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WebGL Product Configurators

From Technical and Market Viability to Alpha

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1 Abstract

Peppr is a company that is specialized in building photo-realistic visualizations. Late 2014, Peppr built a product configurator for SlimFitted, a company that builds tailored shirts. They wanted their customers to be able to design their own shirts.

Current product configurators for the web are built by splitting up the product into different layers. Every layer consists of a pack of images. In Peppr's case, there were 25 colors, 2 perspectives, 7 collars, 6 sleeves and 3 base shirts. This left Peppr with a sum of 6300 different layers (and thus, images) and when the client wants to add another color, they would have to build another set of 252 images. This is a timely and costly venture.

Peppr concluded the usual way of doing these types of projects is suboptimal and started looking for an alternative. That is where this thesis comes to play. March 2011 was the first release of WebGL (https://en.wikipedia.org/wiki/WebGL), an implementation of OpenGL technology for the web. Because WebGL renders directly from the video processor, it opens up the web to a whole new way of using 3d. The actual adoption rate has always been low because only the latest browsers would integrate the technology. Anno 2015 though, the playing field has changed. With more-and-more browsers supporting this new type of technology, the timing might be perfect to bring it to the masses.

In this thesis I will try to find if a WebGL based product configurator, is both viable in terms of technical and marketing aspects.

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2 Introduction

2.1 Problem Statement

2.1.1 Service domain

2.1.2 Technical domain

2.1.3 Organizational domain

2.1.4 Financial domain

2.2 Objectives

Setting up clear and concise questions to answer – aka, objectives.

2.2.1 Main Objective

Broad Research question

2.2.2 Service objectives

2.2.3 Technical objectives

2.2.4 Organizational objectives

2.2.5 Financial objectives

3 Plan of Action

3.1 Research Methodology

Short introduction as to why this section exists

3.2 Assignment of Methodology

Certain aspects of the objectives of the research need certain types of research. I'll assign them here while going into detail in the subsections below.

3.2.1 Service objectives

3.2.2 Technical objectives

3.2.3 Organizational objectives

3.2.4 Financial objectives

3.3 Experimental

Explanation of experimental research related to loading times / browser compatibility goes here

3.4 Empirical

Explanation for empirical evidence based research goes here

3.5 Research Validation & Critical Notes

4 Research Findings

4.1 Service objectives

4.2 Technical objectives

4.3 Organizational objectives

4.4 Financial objectives

4.5 Research Conclusion

5 Building

5.1 Introduction to Single Page Web-Applications

5.1.1 Single Page Concept

5.1.2 Design Patterns

5.2 MEAN Stack

Introduction to the MEAN stack and per component an explanation to the use of it

5.2.1 MongoDB

5.2.2 ExpressIO

5.2.3 Angular

5.2.4 Node JS

5.3 WebGL Engine

5.3.1 ThreeJS

5.4 Requirements

Requirements for the actual app, which components are vital to the usefulness, in other words, what's the MVP

5.4.1 Functional

5.4.2 Technical

5.4.3 Data

5.4.4 MoSCoW

5.4.5 MVP

5.5 DataModel

5.5.1 Node based vs Table based

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