneumoniae



Customer's don't want to use the testers in store because of **hygiene reasons**



## KEY RESEARCH INSIGHTS

After deciding on my target market, conducting a bulk of hygiene research and doing some user research, I have summarised the key points into 5 sections.



1

Over 60% of the general population think good customer service is very important.

2

Mobile Applications are the main competition. Need to find a way to bring the retail experience back into stores, rather than being able to test makeup at home on an app.

3

Store assistants want to sell as much as possible in store to receive their bonus, they need to encourage customers back into store. Customers need a way to test before they buy, and find out what products are best for them.

4

From the questionnaire I found out that customers aren't interacting as much with sales assistants, only 15% would ask the shop assistant to clean a product before they use it.

5

My product design must not replace the shop assistant and have the opposite affect of what is hoped for.  
As the main reason customers come into store is for the assistance off employees.

# 2

## Brand Identity

To chose the brand in which my product design will be designed for, I conducted some primary research and interviewing of staff members.



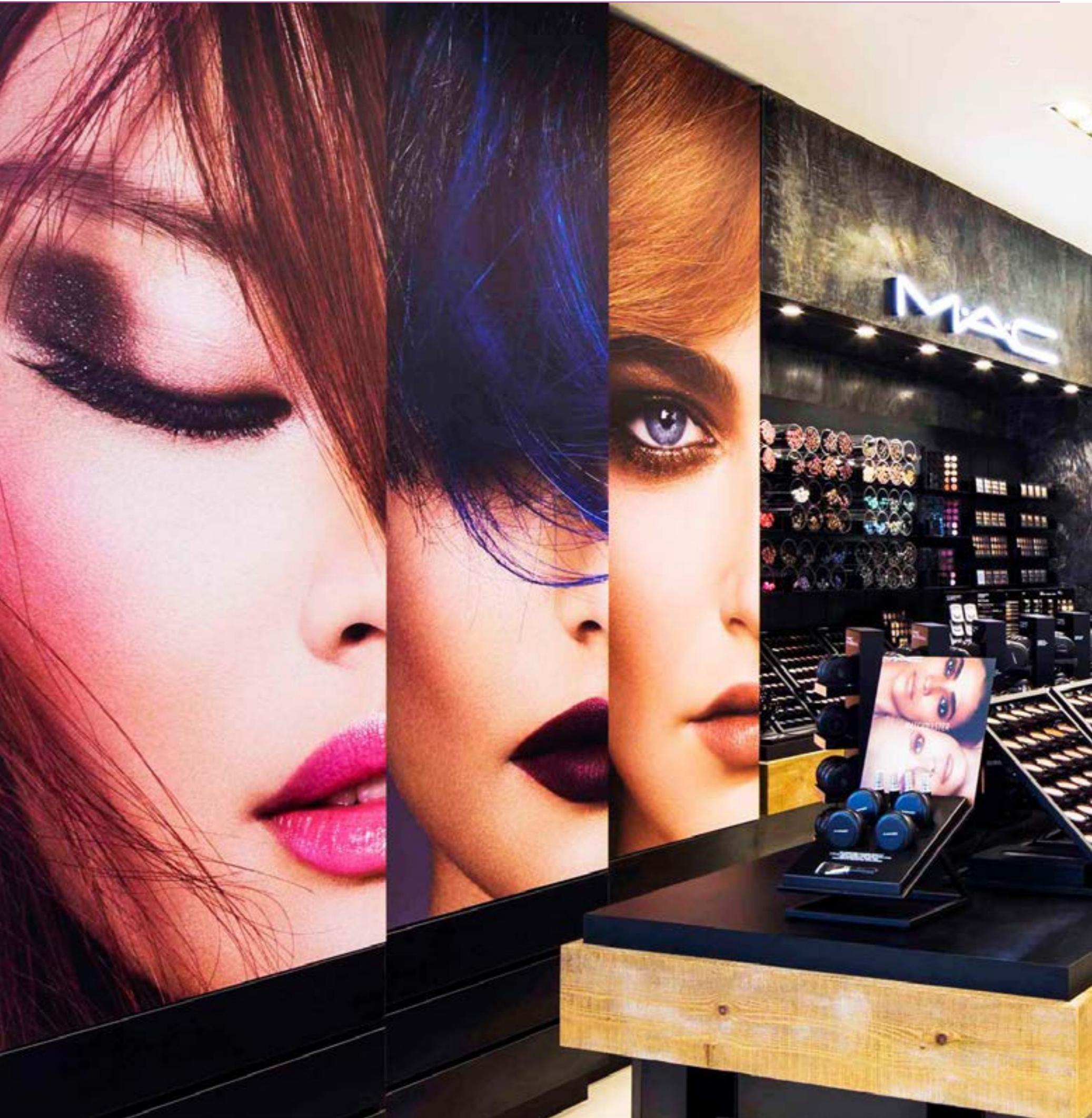


## Brand Identity

At this stage I decided to take photos of possible brands that my product design will be for. I decided to enter the stores and interview both customers and employees whether they would benefit from the device or not.



MAC was very obviously the store with the most makeup testers on display, and the most people testing them out. From my user research it was interesting to see that the two users who would 'test makeup directly onto their face' both selected their favourite brand as MAC. Also none of the users who said they would 'ask the sales assistant to clean the products first' chose MAC as their favourite brand. For this reason I am choosing MAC as my brand identity.



## Current Cleaning Devices

Whilst doing some primary research in the MAC store, there was displayed a social media hashtag #playsnapshare. Underneath explaining how to clean the products. Despite displaying the sign, the glass beaker did was empty and did not include any sanitiser.

I then acted in the position of a customer and told the sales assistant that the beaker was empty to which they had replied they had ran out of sanitiser.



## A Day In The Life The Customer

Here I have created a user journey to show the current day in the life of the customer and the current process they go through to eventually leave happy with the products they have bought.

Shop Assistant goes into drawer to retrieve new lipstick

Customer asks shop assistant for new product



At the till, shop assistant asks for customers email to retrieve their profile.  
Lipstick is added to customers recent purchases



Customer arrives at the store



The store is very crowded, especially other customers testing lipstick



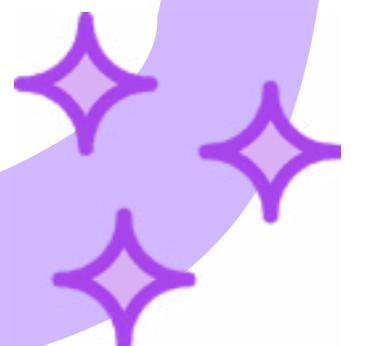
Customer is happy with colour and wants to purchase



Customer applies lipstick to face



Customer picks up a lipstick she wants to try



Customer dips lipstick into sanitiser and wipes with tissue



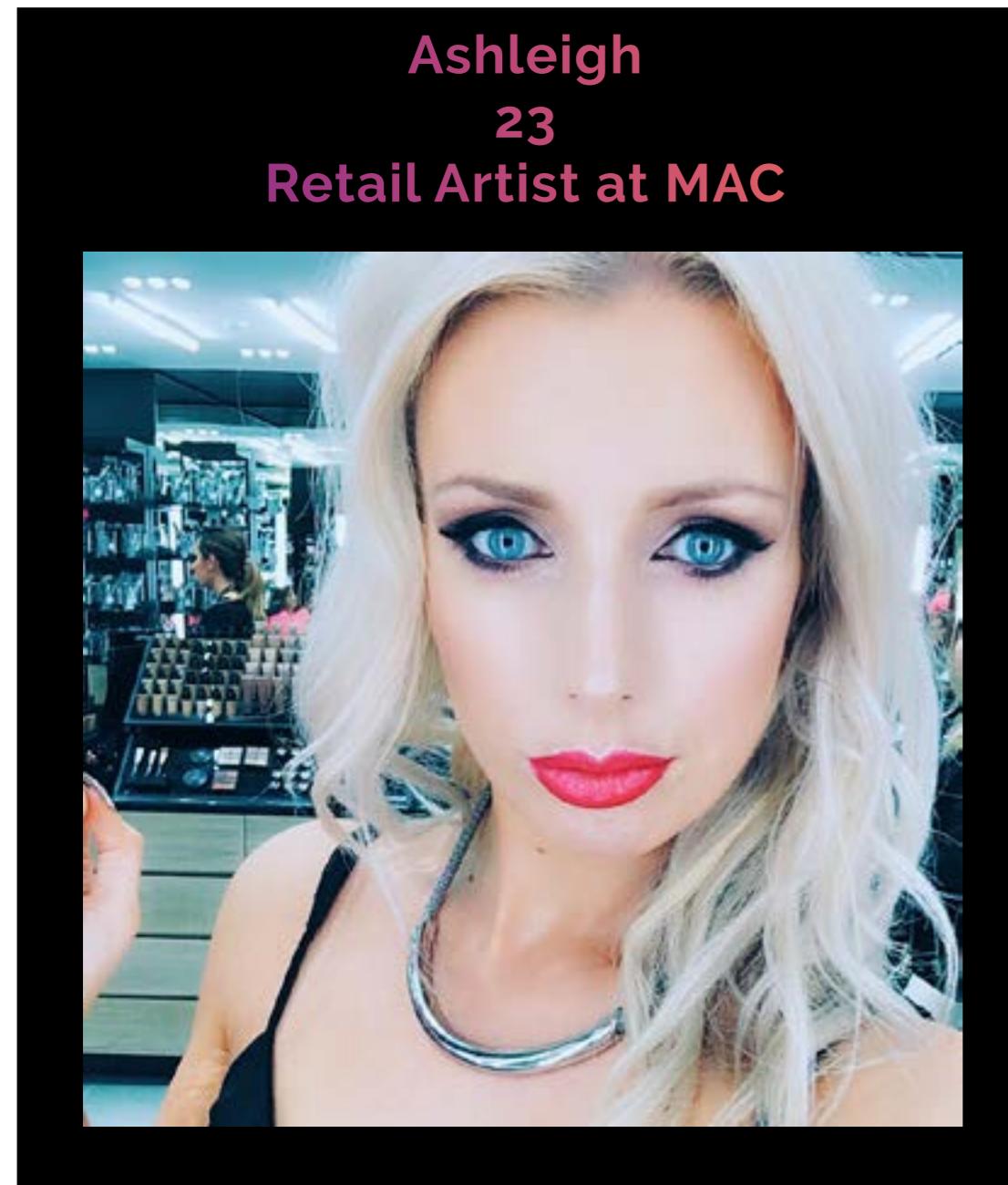
Customer pays for item

Customer leaves store

## Retailer Interview

At this stage I decided it was important to interview a makeup artist at MAC to get a general feel for the brand, and see whether they thought my concept for my product design would fit into the brand etc.

I started with an explanation of the product design and the design principles behind it. I made it clear that the focus was to make a more hygienic retail experience for the company. Then going on to ask the following questions:



### What is your initial thoughts for this product design?

"I think it's a great idea, especially if it will eventually get rid of testers in the future. Testers are always being stolen. Customers often come in and swap their almost empty containers for a tester, especially if it's sold out. We are always constantly restocking displays."

### How do you think your average customer age range will respond to the product if it was in store?

"We get our loyal customers, as well as 'kids' who will come in just cake their face in our testers. I think it would have a good impact on both customers. Considering in this store (Newcastle) we generally receive a younger customer age range."

### Do you think this product would work well with the brand, do you have any concerns or reasons why it might not be a good idea?

"I think it would work well for the brand, but personally I would worry if it was in this store, and there was only one, it might attract the wrong kind of customers, like kids that just want to 'play' with the technology, rather than actually wanting to buy the stuff. But I suppose we get them kids now trying the makeup on. Maybe if there were more than one device this could solve this problem, as we do have quite a large shop floor."

### Do you get informed on how to clean the tester products?

We have to clean the product every morning before the shop opens; so really it's 'cleaner' to test the products in the mornings. We have to dip the lipsticks in alcohol every and wipe with a clean tissue. For the powders we wipe over with antiseptic wipes, whereas brushes are cleaned between each customer using brush cleaner and a paper towel.

### Do you think this product design would encourage customers to in store?

Maybe in comparison to other concessions who don't have this kind of product. But I don't necessarily think people would travel to use this product say from home, as there are many apps that do this sort of thing.

## A Day In The Life Of Ashleigh

As part of the interview asked what her general day at work would look like.



Ashleigh arrives at work



All the products are cleaned in the morning when she arrives at work



She checks the morning emails and completes the morning paperwork



The first customer arrives in store for her makeover



Ashleigh then sanitises her hands



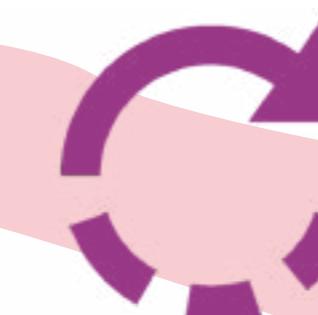
Ashleigh collects the clean makeup brushes and products that she needs



The customer pays and gives Ashleigh her details to add the products to her profile



Ashleigh completes the customers makeover



Replenishment of tester products is done at the end of every day



Ashleigh finishes her day



The products and brushes are cleaned for the next customer

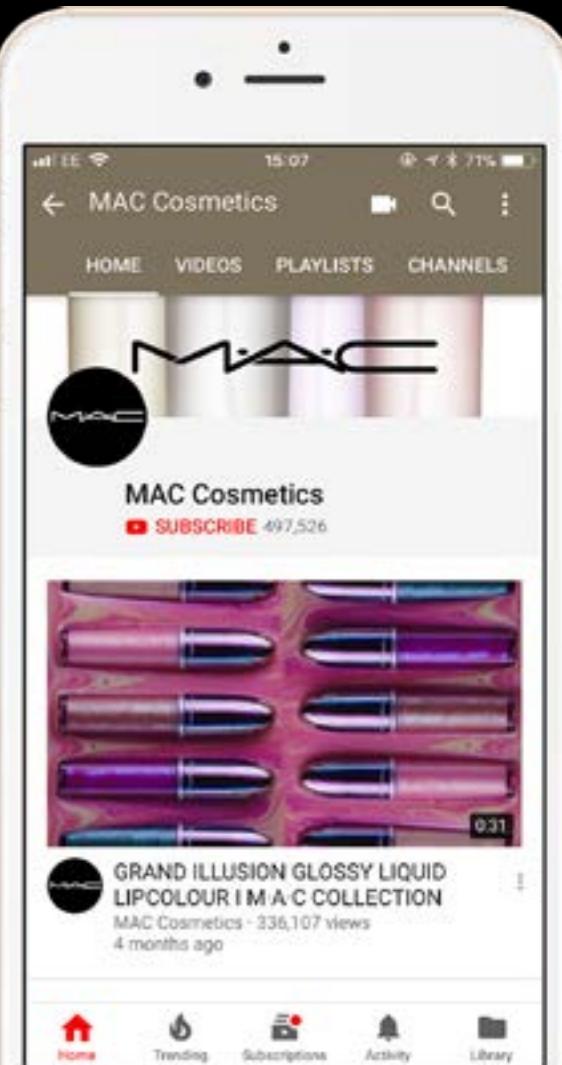
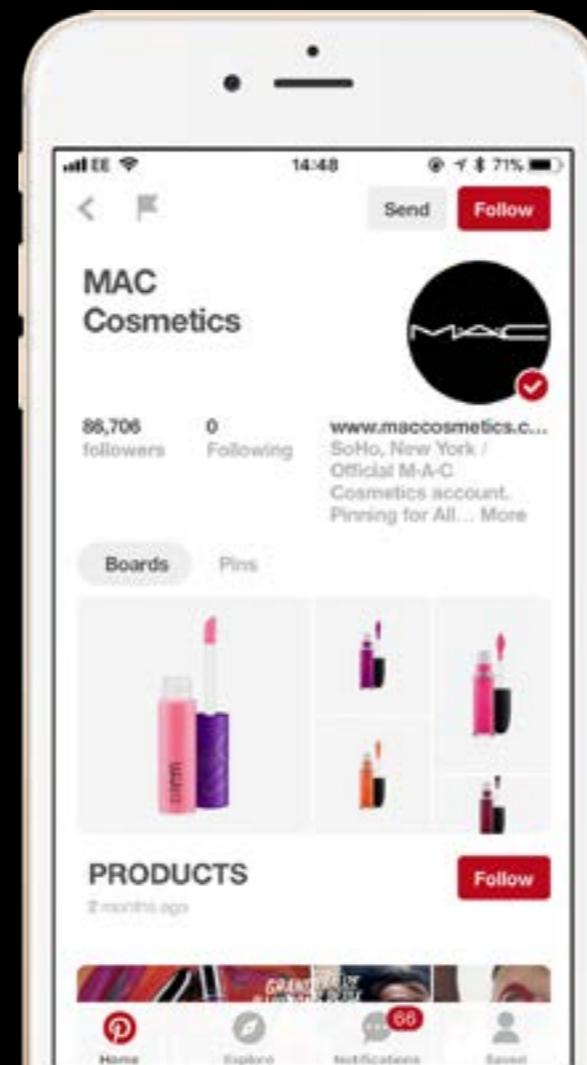
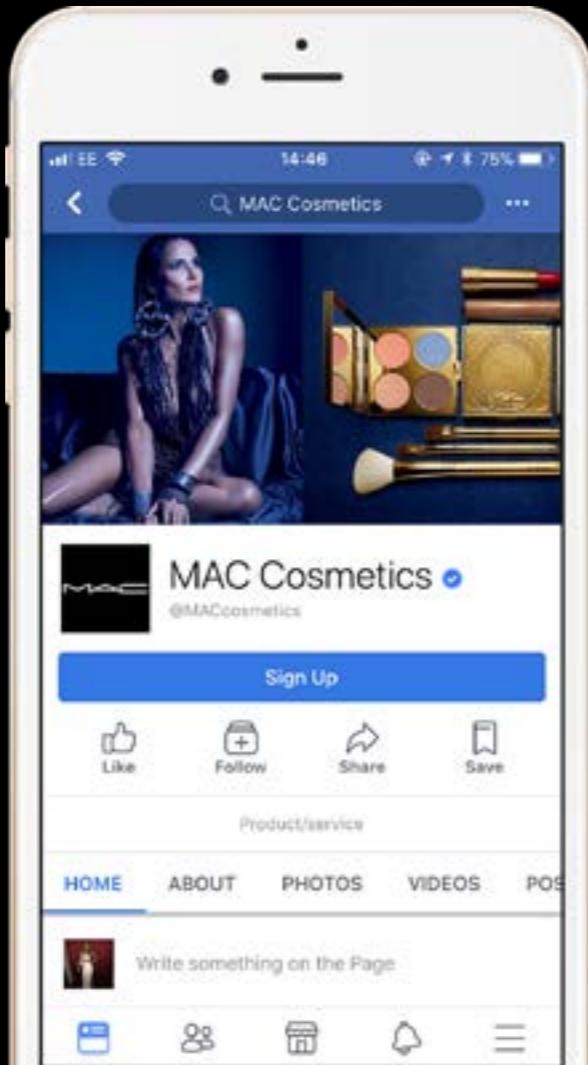
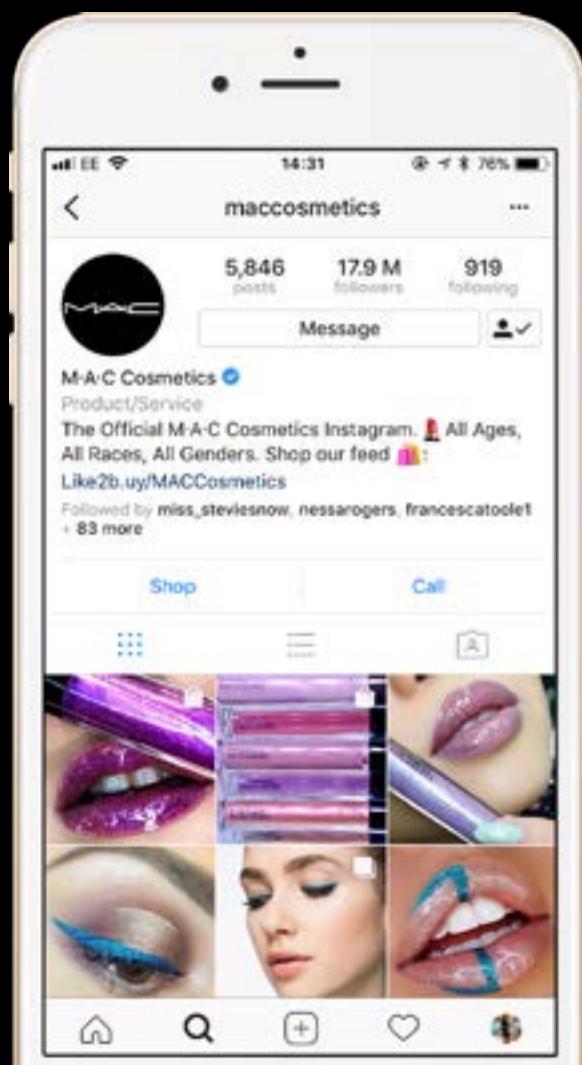
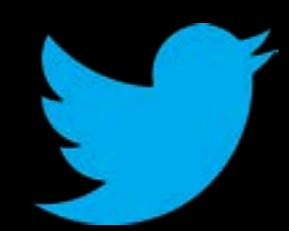


Ashleigh continues serving customers for the rest of the day

## MAC's Social Media Presence

MAC has a really strong social media presence, however there is not a lot to promote social media in store, except a small printed notice beside the lipstick sanitising beaker.

When typing this hashtag into Instagram it is clear it has not been promoted enough. My aim is to promote my product design in a successful way.



# 3 Concepts

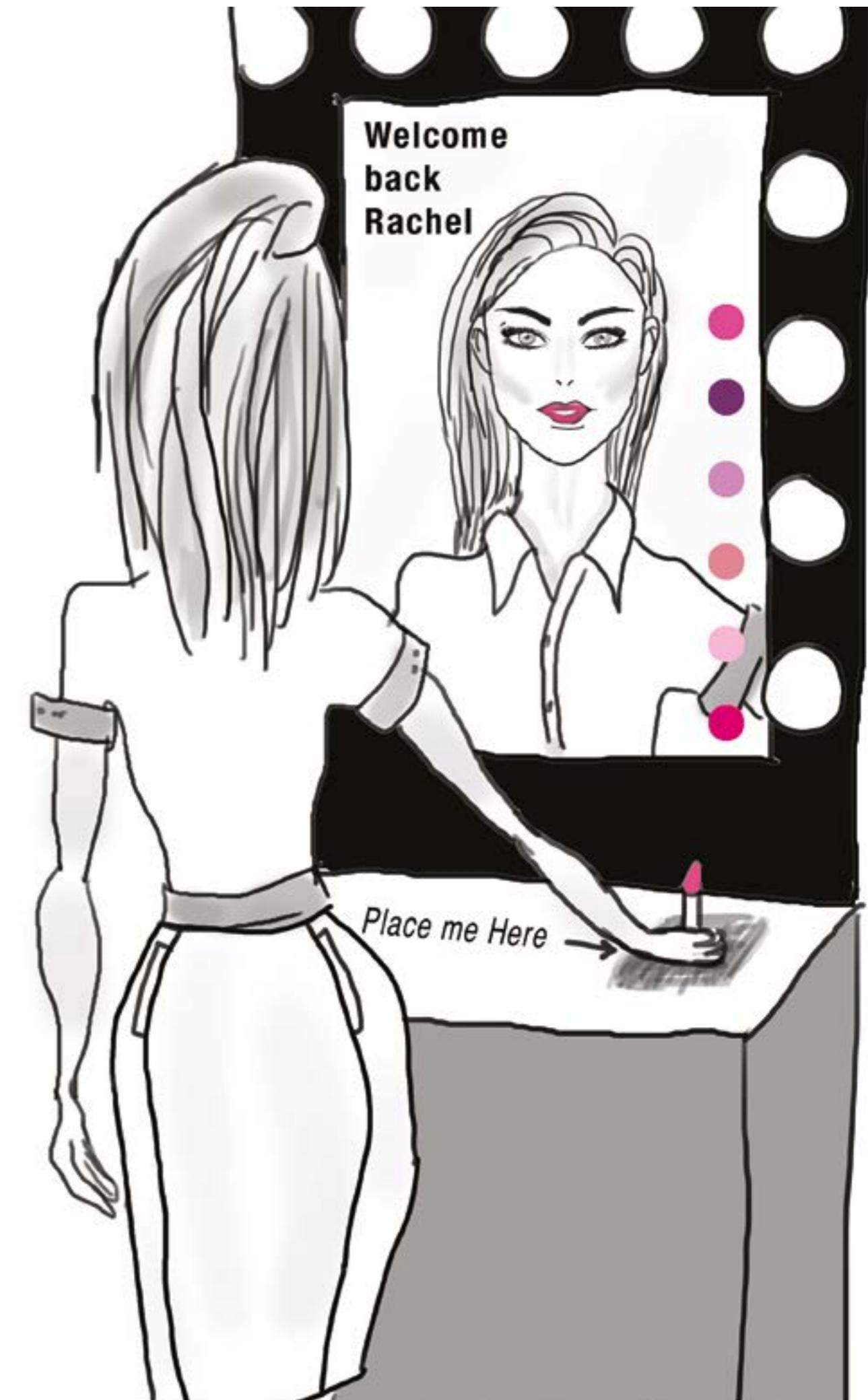


This concept stage involves looking at various ways to which I can approach this design. Also naming the brand, looking at the possible risks for the primary users. Going on to look at the necessary technology I will be using to create this prototype.

## Barcode Scanning

This system involves the user picking up a product that they have seen in store, and then going over to the product design and **placing it down onto the barcode reader**. This will then **display the relaying product onto the users face** through the interface. When you buy a product in a makeup store, the shop assistant will ask for your full name to which they will find your 'account'. The idea of the account is so the customer can see what they have previously bought, for example if they have forgotten the colour of the lipstick they bought the previous shop, the information is kept on their account.

Rather than having to give the shop assistant the users full name and the process be done manually, the **interface will recognise the users biometrics** when using the device and these are **linked to their account**. Therefore when the user sits in front of the mirror there is an immediate **personalised experience**.



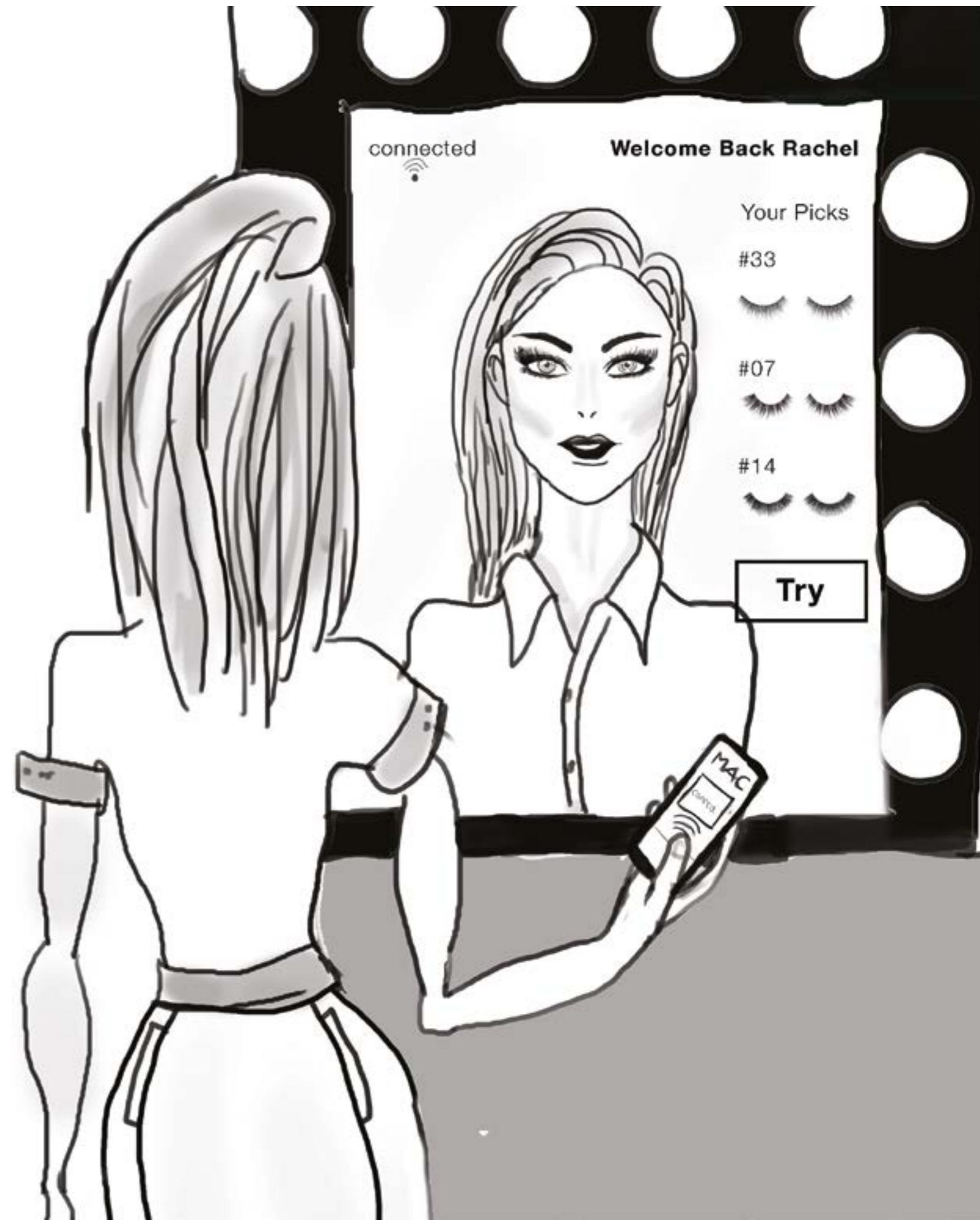
## Accompanying Application

This concept involves a **mobile application** that the user can input all of their **personal details** in. This includes favourite products and will include all of their **recent purchases**. The app will also include brand new products and **products they may be interested in** based on their favourites and recent purchases. The idea is the user can go into store with their smart phone and make the product design a personalised experience when they **connect the phone to the interface**.

The app allows the user to **choose the products at home** before coming in to store to quicken up the process once they are in store.

However this product design **may have the opposite effect** of what is hoped for and actually make the **process longer** in terms of connecting the phone to the interface.

It also seems silly going into store to this when there are already **current competing applications** that let the user try on the makeup from home.



## All In One

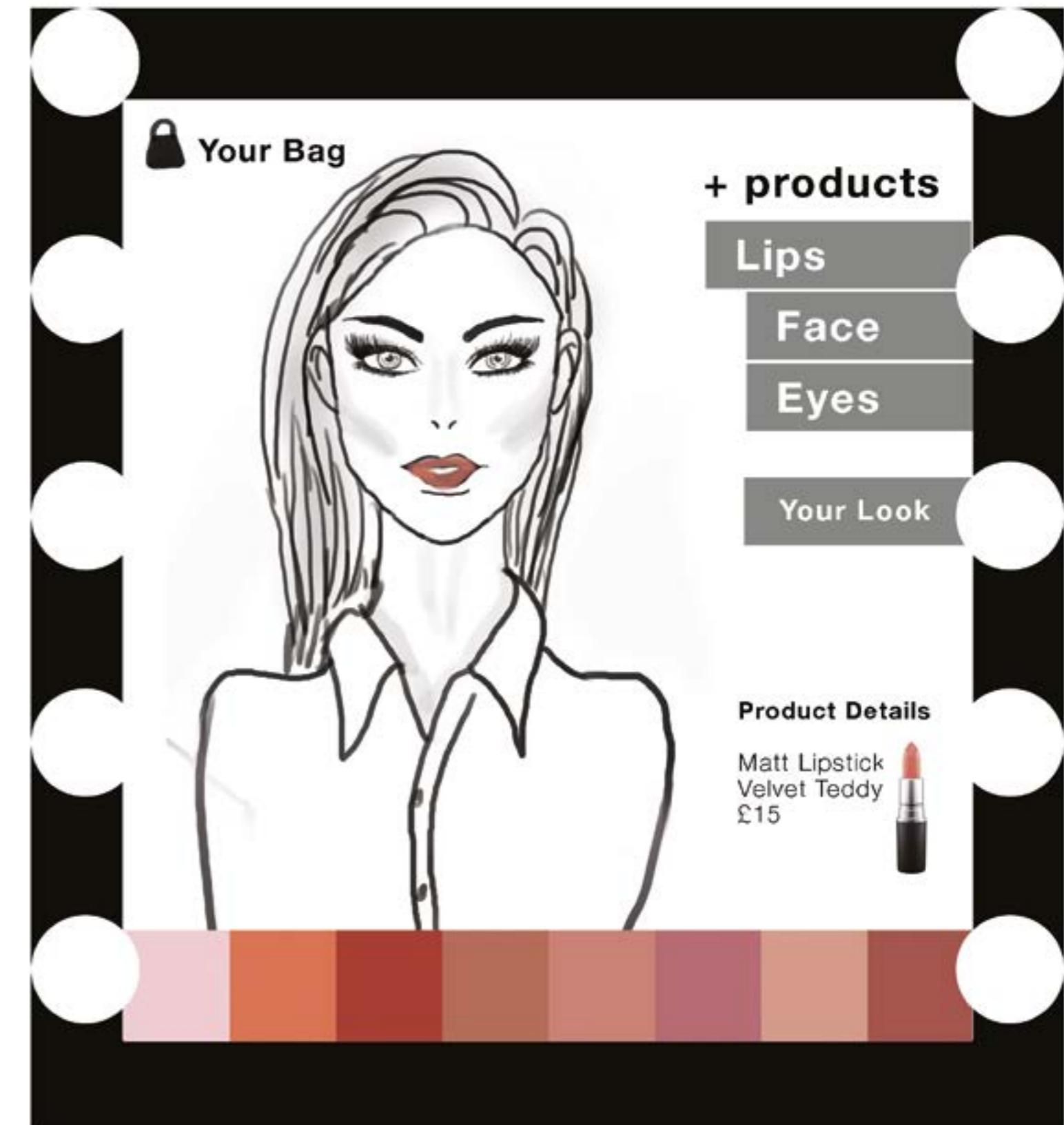
This concept includes all of the products to be displayed on the screen. This will illuminate the need for the customer to pick the products up; everything is already on the interface for the user to try. The interface will display different categories, and different styles the user can try out.

The idea is that the user can add the products to their 'bag' and then checkout through the interface. This information will then be relayed over to the cashier where the user will pay for their products.

The interface will let the customer know whether the product is in stock, other products that would go well with it etc.

However this product does not support the key aim which is to provide an experience that is not already available on the customers phone in the form of applications. This product design does not include any form of physical assistance for the user.

This product would **benefit the shop assistant** who is too busy to attend to every customers needs as it acts like a **virtual robot assistant**.



## Possible Risks

It is important to understand the risks of designing this product in store, from technology issues to problems it may cause the retailer.

1

Could the technology **replace the shop assistant**? There is a lot of talk, research and presumptions that in the future, robots will take over our jobs. In this case that may be a bit extreme, but it is something to consider to make sure the shop assistant still has a 'job' to do.

2

It could have the **opposite affect** which is hoped for in terms of quickening the testing process. For example people may take advantage and **test out every product possible** if they are displayed on the screen.

3

There is also the risk of the product design being **misused**, for example younger teenagers might be using it not for the intended reasons, such as simply **messing around with the functions**. Which is fine to an extend, however not when there are customers waiting to use it for the real purpose.

## Logo Design

I have started to look at the name of my product design, looking at a play on words of the MAC brand. I finally settled on the name MAC Modified. I have used MAC's typeface, **BEBASBOLD**.

### Primary Logo



## Development

MACIFY.

M·A·C·  
MODIFIED

M·A·C·MODIFIED

MODIFIED  
M·A·C

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MODIFIED

M·A·C·  
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### Secondary Logos



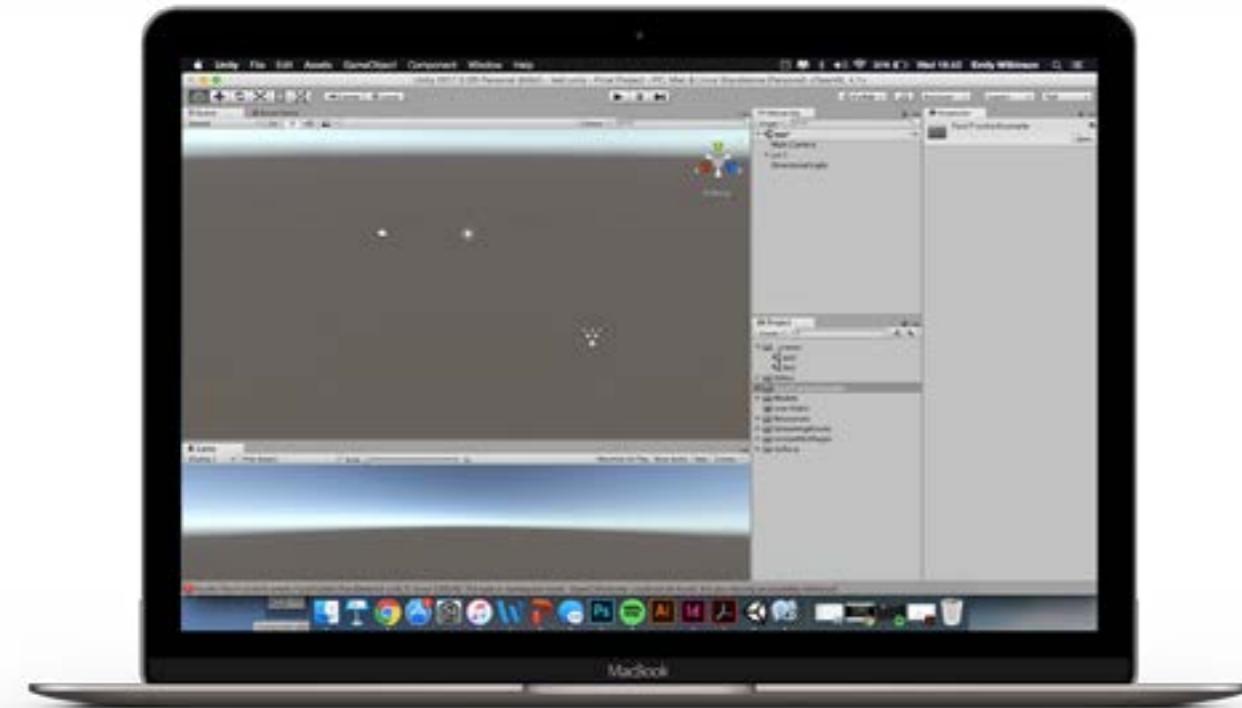


## Initial Technology Research

At this stage I have started to look at the technology that I will need to use to make this product. I originally decided I would use Unity to create the face tracking, however I want to design more of a service rather than just the tracking of the face, which is what other competitors are currently doing.

After testing out Unity, the main problem I faced was that it would be more difficult than originally hoped for and the best option was to use a plugin called Open CV. However using plugins on Unity will limit me to what I can make the interface to look like.

I realised that for my final product design I will not be able to use real life face tracking, despite this being a key part of my product specification. For this reason I will be faking what I want my product to look like in a different way.



### Using Unity Vuforia's AR Kit- £0



After experimenting in Unity I found that the Unity's built in AR kit firstly requires a lot of programming and applies mainly masks. With this being brand new technology there that people are still trying out there is not a lot of support currently online.

### Using Unity Vuforia and Open CV- £90



Open CV is closest to what I would want to achieve in terms of the most realistic face tracking. However using Unity pluggins limits me to what the interface will look like.

## The Hygiene Campaign

Because it is not possible to use live face tracking for my product design, I decided to look at another route instead of creating a virtual try on, looking at the bigger picture and creating an awareness campaign. This concept includes creating a campaign that would do a collaboration with MAC.

Because creating the interface how I would like it is not possible using unity, this concept looks at promoting 4 hygiene areas:

Washing makeup brushes

Washing hands before applying makeup

Not using out of date products

Not sharing brushes and applicators

The final product design would be a social media promoting stand in the MAC store. The available products will be placed onto the reader, which will then play a video of how to clean the product.

In this concept I will also design the promotional material including making branded 'The Hygiene Campaign' products.



## Key Design Arenas

### Change of Direction

After looking back at my previous concepts and thinking about MAC as a sales driven brand. The thought of having a campaign telling customers how unclean their tester products are did not seem to fit with the brand. Particularly because The Hygiene Campaign concept **does not provide another alternative for makeup testers.**

For this reason I decided against 'The Hygiene Campaign' and took a step back to look at my key user needs.

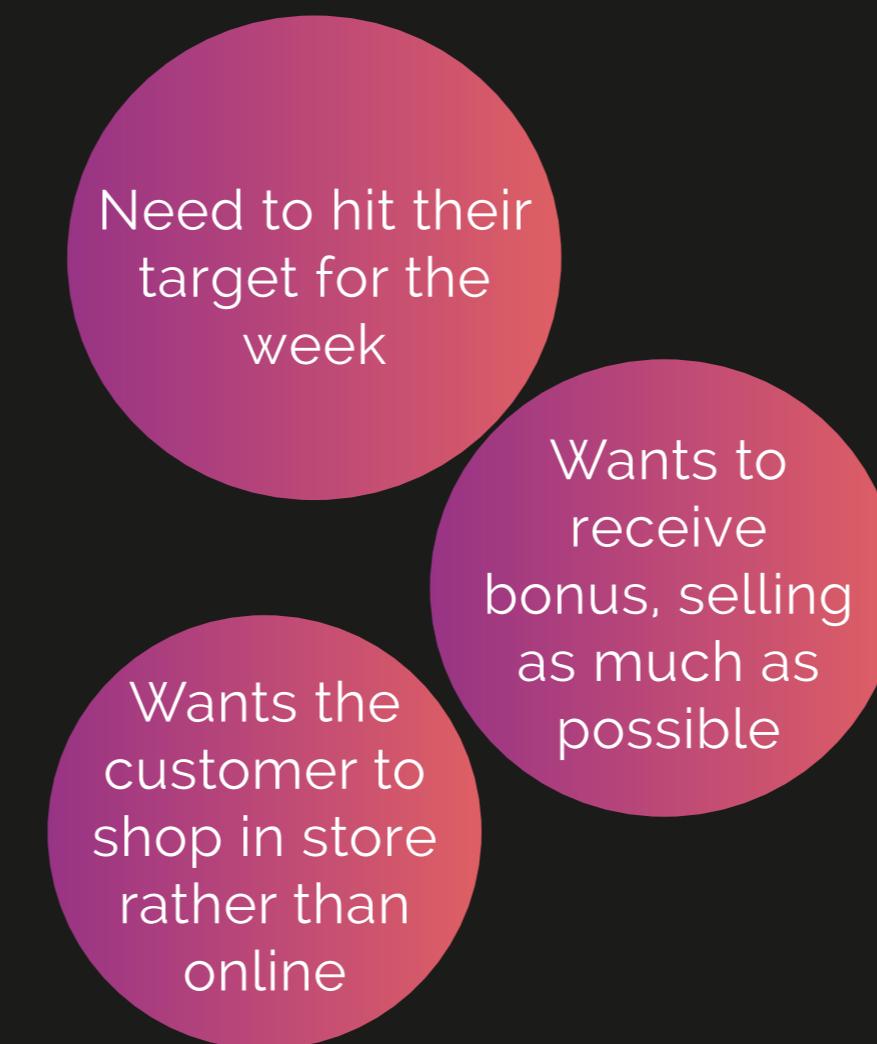
Looking back on the brief I set myself and my other retail trends research. It is clear that the competition between retail stores and online stores is very high. For this reason I need to design a service that customers can **only receive in store**, this is primarily to do with personal customer service.

### Test

**The user needs to be able to test the product before they buy**

### Encourage

**The sales assistant wants to encourage customers to come into store**



## Mac Modified Try On Stand

### Try on stand and Assistant iPad

This concept looks at bringing into account the **sales assistant**. One of the risks that I found was that **technology replacing the sales assistant would be a very big issue**. Also the main reason customers come into store is to receive the **expertise off sales assistance along with customer service**.

This concept focuses on two services, the **MAC Modified virtual try on stand**, and the **assistant iPad app**.

The virtual try on stand is similar to concept 1 with some **refined features**.

The assistant iPad application will be used by the store assistant who will **apply virtual makeup onto the customer**. The idea is for the sales assistant to **apply a filter to the customers face** using face tracking to test the product before they buy it. This will be shown through a **portable iPad** in the hands of the sales assistant.

The MAC Modified Try on stand is intended to use state of the art **live face tracking** to apply makeup onto the users face. The user will **place down their product onto the scanner** and this will display on their face.

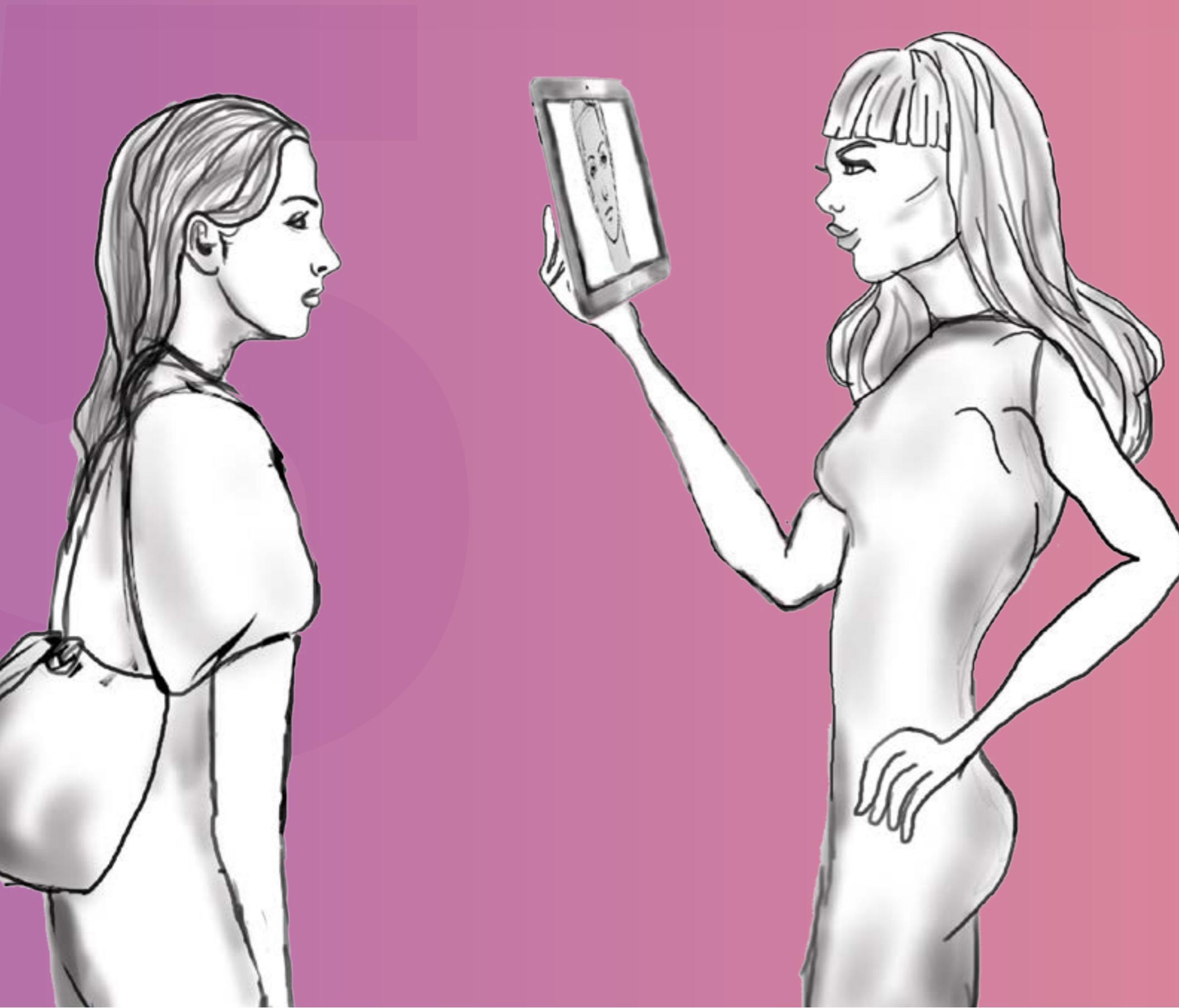
The user also has the option to **add products to their look** by clicking the **add icon on the touch screen**, and placing their next product down.

After they are finished testing their products they can **take a photo of their look**.

After taking the photo the user can click the cross button to **exit and discard the photo** or have the option to send the photo to the customers email.



## Mac Modified iPad Assistant



The MAC Modified assistant will use an iPad to apply virtual makeup onto the customer.

This will be used particularly before customers receive a makeover they could see what colours they suit before they receive the makeover.

The sales assistant will be able to suggest certain looks as well as colours.

The application will also include skin colour matching technology so that the customer receives the perfect colour makeup for their skin type.

The idea for this service came from my initial research in which I want to design a service that the customer can not get from home, which in this case is the shop assistant's expertise.

## How I Would Build It

At this stage I began looking at ways I can mimic my product design to make my product as close to what it is designed to be.

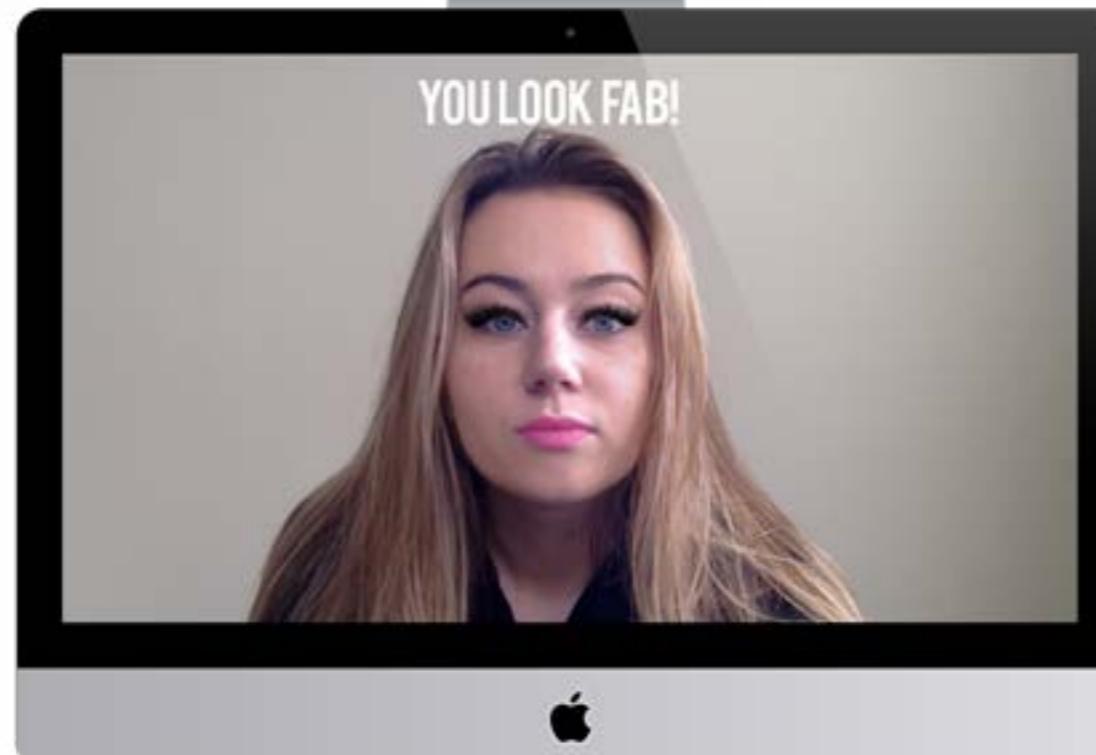
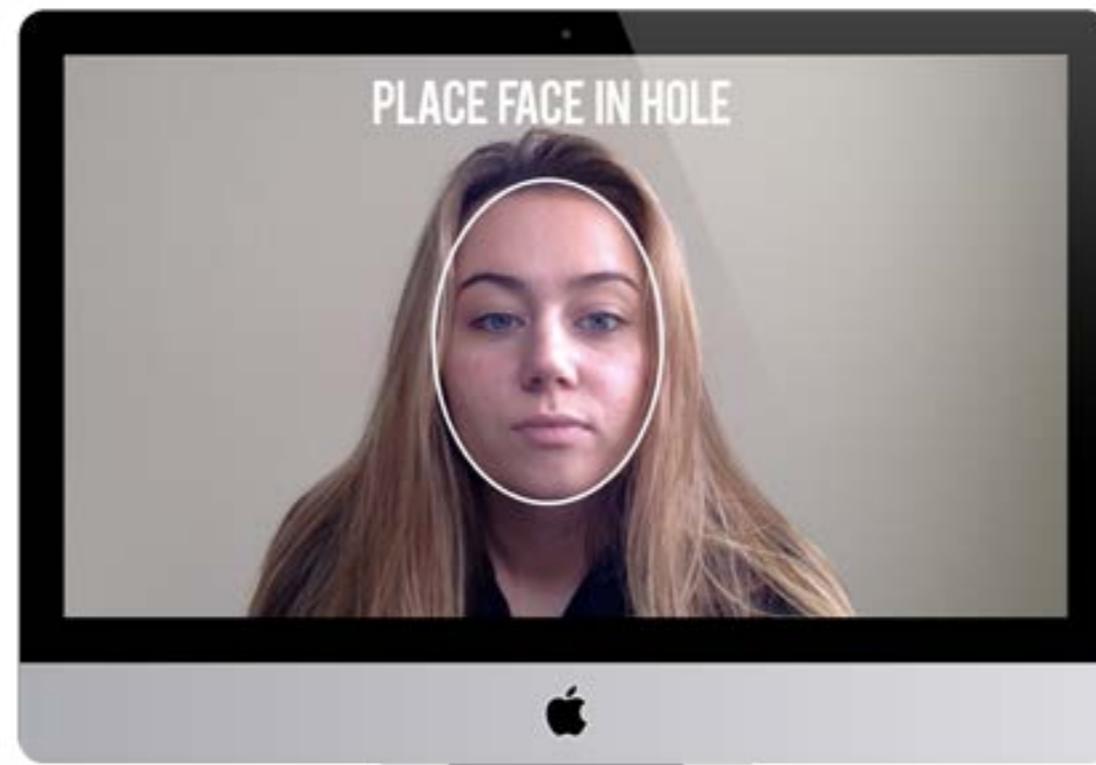
### Live Camera

This will use the iMac's webcam.



### After Effects

To create the overlay videos



Using iMac as interface and using iMac webcam for live camera

After Effects 'live' video will play over the webcam

'Face in hole' feature will encourage the user to place their face in the position the makeup will be displayed

### Arduino

An RFID sticker will be on the bottom of the cosmetic product. The user will place the cosmetic onto the RFID reader, which will trigger the overlay video.



### Processing

To code the overlay videos



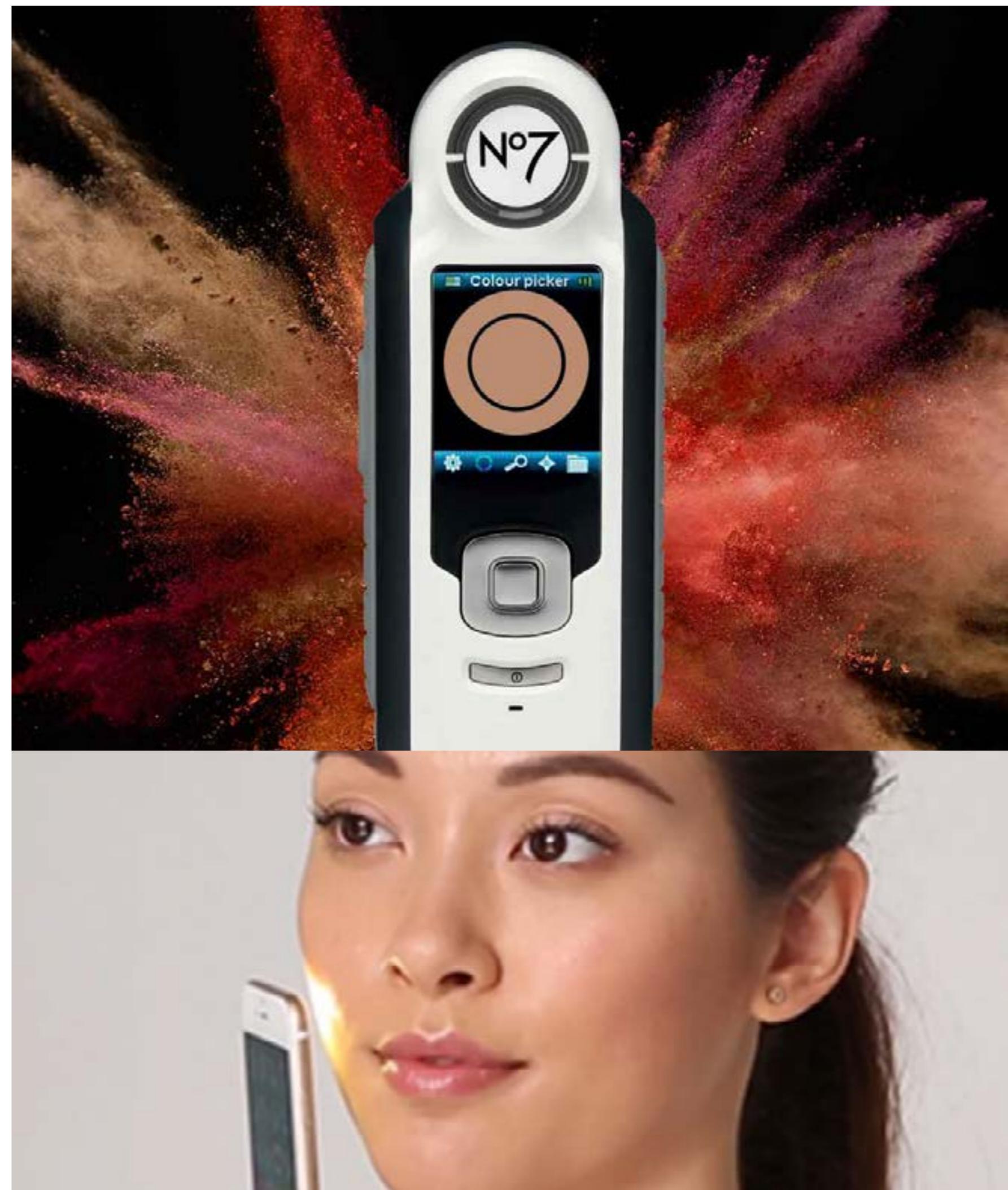
## Colour Matching Technology

Most makeup brands including Elizabeth Arden, No 7 and Estee Lauder use a small device in which the makeup artist would hold up to the customers skin and a colour match will be displayed on the small interface.

However more recently brands have been using photo-scanning technology online or in app form in which the user will upload a photo of them and a colour match will be presented from the photo. However this form is not always effective as factors such as lighting can affect the results.

For my MAC Modified Assistant application the idea is to merge both the application and the colour matching device together. The colour match will be done live on the application. All MAC stores have bright lighting for makeovers and testing, this will make the colour matching more accurate.

Once a colour match has been displayed a look will appear on the users face, with products that will suit the user.





# 4 User Feedback

Before refining my service features I decided to go into the MAC store in Newcastle and conduct some short interviewing with two key user groups, customers and MAC Artists.

## Interviewing MAC Customers

### What I want to find out

If the customer generally shops online or in store for cosmetics

Their motivations for visiting the MAC store

If they know what virtual makeup is or even tested it before and their experience

Possible improvements or pains in the MAC store

What their shopping habits are

Their opinion towards bringing technology into store.

### Why do I need to know this

Need to find out if they prefer to shop online what the reasons for this are, maybe these reasons are something that can be implemented into store

Need to find out why they chose this brand over other competitors as well as why they chose to shop in store over other platforms.

Need to know their experience with other competitors

To find out possible things that could be improved in the MAC store, could be customer service or product related

To find out their general journey whilst in the MAC store

To see whether they would use the service or find it beneficial

### Formed Questions

**When shopping for cosmetics do you generally shop online or in store?**

**Why do you choose to shop in MAC over other competitors?**

**Have you ever tried or tested virtual makeup or face filters before?**

**Is there anything you find frustrating visiting the MAC store?**

**How do you feel towards bringing this technology into store, would you use the service?**

# Customer Interview 1

## Female, 26, Sales Assistant

**When shopping for cosmetics do you generally shop online or in store?**

I mainly shop in store just because I work in town and it's easy to get to. I'll sometimes shop online if it's something I know definitely suits me that I have had before but not very often.

**Why do you choose to shop in MAC over other competitors?**

Because I love the products, but also my sister works here so I get her discount.

**Have you ever tried or tested virtual makeup or face filters before?**

I use Snapchat for face filters but I have never seen or testing virtual reality makeup that is used as a selling tool.

**Is there anything you find frustrating visiting the MAC store?**

Not that I can think of, I don't often come into store anymore because my sister works here she just gets the products for me that I know I want.

**How do you feel towards bringing this technology into store, would you use the service?**

I think it's a good idea to test out new products if it's realistic enough. I think the idea for the MAC artist to apply filters to try different looks before a makeover is a good idea, my sister will tell me of customers who come into store and ask to look like 'Beyonce at the Grammys' and then not like it afterwards. So being able to try looks first is a good idea.

# Customer Interview 2

## Female, 40, Office Manager

**When shopping for cosmetics do you generally shop online or in store?**

Probably mainly shop online just because I generally know what I want to buy in terms of everyday makeup. I am not in town often enough to try new products or feel the need to come into store to purchase products that I know I want.

**Why do you choose to shop in MAC over other competitors?**

I've shopped here since I was 16 and I know I like the products so I just stick to the same products I know are good for my skin and suit me.

**Have you ever tried or tested virtual makeup or face filters before?**

No, my daughter has Snapchat which where she is applying filters to her face all the time but I've never used it.

**Is there anything you find frustrating visiting the MAC store?**

Yes I hate how busy it gets of kids trying makeup on all of the lipsticks, this is the main reason I don't really come into store if I'm looking for something I normally ask one of the girls who works here for assistance.

**How do you feel towards bringing this technology into store, would you use the service?**

Its probably for a younger age range than me I don't think I would use it unless the assistant was showing me how to use it or applying the filters for me.

## Customer Interview 3

### Female, 22, Psychology Student

When shopping for cosmetics do you generally shop online or in store?

I always come into store but most of the time I probably purchase online just because they often don't have the lipstick colour in stock in store because it's a bestseller.

Why do you choose to shop in MAC over other competitors?

I love the products and I love the way that they do their makeovers. I've had a few makeovers here and love them every time.

Have you ever tried or tested virtual makeup or face filters before?

I use Snapchat for face filters and photo editing apps for my photos but I've never put virtual makeup onto my face for a photo, I'd rather it be real.

Is there anything you find frustrating visiting the MAC store?

Not really, the only thing in this store is it is very small and there's not enough room for everyone shopping and trying on products.

How do you feel towards bringing this technology into store, would you use the service?

Yeah I would use the look filters especially to see what makeover I want before I ask for it. The only time I buy new products is if I've had a makeover with them and like them I would never buy a product without having the assistant apply it to my face first to see if I like it.

## Customer Interview 4

### Female, 25, Teacher

When shopping for cosmetics do you generally shop online or in store?

I do a bit of both, I probably shop in store more so I know that I definitely like the products before buying, but I am a bit of a makeup hoarder and collector I love buying all of the limited edition products to test out, which I often get online.

Why do you choose to shop in MAC over other competitors?

I like the products; I don't only shop in MAC however I'm always trying new brands and products.

Have you ever tried or tested virtual makeup or face filters before?

Well I use Snapchat which has live filters and makeup but its more for entertainment purposes really than anything else.

Is there anything you find frustrating visiting the MAC store?

It gets quite busy especially if a new product has just been released. The staff are also not as helpful as competitors such as Charlotte Tilbury who I've always received excellent customer service off.

How do you feel towards bringing this technology into store, would you use the service?

Yeah I would use it I love to try new technology and test new products I think it's a good idea. Maybe not for this store though as it gets busy enough as it is I don't think there would be room to fit a stand like this.

## Interviewing MAC Staff

### What I want to find out

What is MAC like as a brand

Whether they think the service would fit in with the brand

Who is their average customer

How they feel about the MAC Modified stand in store

How they would feel about using the MAC Modified assistant application on their customers

### Why do I need to know this

To find out things that could possibly influence my design and branding for the service.

This is a chance for the staff to give their input of what might work in their environment.

Always designing to suit the majority of users, I need to find out who the average customer is.

This is to see whether they think it would be used for the right reasons

Since the MAC staff will be the users manning the device, it is important to get their feedback on it.

### Formed Questions

If you were to describe MAC as a brand in 3 words what would they be?

Do you think this service would fit in with the MAC brand?

If you had to describe your 'average' customer how would you describe them?

Do you think the MAC Modified stand would benefit customers?

How would you feel about using the MAC modified assisted app in store?

# MAC Store Newcastle Interview

## Assistant Manager

If you were to describe MAC as a brand in 3 words what would they be?

Diverse, a lot of guys come to mac to get makeovers and buy products. Unique, Mac has its own style that's what makes us stand out against other brands. Probably edgy, in some stores the girls have to wear really extra edgy makeup for work to stand out against other competitors, in this store we just tone it down a little bit.

Do you think this service would fit in with the MAC brand?

I think it would work, a lot of our customers are of a younger age all glued to their phones anyway, and bringing this technology into store will definitely have people testing it out.

If you had to describe your 'average' customer how would you describe them?

I would say women in their 20s, that would be our average customer in this store.

Do you think the MAC Modified stand would benefit customers?

I think customers would definitely use it to try our new products, it might be good to have an advertising stand for new products with the stand that would help us drive sales of new products.

How would you feel about using the MAC modified assisted app in store?

It is a good idea as not many people know what they want when they come for a makeover. Everyone has their own style and what we think looks good on them, they might not agree. So showing what we think would look good first virtually would probably save time for us wiping the fifth product they have tried off their face.

# MAC Store Newcastle Interview

## Retail Artist

If you were to describe MAC as a brand in 3 words what would they be?

Colourful, we are always told to promote the brand by wearing the most colourful makeup and eyeshadow. Quirky, I love all of the packaging and web ads for new MAC products, they love to be quirky. And fun, MAC's never afraid to try something new and stand out against other brands.

Do you think this service would fit in with the MAC brand?

Yeah, just make it cool and edgy and our customers will love it.

If you had to describe your 'average' customer how would you describe them?

Probably teens to mid thirties, young ladies who love dramatic makeup. We don't often get customers wanting a 'natural' look makeover.

Do you think the MAC Modified stand would benefit customers?

I think people would definitely use it, maybe not always with the intention of buying but if it's realistic enough and makes the customer look good, their more likely to buy the product.

How would you feel about using the MAC modified assisted app in store?

It's a good idea to have something for the artists to handle and suggest new looks, after all it is our job, it would get boring if we were watching our customers try on makeup all day on this stand.

## Key interview findings

The general age range who shop at MAC are ages 18-35. This is an opportunity to use more advanced technology

How busy the store can get is customers biggest pain.

Live face tracking and virtual makeup is not a very well known selling tool.

MAC Modified must be quirky fun and colourful to suit MAC's branding

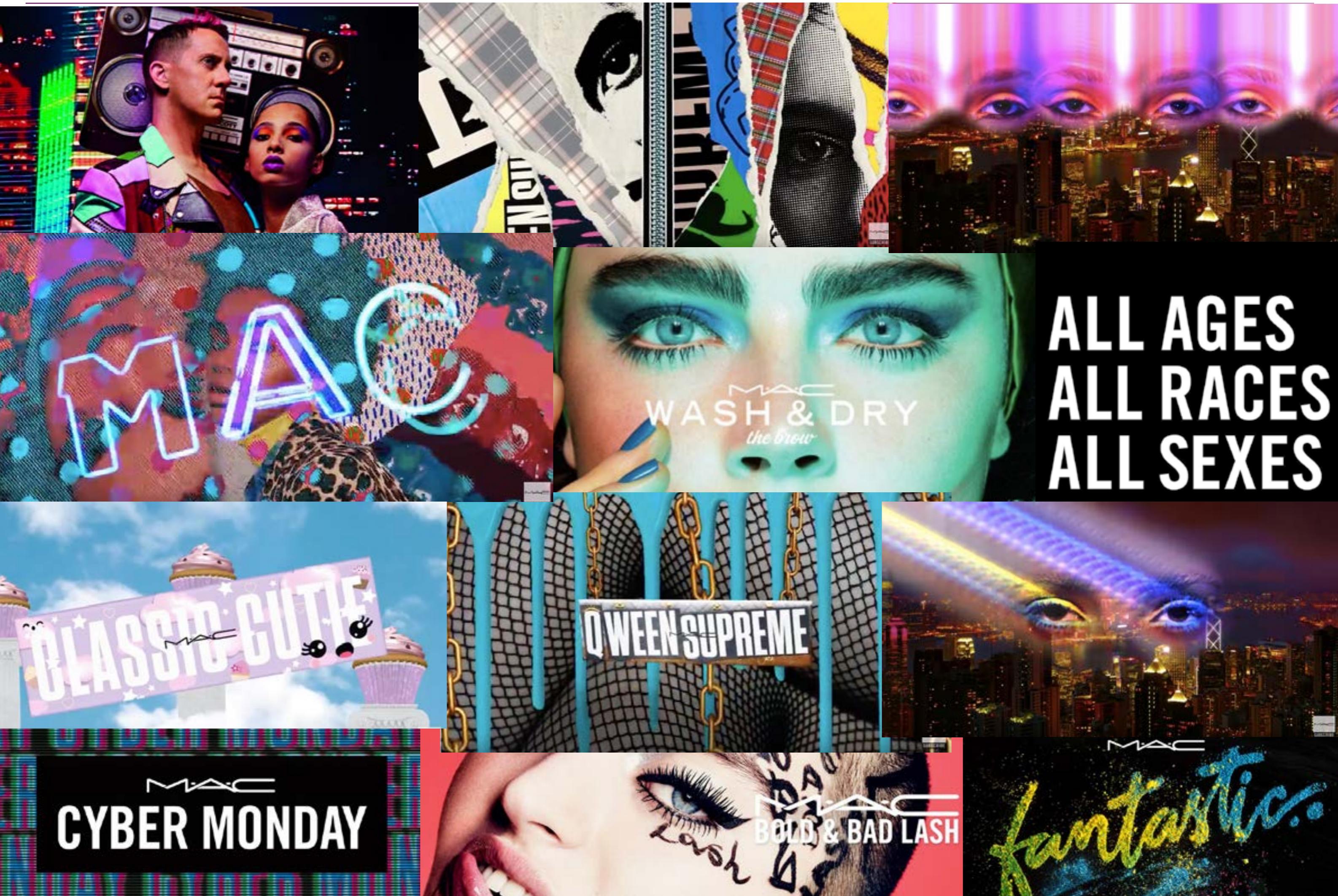
Having celebrity 'looks' that the customers can try on would benefit makeup artists as well as the customers

All customers interviewed said they would use the service. Older customers would prefer it to be manned by an artist.

Some customers would say that other brands have better customer service than MAC.

# 5 Specification

This specification section will describe the features of my project design. How it will work in store in the form of service blueprints and a storyboard. Then looking at a design arena, which highlights my products purpose and benefits.



# MAC MODIFIED

THE IN STORE SERVICE THAT  
ALLOWS CUSTOMERS TO TRY OUT  
DIFFERENT LOOKS USING STATE  
OF THE ART TECHNOLOGY AND  
MAC ARTIST EXPERTISE.



## Renaming My Service

After refining what my final concept idea is, I need to understand how the service will work as a business model to work with MAC Cosmetics. Previously I described this service as MAC Modified, which consists of the MAC Modified stand and the MAC Modified Assistant iPad. I decided to rename each of these services to define what they each do. I have renamed the MAC Modified Stand as **Mac Modified Personal**, the reason being that I still wanted to keep the title short and snappy. 'Personal' comes from the idea of the service being a one on one personal experience with the product design, without the assistance of the MAC Staff. The MAC Modified Assistant iPad application I have renamed to **MAC Modified Assistance**. Again keeping the title short and to the point describing what the application does which is primarily to allow makeup looks to be modified by the MAC makeup artist.

## How will the MAC Modified Service work?

With the MAC Modified service consisting of two concepts, which include the personal try on stand and the assistance iPad app, it is important to define how they will work in store.

Visualising my service in store is important, which is why it is important to specify that the MAC Modified personal and assistance **can work separately as well as together**. For example in smaller MAC stores there might not be room for a MAC Modified Personal Stand however in larger stores, there could be two placed in store.

This eliminates the worry of larger busier stores having lots of customers wanting to use one stand. **Larger stores could also have multiple iPad's if possible, or even one iPad per member of staff.**

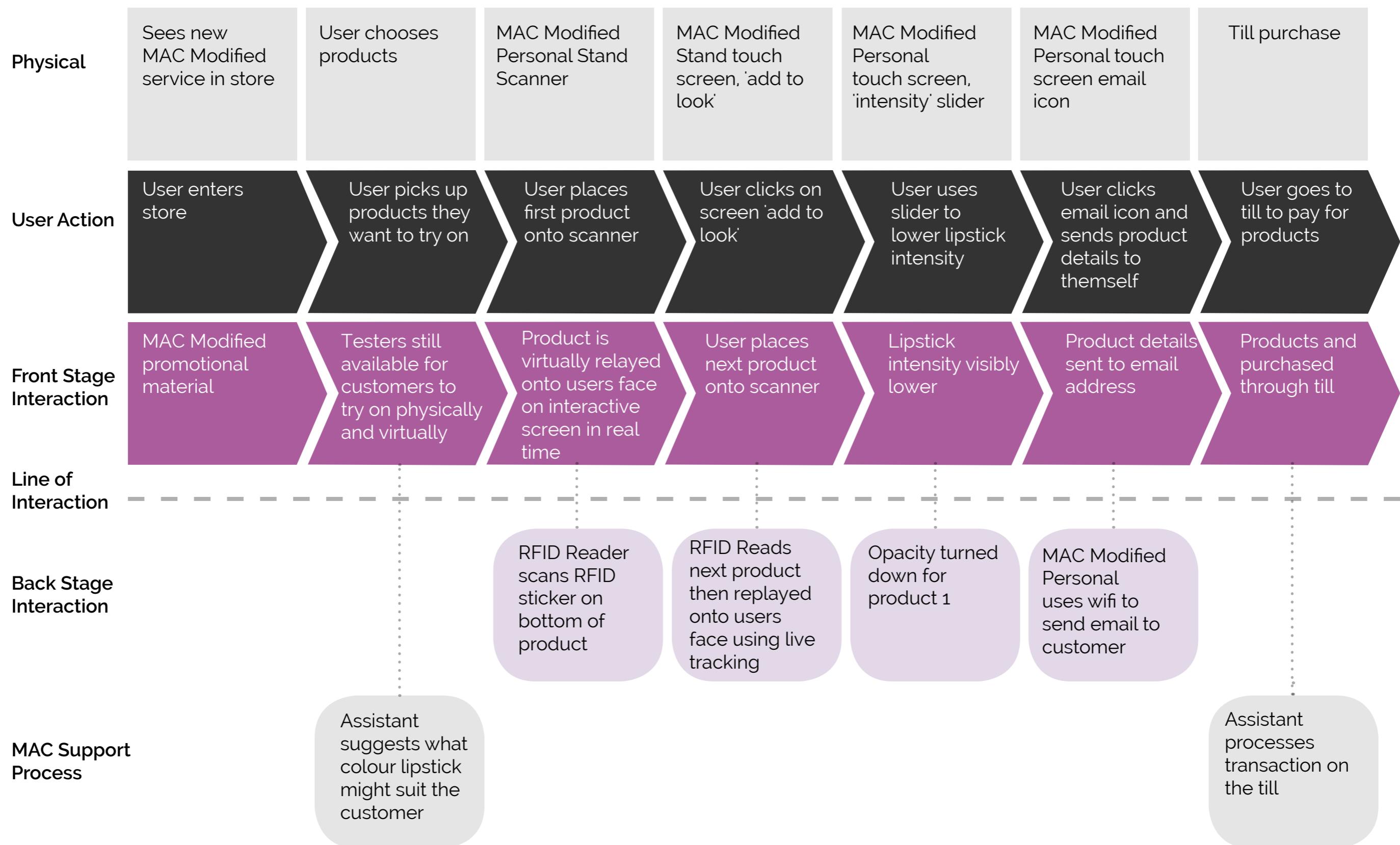
## **MAC Modified Personal Refined Features**

- Customer picks up product they want to try on and places it down onto the scanner.
- Live face tracking displays product onto face
- Slider option to show the intensity of the makeup product on face
- 'Add to your look' option to add products to their face
- Touch screen option to take a photo of their look.
- Their photo and product details can be discarded or sent to their email address.
- 'Works well with' button, this encourages the customer to buy the products that go with their chosen product
- The advantage of having the stand in store is so the customers can look at the colour of the real tester products, as screens can sometimes be deceiving.

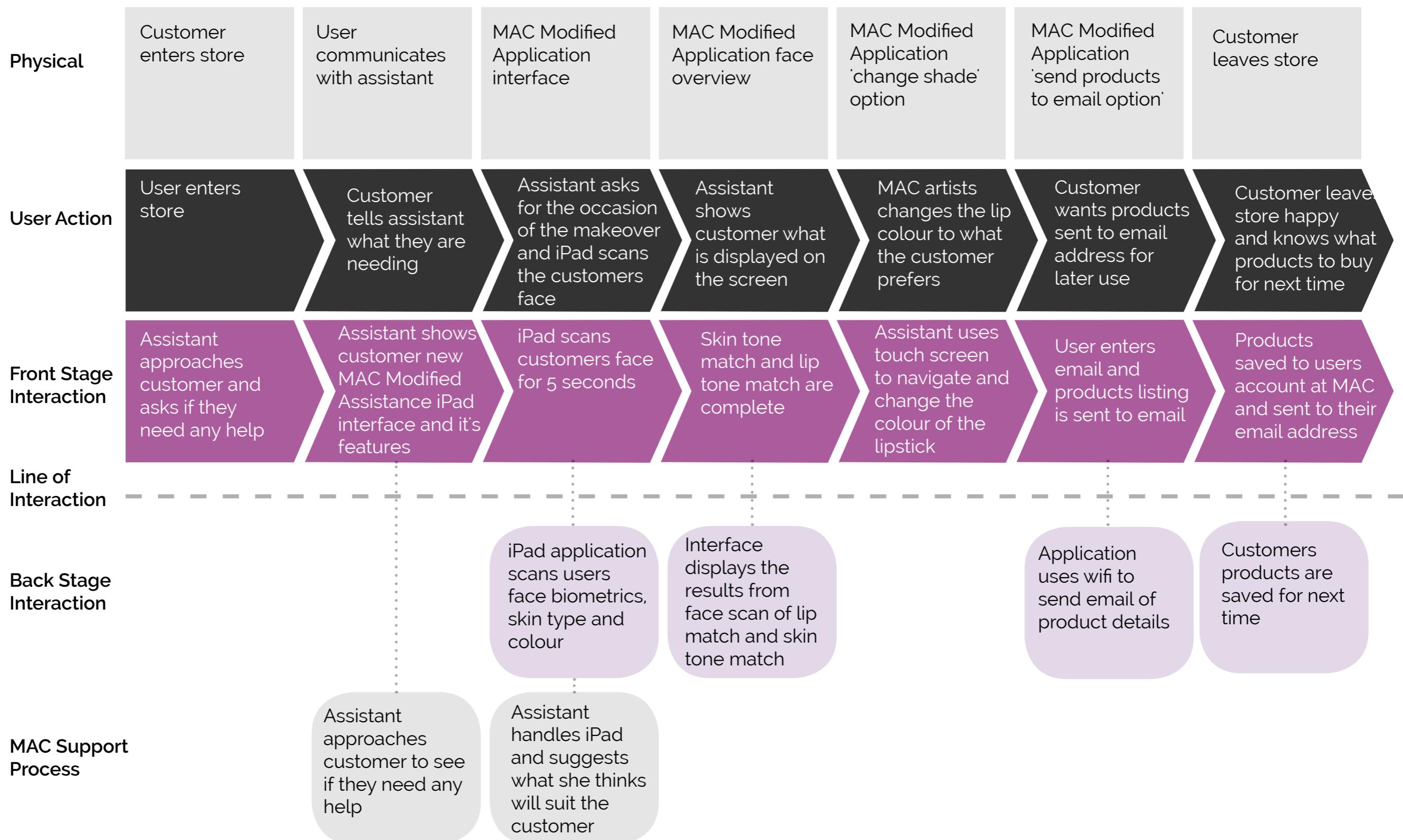
## **MAC Modified Assistance Refined Features**

- As the user picks up the application, it will ask for the customer's occasion for the makeover, this is so the virtual makeup is suited perfectly for each possible event. For example 'everyday' makeup will not be as heavy and dramatic as 'night out' makeup
- Assistant holds iPad up for face scanner and colour matching technology to display the perfect 'look' for that specific customer for a personalised experience.
- Eyes, lips and face can be customised by the assistant
- Shop assistant can save looks to the customers account
- Option to send photos and product details to the users email

## MAC Modified Personal Service Blueprint



## MAC Modified Assistance Service Blueprint

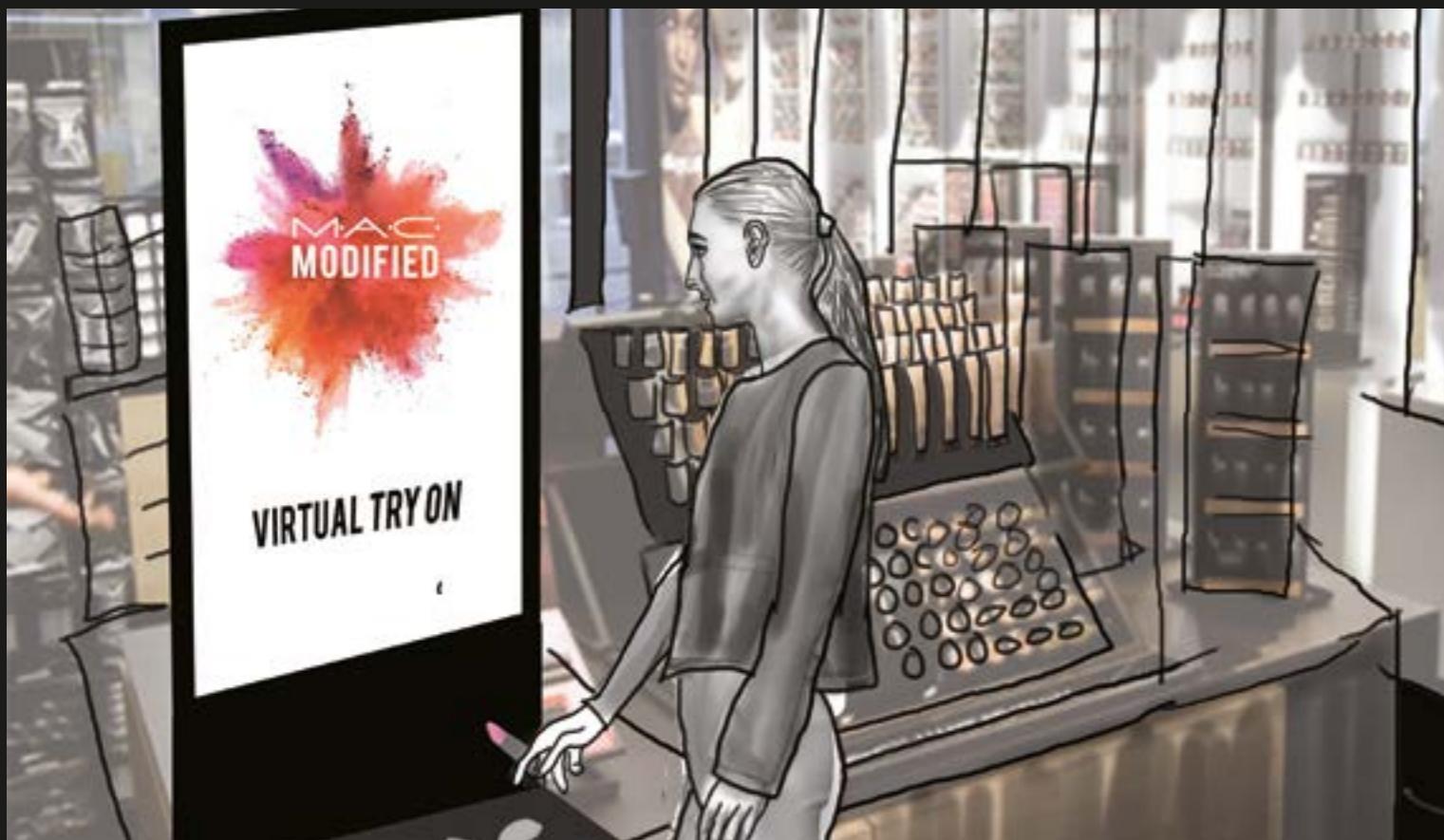




Customer sees advertisement for MAC Modified virtual try on and is intrigued. They enter the store.



Customer chooses the products they want to try on.



Customer places lipstick down onto RFID reader



Lipstick is displayed onto customers face using live face tracking, product information is displayed at side of touch screen.



Customer uses slider to lower intensity of lipstick



Customer wants to view the lipstick with a look. Looks are displayed on the side of the screen to choose from



Customer takes a photo of her look



Then emails the photo to her personal email address



Customer goes to the till to pay for lipstick. The MAC artist explains about the new service as well as the assistance application.



The artist tells the customer about the new colour matching technology for the customer to try out.



MAC Artist holds iPad up to customers face to use colour matching technology

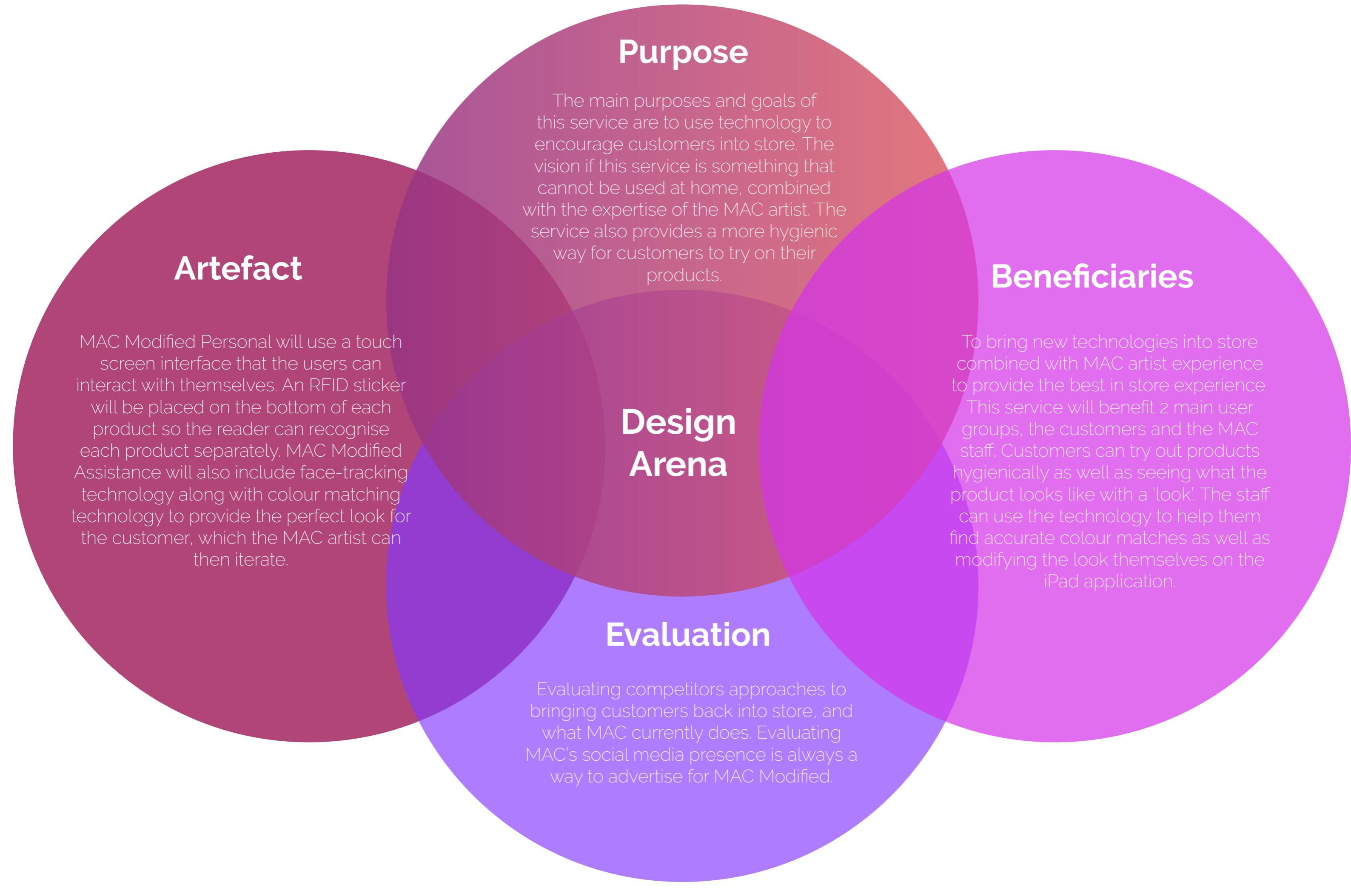


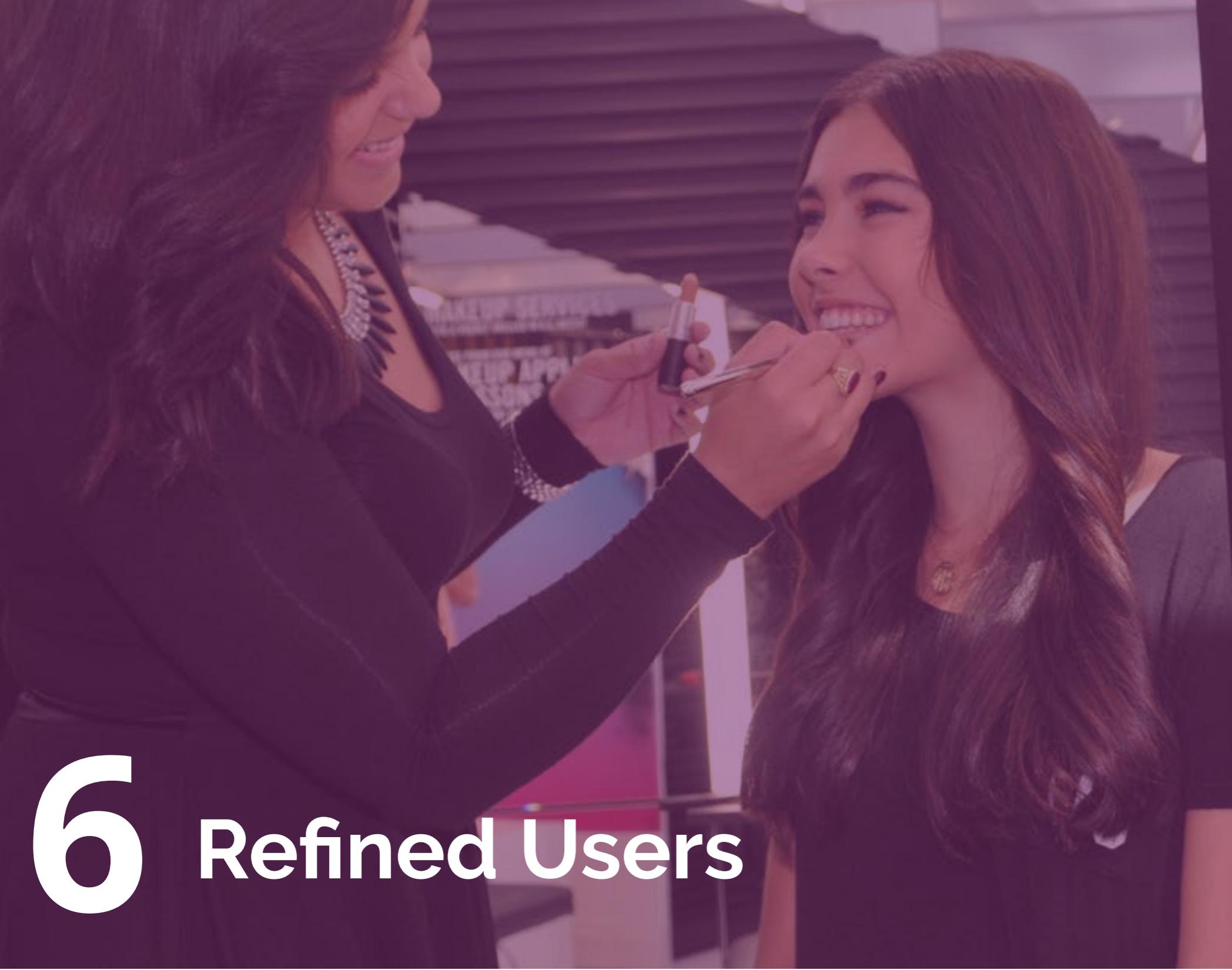
MAC artist can change different parts of the look displayed to fit to what the customer wants.

## Slogan

I have decided to create a slogan for MAC Modified, I tried to think of a play on words to the current slogan, 'All ages, all races, all sexes'. From this I thought of what are the key words for this service:

**IT'S AUGMENTED  
IT'S MODIFIED  
IT'S THE FUTURE**





# 6 Refined Users

This section will look at my 3 refined users for MAC Modified, looking at user scenarios and their journey they go through whilst interacting with the MAC Modified Service.

# User Persona 1

Rachael is an 18-year-old biology student who loves anything to do with fashion and beauty. She is always trying new products and watching tutorials on how to do her makeup. Studying biology she likes to take care of both her health as well as her appearance.



## Goals

Rachael loves shopping and is always looking for new makeup. She is looking for an easier way to try out makeup products that doesn't involve having to clean them every time before use.

## Pains

Because Rachael studies biology she is a very hygiene conscious individual therefore she always asks the shop assistant to clean the products before she tests them out. However on a busy day it is frustrating as a lot of people are in store testing products in the same way.

## Technology

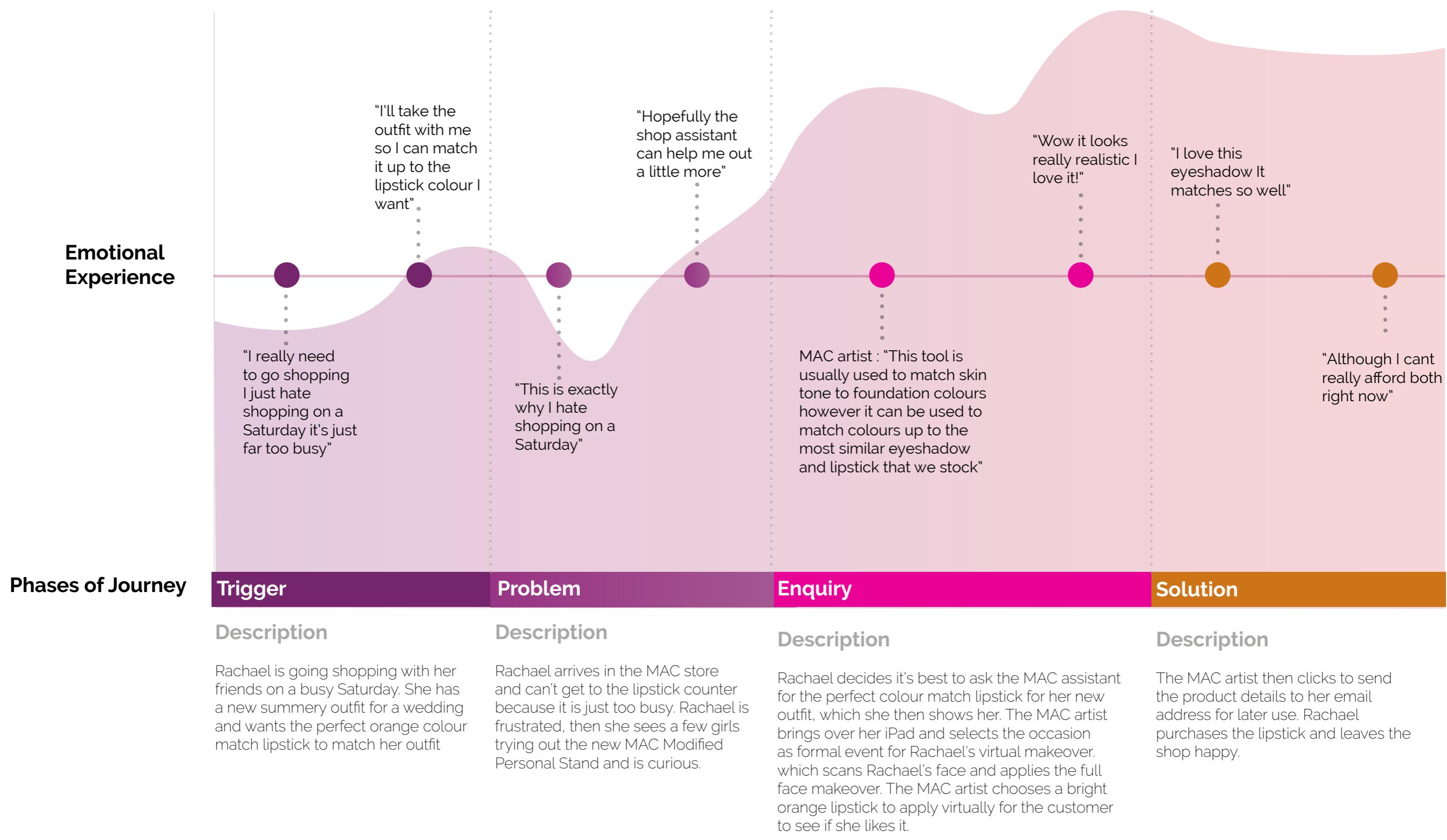
Rachael has an iPhone X and knows the principles of face detection. She also uses Snapchat and Instagram face filters and other photo editing apps to edit her photos.

Knows very little



Is very confident

# User Journey 1



## User Persona 2

Christine is an 40-year-old office manager who loves makeup and trying out new products. She often buys expensive makeup but doesn't really know how to use it or if she's applying it correctly. She hears about the brand MAC off her friends and wants to find out more about it.



### Goals

Since Christine buys expensive products she wants to know if she's applying it properly and if she is wearing the right colour to suit her.

### Pains

Christine doesn't like going into store as she feels too old to be shopping for cosmetics in store. She always buys her products online but she sometimes ends up with the wrong shade of makeup, she needs a makeup artists help.

### Technology

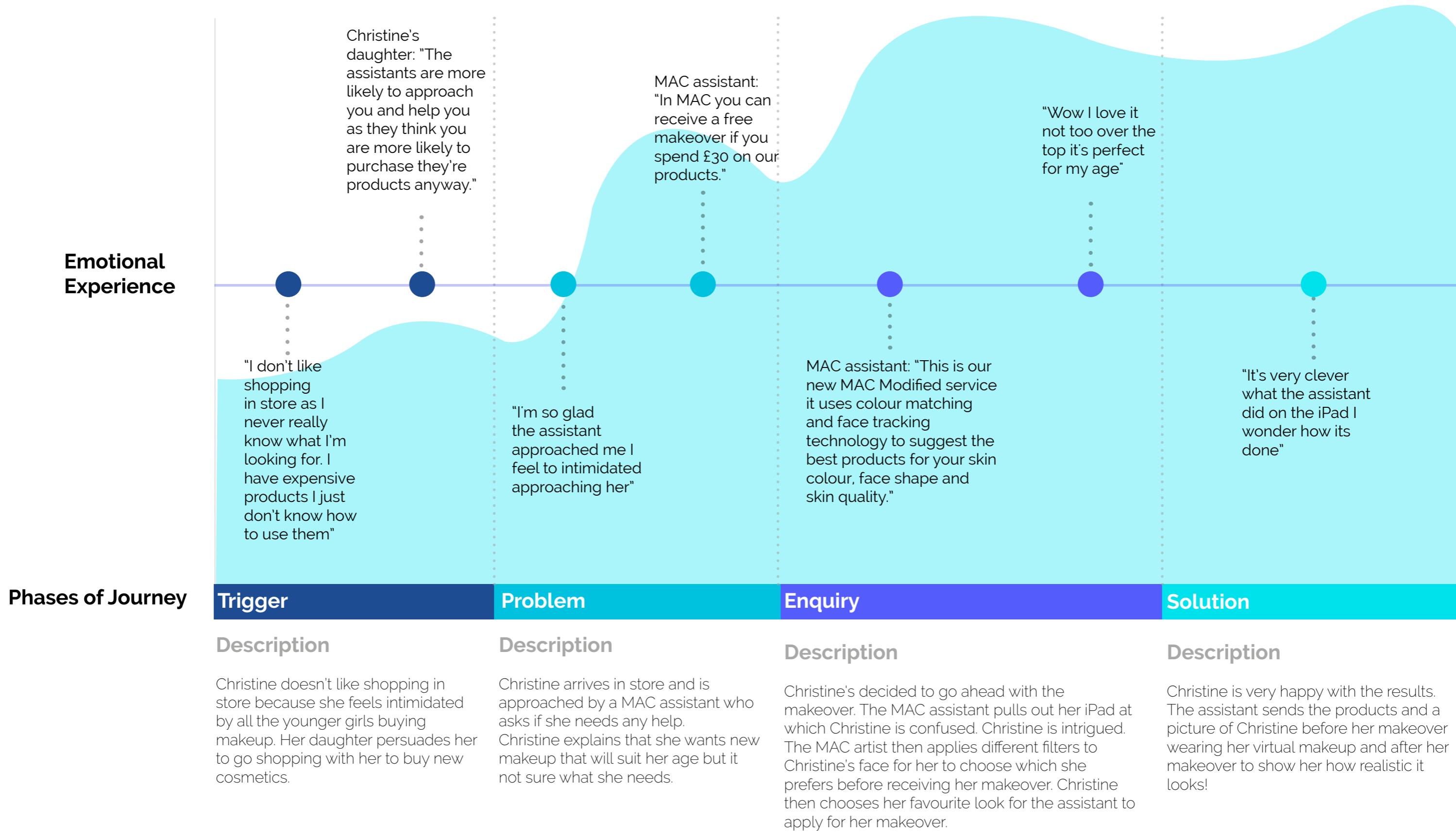
Christine works on a computer in her office and can access the internet and complete a purchase online shopping. She owns a smartphone but doesn't really know how to use it that well, only to take photos, send messages and make calls.

Knows very little



Is very confident

## User Journey 2



## User Persona 3

Abbie is 25 years old and is a MAC makeup artist. She works in a very busy London store and does around 5 makeovers every shift. She is really passionate about makeup and improves more and more over time.



### Goals

Abbie loves what she does but sometimes she needs some guidance to what products she should use on someone or what might suit them best.

### Pains

Abbie hates when a customer comes into work and asks to look like a celebrity or to redo a celebrity look which can be very difficult to mimic.

### Technology

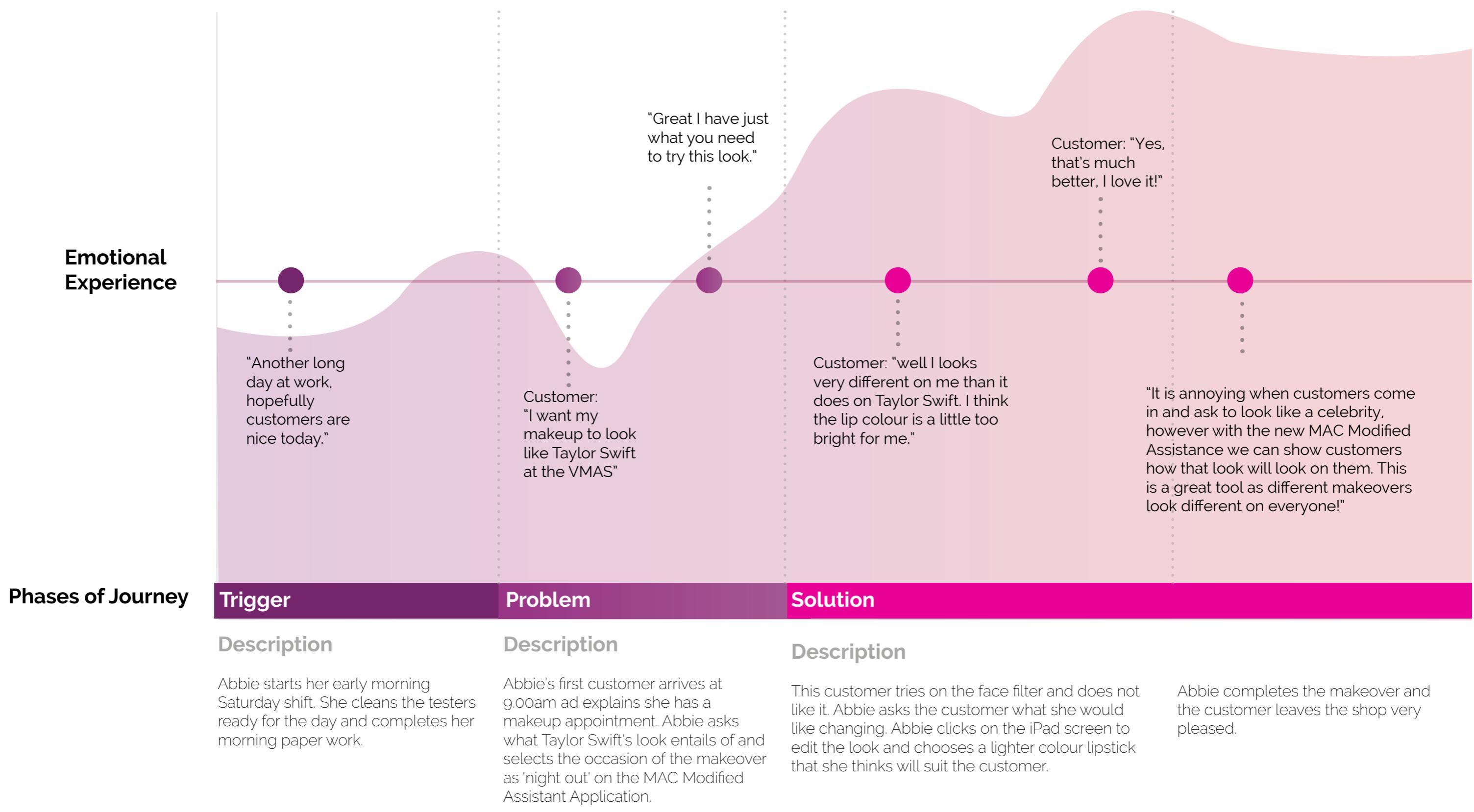
Abbie owns a smartphone and knows how to work a tablet. She's not really advanced in technology but can work smartphone apps etc.

Knows very little



Is very confident

## User Journey 3





This section looks at the development of MAC Modified Personal and Assistance. Starting from basic wireframing to hifidelity mockups. With user testing guiding the final interface design and layout.

## MAC Modified Personal

### How It Will Look

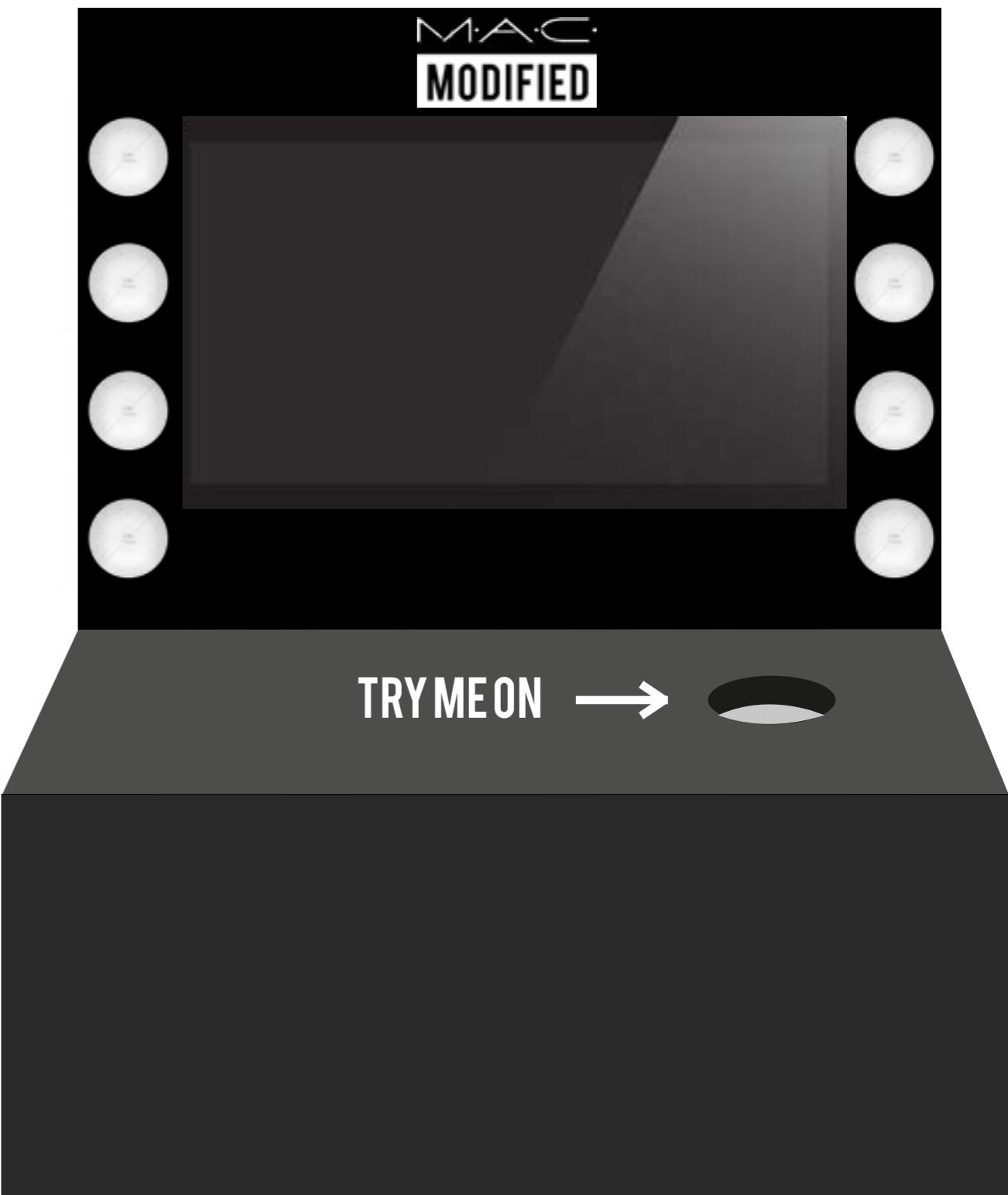
Because I want to design the interface as close to what I would like the service to look like, **I have changed what I will be making slightly.**

My final product design will **not include a live webcam** as this include the user placing their face in the area the makeup will be placed on their face. However the idea is to have live face tracking and the '**place your face here**' **would not be a part of the actual interface.**

Therefore I have decided that I will make a **series of videos** that will show the **live face tracking and how the interface would actually look like in a MAC store**. These videos I will make in **After Effects**.

In my previous drawings and visualisations I have also portrayed the screen portrait. However to have a large screen displayed how I want it will be have to be on an **iMac computer screen**. Because of this my design development and interface designs will now be drawn in a **landscape view**.

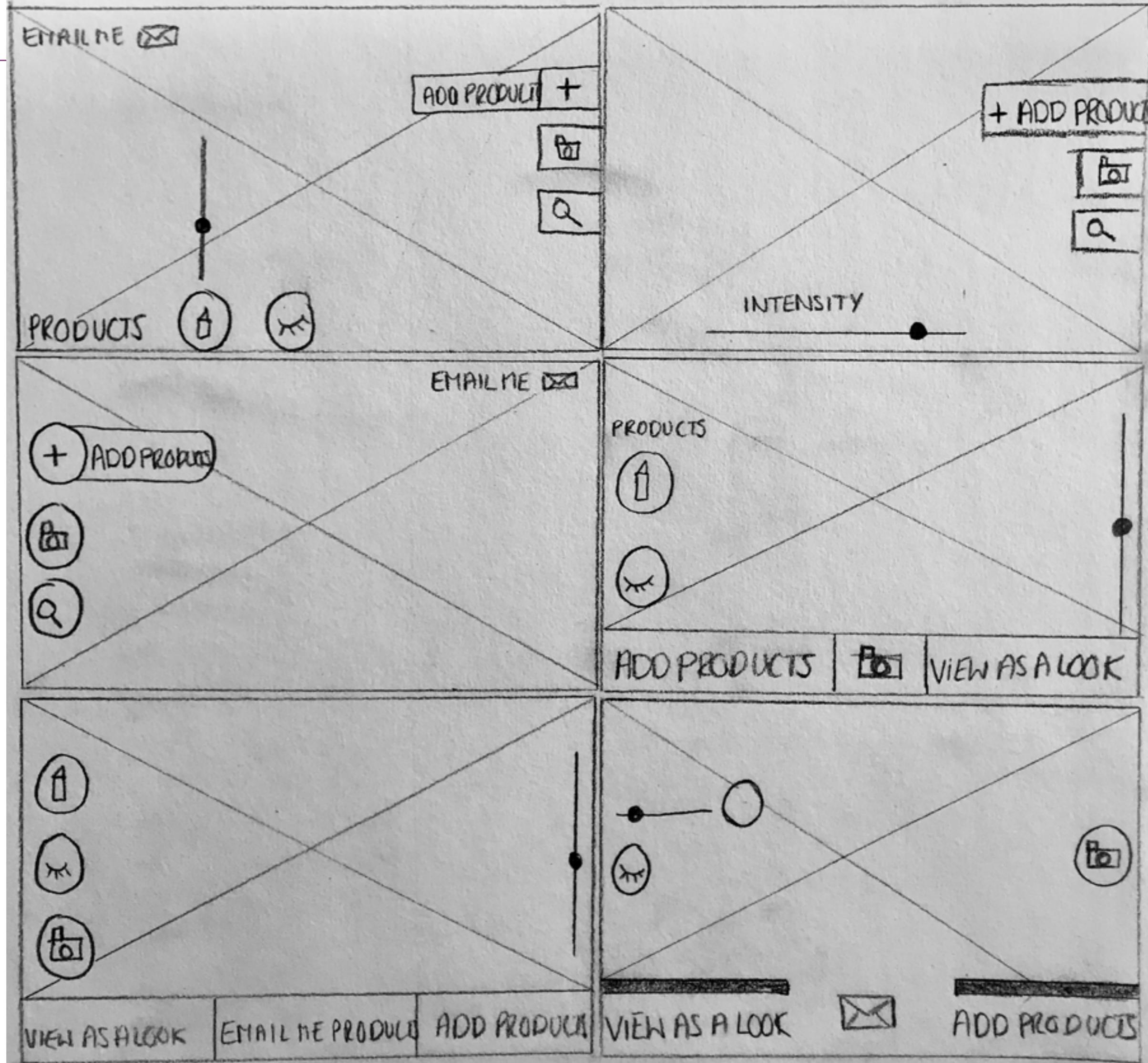
I will then create the **packaging around the iMac screen** along with a **stand for the interface to stand on**. To go along with MAC's branding, I have visualised the stand to have **lightbulbs around the screen** to provide the best lighting for the live face tracking.



## DESIGNING THE INTERFACE

### Wireframing MAC Modified Personal Stand Interface

At this stage I began looking at visualising the interface for the stand, which I will be making. By refining my key features I can now think of where to place them on the screen, thinking about which content needs to be prioritised. I have began to sketch some rough wireframes, seeing what is best visually as well as which is best in terms of accessibility. After getting a rough idea of how much content needs to be on the screen I will then go on to create some hifi mockups and do some user testing.

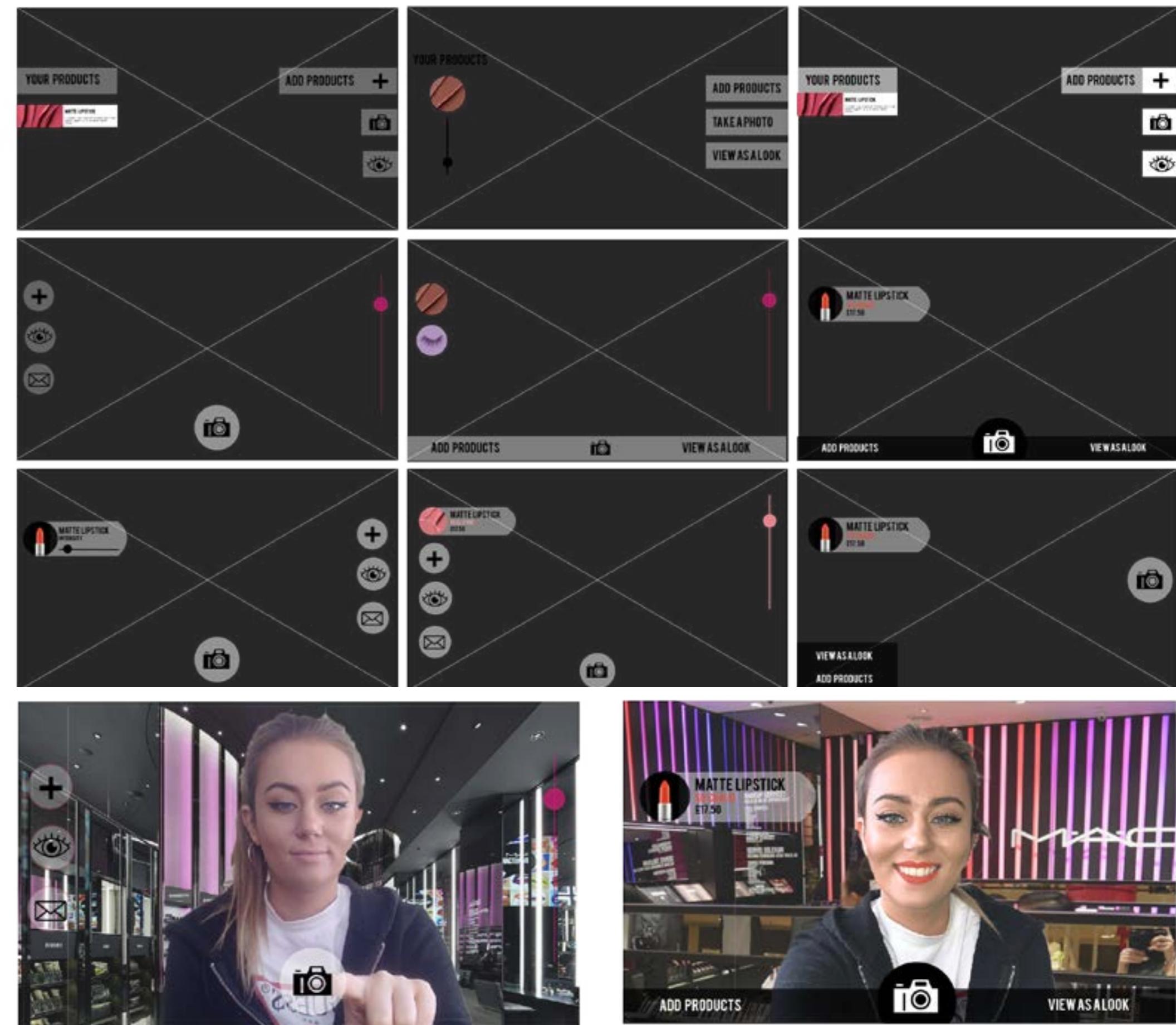


## HIFI Mockups Stand Interface

After creating some wireframes I then went on to create some hifi mockups of what the interface could look like. I originally began by sticking to MAC's brand guidelines using a box effect but this didn't work as well and did not look as clean as it did on their website. I then tried out using circles which worked much better using small icons for each button.

I then went on to place a photo of myself in a MAC store behind the mockups to get a feel for what it might actually look like. From doing this I found that the low opacity white works better on a real life background and stands out more than a low opacity black button would.

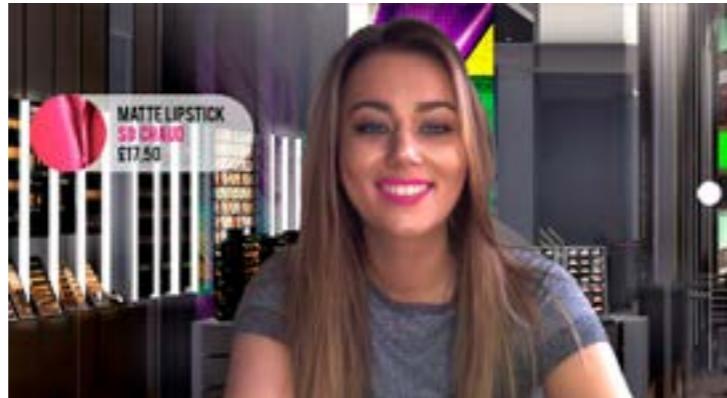
I have decided to work with opacity buttons because depending on the background the buttons were not visible without a button background.



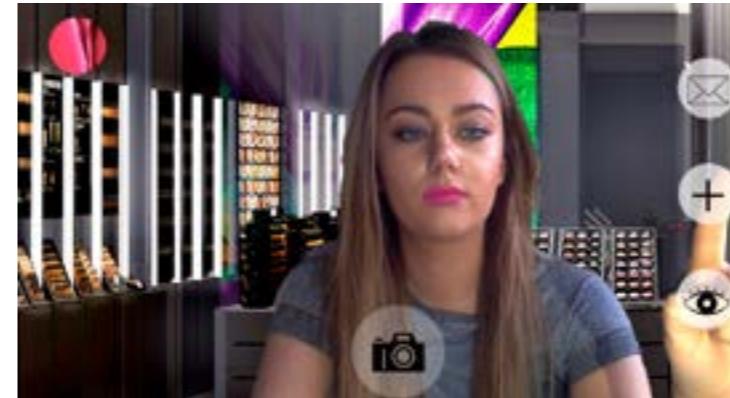
## Flow of different features



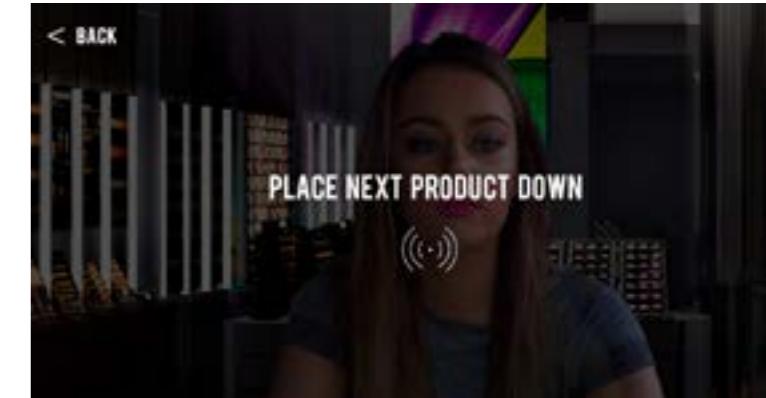
Before the products gets placed down on the scanner, the camera screen is blank.



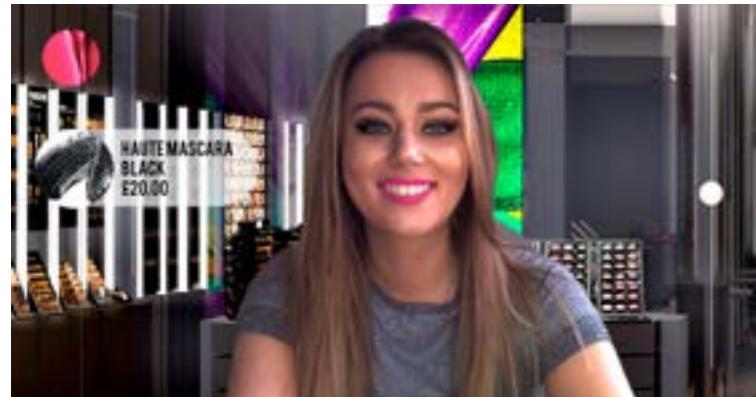
When the product is placed down it will appear on the side of the page including the shade and price. The product is displayed on the users face using live face tracking.



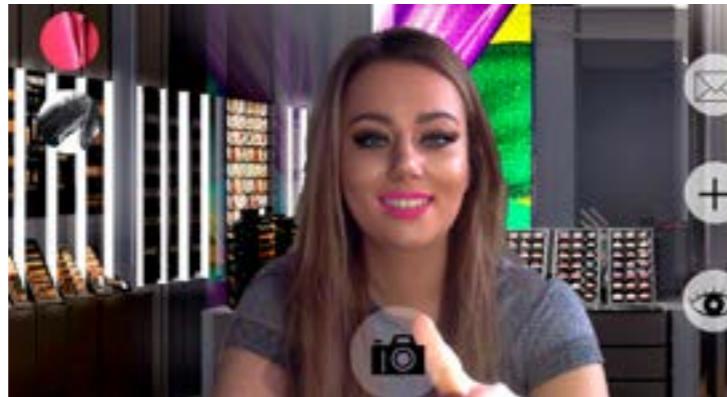
The user goes to add more products to their look clicking the add icon on the touch screen.



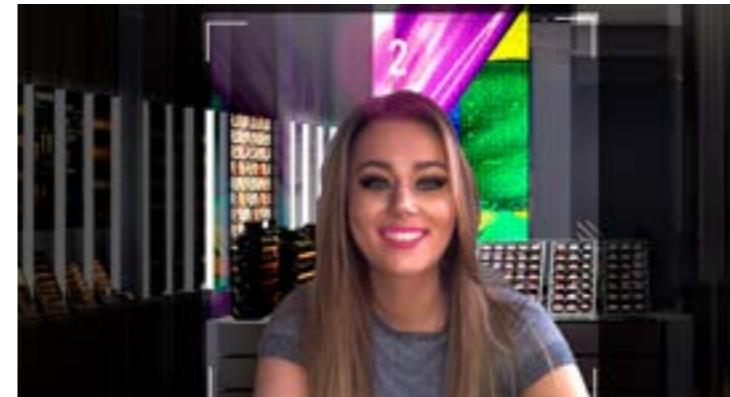
Screen is waiting for next product to be placed onto the reader.



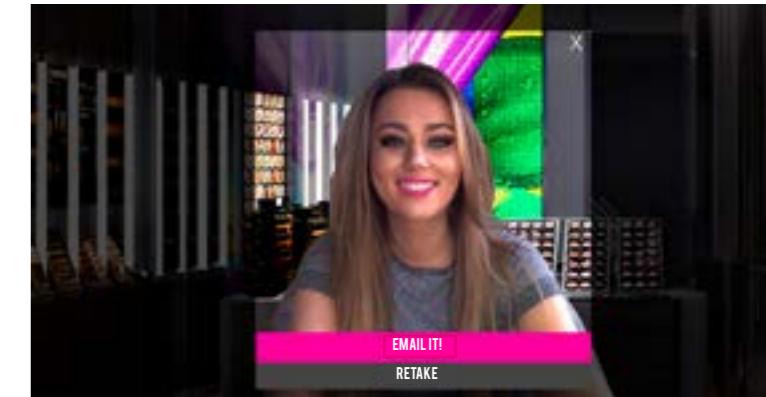
Next product is displayed on side and on face. There is an intensity slider on the side of the screen so the user can change the intensity of the product on their face.



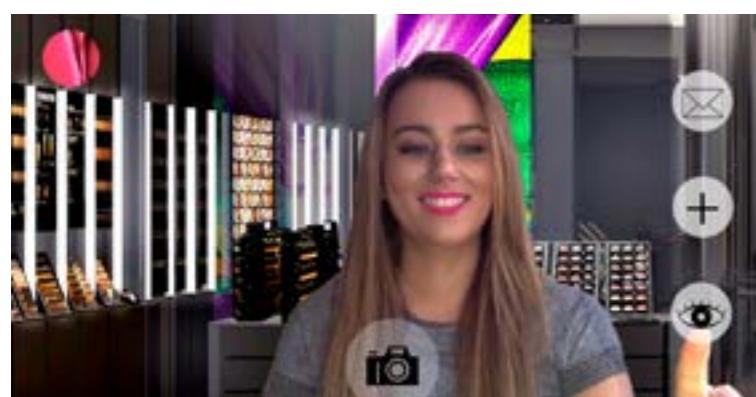
User clicks on camera icon to take a photo of their look.



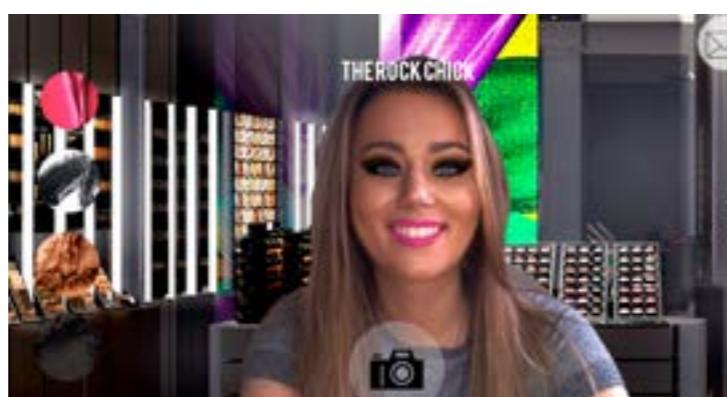
Countdown appears on screen before capturing users photo.



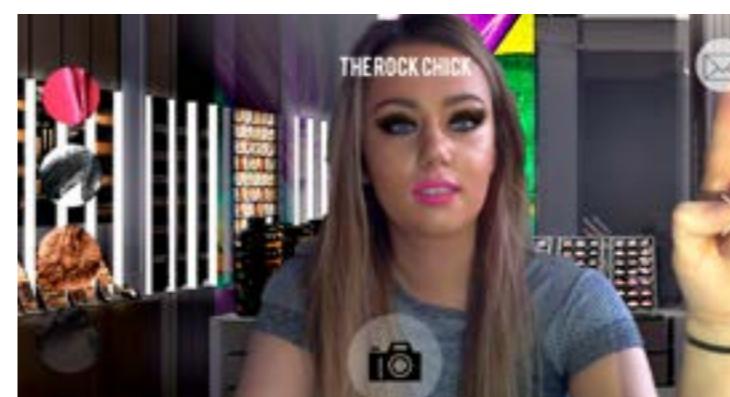
After photo is displayed on screen. With the option to email photo to themselves. or retake the photo.



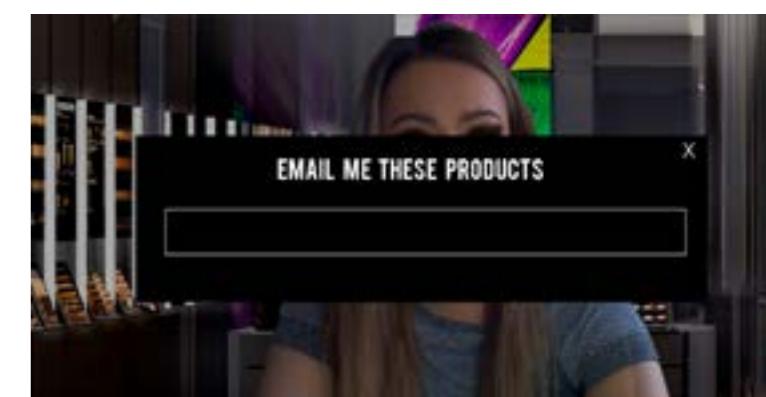
User clicks option to view the products with a look



Products are displayed down the side with product details and the arrow option to move to next look.

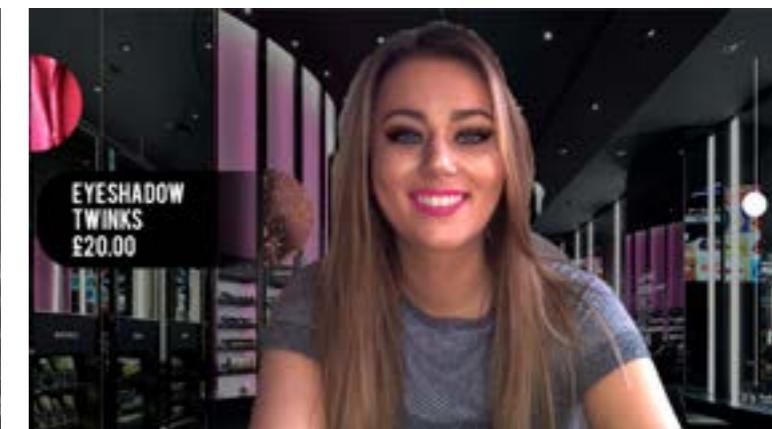
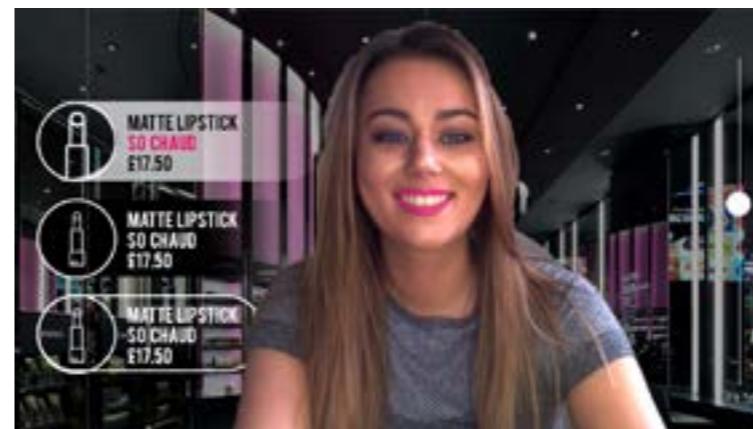
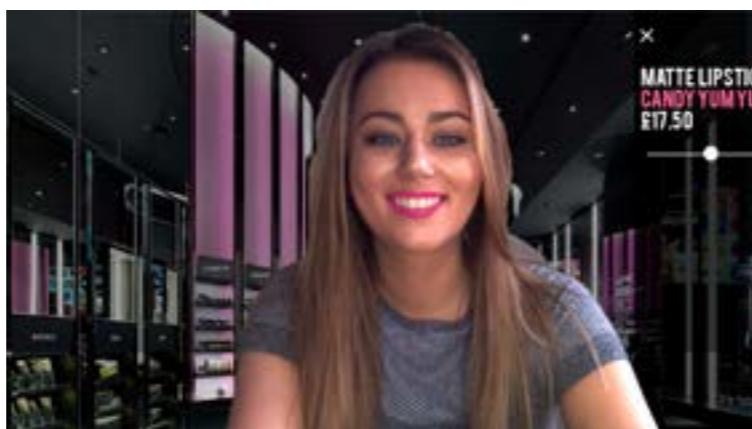
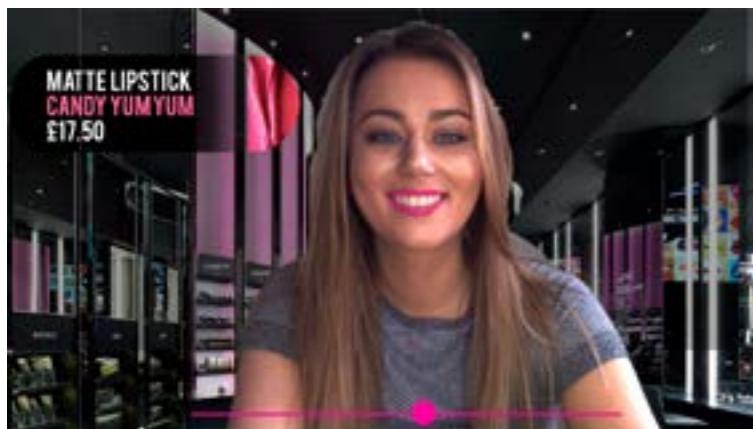


User clicks option to send the product details to their email address.

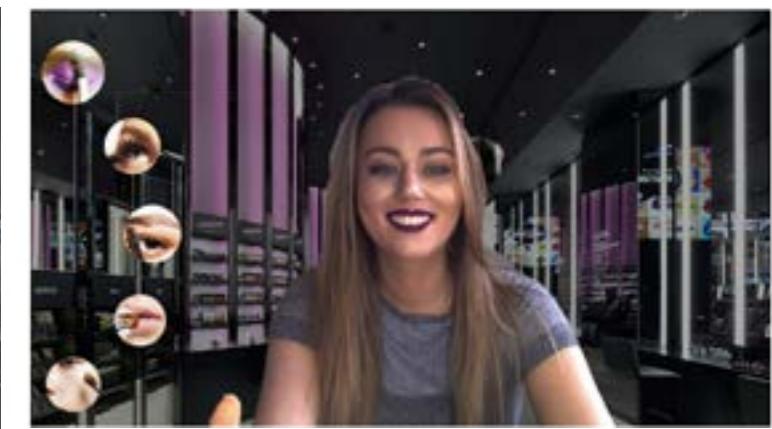
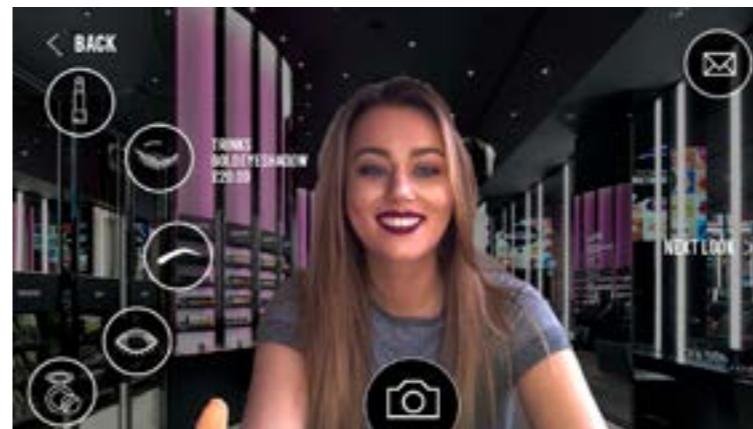
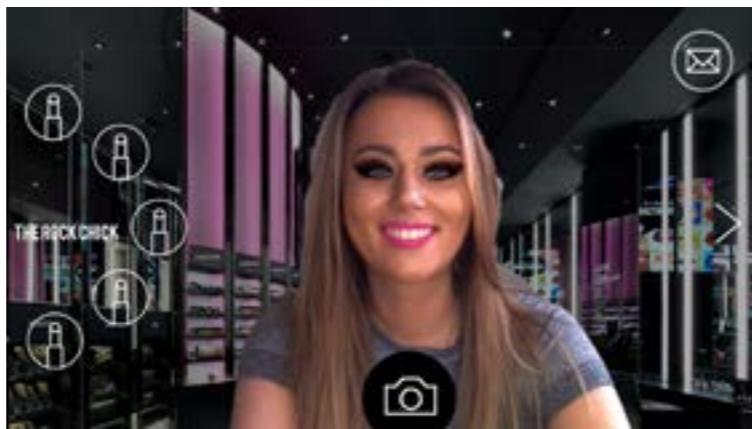
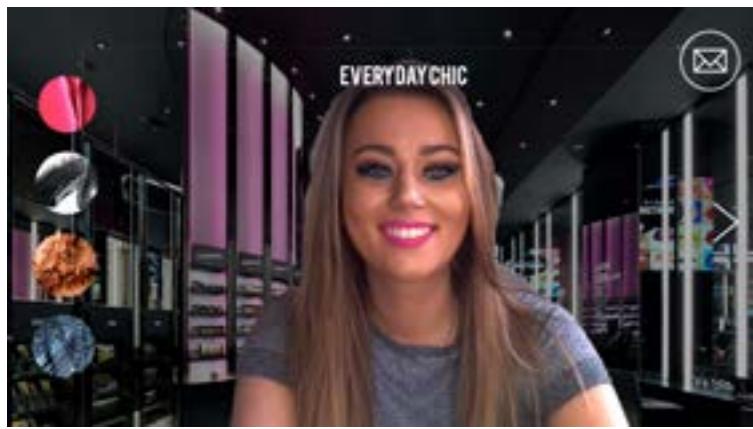


Text box for user to enter email address.

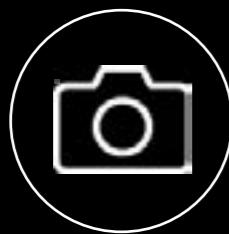
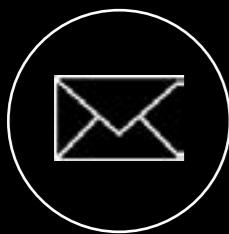
## Different ways of displaying the products on screen



## Different ways of displaying the looks page

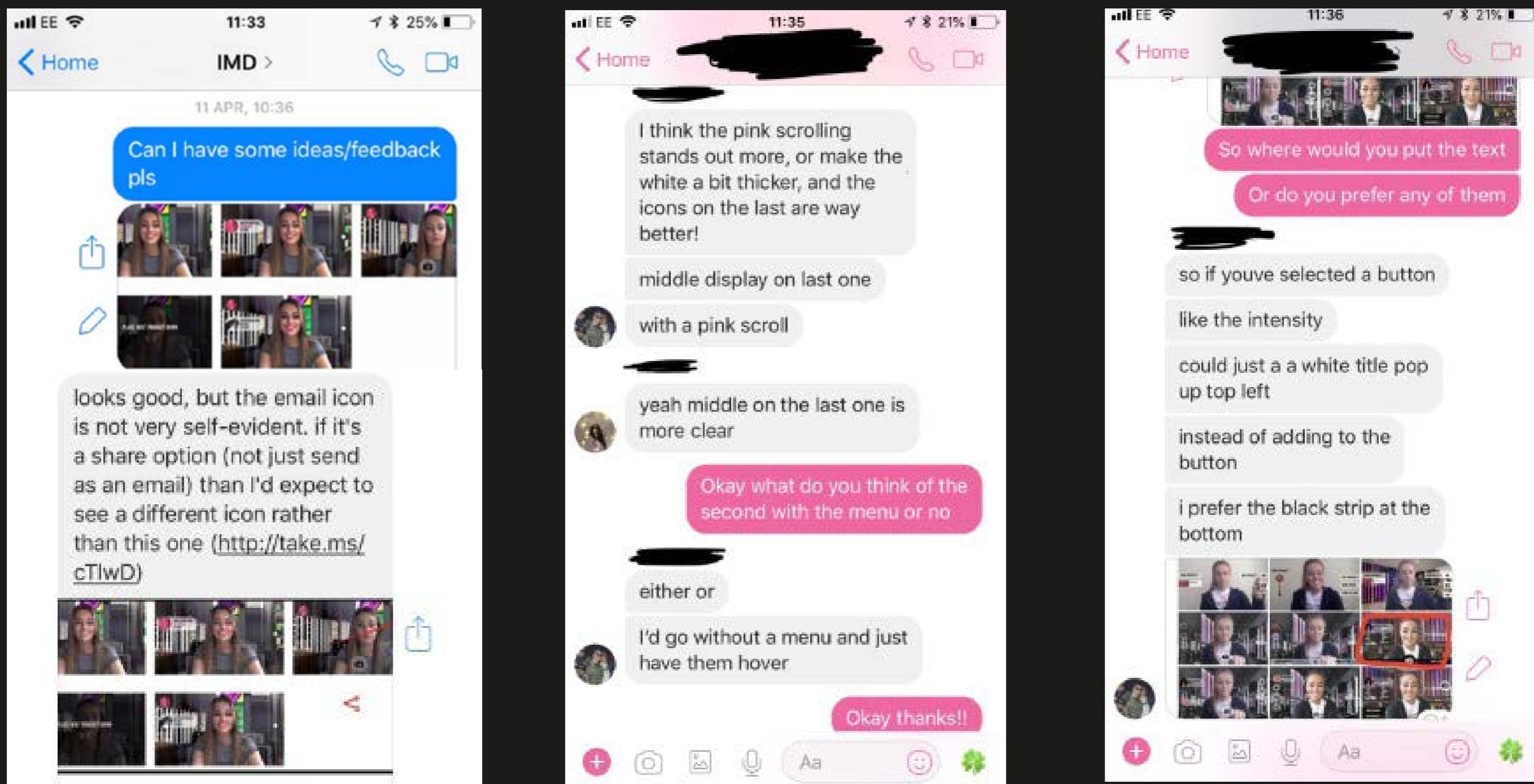


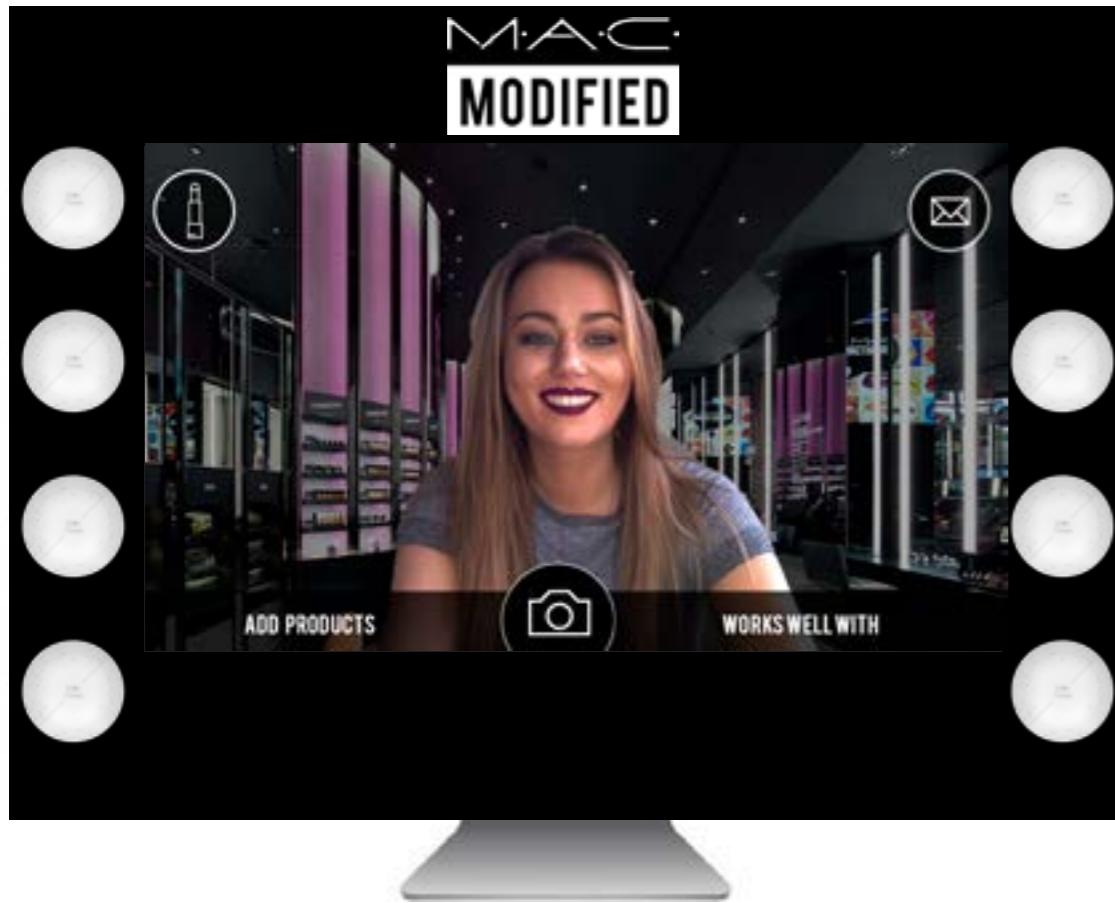
After experimenting I found making the icons white inside a black button works better on different backgrounds and also works better with MAC's overall brand. Putting the looks page in a wheel format allows to the user to scroll through and see the different products that have been applied to their face. Since I have decided to use icons for my final design I searched [thenounproject.com](http://thenounproject.com) which is where I am sourcing my icons from to find which match each button function the best.



# Receiving Feedback

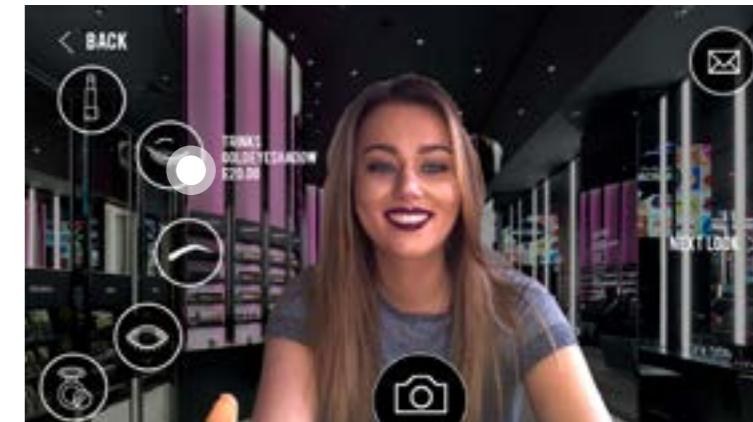
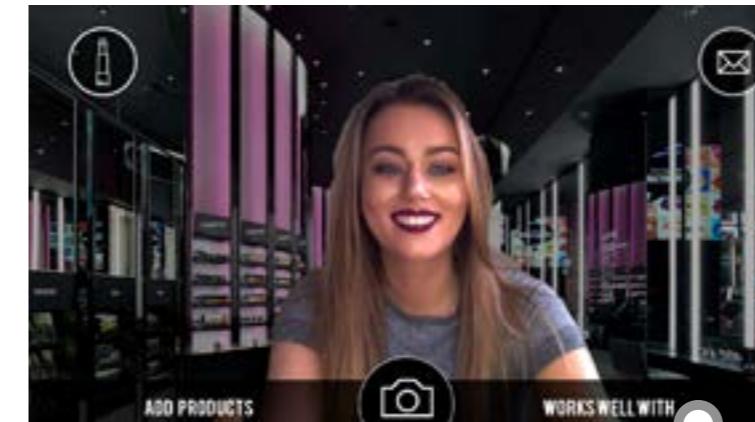
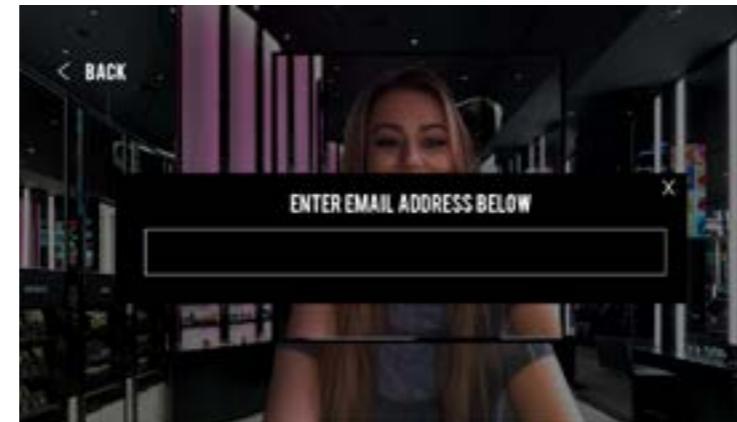
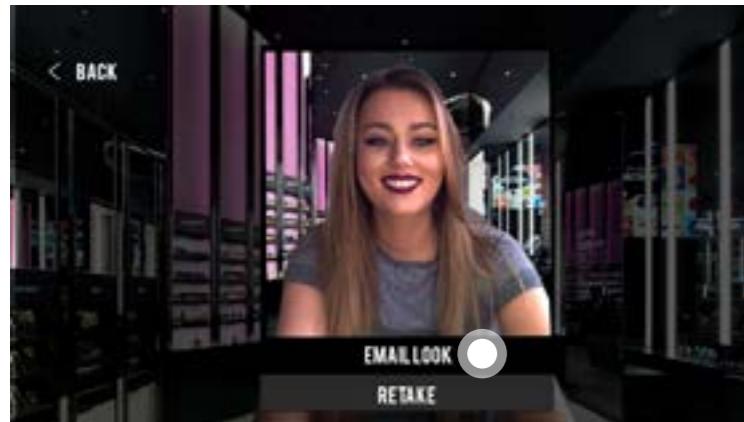
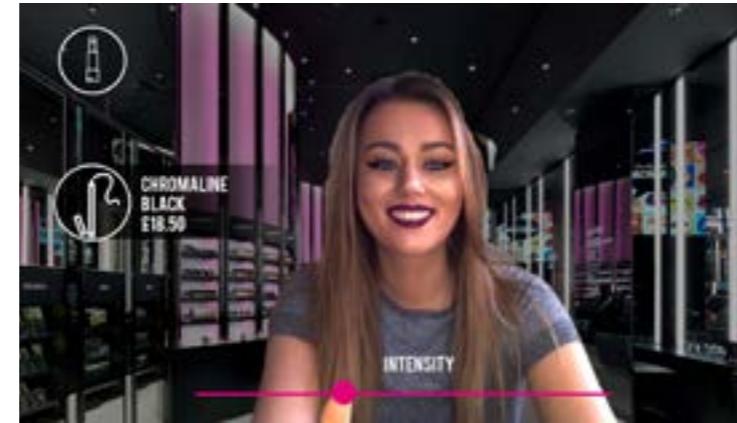
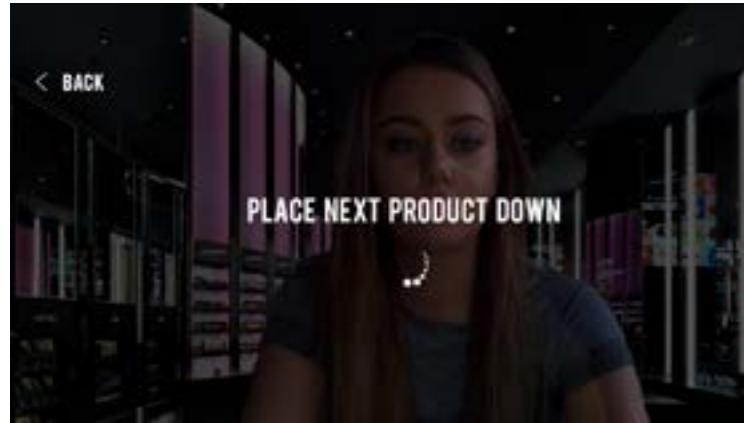
After completing some hifidelity mockups I went on to ask for feedback to see what people thought about the designs, if they knew what each icon stood for etc. After receiving some feedback that having a bottom nav bar worked better than having all icons I decided to try this design as it was a thought that I had originally that maybe the user won't know what the specific icons stand for.





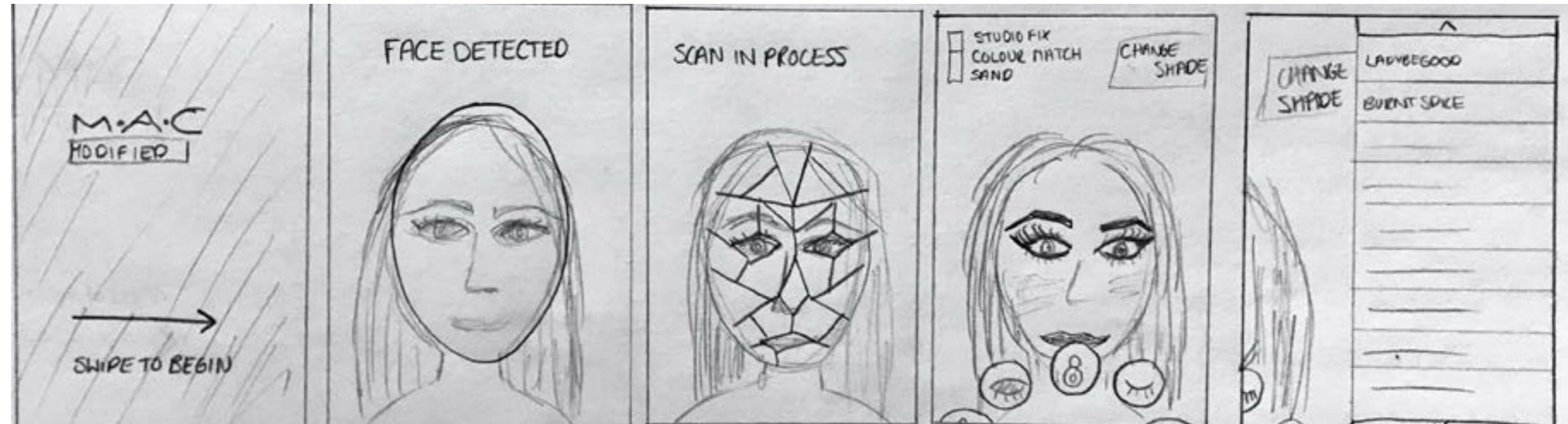
## Final MAC Modified Personal mockup screens

After experimenting with different backgrounds and icon colours I have decided to go with a theme for all screens which also fits in with MAC's branding. I have also added a pink slider in to make it more visible at the bottom of the screen.



## Mockups for Assistance iPad Application

For the Assistance iPad application I must design these screens with the MAC makeup artist as the primary user. I have decided to go with the similar design as the Personal stand, keeping the design basic and neat.

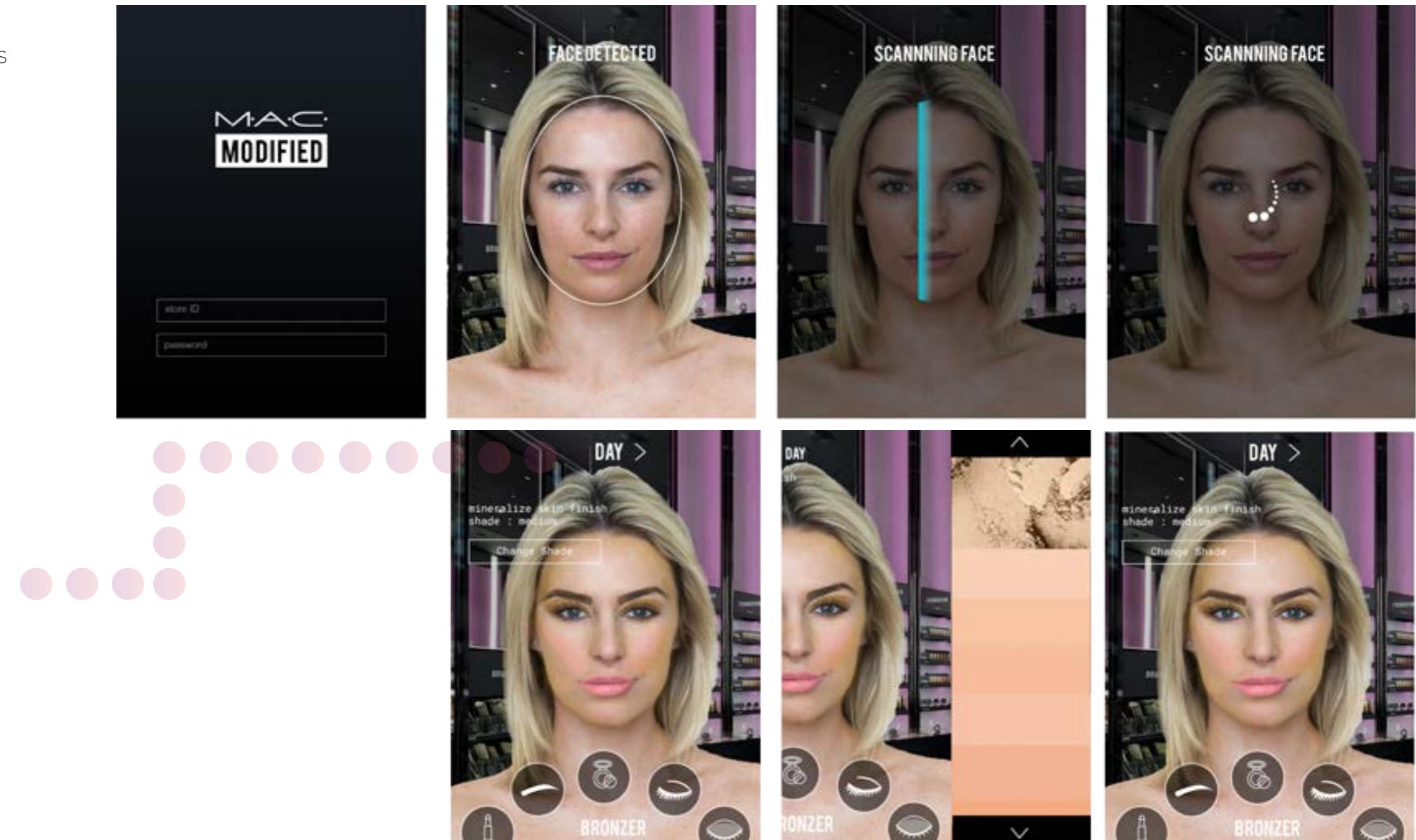


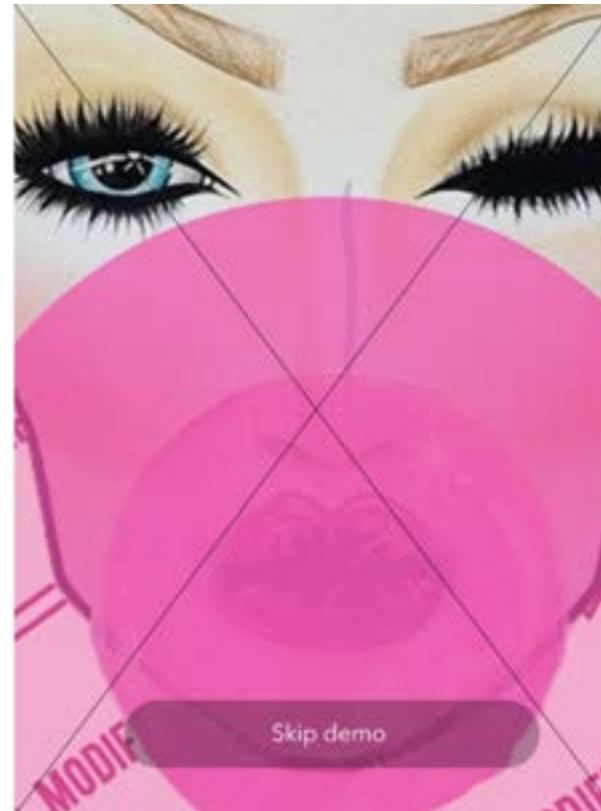
The idea is for the MAC Artist to ask for the occasion of the makeover, the iPad then scans the users face, this then takes a photo of the customer and displays the makeup match on their face.

Every product that is on the users face is then displayed along the bottom of the screen in icon form. Then allowing the MAC Artist to click on each product to modify them by either changing the shade or removing it.

I began by looking at different ways to display the face scan and ways I can display the hamburger menu in order to change the shade of the product.

Before I introduced the 'select occasion' feature, I originally went with a 'day' and 'night' option which would edit the makeup filter on the customers face as displayed.

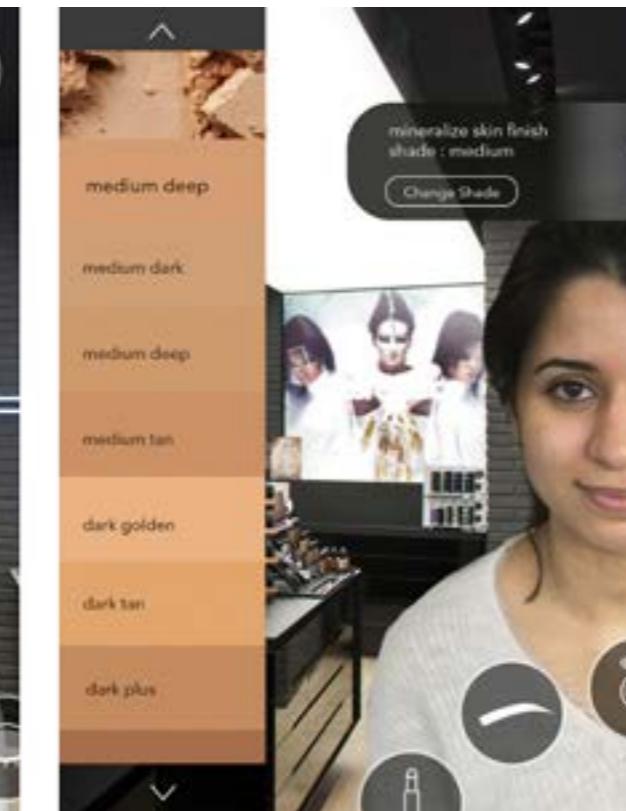
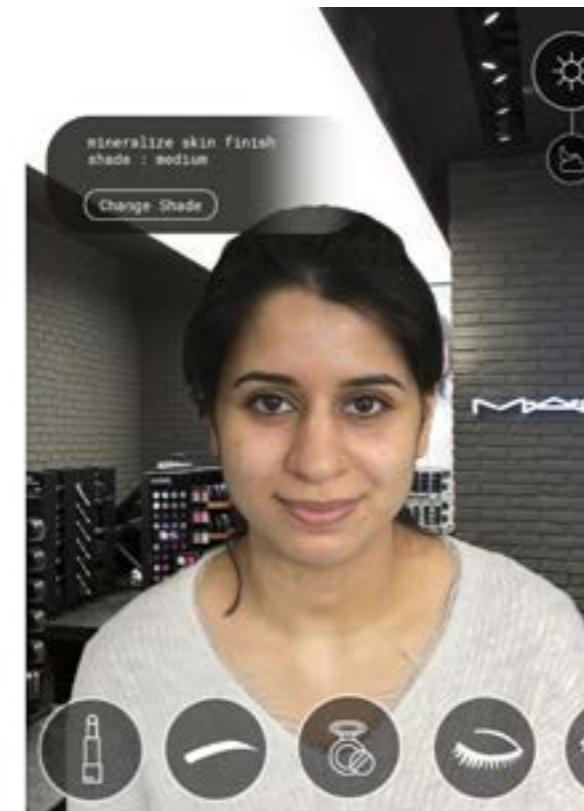
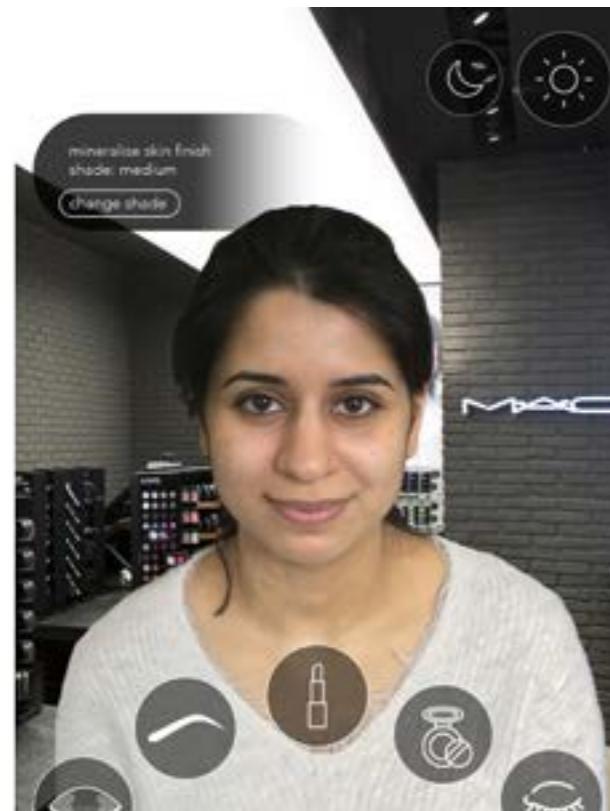




## Further Development

I decided it would be a good idea to add in a demo video that will play as soon as the MAC Artist signs into the application with the option to skip it. This will introduce the new service to the staff at MAC with an overview of what the application does.

To the right are the assets I will be using to prototype the app. Showing how the scroll icon will be displayed, along with the makeup overlays.



## Final Look



## User Testing

I went on to do some user testing for the application. I tested with MACs general user age which from my previous user research I found was ages 18-30.

From doing this research I watched what the user touched on the screen and their general hand gestures.

The first thing I found was users using the scroll wheel on the bottom did not scroll as a wheel, but instead just scrolled straight along the bottom of the screen. For this reason I decided to change the scroll along the bottom to a straight scroll rather than a wheel:



After receiving more feedback one user asked what if I didn't want everyday up or night out makeup, what if they were going to a wedding.

This made me change this feature slightly and add in an occasion drop down before the face scan of the customer. In this drop down I added in the makeup occasions:

Everyday  
Nightout  
Formal Events (weddings, christenings)  
Costume (Halloween)  
Festivals



## Prototyping iPad App

To prototype the iPad app I began by using Flinto as I originally wanted the scroll bar on the bottom to be curved. I also liked on Flinto how I could edit the assets on live on my iPad, this allowed me to see just how it would look on screen.

However it became much more complicated when trying to create transitions and linking them all together, therefore after I did my user testing and realised I didn't actually want the scroll bar to be rounded. I decided to use Proto.io for quickness.

## Creating Demo Video

For my iPad demo video I used a mixture of found footage, along with screen recordings of my application prototype. I decided it would be best to create a short voiceover to get the idea of the iPad across better.

The demo video is a great way to show the screens which I haven't prototyped including adding an occasion for the makeover and what the face scan will look like.

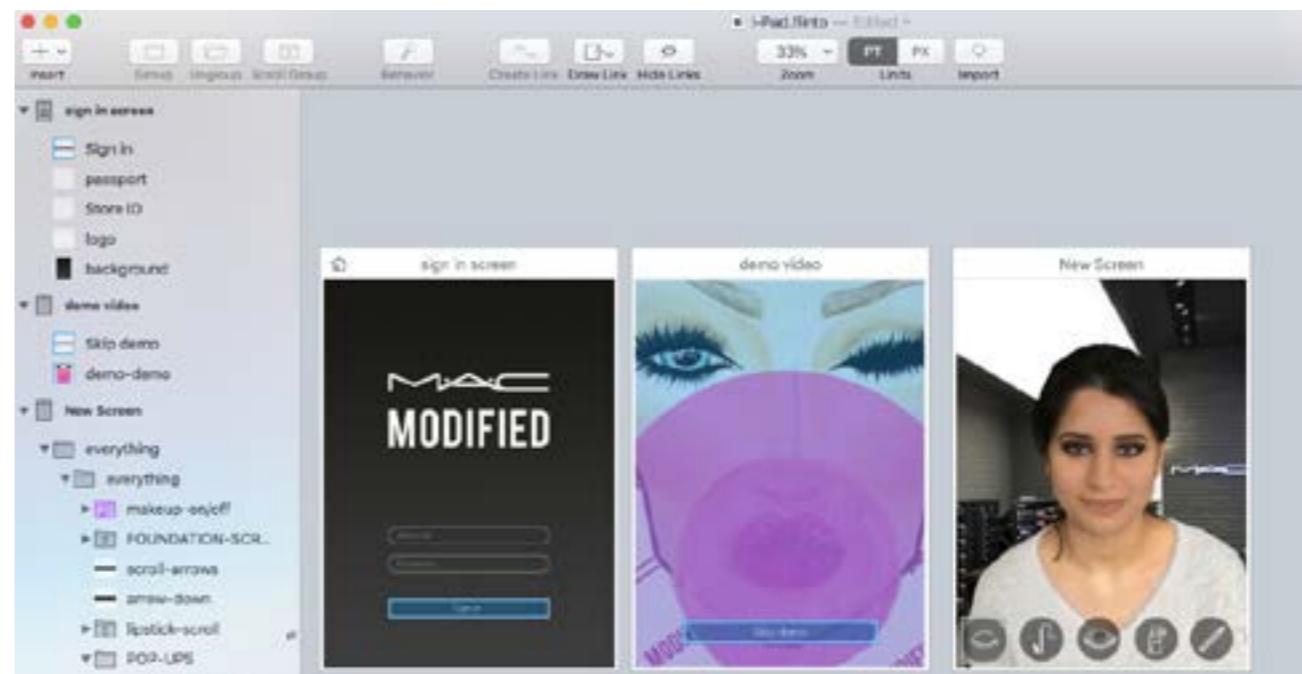
### Found Footage for demo video

**makeover clip:** <https://www.youtube.com/watch?v=mRuki5fsgJs>

**iPad clip:** <https://www.videoblocks.com/video/teen-girl-is-using-tablet-pc-with-green-screen-in-portrait-mode-in-nightclub-xyhdvkx>

**Mac store:** <https://www.facebook.com/northparkcenter/videos/10155484518577880/>

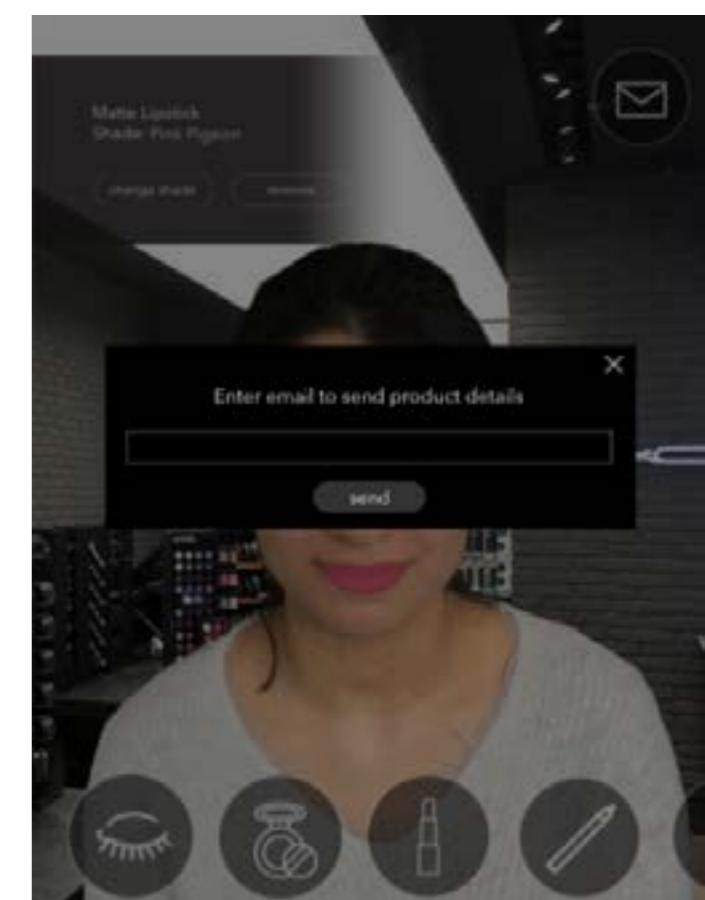
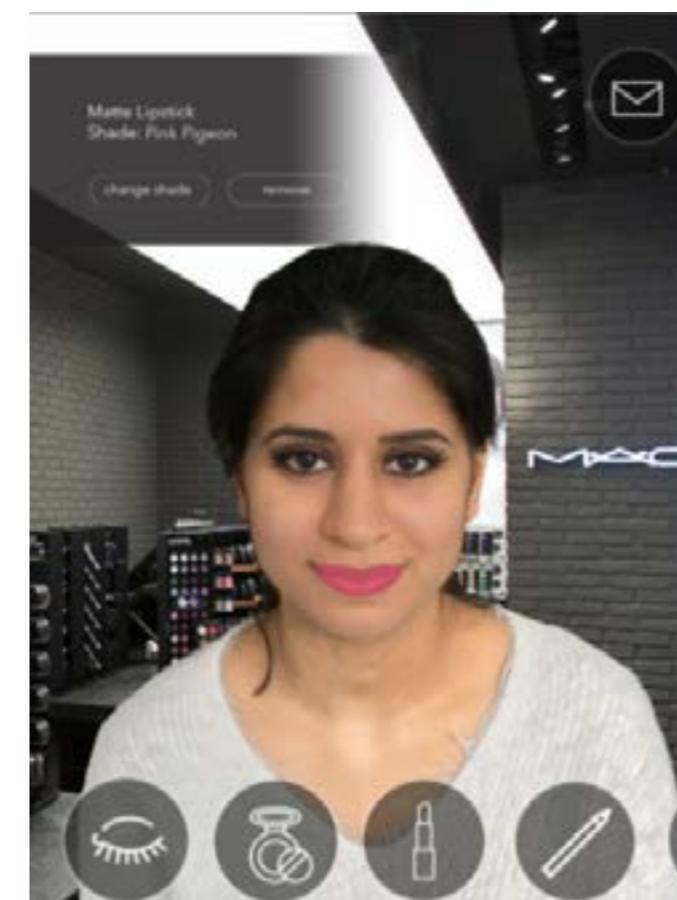
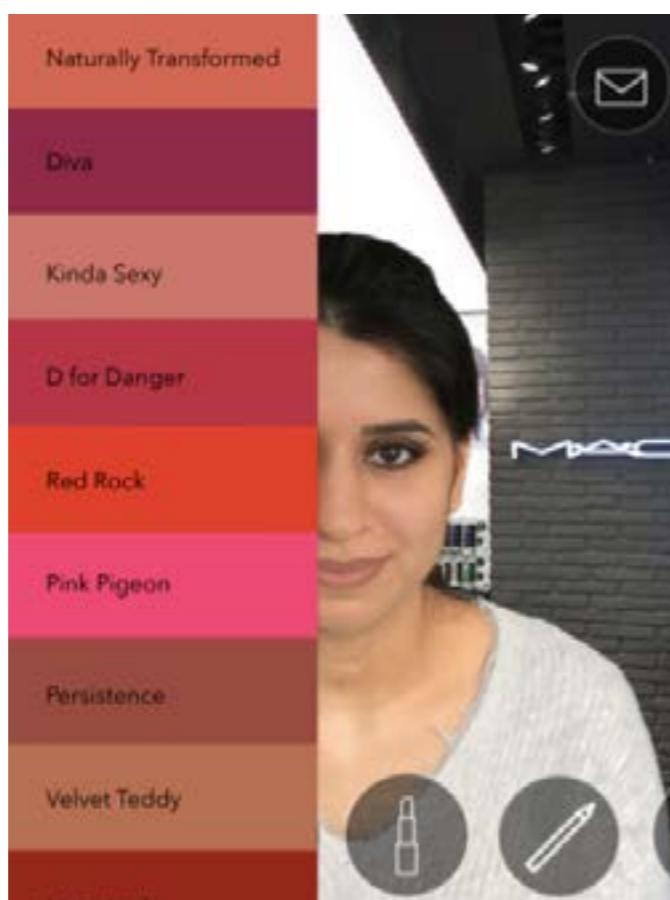
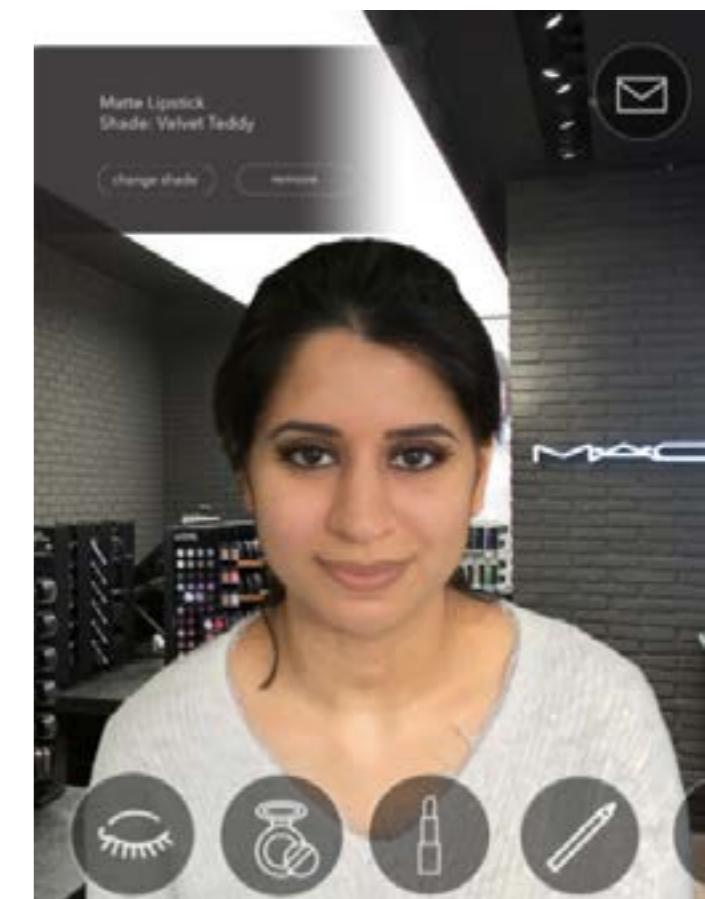
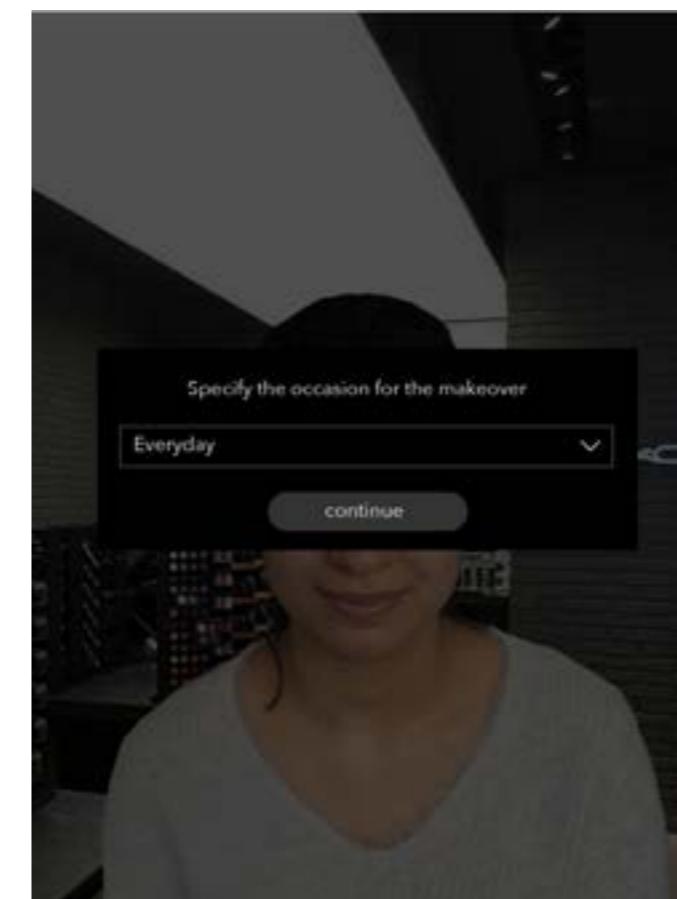
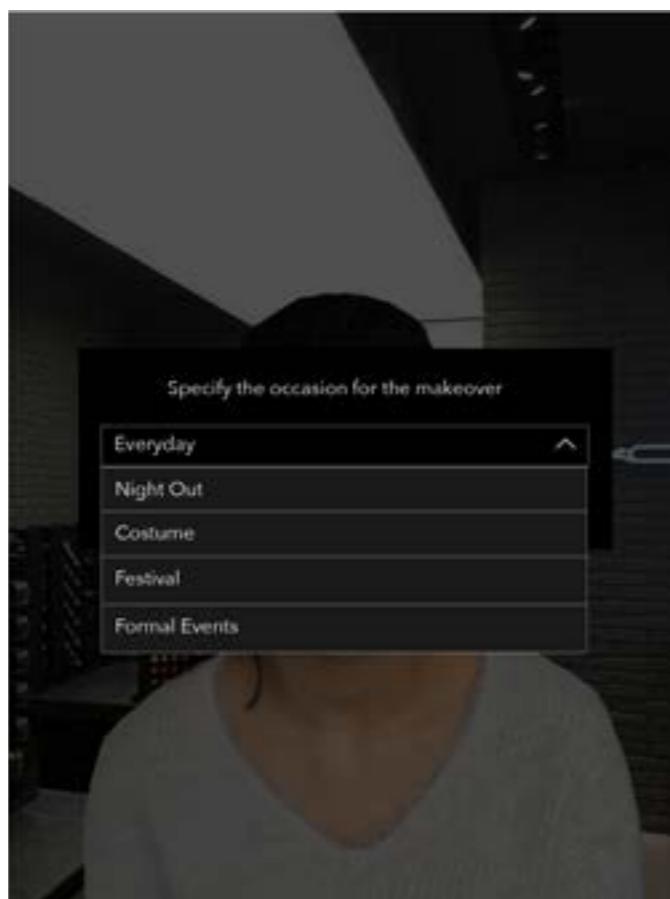
**backing track:** [https://www.youtube.com/watch?time\\_continue=5&v=4Eiohy-9YwM](https://www.youtube.com/watch?time_continue=5&v=4Eiohy-9YwM)



**Final Prototype Link:**

<https://pr.to/YBF81W/>

Hold down onto face to view the before and after of the makeover





# 8 Making the Videos

This section looks at how I made the videos and mocked up the face tracking using After Effects.

I have created 3 videos, two showing the features of the interface, the other will be on a loop as an advertisement.

## Filming with Green Screen

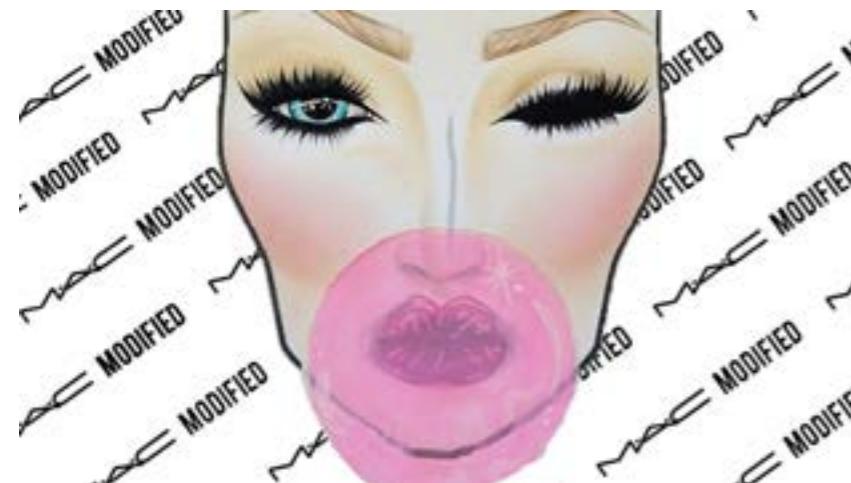
I decided to film on a green screen so that the videos would show what the stand would actually look like in a MAC store. After watching a few YouTube tutorials I decided to create a make shift green screen and go on to use chroma-keying in Premiere Pro.

After doing some research I realised that the brightest neon green possible worked best when using chroma-key in Premiere Pro. Using the ultra-key tool, as well as adjusting the matte generation and matte clean up allowed me to create the most precise outline of my hair and shoulders.



## Video 1- MAC Modified Introduction

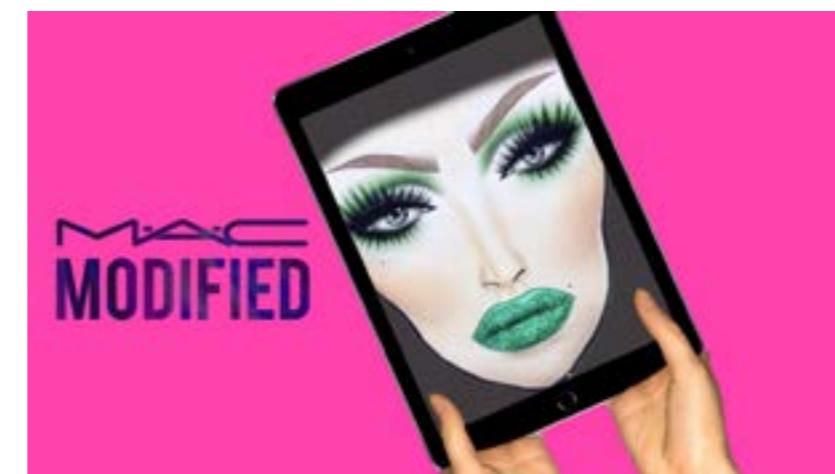
I decided it would be a nice effect to have a short advertisement of MAC Modified on loop until the user places the product down. For this advertisement I wanted it to be illustrative and edgy, like MAC's brand. I received inspiration from some of MAC's current advertisements. I created this video as a short introduction but also a demonstration of how to use the stand. I used a mixture of my own animation along with found footage from some of MACs current adverts. Below are some screen shots of the final video with a short description of the idea behind each scene.



Introduction to video includes a 'MAC Facechart' which artists use to practice makeup on using an illustrative style, with a logo background.



I decided to include a hand swiping the screen to display that the screen responds to touch.



iPad displays face charts being snapped into real life. A play on of what the MAC Modified iPad application actually does.



Found footage displayed on a MAC Modified stand mockup of the transition of an illustrated makeup image into real life.

## Found Footage and Images

**Backing track:** <https://www.youtube.com/watch?v=minzZFMQBbQ>

### Found Footage:

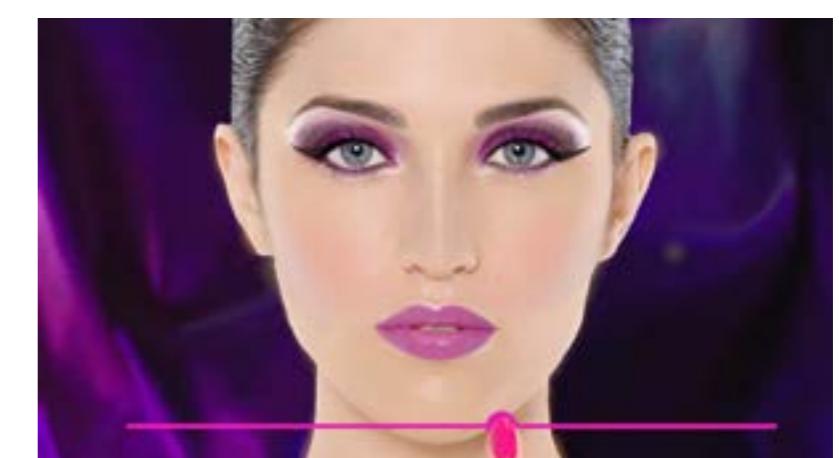
<https://www.youtube.com/watch?v=4Eiohy-9YwM>

[https://www.youtube.com/watch?v=k9xs\\_59lgJo](https://www.youtube.com/watch?v=k9xs_59lgJo)

<https://www.youtube.com/watch?v=ia6MXULTOas>



A quick snap of all the variations that are possible to try the MAC Stand, displaying different lip colours.

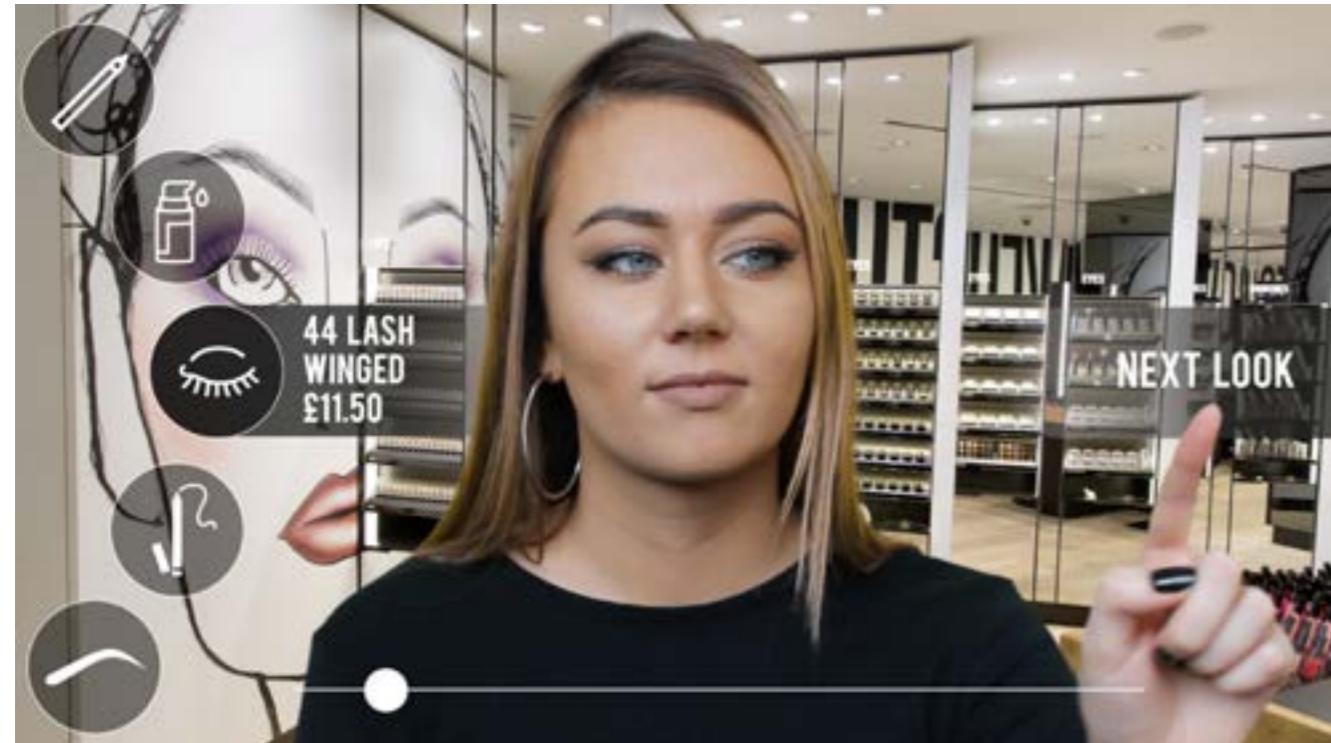


I included this scene to show the user what the slider does when a product is placed down, increasing and decreasing the intensity of the product.

## Video 2- Exploring the 'Works Well With' Option

After finishing my filming I then went on to find the best MAC store background image for my footage. I decided to go with something a little lighter than the image I created my hi-fi mockups on to brighten the screen slightly.

Background image: <http://glamouria.com/glamouria-visits-mac-make-up-studios/>



I began by creating the interface in After Effects, later going on to create the makeup as a face tracking effect.

Because the face tracking must work to my every movement, it was necessary to complete this frame by frame in After Effects which was very time consuming, however it was the only way I would achieve the best results.



This video will appear on screen when the 'viva glam III' lipstick is placed onto the reader.

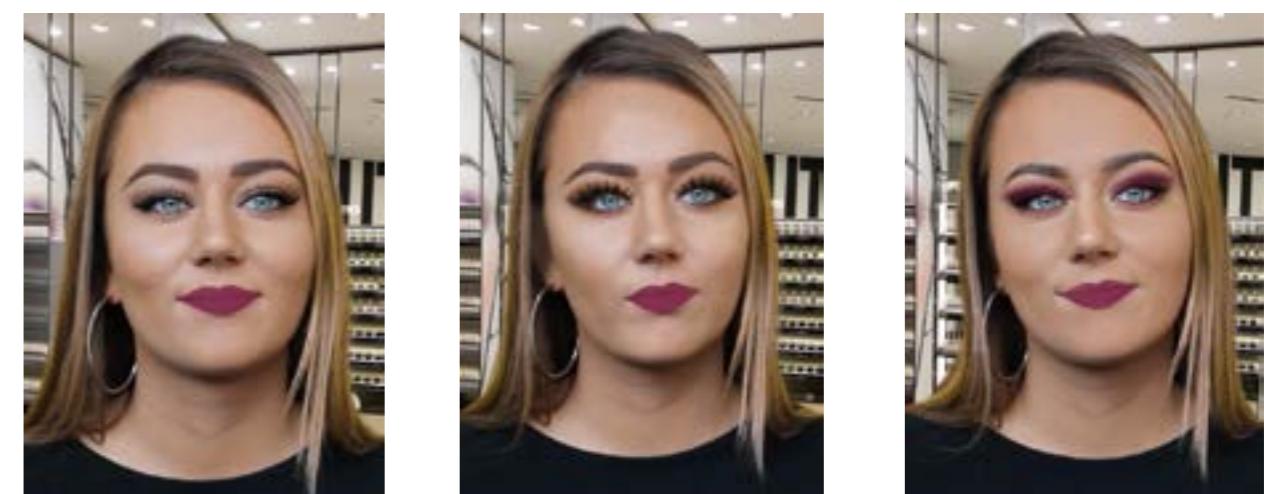
At this point the lipstick will pop up on screen and appear on my face. After I have then adjusted the intensity of the lipstick the icon moves to the top of the screen and displays the screens nav bar:



I have made two videos, one exploring the 'Works Well With' option and the other the 'Add Products' option, with the camera button in the centre. The following are some examples of the makeup layers which I then placed onto my face frame by frame in order to animate them:



Once I click on the option 'Works Well With' a look is displayed on my face, the screen then appears as displayed on the left with all of the products that are shown on that look. Once the user clicks on one of the icons, the details are displayed next to it along with an intensity slider to adjust how much of that product is displayed on the face. For my demo video I created three 'looks':



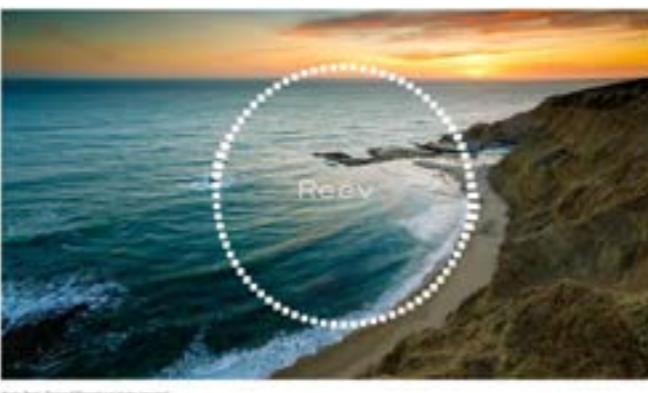
## Video 3- Exploring the 'Add Products' Option

This video will be triggered when the MAC eyelashes are placed onto the reader. The video begins with the lashes icon popping up at the side with the product details, as well as being displayed on my face. The icon then moves to the top of the screen and the nav bar appears. After clicking then on the Add Products button on the nav bar, the screen then darkens and reads 'Place Next Product Down'. Assuming that I have then placed down an eyeshadow onto the reader, the eyeshadow is then displayed on my face with the product details.

I then click onto the camera button to take a photo of the look. The screen then counts down and displays the photo taken on screen with the option to email the photo, retake or cancel.

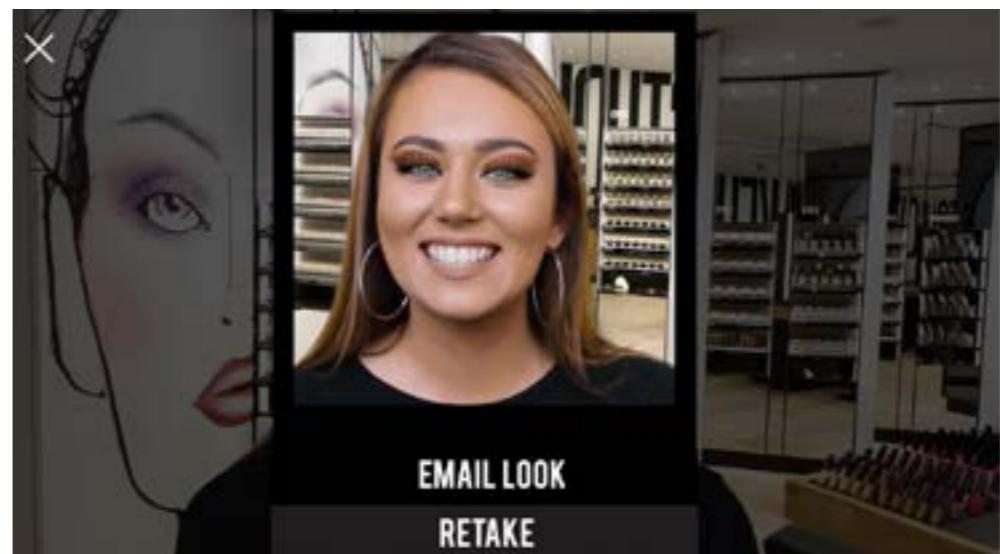
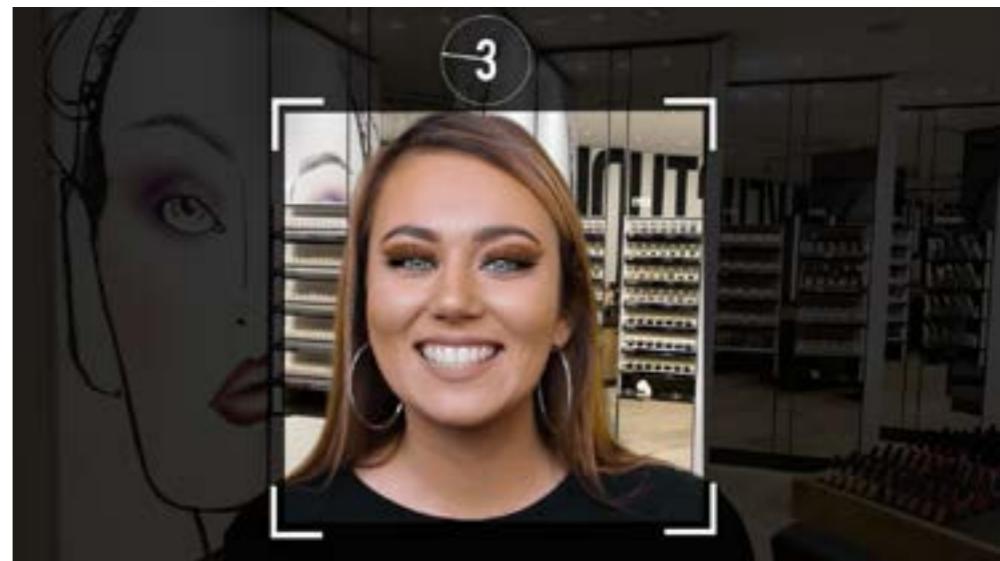
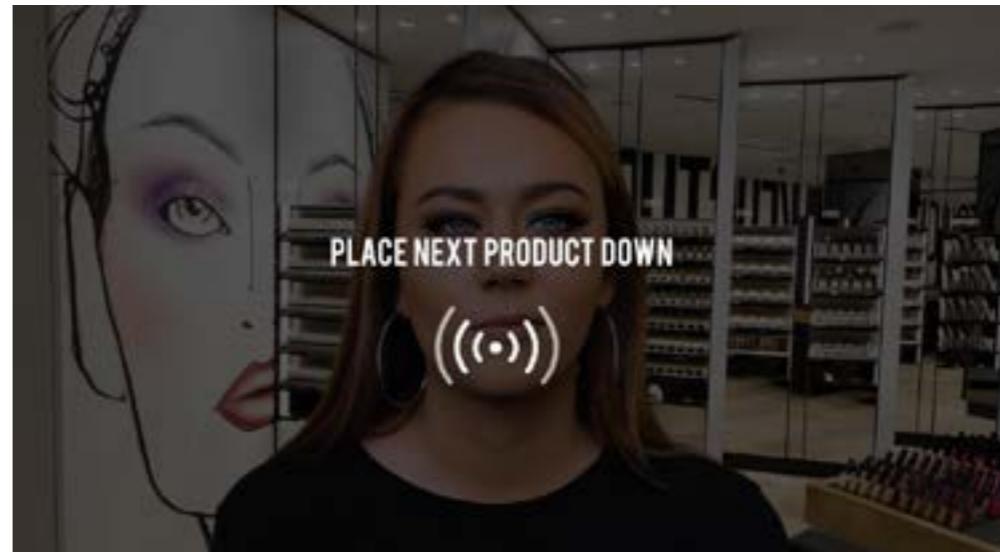
After finishing both videos in After Effects I decided to add a backing track to each video in Premiere Pro. The two backing tracks I decided on were upbeat to keep with the branding of MAC along with my short advertisement video.

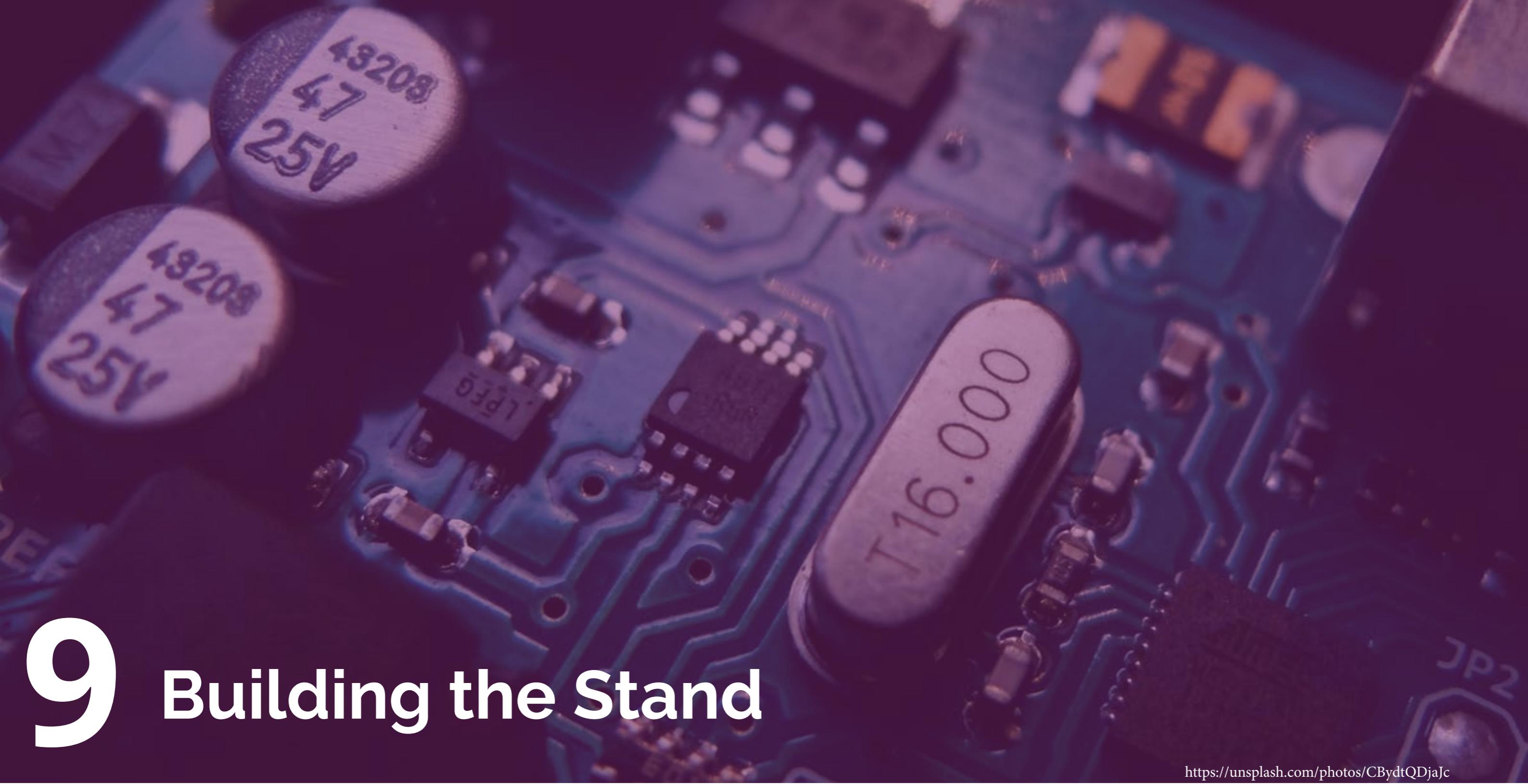
Found Audio:



<https://www.youtube.com/watch?v=rGIAQm-ixAQ>

[https://www.youtube.com/watch?v=Gegny\\_7W5Ao](https://www.youtube.com/watch?v=Gegny_7W5Ao)





# 9 Building the Stand

<https://unsplash.com/photos/CBydtQDjaJc>

This section looks at how I build the MAC Modified Personal Stand and the Code which I used to create the interaction.

## Ordering the Correct Components

Before starting to build my code, I ordered all of the necessary components:

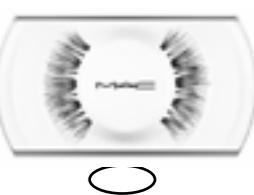
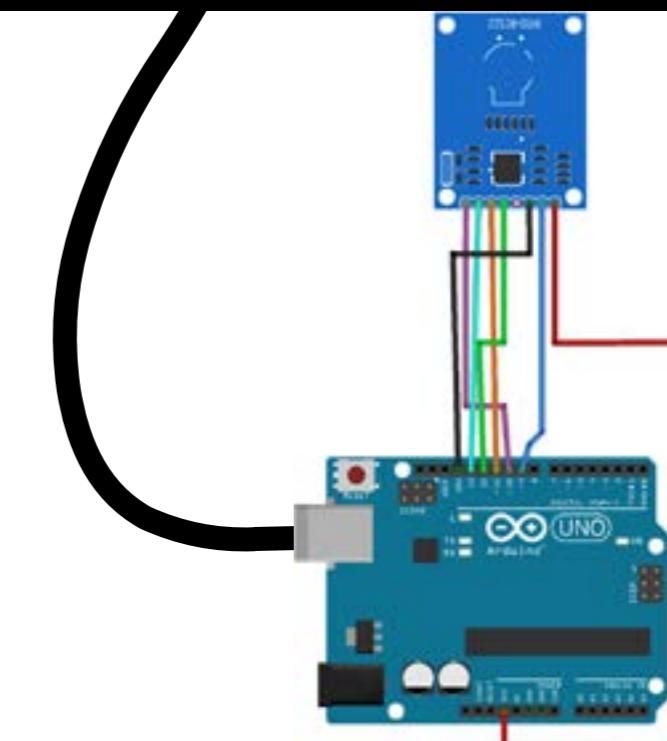
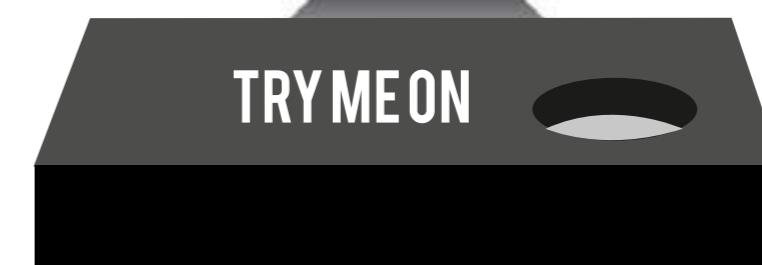
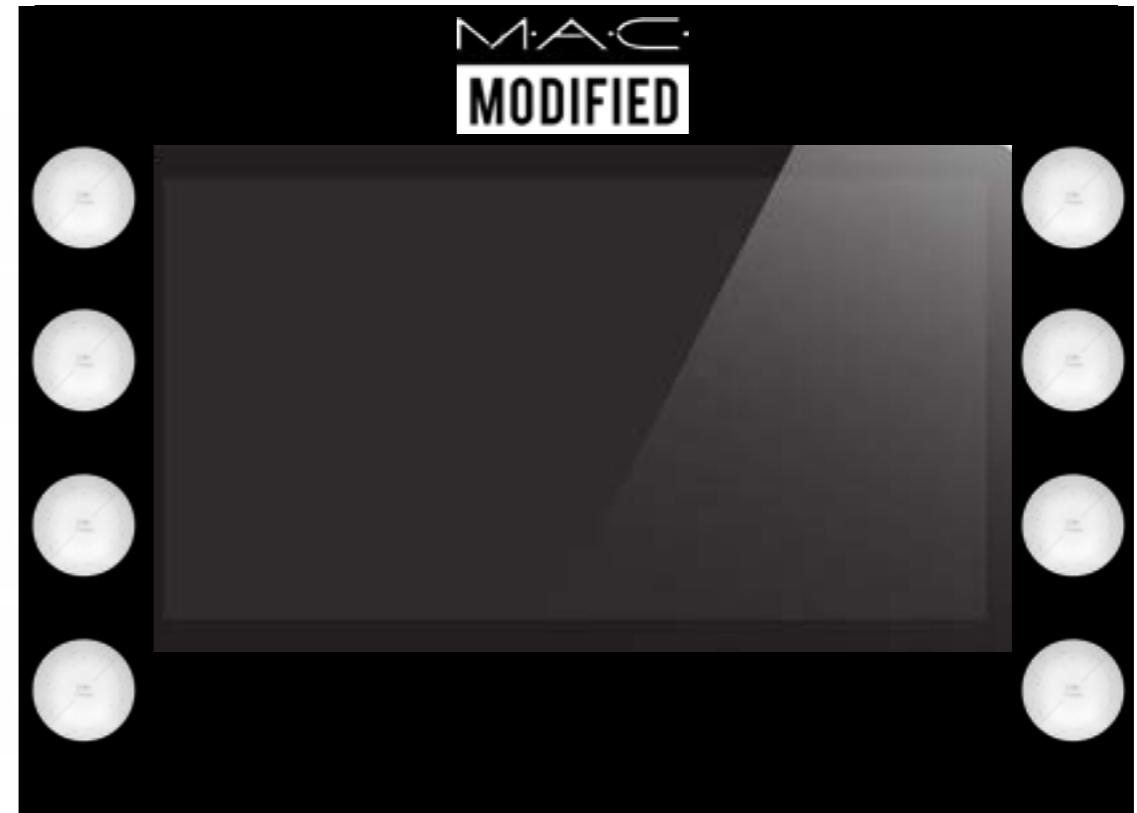
**HALJIA NFC RFID RC522 RF IC Card Sensor RFID Reader Module With S50 Card Keychain for Arduino**  
 by HALJIA  
 ★★★★★ 3 customer reviews  
 Amazon's Choice for "rfid rc522"

**YARONGTECH Anti-metal NFC sticker RFID on metal tag label MIFARE Classic® 1k 13.56mhz Dia 25mm (Pack of 8)**  
 by YARONGTECH  
 Be the first to review this item

**Elegoo 120pcs Multicolored Dupont Wire 40pin Male to Female, 40pin Male to Male, Jumper Wires Ribbon Cables Kit for arduino**  
 by Elegoo  
 ★★★★★ 100 customer reviews | 3 answered questions

On the right shows a basic visualisation of how my product will be housed. The Arduino will be housed inside a box for my prototype and I will then build the packaging around the iMac screen to go with MAC cosmetics branding.

The RFID stickers will be stuck to the bottom of the two products I am using, eyelashes and lipstick, which will then trigger the relevant video.





## Software and Soldering

After finding out which wires go to each pin, I then soldered the pins to the RFID board which will be housed in a box. After soldering and attaching the wires to the correct pins on the Arduino board, I then tested that the RFID board and the stickers that I bought were compatible using the serial monitor.

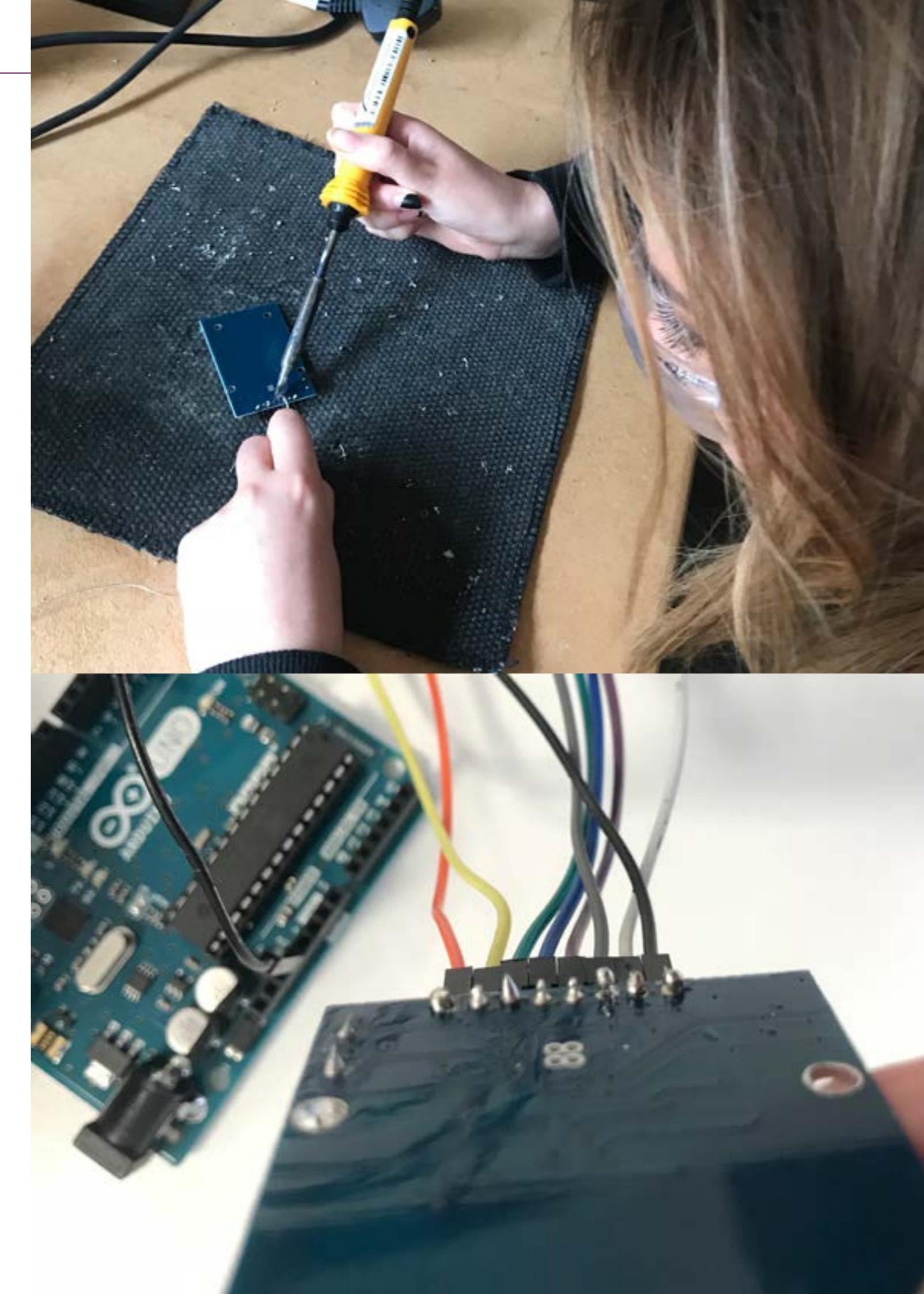
After everything was working correctly I then installed the G Streamer Video Based Library in Processing to upload my videos into.

The code which I tested on makes my videos play on a loop once the RFID sticker is placed down. I need to make my videos play once when the product is placed down and when there are no products placed down the Video 1- MAC Modified Introduction plays on a loop.

However I came to a slight problem when wanting Video 1 to play on a loop as in Processing there is no way to tell if anything is playing, therefore it is not possible to code a video to turn on when the other is turned off.

For this reason I tried a few other options, the first being to layer the videos on top of each other, the only downfall of this is when one video is finished playing Video 1 will not play from the beginning as it is on a constant loop.

Another problem with this method was the backing track of the videos were playing on top of each other. I then tried editing the volume but this was unsuccessful.



## The Code

As the image displays on the right when I placed my videos into Processing they are displayed with a black box around them, after testing a larger video I found that this is due to the size that the video was exported at and this cannot be edited in the code. Therefore I need to find out the size of my laptop screen to re-export the videos at this size.

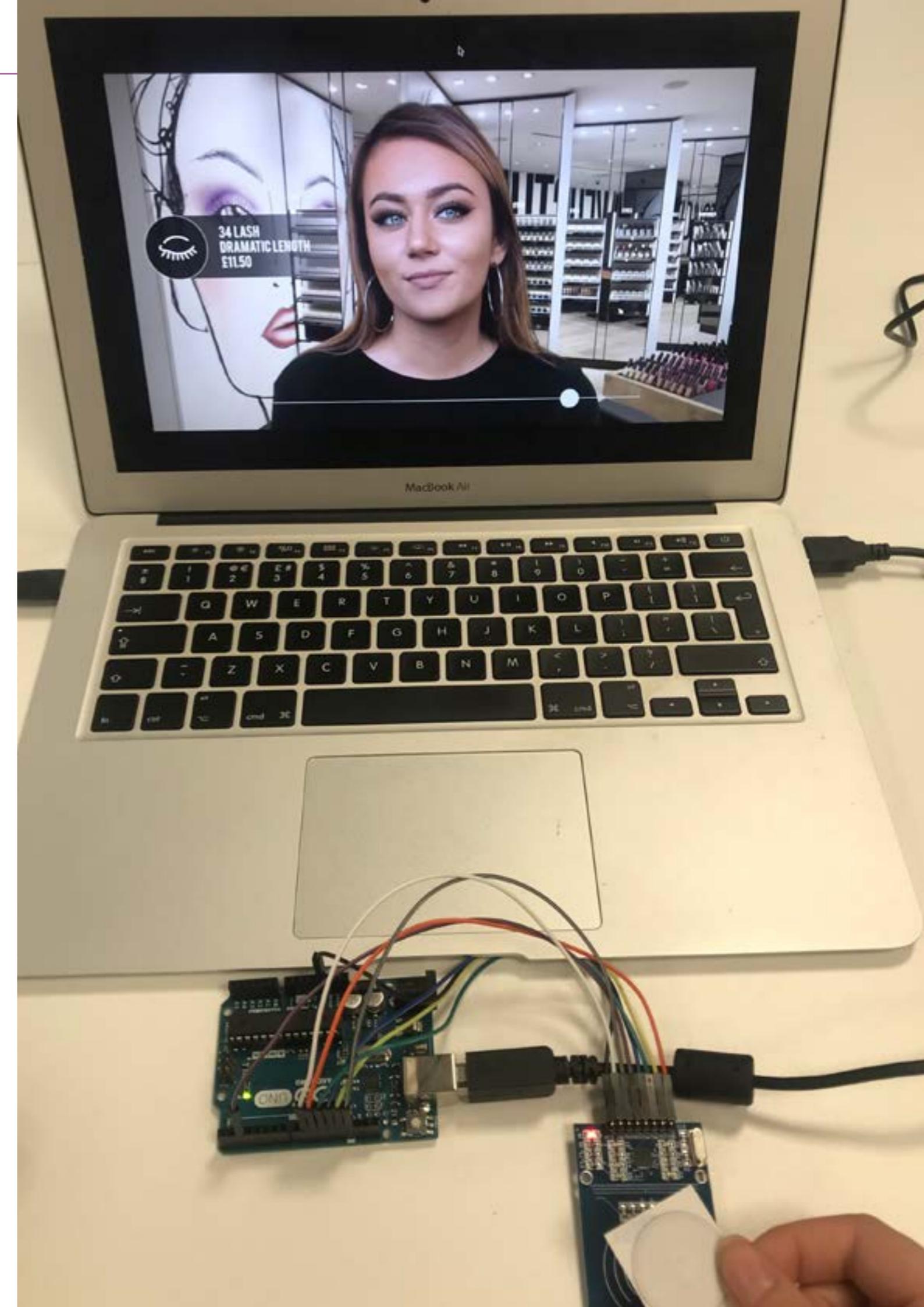


I then went to visit makerspace to see if they could fix my code. The idea is for :

- Mainmovie (advert) to play on constant loop  
\*lipstick RFID sticker is placed onto scanner\*
- Mainmovie stops and plays Video 1
- When Video 1 is finished, Mainmovie plays again  
\*eyelashes RFID sticker is placed onto scanner\*
- Mainmovie stops and plays Video 2
- When Video 2 is finished, Mainmovie plays again

Unfortunately after spending a long time in makerspace they could not work out what was wrong with the code which I was using for it not to play the relaying movies.

I originally thought that this process was going to be straight forward in terms of the coding I tried to keep it as simple as possible. Thankfully for the final code with the help of Tommy Dylan, it began working smoothly. I also repeatedly had problems with my Arduino board not working and then my RFID reader stopped working, however despite many technical difficulties, Tommy got it working in the end.





## The Code

For my final Processing code, the idea is for the serial numbers from the RFID stickers which are in the Arduino code to be imported into the processing code, which the videos are placed in.

After assistance from Tommy Dylan I finally got my Processing code to work as displayed on the right. However after getting the code correct, my Arduino board stopped working, after changing Arduino boards and RFID readers, the code still did not work on my laptop.

For some reason the code would work on other laptops and not my own, therefore for my video I will be using a different laptop.

For the final show I will be using a large iMac screen, so this should not be a problem.

```

import processing.video.Movie;
import processing.serial.*;

// MOVIES
Movie lipstickMovie;
Movie eyelashesMovie;
Movie mainMovie;

int currentMovie = 0;

boolean currentMovieChanged = false;

boolean currentEnded;

int x = 0;
int linefeed = 10; // new line ASCII = 10
Serial myPort;

void setup() {
    printArray(Serial.list());
    frameRate(30);
    textSize(050);
    textAlign(CENTER, BASELINE);
    fill(#FFFF00);

    // change port!
    myPort = new Serial(this, Serial.list()[3], 9600);
    // here we're saying that we need to buffer until 'NEW LINE'
    myPort.bufferUntil(linefeed);

    mainMovie = new Movie(this, "advert.mp4") {
        @Override public void eosEvent() {
            super.eosEvent();
            myEoS();
        }
    };

    eyelashesMovie = new Movie(this, "eyelashes.mp4") {
        @Override public void eosEvent() {
            super.eosEvent();
            myEoS1();
        }
    };

    lipstickMovie = new Movie(this, "lipstick.mp4") {
        @Override public void eosEvent() {
            super.eosEvent();
            myEoS2();
        }
    };

    println("Play Main Video");
    currentMovie = 0;
    mainMovie.play();
    while (mainMovie.width == 0 | mainMovie.height == 0) delay(10);
    surface.setSize(mainMovie.width, mainMovie.height); // P3
    //size(vid.width, vid.height); // P2
}
}

void draw() {
    if (currentMovieChanged) {
        if (currentMovie == 1) {
            lipstickMovie.noLoop();
            lipstickMovie.play();
            eyelashesMovie.stop();
            mainMovie.stop();
        } else if (currentMovie == 2) {
            eyelashesMovie.noLoop();
            eyelashesMovie.play();
            lipstickMovie.stop();
            mainMovie.stop();
        }
        currentMovieChanged = false;
    }

    // track when videos have ended
    if (!currentEnded) {
        if (currentMovie == 0) {
            image(mainMovie, 0, 0);
        } if (currentMovie == 1) {
            image(lipstickMovie, 0, 0);
        } if (currentMovie == 2) {
            image(eyelashesMovie, 0, 0);
        } else {
            println("Playback Has Ended!");
            currentEnded = true;
            if (currentMovie == 0) {
                mainMovie.stop();
                mainMovie.play();
            } if (currentMovie == 1) {
                lipstickMovie.stop();
                mainMovie.play();
                currentMovie = 0;
            } if (currentMovie == 2) {
                eyelashesMovie.stop();
                mainMovie.play();
                currentMovie = 0;
            }
        }
    }
}

void movieEvent(final Movie m) {
    m.read();
}

```

## Code Continued..

```
// events to track when videos have ended
void myEoS2() {
    currentEnded = true;
    print("Lip EOS");
}

void serialEvent (Serial myPort)
{
    // read serial buffer as string
    String myString = myString = myPort.readString();

    // if we have any other bytes than linefeed
    if (myString != null)
    {
        myString = trim(myString);
        println(myString);
    }

    if (myString.equals("25e04fcf"))
    {
        println("play video 1");
        currentMovie = 1;
        currentMovieChanged = true;
    }
    if (myString.equals("d5fe4ecf"))
    {
        println("play video 2");
        currentMovie = 2;
        currentMovieChanged = true;
    }
}
```



## The Arduino Code

For the Arduino Code I used the minimal interrupt example. and uploaded this to the board. The Arduino code is primarily used to read the RFID stickers.

In order to link the processing and Arduino code I set the serial ports both to 9600.

SD	►	D10	3
Servo	►	?	2
SpacebrewYun	►		
Stepper	►		
Temboo	►		
TFT	►		
WiFi	►		
RETIRED	►		
Examples for Arduino/Genuino Uno			
EEPROM	►		
SoftwareSerial	►		
SPI	►		
Wire	►		
Examples from Custom Libraries			
Adafruit NeoPixel	►		
MFRC522	►		
MifareClassicValueBlock			
MinimallInterrupt			
Ntag216_AUTH			
ReadAndWrite			
ReadNUID			
ReadUidMultiReader			
RFID-Cloner			
rfid_default_keys			
rfid_read_personal_data			
rfid_write_personal_data			

## Housing the Arduino

To house the Arduino I new I wanted something small and rectangular that the user would place the products down onto.

My first prototype was a cardboard box, this allowed we so see how big I needed the box to be to house the Arduino and make sure the RFID still scanned through the thickness of the cardboard.

After creating my first prototype I took the measurements of what I needed the size of the box to be and began searching for black wooden boxes.

After looking at a few options I decided to look at a wooden domino box, this was perfect as I could slide the top of the box off to place the Arduino inside.

After spray painting the box black I then drilled a hole into the back of the box for the wire to fit through and connect to my laptop.

The prototype displayed in my final prototype video of the wooden box is not the box I will be using for the final show.

My vision for the final show is to have something slightly larger and inviting, simply because the small box gets kind of drowned out by the large iMac screen when placed together.



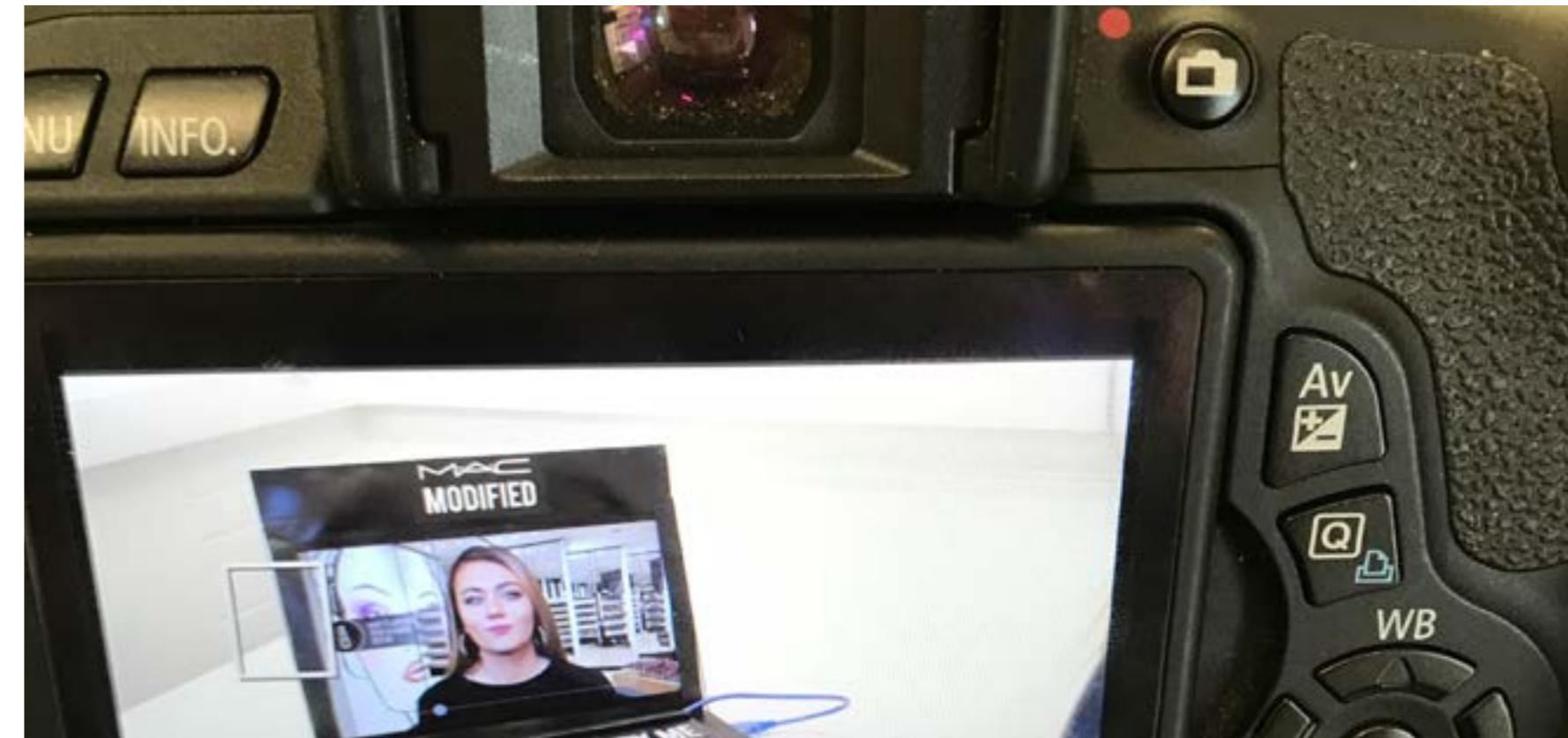
## Housing the Macbook

For my final video and for the hand in I will not be housing the iMac large screen as I cannot work off this processor until the final show.

For this reason I decided to create a small mockup out of card for the purpose of my video to show the screen housed.

I simply used paper and spray paint to create the illusion that the videos aren't actually playing off my macbook air.

Once my prototype was complete I decided to create a short demo video to show the Arduino and processing working.



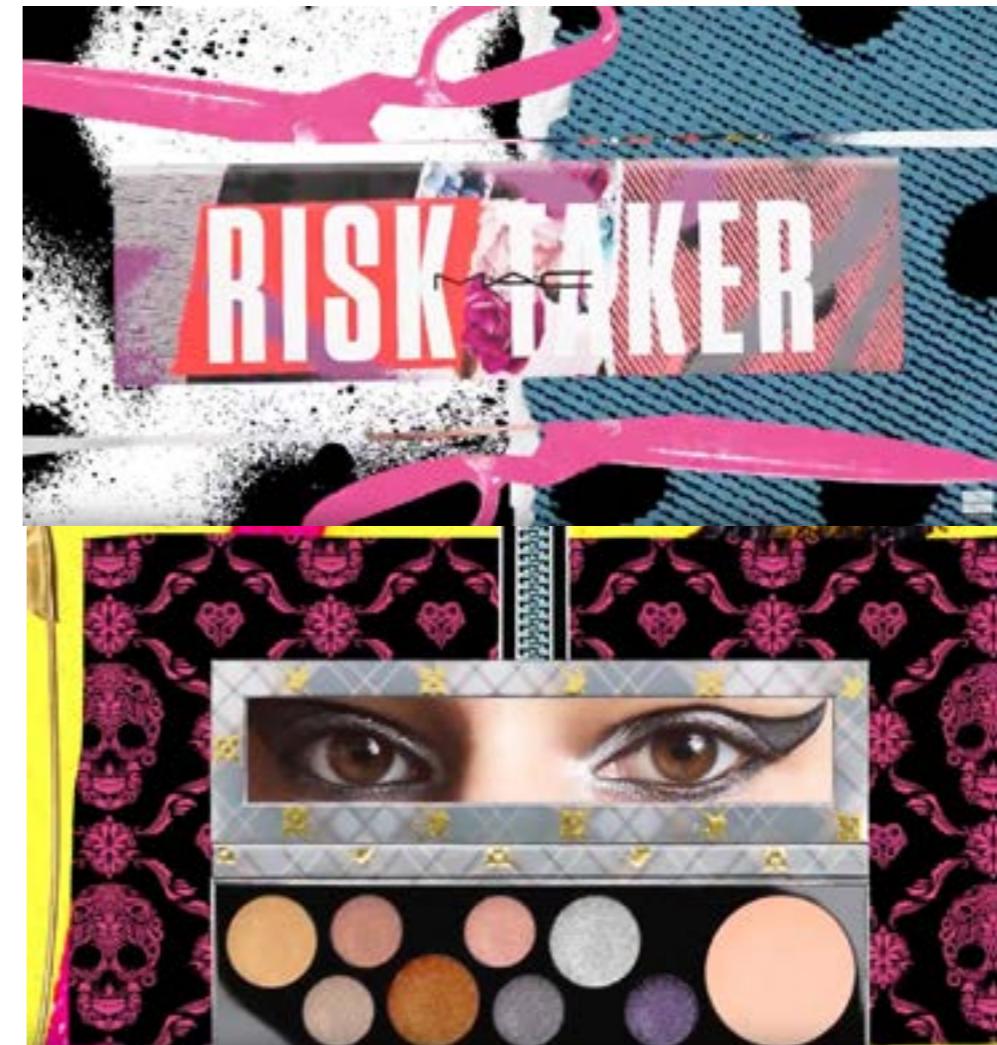
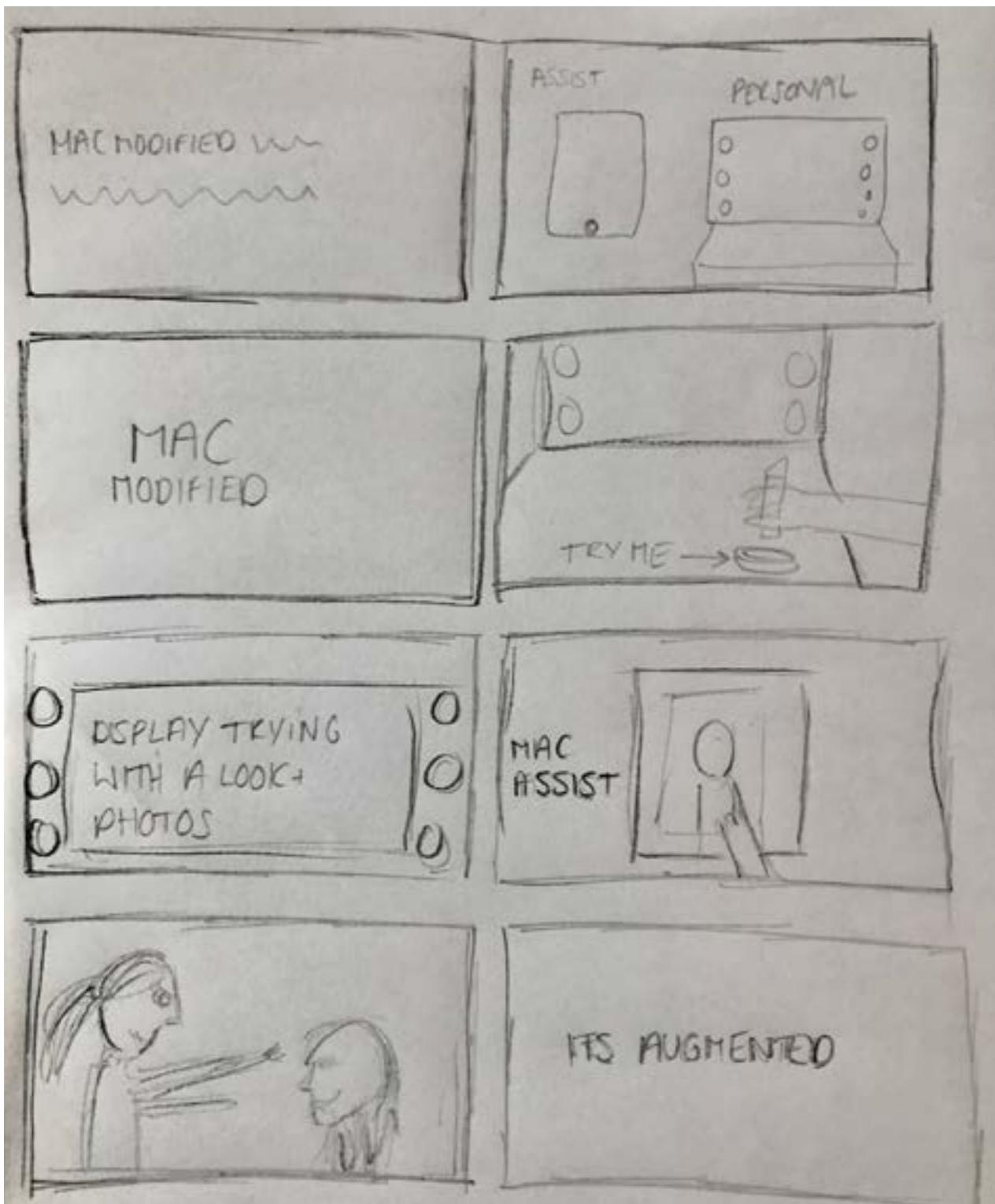
# 10 Final Video Development

This section looks at how I got to create my final video showing how the MAC Modified Service works. Using both found footage and animation using the programmes Adobe After Effects and Premiere Pro.



## Video Inspiration

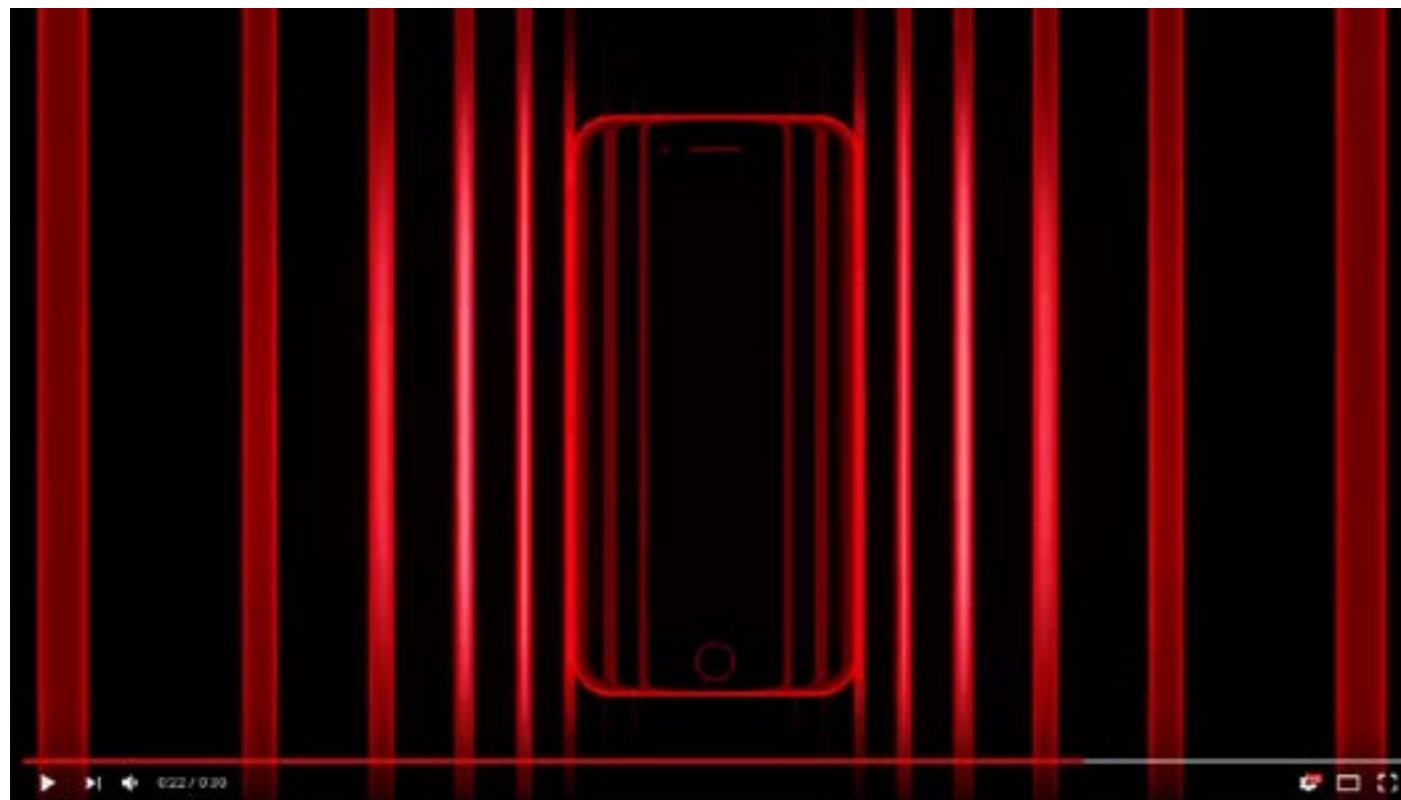
For my video I want it to also act like an advertisement and go with MACs style of video, similar to that in my first video advertisement. However here I must find the balance between telling a story of how the service works as well as keeping it to the point and to MACs style of video advertisement.



## Video Development

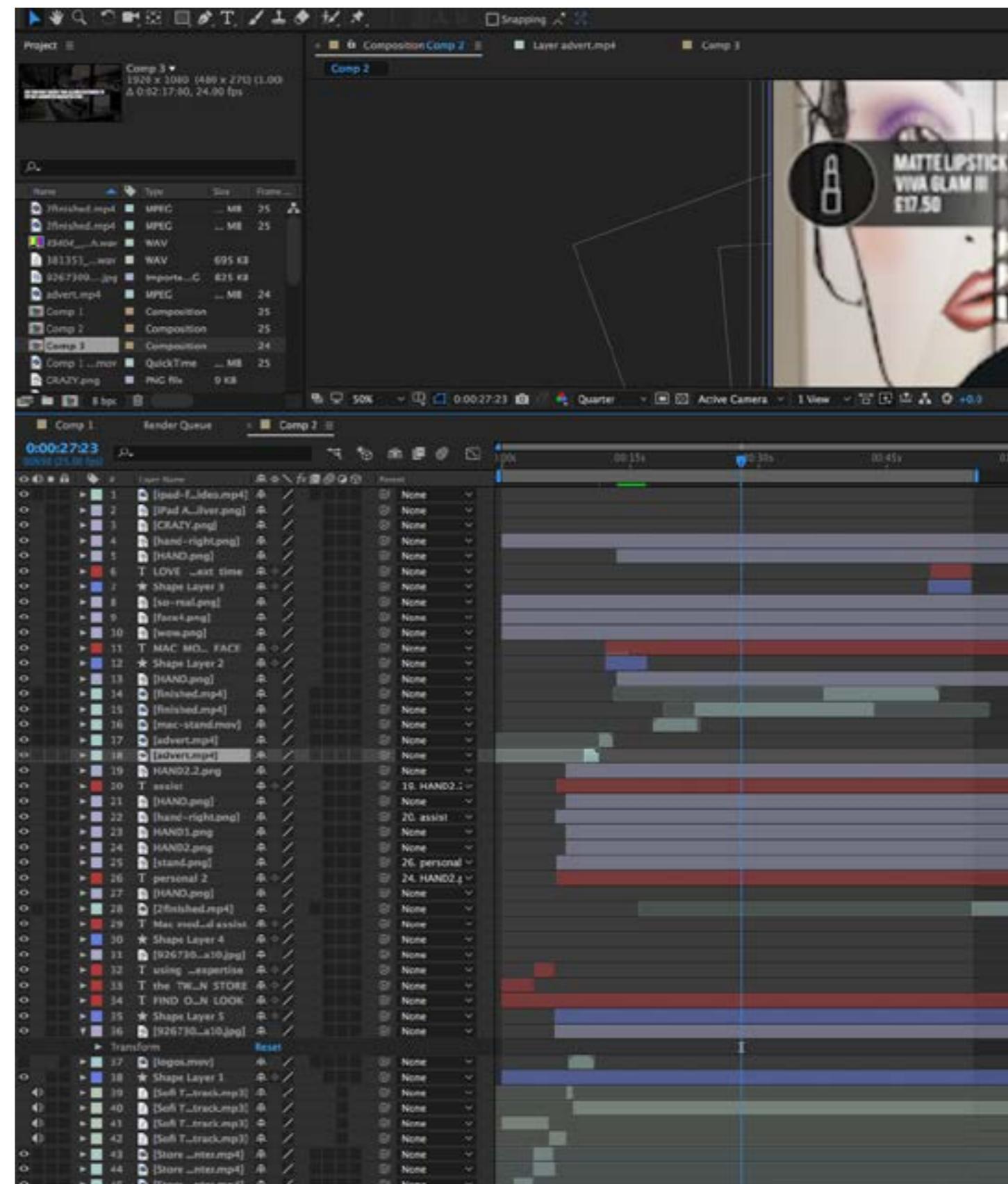


Once I knew the type of style and format I was going for, I searched for a relevant soundtrack. I decided I needed something upbeat, I looked at current advertising soundtracks and came across Apples iPhone 8 soundtrack, which worked really well with the type of style that I was going for.



Apple ad: iPhone 8 (PRODUCT)RED models

Because After Effects often does render quite slowly, I created my video in chunks in After Effects, then placing them into Premiere Pro to piece together with my soundtrack.



# 11

## Future Developments



This section looks at what my goals are to have complete for the final show. This includes more prototyping and building housing. Also how I vision my final show setup to look.

## Housing the iMac and Arduino

In order to house the iMac I must find the correct durable material. Because I am also wanting to place battery powered lightbulbs around the screen to go with the branding. I decided it would be best to work with a correx board, as I used this for one of my previous projects.

My aim is to measure the iMac screen and then cut the board to the perfect size for the iMac. I then need to measure the size of the light bulbs to place them around the screen in the correx board.

I will then create a stencil for my logo and then spray paint the logo onto the correx board.

I also want to create larger housing for the Arduino as the small box is very drowned out against the large iMac screen.



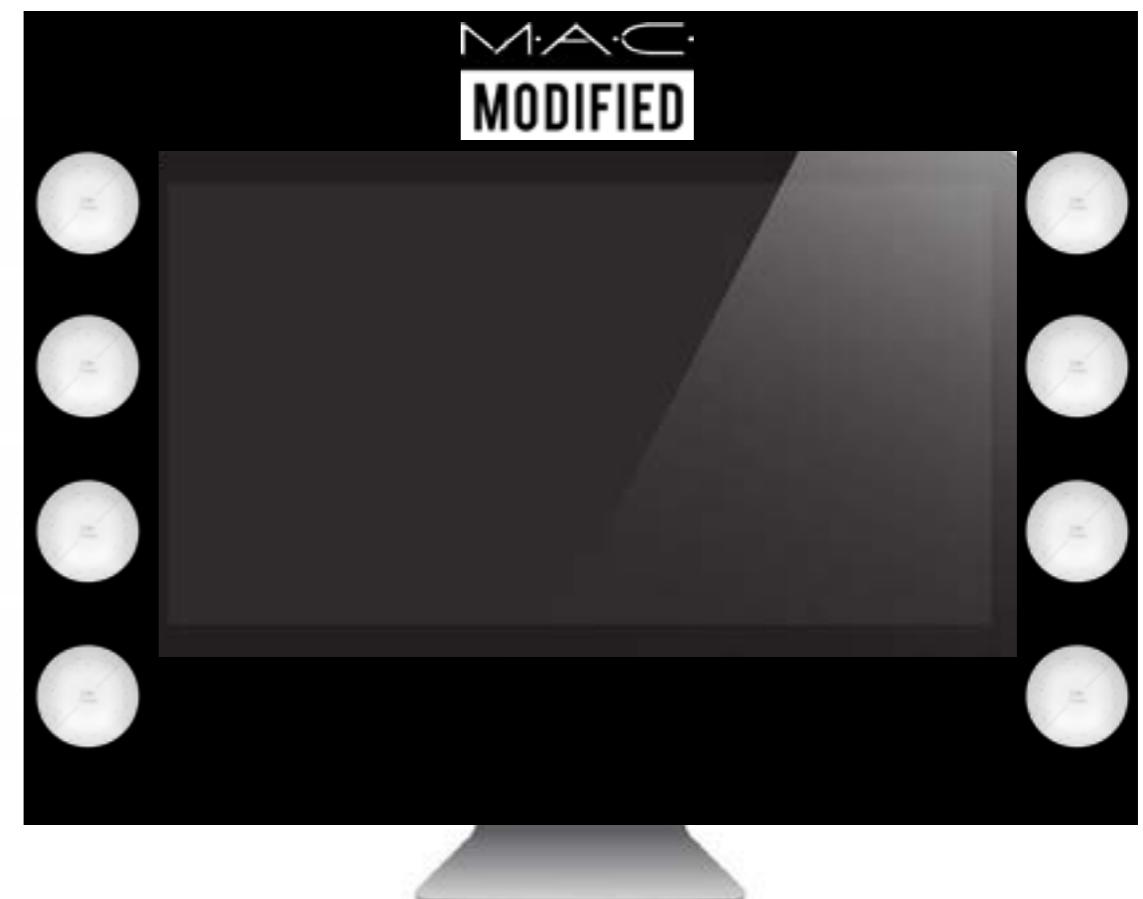
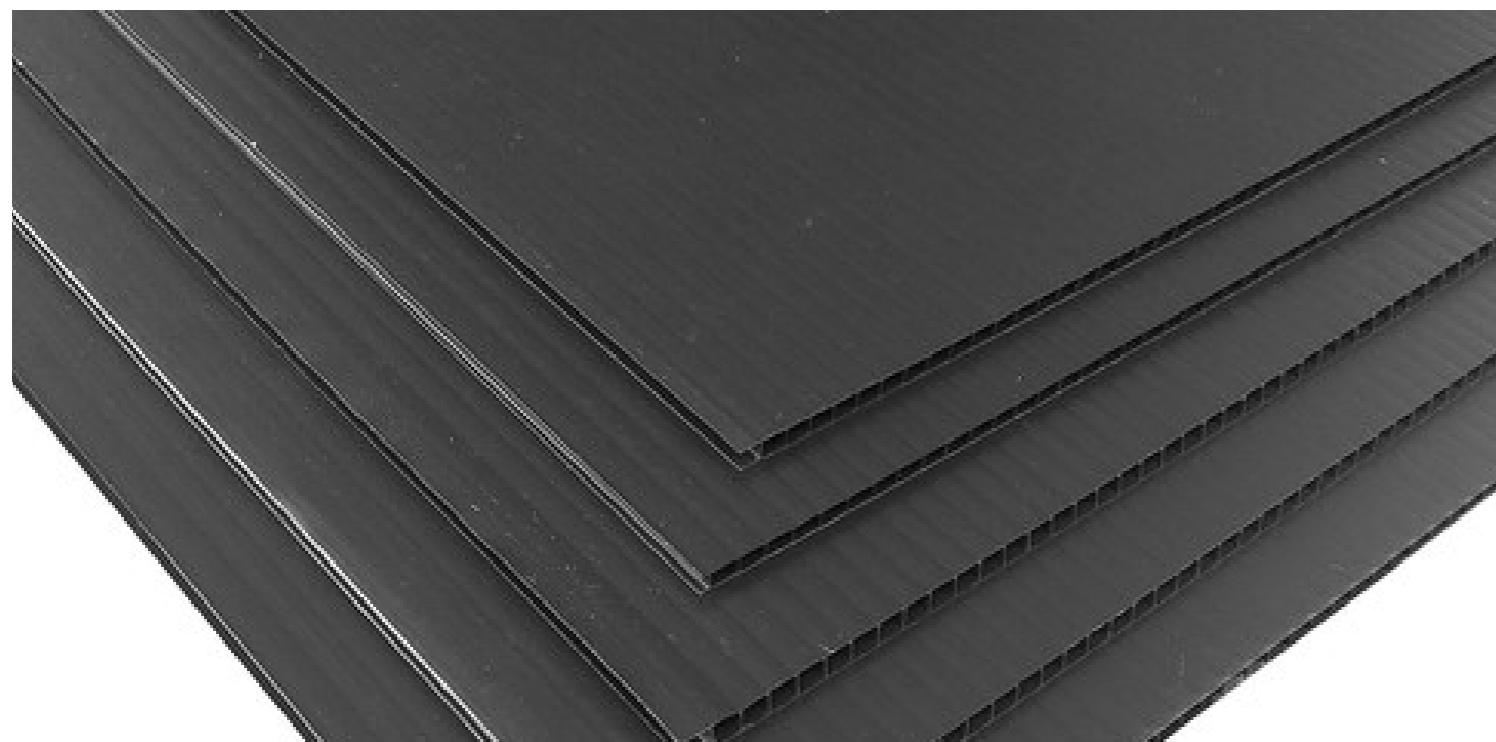
## Further iPad Prototyping

For the final show I will prototype the whole iPad application for users to test out the various looks and colours.

The stage of the iPad prototyped at is after the photo and face scan has been taken.

## Branding

I have also bought an iPad cover to complete by branding for MAC Modified. This would resemble what would be in the MAC Store.



CULTURAL  
PROBE

DEVELOP  
PERSONAS

CARD  
SORTING

CUSTOMER  
INTERVIEWS

LISTEN IN ON  
CUSTOMER  
SERVICE CALLS

FIELD  
VISITS

RUN A  
USABILITY  
TEST

USER  
SURVEY

# 12 Evaluation

Evaluating my progress from the beginning to the end of this project, things I have enjoyed and also the challenges I have faced and overcome.

I feel this project has been a great success and I have worked to the best of my ability with the technology that has been available. As I began this project, my aim was to use Unity software and use the plugins for face tracking which are available. However, after experimenting, I realised using the plugins would limit me to how I could design the interface which is my key focus. Also to learn a new software for my final project was risky considering that there is not a lot of support out there as face tracking plugins were brand new to 2017.

I did struggle because of this at the beginning of this brief as I spent a lot of time beginning to learn Unity and trying to figure out what the best pluggin was to use for face tracking. Because I couldn't get the face tracking working properly I changed my project focus over half way through the brief and added in the iPad application.

From this point I knew my workload was going to increased a lot as I still wanted to create the MAC Modified Personal Stand to work along with the iPad as a service. Because creating the face tracking in After Effects took up a big chunk of time as I was editing these videos frame by frame, I could not complete the prototype of the iPad as much as I wanted to for the hand in, however this will be complete for the final show for users to edit the still image and try out the different looks.

A bonus I had whilst working on this project was as I work in retail it helped me understand store expectations and customer needs. Also working beside the MAC store allowed me to constantly receive feedback for my concept as well as conduct a lot of primary research. Because of this my project was driven by responding to feedback and user testing, initially I wanted to get rid of tester products due to hygiene reasons. However this was just not going to be possible after doing research and receiving user feedback, customers still need physical testers to see what the makeup will physically look like on their face.

After receiving feedback I realised in some areas the makeup wasn't looking as realistic as expected on the face tracking videos, here I was stuck between creating the full intensity and colour of the lipstick, and making the lipstick look realistic. At this point I lowered the opacity of the overlay to get the perfect medium. Unfortunately because of this the intensity slider on my stand video is difficult to see what is actually happening as I have lowered the opacity in order to make the lipstick overlay look more realistic.

Overall I am happy with the final outcomes of my project and I am looking forward to building my display around it for the final show.

**IT'S AUGMENTED  
IT'S MODIFIED  
IT'S THE FUTURE**

