**DM7908 Augmented Reality Research Presentation**

Transcript

Hello, in this presentation I'm going to be exhibiting some of the AR-based research that I've been carrying out for this module. As my competitive audit focused upon the product pages on the website of my clients competitors, I’m focusing this visual research on the augmented reality experiences of brand that sell similar product to my client. I will firstly be analysing a few similar augmented reality deployments, and commenting on what I believe they do well and picking out some elements that my client could benefit from having in their experience.

I will then move on to research some of the required technologies and existing solutions that are available to my client for production of similar augmented reality experiences.

Okay, so let's start with the augmented reality deployments.

The first experience that I researched is an experience by a company called Bulgari. The product range predominantly consists of high-end fashion items, including handbags. The mobile website, which you can see on the screen, allows for a 3D view and an augmented reality experience to be launched (see red highlight). The 3-D view can be swiped so that the user can see all around the product, while the augmented reality experience allows the user to place the product on the surface and physically move around it themselves; the experience does not animate the product in any way, so the user cannot see inside of it. I think that this might negatively impact those users with a high need for touch, as they might now have a lower level of confidence - the AR experience can’t assure them of product texture or capacity.

I don't know how the virtual model of the product was created, but seeing a side-by-side comparison, .as we have on screen tells me that the virtual object does not represent the textures of the physical object. For example, there is no shine that would indicate a polished leather or shiny plastic material. In the AR experience, the model appears very dull, which in my opinion does not sell the product very well.

On screen you can also see how I related this experience to some of the theoretical research that I found as part of my literature review. Please feel free to pause the screen and look at some of the annotations on the slides as we continue.

In the central screenshot of the experience, you can actually see the default user interface for augmented reality experiences on apples operating system. This interface allows for the user to switch between the augmented reality experience and seeing the 3D virtual model on its own without the contextual surrounding. There are also buttons to quit the experience and to share the experience.

While this appears to be the minimum for an augmented reality user interface, I am interested to find some experiences with more advanced features, especially as I am already aware from my previous studies that accessibility considerations can also be made for similar experiences.

Before moving on, I also found that Bulgari experiment with other forms of emerging media. An NFC chip inside of products allows users to quickly and easily access information about sustainable practices, social media experiences, and fashion tips. This will likely please some consumers with a high need for touch, especially while they are shopping. However, and crucially, this is not of particular use to users who are shopping online as they do not have physical access to the product nor the NFC chip.

Converse is the next brand that have produced and augmented reality experience. In fact they've actually launched two different experiences, and one is clearly a later iteration of the other.

On screen, we can see the most recent iteration, which I believe to be called ‘Converse Skate Park’. It's actually an addition to a very popular and highly functional social media application called Snapchat; the experience leverages this functionality and popularity, allowing converse to insert their footwear designs and benefit from this form of synergy.

I've highlighted a few key elements of note. In the blue square you can see that I've highlighted some media options, allowing users to add music for example into their experience. And, in red, I've highlighted the design selector, which appears as a column of buttons that users can tap to change the footwear design - this is one element that I'm keen to bring across to my clients’ AR experience. Their product line features a wide range of designs, especially considering a unique selling point of their brand is that they champion the design and artwork of young artists. This element should perhaps be given a more central focus for my client for this reason.

… And here we have converse is first iteration of an augmented reality experience. One criticism I have of this experience is that it appears to have only provided a limited field of view to the consumer. Users could only see products from a ‘birds-eye’ view. This may have been due to hardware issues in popular smartphones. However, the constraint could have also been related to Converse’s in-house development team, who may have had knowledge, budget, or time constraints, limiting the outcomes they could a produce; a collaboration with Snapchat may have enabled them to overcome this.

My next point of research involves some promotional material by a design agency called genius ventures. This promotional material was created for the brand Louis Vuitton, and in my eyes is a marginal improvement because it allows the user to see the texture and material inside of the bag, and gain some sense of capacity as well as scale. It appears that the experience is interactive, and that the user can rotate the bag, and information labels appear when the white, circular targets are centred on screen.

These information labels are somewhat problematic however. The image on the right shows that at some angles these labels are not easily legible. Further to this, the scale of the labels means that users will need to position themselves in a particular range from the virtual object so that they do not appear too large or too small. These two issues combined could create an accessibility challenge, that might be overcome by integrating the information into the user interface instead.

One further criticism that I have is that the products material or texture doesn't appear to be responding to the environmental lighting conditions. There are no shadows around the product, and its texture doesn’t appear to shine at all. This is perhaps the same situation as the Bulgari augmented reality experience, which leads me to believe it might be a hardware limitation or a limitation imposed by the operating system of the mobile device being used.

I decided to look a little closer at how models in augmented reality experiences can come to have interactions with the environment surrounding them. Looking at Apple’s solution, ARKit, it appears that environmental textures and lighting conditions or introduced a couple of years ago. The method of achieving this is fascinating, as the software generates the textures for the environment surrounding the virtual object in real time, and then uses this to render a graphical overlay that encompasses the object and appears to the user as a reflection of the surrounding lighting conditions.

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As I have a fairly up-to-date iPhone and access to a Mac, I believe I could leverage these abilities for this project. All of my devices meet the requirements on the screen, and I do have Xcode downloaded already.

Now, I have been doing some of this research concurrently with my early sketches and wireframes, so there is some overlap here. When creating my wireframes I had to consider how a user might make selections about the design of the virtual object on the screen, for example, and this led me to ponder the user interface. I settled on taking inspiration from camera applications, as these seem to adhere to what is a now a set of conventions for camera applications. You can see by my coloured annotations, despite a few variations on layout, the functions appear to be present in roughly similar ways. I will discuss my decision-making in a bit more detail when I come to present my sketches and wireframes on my blog.

My final area of research was to do a deep dive into an agency that provides augmented reality, virtual reality, and mixed reality experiences for retailers. Now, these experiences I expect to be expensive, and so exclusive to bigger retailers who may be able to afford a level of financial risk. They may not be appropriate for my client, but they are certainly providing a similar solution to the one I'm seeking to create.

Designhubz do an excellent job of detailing the advantages in creating such experiences with emerging media. Here, they have listed some of the questions that consumers may ask themselves, especially those with a high need for touch, when purchasing a product. They are specifically explaining that their product ‘boosts buying confidence’ by addressing these concerns, which in turn has positive effects for the client, such as a reduction in returned products.

They even go as far as to explain how the process would work, from digitising physical objects, to embedding them on e-commerce and social media platforms, to then analysing various metrics to attain useful analytics data.

One thing that I also thought was interesting is that they supply ‘fully automated and proprietary digitisation rigs’, which contain equipment needed to scan physical products, creating photogrammetry models that can be used in 3D and AR experiences. I suppose this automation process removes the possibility of human error, and goes further to ensuring high quality photogrammetry models.

It's interesting to come across this solution at this stage. It’s almost entirely achieved the goals that I set out for myself for this project and my study proposal. However, I suppose its limitation is likely to be its cost and thus viability for clients such as Blossom & Easel. I think this highlights the importance of making sure my prototyped solution firmly addresses the affordability aspect.

Once I had researched some of the augmented reality experiences that have been produced by similar brands to my client, I decided to move across to looking at how these experiences could be created.

And, at this point I did remind myself of the constraints that my client and similar e-retailers could experience, and these included project cost viability, the client’s knowledge on technology, and the client’s time, to name a few. I will keep this in mind whilst conducting this part of the research, and pass comment on them when I felt like I'd seen something relevant.