

The Collaboration of Fashion & Technology

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Abstract

Background: The collaboration of the fashion industry and the digital industry is the next stage in fashion technology, and once it takes full effect, it will forever change society. Some of those technologies are augmented/virtual reality shopping and smart clothing.

Objective: The main goal of this study is to show how fashion technology and its services are going to deliver positive rises for the economy, job force, and future careers for college students.

Design and Method: The research method is based on the focus of current/future technology and blueprints of the fashion industry and how their collaboration is becoming a stepping stone in the new decade of the 2020s. It is being broken down through brand new college courses based on fashion technology involving 3D printed clothing, digital changing rooms through your mobile shopping apps, major fashion companies like Vogue getting involved in trends and how it will benefit their goals, how COVID-19 anticipated the fashion industry and the rest of the world to do more, etc. All of the research is current, and the oldest being a couple of years old; there is more research to come from this, so the real question is: Will the collaboration of the fashion and technology bring out what type of result? Will it bring the good, bad, or the ugly?

Result: The fashion industry's plans for their use of technology and what will change in these next few years are more beneficial than anticipated through their goals on increasing jobs in the world and significant points for the economy. There are even plans for making better for the environment and dropping down pollution rates.

Conclusions: Fashion technology is the future for the United States and the rest of the world for their focus on bettering the COVID-19 pandemic. The fashion industry wants to change the game by leaving the “regular cotton” cloth and change to digital 3D printed fibers to create merchandise or even try out virtual reality outfits in the comfort of your own home. The list is endless for what is to come since we are beginning this new phase in the fashion industry.

Keywords: *fashion, industry, COVID-19, technology, economy, virtual, reality.*

Chapter 1: Introduction

Technology in the fashion industry is becoming increasingly adopted by businesses as the years go on, increasing consumer satisfaction and business satisfaction via sales rates augmented reality, and behind-the-scenes looks (McDowell, 2020). Although fashion technology is valuable and inevitable, due to entering the technological age of society, an area of concern to address is just how much will fashion technology change the industry? And should we be compliant in letting it change the industry completely? The overpricing of clothing would be an additional concern to address. As methods of the fashion industry become more complex, a rise in pricing would result in low demand, as not a lot of people would be able to afford the new styles. Although change is often scary, especially when technology is involved, I feel that technology and fashion coming together are positive changes to the industry. Even though I believe the change to be positive, the significance of the industry's problem changing altogether, and the potential rise in clothing prices, should still be addressed.

The proposed study should be conducted to look at the pros and cons of potential clothing price increases when combining fashion and technology and the aftereffects of the COVID-19 Pandemic. Although consumers are often enamored with new production methods, if price increases are too significant, it could hurt business profits. A practical reason for conducting such a study would be to compare the positives of combining fashion and technology with the negatives [i.e., potential increase in clothing costs] and let the production company and consumer decide what they feel be best. The relevance of this topic is significantly more important today as technology and fashion seem to be apparent everywhere. Although consumers seem to be willing to spend more on their fashion choices, is there a limit?

An important term to be aware of in this study is the term *fashion technology*, defined as “technology that enables a fashion experience when you wear it or interact with it” (OSFashion, 2016). Relevant research about this topic includes the leading technologies influencing the fashion industry, current trends within the fashion industry in digital technology, and fashion technology education. “Studies in the existing literature [that] incorporates all [of] the major variables or constructs that are present in the proposal study” (Rudestam & Newton, 2001, p.63).

The primary objective of this study is to provide relevant information on how technology in fashion is changing the industry positively. Currently, there is a lot of information about fashion technology being a hot trend and transforming the industry, but there are not many negative aspects available. The research design will consist of an analysis of scholarly articles written by those in the industry or close connections to the fashion industry.

Chapter 2: Literature Review

The Future of Fashion Tech in 2020

What I have gathered from Vogue Business (VB) shows their prediction of what the next decade of fashion will look like. VB believes that technology and fashion will coincide together, calling it “digital clothing.” Some brands have already begun making blueprints and designs for stuff they want to in the near future. What is being made now is a specific type of fashion tech called “augmented clothing,” a cellphone app mode that shows clothes on your person before purchasing it. Not only augmented clothing but social media influencers and their collaborations have also created significant purchases and resales with the widespread of their massive social media following. Vogue business believes that augmented clothing is only the start to what the future has to offer with fashion technology (McDowell, 2020).

Top 5 Technologies Transforming the Fashion Industry

Five technologies bring massive change to the fashion industry like 3D printing, digital mesh, artificial intelligence, the internet, and blockchain technology. Each of these technologies has impacted society and introduces us to a new way of life. 3D printing has made a significant stepping stone in the design world. There are even talks of 3D printing, designing clothes, and even college courses are being made. Digital mesh is a type of fiber that can change and be controlled by technology devices where it can alter and change form. Artificial intelligence has made strides in technology through cellphones and Bluetooth speakers. Now that augmented reality shopping and clothing are on the rise, it will replace in-store employees and will be replaced by machine learning and artificial intelligence that will help fit the clothes and try on more accurately.

Another piece of tech is, of course, the internet and how it helps bring everything together now that it is the only source of spreading information and gathering it. The internet is the only thing that brings in details of new products and business to society. The last piece of tech that is focused from WVTOX is blockchain technology which combines all industries businesses from social media, shopping apps, internet, and online paying. All of this is online collaboration which is the primary source of all types of businesses, including the fashion industry. All of these technologies have made strides in the world, and it is now the stepping stone for the future of fashion technology (Smith, 2016).

Top Trends for Fashion Industry in Digital Technology

There are trends that the fashion industry is following to bring digital technology into its field. There are fashion shows that are using augmented and virtual reality. With the watching of these shows, you can view them on the company's app and even buy the clothes from the show. This type of digital technology started back in 2017, which is still a rising trend since most trends are temporary, and this one has lasted for a good number of years. This trend is bringing fashion and technology closer together through the merchandise they are both releasing to consumers (Techliance, 2019).

Fashion Tech Education Is A Main Trend For 2020

Fashion tech education was a rising trend for education for colleges and universities. Still, it sadly got affected by the rise of the COVID-19 Pandemic since they both started at the same time. Fashion tech is a new major that will bring future careers and studies for students who want to be involved in both the fashion and tech industries. Not only that, but it will increase new jobs, but it will raise more money in our economy

after the tremendous loss from the pandemic. The fashion industry is one of the top industries that lost hundreds of workers; not only that, it is also limited, but now with this collaboration and the upcoming college majors, it will open doors to more people that want to work in both industries. This new major study at colleges and universities anticipates us to do more with how the entire world got affected by the pandemic (Yu, 2020).

COVID-19 Accelerates the Fashion World's Adoption of Technology

The COVID-19 pandemic has had drastic effects on the entire world and all of its industries. This year alone has made us all want to go back to work and do better by making changes and coming together for a brighter future. Take, for instance, the fashion and tech industry; they both are planning to come together and creating more jobs to help jumpstart the economy for where it was a couple of years ago as well as making changes to help the environment since they are planning to drop down 50% of green gas emissions by 2030. Technology is becoming more advanced by the year. The fashion industry is planning to use 2d and 3d designs for making clothing through 3d printing and involving virtual reality to present them as lifelike once the design is complete before production. Social media will be a significant guide in spreading the word of what is to come since social media is at an all-time high since the pandemic began. We expect to see that all of this is happening in the near future and so much more (Little Black Book, 2020).

The Future of Fashion: From Design to Merchandising, How Tech is Reshaping the Industry

The coming of the new decade will show how the fashion and tech industry brings in new ideas to change the field to benefit them both working together completely. One of these new ideas is reinventing the “dressing room” ever since the start of COVID-19; dressing rooms have not been used in over a year. So now, clothing stores are using their apps to have virtual reality and augmented reality mode that can show you a preview of the clothes you are interested in buying. This idea will not only keep people safe, and they can do it from the comfort of their own home, but it will bring money to businesses and help out the economy from social media and app usage. Several tech companies are already starting to collab with clothing companies like Amazon and Google, giving them the software to bring the merchandise to life from your smartphone alongside artificial intelligence that will guide you to the clothes you need. With this aid from the tech industry, the fashion industry is predicted to be at \$2.2 trillion, a pull-up for the economy (CB Insights, 2020).

Top 9 Technology Trends Reshaping the Fashion Industry in 2021

Trends have been an aid to the economy and society since the beginning of time. Nine technology trends are reshaping the fashion industry. It is broken down into nine different sections Artificial Intelligence (A.I.), Internet, Rapid Data Analysis, Mobile Commerce, Virtual/Augmented Reality, 3D Printing, Blockchain, Sustainability, and Novel Fabrics. These trends are the primary source of income for clothing companies, with a significant help being that social media spreads the word at a much more accelerated rate than by word of mouth. Each technological advancement or “trend” brings a benefit to not only the companies but to the economy and its consumers (Kochar, 2021).

How Technology is Shaping the Future of the Fashion Industry

Ever since COVID-19 began, it supports how technology and fashion are going to be partners in the coming future. For example, online shopping, which has been around since the early 2010s, in 2017 online shoppers went up 2 billion from 1.6 billion in 2014. Online shopping was one of the significant resources for us to survive from COVID-19 since almost the entire country had to stay home during the quarantine lockdown that occurred during most of 2020. Now that COVID-19 is dying down, businesses are opening back up like restaurants, shopping malls, and movie theaters. But online shopping has become the major source of buying and consuming products, and people are still afraid of going back to public spaces. There are even talks from Microsoft that they create augmented reality programs to interact and socialize with people from home; it may even include online shopping in the future; who knows. A lot is coming to change throughout the years 2021 and 2022. The partnership between fashion and technology will grow stronger by the day (Rahman, 2019).

Chapter 3: Methods

This study will aim to look at the effects of technology in fashion. The study will look at how fashion technology affects consumers, businesses, and students who study fashion in college. The study will be qualitative, looking at previous literature and prior studies to draw connections. I feel that technology and fashion coming together is overall a positive change to the industry. Although I believe the change to be positive, the significance of the industry's problem changing altogether and the potential rise in clothing prices should still be addressed. These changes affect not only businesses and consumers but also fashion students. However, the effects of the COVID-19 pandemic have made setbacks to not just the fashion industry but the entire world, including programs from schools as well as attending in person, the loss of jobs, and so much more. The pandemic has made anticipation for the fashion industry to do more since we were forced to be in quarantine for several months. The overall question to address: is technology in the fashion industry inherently a positive or negative change? Have we waited too long, or are we rushing everything from what we have experienced in the past year?

A qualitative approach fits this research design because drawing social connections cannot be made using quantitative methodologies. To address the problem of an industry being changed by technology and weighing in on both the pros and cons of such changes is something that benefits from previously done literature and drawing connections from such literature. The intended outcome of this strategy is to highlight business, consumer, and student pros and cons of technology being implemented and used within the fashion industry and how we are coming back from the effects of the COVID-19 pandemic.

The data collection method for this study will be done through existing data, specifically peer-reviewed journal articles. To search for this data, Google Scholar was used to sift through

results. Some results searched for include impacts of technology in the fashion industry, the role of technology in the fashion industry, technology, and fashion, fashion students, and technology.

I intend to analyze these results by comparing the opinions listed in the researched articles. To back up the opinions listed, theoretical perspectives may be applied as well, when appropriate. These perspectives will be explained in full when they are introduced within the context of the research. In most of the previously written articles that were gathered to analyze, the authors conduct quantitative survey studies to measure consumer responses to proposed questions about fashion technology. Therefore, there is a solid combination of both empirical and data-based evidence to analyze within this report.

When conducting qualitative-based research, it is important to state opinions and facts to not to mistake one for the other. Because this report focuses on an opinion-based research question: is technology in the fashion industry inherently a positive or negative change? The analyzed research and synopsis of the research will be given. Still, it is ultimately up to the reader to decide for themselves if technology in the fashion industry is inherently positive or negative, after reading the provided results of the study.

The texts I have chosen to analyze are eight scholarly journals written by different experts in the field of fashion and technology. These articles are titled: *The Future of Fashion Tech in 2020*, *Top 5 Technologies Transforming the Fashion Industry*, *Top Trends for Fashion Industry in Digital Technology*, *Fashion Tech Education Is A Main Trend For 2020*, *COVID-19 Accelerates the Fashion World's Adoption of Technology*, *The Future of Fashion: From Design to Merchandising*, *How Tech is Replacing the Industry*, *Top 9 Technology Trends Reshaping the Fashion Industry in 2021*, and *How Technology is Shaping the Future of the Fashion Industry* . I have chosen these articles because they are done with no seeming ulterior motive [i.e., not done

as propaganda for any fashion companies], and experts do them in the field of fashion and technology with what they expect to see in the upcoming years. I also wanted to analyze how one of the upcoming trends that are coming to college campuses. How this soon-to-be rising trend will impact future college students to come giving them the opportunity to join a new type of workforce in the fashion industry. This trend may be starting in the United States, but it will affect the rest of the world with trends spreading like wildfire on the internet.

Some potential limitations of this study are as stated prior. The research itself is heavily opinion-based, but data will be presented clearly and coherently, leaving the reader to determine their own opinions upon reading. To attempt to control for error, I will eliminate analyzing any heavily opinion-based scholarly articles. All of the articles chosen have survey data within them, so the information provided by previous authors is gathered via fact-based evidence and not personal opinion. Pursuing qualitative methodology is better for this study than quantitative because comparing the results and analyses of previously conducted research will give us a wider perspective.

Chapter 4: Results

RQ#1: What will come from this collaboration?

This collaboration of the fashion and the digital industry will introduce consumers to a new line of merchandise/future careers:

- Virtual Reality/Artificial Reality Shopping
- Smart Clothing
- 3D Printed Clothing
- New College Courses that will focus on Fashion Technology
- New Careers that will increase the economy

Each one of these creations above will change the way we think, feel, and experience fashion as a whole. With so many predictions and few launches of these products being given to the public, we do not know what to expect in the coming years. But what we know is that the products released and started to be used more just proved to be the stepping stone of the next generation of fashion technology.

RQ#2: Will fashion technology become the next big trend as a college course?

2020 was planned to be the year where colleges would introduce fashion technology as the brand-new college course. It was supposed to be the next most significant trend on all college campuses, but the effects of the COVID-19 Pandemic this upcoming major were delayed. With quarantine ending and students are starting to back to the campus Fall semester of 2021, with this time being the startup of the new major.

Chapter 5: Discussion

Begin the discussion with a summary of the main findings? What did you find out from your research?

The research that I have found for my Senior Capstone topic on the future collaboration of the fashion and technology industry. Each source dives into what the fashion industry plans on doing in the next decade with the helping aid of technology. With it being a brand-new topic and only a couple of years old, there is still new research coming in that is changing the world bit by bit. The research dives into what the collaboration will bring from the two industries like smart clothing, augmented reality “dressing rooms,” and even college courses on fashion technology and how it will change and bring more to the economy. There is much more that will come in the near future because everything is starting now, and because of COVID-19 being a major setback, there is much more to come; it is just coming a little late.

Related the findings to previous research regarding whether they support or fail to support the conclusions of that research?

All of the research that I have collected for my Senior Capstone topic leans more towards the support of my theory on what is to come from the fashion industry's future and what they are going to deliver to consumers and the rest of society. Through everything mostly being blueprints, betas/prototypes, and some already launched and being used by consumers, it is important to know that there won't be any evidence of failure. The reason for that being is that everything has begun later than planned because of the COVID-19 Pandemic, so there will not be any sign of evidence of what has not worked out since everything is still in the beta stage. The very few fashion technology products that are already out on the market have shown great beginning signs of success, so the real question is, how long will that success last? My research will conduct what the plans are for the fashion industry and how their collaboration with

technology will forever change the game of fashion merchandise and other products that will be released in the near future. While writing my study, there may be products that will be launched during my research, which will support my theory on how the collaboration of fashion and technology works together to change the way we see fashion merchandise technology.

Explain how the findings reject theory, practice, or policy formulation? Avoid reporting results in the discussion section that have not been mentioned in the results section. Nothing new should be in this discussion. Finish with a paragraph summarizing the main conclusion.

What I have found from my research so far is that with almost everything being planned in the future. Everything is starting later than expected because of COVID-19. I will have to say that I don't know how long the success of this technology is going to last since we don't know the full result just yet, and everything is starting now and not last year when it was supposed to. Without COVID-19, I expected more for me to work with to bring together my research for my capstone but sadly. So, the plan now is to stick with the research that I have gathered from 2019 and what is happening right now, still with the theories of 2020, and put it together in this paper. There is so much that I wanted to add an introduction to this, but with what COVID-19 did to the fashion industry and the rest of the world, everything is starting later than planned. But with the result of COVID, several industries want to do more and be prepared if there is another setback like this in the future. So, we may see in the future more inspiration than we heard in the last couple of years which will prove my theory even more than that the fashion industry and everyone else will completely change the game with their collaboration with technology.

Conclusion

With what is to come with future research on the collaboration of fashion and technology, we do not know what is to come. So much was supposed to happen in the year 2020, but with the effects of the COVID-19, it was impossible to start with everyone being under a mandated quarantine for almost a year. But now that COVID-19 is dialing down and everyone is getting the vaccination, the fashion industry is planning to take no stops with what they have planned. From starting with virtual reality/augmented reality shopping by using your cellphone to preview clothes on you before purchasing them in the comfort of your own home. It has been used chiefly on major shopping websites like Amazon, Adidas, Wayfair, and more to companies that are following the path. There is more to come with smart clothing and what type of careers will be built when the workforce is made from this new field of fashion. These are only a few things that the fashion industry has announced to the public of what is to come. There might be something more significant in works for years that might be coming sooner than we thought, but only time can tell. The fashion industry wants to change the entire game of we view them; let's hope that there will be more to come from this pandemic. The start of this research has only just begun soon; there will be so many resources and announcements that will take this light theory into the type of trend that will make a stamp in history. The real question is, when is it going to start officially?

Resources

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