IB Subject: Design and Technology

Extended Essay

Title: V stitcher and the Global Textile Waste Crisis

Prescribed Question: Is V Stitcher the solution to the High Street Fashion global textile waste crisis?

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1. Introduction:

Fashion is constantly developing but a major problem is the amount of textile waste produced. The main question is whether there is a solution to this growing problem? When thinking about current fashion companies, a large number of them want to investigate what are the new digital solutions to solve the waste crisis and how effective they are.

There is known to be over 92 million tons of textile waste created annually from the fashion industry and this is estimated to increase by about 60% between 2015 and 2030, with an additional 57 million tons of waste generated annually (Malatesta). New software solutions are currently being developed to reduce these problems. A company known as Browzwear has come up with a new software - V stitcher, which focuses on the process of designing to client preferences, production and prototyping, pattern developing, modelling and the selling of the product. Browzwear is a software that designers use to choose multiple patterns, body types, cuts and styles that can be used to create a particular product.

Traditionally in the fashion design development process, when looking at a design, it is difficult for designers and buyers to fully visualise the product from flat initial sketches (Claxton). V stitcher could be a way for designers and clients to explore their creative ideas and experiment with design development with no harm to the environment therefore reducing waste. The main aim of this

investigation is to evaluate the potential impact of this software. As well as evaluate, to what extent can Browzwear effectively impact this growing problem of waste in the fashion industry.

Figure 1.1

(Cooper, “Fast Fashion: Inside the Fight to End the Silence of Waste”) Fig 1.1

1.1 Purpose of this essay :

The purpose of this essay is to conduct research to gain a better understanding of the potential impacts of V stitcher on textile waste, and investigate how the software may impact waste reduction. To do this it is necessary to investigate the current process of manufacturing, retail and the disposal of garments waste during sampling and at the end of the product life cycle and evaluate how the

functions to V stitcher, can potentially reduce this. This essay is aimed to establish whether V stitcher is the solution to the global textile waste crisis.

1.2 Methodology

The essay will use the following methodologies to investigate the question. First, analyze the current practices and processes of design development production, resulting in serious environmental effects. By finding this out, we can compare this to the functions of V stitcher to see if this software can reduce the amount of waste. Secondly, investigate whether V stitcher can help companies and designers visualize their products to clients without having to use physical prototyping and can conclude whether or not it helps reduce waste.

The investigation will use interviews from a variety of sources including Nastasia Malatesta Redress HK - an organization raising awareness about fashion waste and fighting for a global change (Malatesta). As well as drawing information from interviews from a high street fashion designers perspective, such as Leanne Claxton (fashion and print designer based in the UK and Hong Kong). I was also able to gain an understanding of how designers create waste and whether actions should be taken to fix this problem (Claxton). The investigation will also use interviews from Business Developer of Browzwear, Vivien Pak, to explore the functions behind the software and the process behind how designers use the product. From this information, an argument can be formed as to whether it is a substantial solution to the problem (Pak). These interviews will provide valuable

information which will help me assess whether the software can reduce textile waste.

The study will also reference secondary research sources, such as literature, documentary videos and books. These sources explore the amount of waste in the fashion industry and the functions and usefulness of software such as V stitcher on websites and in videos. A study on CBC (Agro) discusses fast fashion and the impact of the process on the environment, a book by 'Redress' (Dean) 'DRESS WITH SENSE' explores the different methods to reducing waste.

2. Context:

High Street Fashion: High street fashion also known as fast fashion is defined as clothes worn on a day-to-day basis and accessible to everyone (Malatesta). Throughout this investigation, there will be an analysis of the three main parts of high street fashion - the production and manufacturing, retail and buying by consumers and the disposal of the garments.

V stitcher: V stitcher, a software developed by Browzwear is used by designers to help visualize products that they want their clients and consumers to understand. The features of V stitcher may impact the process of design and development and could be beneficial to the impact the fashion industry has on the environment. The main purpose of the software is for designers to be able to

communicate a clear design idea and create multiple designs without having to waste any material as products can be seen through the software. The software itself also helps communication with designers, merchandising teams, buyers to then final consumers. Through this investigation, we can see whether this can help the global textile wastage (Pak).

3. Fashion currently vs Technology

High street Production

The manufacturing process in fast fashion industries tend to be located in third world countries due to labor being cheaper as the workers are less skilled, which then leads to lower standard of clothes. (Bird). The article 'where are our clothes made' (Akhter), discovered that this ultimately leads to the clothes not being durable for long term use, thus resulting in more wastage at a quicker rate.

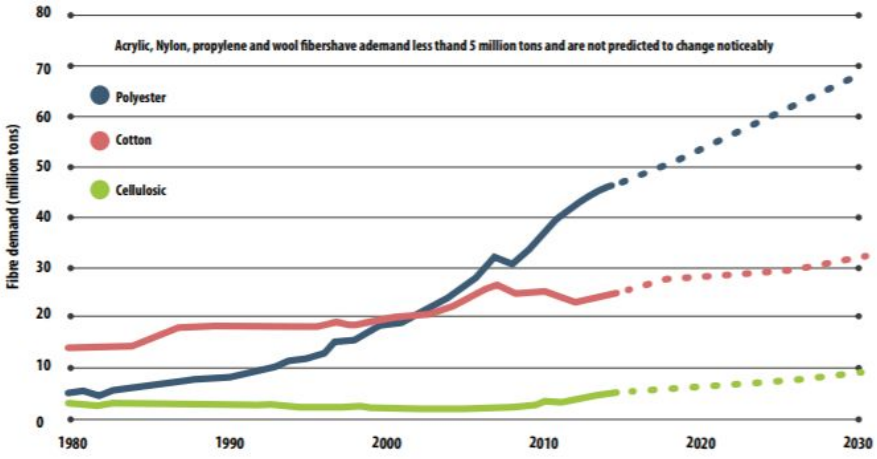


Figure 1.2

(Common Objective. "Fashion and Waste: An Uneasy Relationship."

Fig 1.2 shows the increase of polyester as a material in the fashion industry, the traits of polyester are cheap and low quality which eventually leads to clients buying more and companies wasting more. We can see based on the graph there has been a decrease in using natural fabrics, implying that companies are using chemicals to create a synthetic fabric known as polyester which is affecting the environment. (Herbszt)

A study by Simon Parry a journalist from the South China Morning Post stated that fast fashion leads to clothes being thrown away more often and in the long run increasing waste (Parry). A recent article posted by Csillia Herbszt comments on the low quality of fast fashion clothing and how clothes are produced from a cheap fabric in order to keep the cost low and for consumers to constantly buy more (Herbszt). This can be seen in Fig 1.2, where polyester known to be one of the most wasteful fabrics (Herbszt), can be cross referenced to the statistics, which implies that annually the amount of textile waste produced is increasing. She went on to explore how it confused her that the clothes she bought were cheaper than a cup of coffee, exploring that they lack quality, leading to throwing away clothes only after a few months of buying (Herbszt). Csillia went onto say that polyester is one of the worst materials to use which can be seen through fig 1.2. as it is plastic, and releases microplastics into our water system when washed, which pollutes the ocean (Herbszt).

High Street brands use prototypes to test function and aesthetics behind the product, but due to there being a high amount of samples generated to visualise the product, the production process is extremely wasteful. (Malatesta). From a designers perspective, they are usually building their own brand, therefore methods of testing and visually understanding what the product would look like an essential step. The process of designing starts by responding to a seasonal trend/ theme which is set by clients. Fashion designers then draw a range of fashion sketches, usually this is a hand drawn sketch or Adobe Illustrator (Claxton).

Fabrics are physically chosen and a merchandising team will communicate a tech pack information to the pattern maker and will source all the fabrics. The production process involves the tech pack, pattern and materials being sent to a factory for initial sampling. Once a sample is made, the designer evaluates it success. A number of samples are generated before a final sample is approved. After the final sample is ready, the garment is shown to the fashion buyer from a fashion company. The garment may need to be sampled a further 1-2 times in order to meet the buyers specification. Only after this, the garment is approved by the buyer and an order is placed with the factory. Production of the garment can take 6-8 weeks before delivery to the store. (Claxton)

Claxton explains that the majority of designers incorporate some technology into their process, but from this analysis we can see that a smaller amount of sophisticated software is involved. As designer Leanne Claxton explores that majority of the processes just involved Adobe Illustrator instead of other technological methods to reduce waste. (Claxton)

V stitcher production

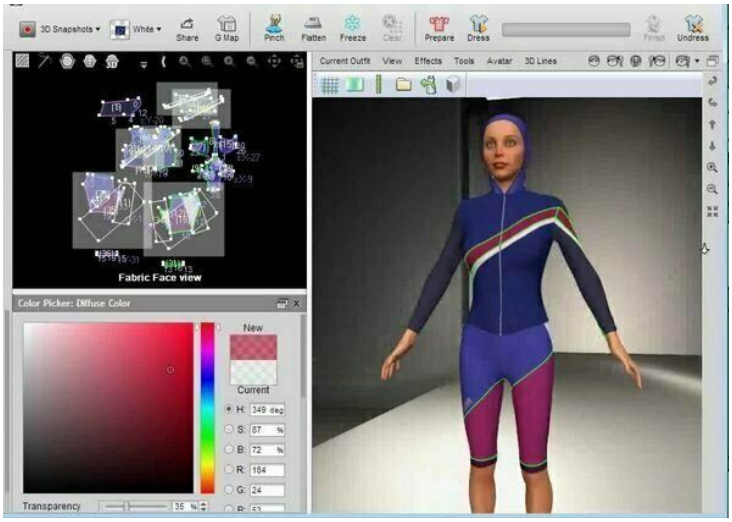
A newly developed software by Browzwear, V stitcher is a possible solution to the growing problem of textile waste. V stitcher is a virtual CAD modeler that helps designers explore (3D visualisations) a piece of clothing or a certain pattern without having to create any physical product, and therefore no waste. The main purpose of the application is for designers to communicate with their client, and gain insights to their preferences by creating a clear vision between the designer and client in order to explore each others ideas. The software generates less waste and through this, we may be able to solve sustainability. (Pak)

Through primary research on Browzwear, we can analyse its key functions and how companies can tailor it to suit their needs. The main purpose behind analysing V stitcher is to come up with a conclusion on whether this could be the future solution to the growing problem of the high street fashion global textile waste. Softwares such as V stitchers have been designed to reduce the amount of time and money wasted into production (Pak). The main purpose of this

software is to make designers' lives easier when trying to communicate an idea without making any prototypes or testing. Currently, production methods involve companies having to do quality tests, drape tests and dye tests. (Pak)

By undertaking a one-on-one interview with the business developer of Browzwear, we can understand the purpose of the software and how it helps reduce waste. Through the analysis of which companies use V stitcher, as well as how they are using it, it can be assessed to whether this is a possible solution to the waste crisis and help improve the environment.

Fig 1.3 (Miller, "10 V-Stitcher Alternatives & Similar Software – Top Best Alternatives")



The software would start with a designer having a pattern piece which can be altered towards a specific style and length; for example creating a dress would have the option to add sleeves, change the length, add a collar, and even tighten or loosen certain areas (Pak). The designer would also be able to add a digital human to test out the main layout of the dress on humans, and then add finishing touches such as belts or zippers and test it on different body shapes (Pak). In Fig 1.3 we can see the representation of the digital avatar which helps clients gain a visual

understanding over how to product would appear on a human. Lastly, once completed the designer would have a finished visual on a product, which they could then save and send to their client for approval. With this, they can make changes according to their client's needs & standards; thus creating less fabric waste, with products of better quality, but this takes more time and effort.

Through the analysis of the production of V stitcher, we can see that its functions have the potential to reduce wastage of prototypes through the digital avatars and 3D visuals of the pattern in detail, which help designers who prototype to test the aesthetics behind their design. Though this is good for the environment it does not help with the consumers' needs of time stance, as the main advantage of fast fashion is clients getting instantly the clothing item they desire. However with this production method of having the client approve, could suggest that the technology needs to be improved for more companies to change their production methods.

High Street Consumers vs V stitcher consumers

Trends and Consumer habits are another key factor that lead to environmental waste. During the 1980's there were said to be only 4 main fashion seasons, and these would stay the same. In present day, the cycle constantly changes (Agro). The effect of celebrity culture, events such as Fashion Week and the growing want for the newest item leads to consumers spending more money to stay updated on the latest trends (Pak). Fashion seasons are broken into smaller

more frequent ranges that are regularly updated in store (Claxton). Fashion Brands themselves have a major impact on the amount of waste as a result consumers are also responsible for creating waste and destroying the environment, because of the desire to continuously keep up with trends. (Claxton)

Technology:

Browzwear was initially designed to help designers communicate their ideas and gain feedback on users ideas and justifications and decide if changes to the products are required. Through this process the inventors wanted to explore how this could help increase sales, and decrease waste from unwanted clothes and designs that would have been made.

By interviewing Vivien Pak business development manager for Browzwear, there was a clear indication that textile waste problems could be solved with this software. The idea behind V stitcher was to give the consumer a 3D visual platform to see exactly every detail of the product; from the intricate stitching, drape and overall appearance to seeing the exact look. With this consumers already know exactly what they want and can make the alterations to suit their preferences. This contrasts with fast fashion stores that produce clothes in mass production, and throwing away the vast majority of unsold items or samples of prototyping, V stitcher eliminates this problem. One problem with V stitcher is

although it has got a very defined specific visual display, the software could develop more features to attract a variety of target markets.

High Street impact & V stitcher impact

Understanding where the extra garments and waste ends up is vital to find a solution, as this is the most detrimental part out of all the processes (Agro). Elizabeth Cline explored that even if fast fashion companies want to recycle, it would take 12 years to recycle what they have already produced! Due to this, it is almost impossible for there not to be any effects on the environment. They further showed that once the clothes are used they end up in landfills, which defeats the purpose of companies such as H&M's recycling boxes.

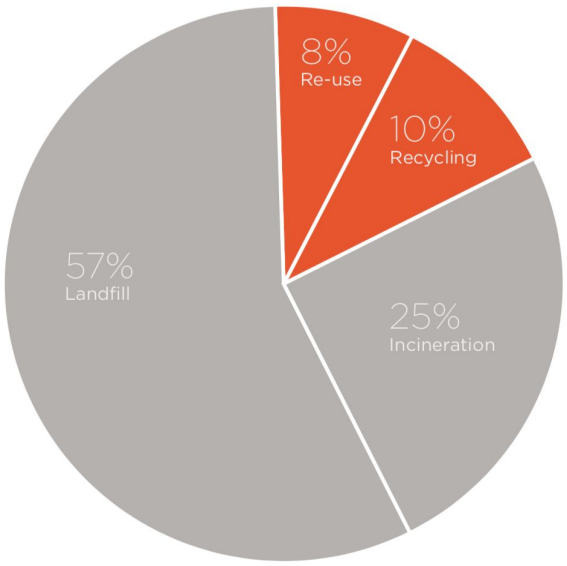


Fig 1.4

(Common Objective. “Fashion and Waste: An Uneasy Relationship.”

Fig 1.4 shows more than half of the waste produced in the world goes into the landfill. We can use this figure to show the impact production methods on the fashion industry.

Figure 1.5

Fig 1.5 is a poster that explores positive marketing - in order for people to learn about measures to take in relation to the amount of waste produced (Objective). This is different to the actions by H&M. H&M uses misleading marketing to promote recycling of clothes, however almost all the clothes being given back is actually sold to a middle man, which means that the majority of unwanted clothes are shipped overseas to developing countries.

From analysing the process behind the fast fashion industry, we can see that the main problem lies with both the brands and the consumers. Every year more and more garments that are bought, are discarded; this leads to problems in major reparations trying to fix this issue which later on will affect the environment even more.

Impact of V stitcher:

(“VStitcher 3D Apparel Design Software | Browzwear.”)

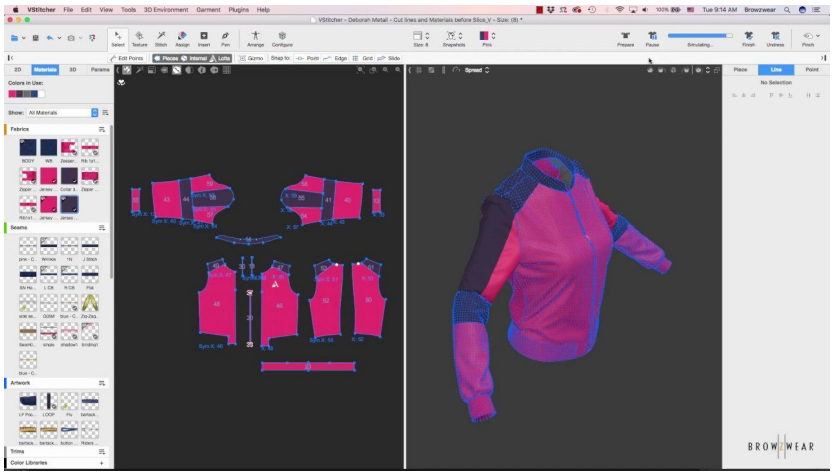
Figure 1.6 explores the pattern piece and methodology behind how the product is produced.

V stitcher has been created to help designers ease the process of production and to please consumers to cater to their wants before they are produced. The potential impact of V stitcher is mainly focused on reducing the amount produced in the first place, by giving clients minimal amounts of clothing to a high end quality. Due to change of production, the effects and amount of waste being produced will decrease with using V stitcher. Companies that believe in that are already starting to incorporate these ideas.

Companies are trying to become more aware about the amount of waste created in the fashion world, although the majority of the actions taken are to create donation centres or refurbish old clothes, instead of finding a solution for the

problem right from the beginning. Some companies however such as Tommy Hilfiger, Adidas, Nike, Lululemon and Columbia are finding V stitcher as a solution to their waste, as it is time saving and cost effective to create prototypes and pay labour workers (Pak). For example in Fig 1.7 below, Adidas uses V stitcher in there clothing to explore the intricate details without wasting any material.

("VStitcher 3D Apparel Design Software | Browzwear.")



In Fig 1.7 Adidas would send this jacket to client and make modifications based on its function and aesthetics (Pak). The pattern piece has been laid out with all the intricate details which can help the client understand the whole concept behind the product. The main purpose behind this pattern layout is for the client to gain a 3D visual perspective of the product and be able to analyse the tiny intricate details as shown in Fig 1.6

It is important that companies try to increase awareness of the effects of waste and pollution on the environment for consumers to be more aware. Consumers are becoming more conscious about the impact of textile waste today than before. The new generation of buyers have more care for the environment and

are more alert about purchasing products from environmentally conscious companies.

Tommy Hilfiger and Adidas are two companies that are trying to incorporate V stitcher into a lot of their production. According to Vivien Pak, Tommy Hilfiger has been working alongside V stitcher to keep adding different features and improvements to the software. In Fig 1.7 there is a snapshot of a new adidas collection of sportswear sweaters that show the layout of the design and use a pattern maker to let clients visualise what they are going to buy. Pak suggests that Adidas created a V stitcher account in order to create an easy platform for consumers and designers to communicate about their designs without having to send prototypes (Pak). Design director of Adidas, Lotta Jurica, explain that using V stitcher can improve sustainability, since no materials are wasted throughout the process of designing and visualising her products and ideas. Adidas is also using V stitcher to add onto their website a 360 virtual idea of how the product looks. In addition companies such as Adidas and Nike use algorithms for their website in order for companies to see what their consumers are interested in and thus create new products based on that (Pak). Throughout this process companies are helping the environment, as well as increasing sales and customer satisfaction, which makes this software even more beneficial for companies to implement.

Is V stitcher the solution:

The software could be a key solution to this problem, as production is one of the most wasteful processes in the fashion industry. (Malatesta). The design platform in V stitcher only uses virtual prototyping and testing, which means that the method of producing and concepting ideas is environmentally friendly, and only produces when the garment has been fully developed and reassured to a good standard (Pak). Though this is true that some large brands are already using V stitcher for a variety of applications the majority of brands and designers are still physically prototyping using a number of samples using software such as Adobe Illustrator which doesn't give clients the full detail and intricate patterns behind the designers interpretation. (Claxton). The reason why designers use illustrator is because it is cheaper and easier to use, in contrast to V stitcher (Claxton). We have to consider the constraints that learning and buying a new software would have on designers.

Although some companies have started using V stitcher to help the environment, many are still not doing enough. From our research of HnM, from misleading marketing about recycling to an unwillingness to change the design process due to under investment. Some companies do not want to change their production strategy as it would have an impact on their sales and growth rate (Pak). Viven

Pak also explained that companies have spent years building up the idea of fast fashion, where production is quick and labour costs are cheap. Having to change the production method and the pace of how things are produced would be very difficult as they believe that the technology is not as developed and fast pace as normal production methods; but she believes that as technology develops more companies will join.

V stitcher is evidently a good way for companies to improve sustainability and reduce the waste, but companies need a cheap software that can be easily used across design and production teams and could still produce and create prototypes at a quick rate in order to match up with the current production methods. V stitcher needs to keep developing the production method for companies to generate sales and be sustainable. We must also take into consideration, the price of the software and the time required to learn it, before companies are willing to change their current methods.

4. Conclusion:

I believe this investigation is crucial towards how companies can find a solution to the growing crisis of the high street fashion's global textile waste. Through research and the exploration of V stitcher, we see that waste can be reduced, but

there is a limited amount of information on whether or how it can be implemented to benefit companies as the software is still developing.

Though the fashion industry does have some alternatives and designers are trying to attempt to add technology and sustainable ideas into their brand, not a significant amount is being done. However saying V stitcher is the solution to the high street fashion waste would not be fully correct. It is a possible solution, though more needs to be done to develop and advance the technology to convince high street brands to invest and change their design and production methods. To a certain extent, V stitcher is a better option for smaller scale companies as designers are able to spend time communicating with their clients directly, producing to cater to their needs. From this, we conclude to some extent V stitcher is a possible solution however further development and integration of technology is required to ensure high street fashion companies can effectively use the software to reduce wastage whilst still meeting these production volume, pace, sales, and customer needs.

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