



DIGITAL FASHION FOR SUSTAINABLE CHANGE

A strategy for digital fashion at Tommy Hilfiger

Thesis
MSc Strategic Product Design
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“Freedom of expression doesn’t come from drawing lines, following suit or sticking to scripts. More of the same never made a difference. Someone needs to fly the alternative flag, and stand for those whose dreams are bigger than their boundaries.” - Tommy Hilfiger

Digital fashion for sustainable change

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PREFACE

Dear Reader,

You are reading the final work of my Masters Strategic Product Design. The result of six rich years of study at the TU Delft ended in quite a different way than I imagined. Writing this thesis amidst Covid-19 was certainly challenging, but I argue it made the topic I researched even more relevant and interesting. During this research, a lot in the industry has changed. Where the exact definition of digital fashion was still to be determined in August 2020, an entirely new Wikipedia page emerged explaining the phenomenon in January. The interest of people around me grew along with its relevancy and granted me the opportunity to learn at full speed - something I would have never completed without the support of a few people.

Dear Puk, thank you for granting me the amazing opportunity to submit and execute my research at PVH. All your efforts, inexhaustible optimism and trust in me throughout the process has gotten me where I am today. The way you tackle problems with a clear and direct approach has been truly inspiring and has helped me to focus and prioritise throughout the process.

A52, Thank you for the warm welcome and your undivided interest in my work and wellbeing, even though we were all working from home. You have made me feel part of a team, and I truly enjoyed all the team meetings, monthly virtual gatherings online and especially the rare occasions we got the be together at the office.

Second, I would like to thank my amazing supervisory team! Roland, for inspiring me to approach the world from a philosophical point of view, and when lost, always asking the right questions to get me back to Earth. Jeroen for always pushing me further and inspiring me to go off the beaten track of analytics and well-put design methodologies into the mindset of ‘design’.

Third, a special thanks to my parents, who have given me the opportunity to study and have always encouraged

me to seize each opportunity that crossed my path. Finally, I would like to thank all my friends, roommates and fellow SPD students who looked after me and listened so patiently to my ideas, making it feel like a joined effort. Especially Bente, seeing your face daily on facetime at all the dips and peaks of this process has been a rock in the surf.

And lastly, Dale for inspiring me and making me smile.

Enjoy reading!

Charlotte

EXECUTIVE SUMMARY

For the fashion industry, 2020 was a year of change. As the covid-19 pandemic ravaged the world, the industry suffered its worst year on record (Business of Fashion, 2021). Consumer behaviour shifted, and supply chains were disrupted. The industry had to rethink their business and define the 'new normal', which meant adapting to trends and focusing on digital solutions.

One of the solutions could be digital fashion. Digital fashion is computer-generated fashion that can be worn with your digital bodies - avatars - and with physical bodies by using AR technology. PVH, a global apparel company that manages lifestyle brands such as Tommy Hilfiger, has identified digital fashion as an opportunity for new digital products/services or digital ventures and is looking to use it in innovations that 'Win over Gen-Z' and 'Commit to Sustainability'.

The aim of this research is to provide Area52 with a recommendation for how to pursue digital fashion innovation within the coming ten years in the form of a future vision and a strategic roadmap. Extensive literature review and multiple generative research methodologies like focus groups, semi-structured interviews and co-creation sessions were used to empathize with all stakeholders. Subsequently, various elements of Vision in Product design (Hekkert & Van Dijk, 2011) and Design Roadmapping (Simonse et al., 2015) were used to synthesize the insights into a set of recommendations that are structured in a why-how-what format.

Why?

In our envisioned future, Gen Z are identity nomads that want to be unique and continuously develop and discover new sides of their identity through the fashion they wear. They would prefer to have an endless wardrobe with which they can try something new every day. However, the environmental impact and cost hold them back. In the on-demand and augmented society that the world is heading towards, this problem can be answered with the future vision: In 2030, augmented fashion will be the ethical means for Gen Z to express and stretch their identity through instant experimentation.

How?

In the stated vision, digital fashion changes the interaction between consumers and brands from a one-way stream to an infinite interaction loop. Tommy Hilfiger facilitates the continuous discovery of the identities a

person wants to identify with. Consumers can explore and experiment with digital styles in the physical domain using AR technology endlessly. In turn, Tommy Hilfiger perfects their consumer profile with the data they receive.

To arrive at the future vision, I propose a three-horizon approach for Tommy Hilfiger:

- H1 Enhance physical fashion
- H2 Build blocks for phygital fashion
- H3 Instant experiments with augmented ethical fashion

What?

Based on the roadmap, future vision and brand-user interaction, the desired product-user interaction is defined in the form of guiding principles. The principles state that Tommy Hilfiger's digital fashion solutions should foster experimentation in a way that:

1. Is Playful
2. Is Dynamic and Iterative
3. Offers Interesting Variety
4. Is Accessible
5. Enables Feedback

The way these principles can be put to practice in product or service designs is demonstrated in the final vision concept 'Anywear'. Anywear is a 2030 platform that connects style-influencers to people who want to experiment with new identities. Through a subscription model, users get access to an infinite digital wardrobe that they can use across the entire phygital environment. It gamifies fashion and guarantees newness by monetizing success for creators.

The concept provides Tommy Hilfiger with:

1. Insight into how their products are styled
2. New inspiration for designs
3. Customer engagement
4. Data on consumer personality, preferences, community and possibly even activities, based on the fashion they choose to augment.

READING GUIDE

On the next page a visual overview of the report structure is given. To easily read through the report some basic visual guidance is provided.

Each phase starts with a short summary of what will be discussed. Every phase has its own supportive color, that indicates the position in the overall project. The phases consist of multiple chapters.

The glossary below clarifies some industry terms and abbreviations that are used throughout the thesis. Appendices can be found in a separate document.



Full-page colors indicate the start of a new section, and thus phase of the project.



Sections are concluded with a full-page picture. On this page research questions will be answered.

Important Information

The key take-aways, conclusions, next steps and essential figures are emphasised in the grey coloured boxes.

Additional information

Secondary information that provides in-depth, and mostly scientific knowledge about the research or topic are provided in the light pink boxes. The boxes are kept to a minimum to secure readability.

GLOSSARY

Fashion: A style that is popular at a particular time.

Clothing: The things we wear to protect our body. We talk about clothing in this report when it has nothing to do with the contemporary nature of fashion.

Digital fashion: The visual representation of clothing created using computer technologies and 3D software.

Phygital environment: A world where the physical and digital world have merged.

AR: Augmented reality, a technology that covers a

computer-generated image on the real world. It lets users experience an enhanced version of the real world.

VR: Virtual Reality, a technology that replaces the real world with a simulated alternative. It lets users experience a different world.

URL: Un-real life, referring to the digital spaces and virtual environments we live in.

IRL: In real life, referring to the physical world we live in.

Tommy: Tommy Hilfiger brand

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INTRODUCTION

1.1.2 PVH

This thesis is written in collaboration with the innovation team of Phillips-Van Heusen Corporation (PVH). PVH is a global apparel company that manages a diversified portfolio of lifestyle brands including Tommy Hilfiger, Calvin Klein and more.

1.1.2 Area52 Innovation

The fashion industry is a highly competitive and polluting industry, where innovation is key to stay relevant. This is why PVH has founded their innovation team 'Innovation Next' in 2018, starting with product innovation, from which they diversified to digital innovation and eventually new business model innovation in 2020. Currently, they operate under the name of AREA52 Innovation. AREA52 delivers innovations for all brands in PVH, but is most involved in the Tommy Hilfiger business as its HQ is located in Amsterdam.

The team is designed specifically to deliver a continuous pipeline of new innovations where fashion meets technology in order to lead a positive change in the fashion industry. The team operates within four streams: Product, Digital, Business and Culture. Each stream is working on one of the eight innovation north-stars (Figure X).

INNOVATION NORTH-STARs

- Understand our consumer
- Design Meaningful Omnichannels
- Re-birth Tommy North America
- Ignite China
- Unlock Global Womenswear
- Win over Gen-Z & Millennials
- Build a Global Operating Platform
- Commit to Sustainability
- Foster a Genuinely Inclusive & Diverse Culture
- Embed Digitalisation across the value chain

Figure 1
Area 52 Innovation north-stars

1.1.3 Opportunity

For PVH and the entire fashion industry, 2020 was a year of change. As the Covid-19 pandemic ravaged the world, the industry suffered its worst year on record (Business of Fashion, 2021). As consumer behaviour shifted and supply chains were disrupted, the industry had to rethink their business and define the 'new normal'. This meant adapting to trends and putting more focus on digital solutions.

"The pandemic will accelerate trends that were in motion prior to the crisis, as shopping shifts to digital and consumers continue to champion fairness and social justice."

(Business of Fashion, 2021)

Of all brands in their portfolio, Tommy Hilfiger is used as the leading brand to explore new innovations. Tommy Hilfiger has had a focus on digital transformation for the past number of years and set out the goal to digitize the entire design process by 2022. This allows them to create realistic virtual samples (3D models) even before a garment is produced. It speeds up the design process, reduces back and forth with vendors and limits the amount of waste (Internal brief, PVH).

So far, the 3D models have mainly been used to improve the effectiveness of internal operations. However, technological advancements in AI, AR, 3D visualization and computing power create the potential to use them in consumer-facing experiences as well.

Area 52 has identified digital fashion as an opportunity for new digital products/services or digital ventures, and is looking to use it in innovations that tap into two out of the eight digital innovation north-stars: 'Winning over Gen-Z and Committing to Sustainability' (Figure 1: Innovation north stars). That means both Gen-Z and the environment will be considered as main stakeholders for this project.

1.1.4 Gen Z

With respect to the innovation north-star, answering future needs of Generation Z, will be the main focus of this thesis. This generation, born between 1996 and 2010, has technology as their second nature, and grew up using technology as an extension of themselves on a daily basis (Protein Agency, 2020). They meet their friends online more often than they do in real life (Anderson & Jiang, 2018). A development that was only accelerated by the pandemic.

Online presence yields the opportunity for brands to be visible where the consumer spends the majority of their time. At the same time, the young consumers expect ever more sophisticated and on-demand solutions that improve their customer experience.

Digital fashion is seen as a new way for PVH to be in the digital consumer playing field.

"How can we be closer to consumers in a way that we stay true as a brand, but in their playing field?"

– Sr. Brand Strategist Tommy Hilfiger



Figure 2
Digitally design 3D garment of Tommy Hilfiger (Courtesy of PVH Corp)

1.1.5 Tommy Hilfiger

Historically, the value of brands rested primarily on their promise to deliver superior quality products (Beverland, 2018). Today, brands deliver value in many other ways. As will be discussed in Chapter 2, most value in the fashion industry is created by sign- or symbolic-value. This value mainly stems from the identity and narrative that a brand represents. In this way, brands are potential resources that users can draw on to achieve identity goals. As digital fashion will probably serve no functional value, the brand under which a new digital innovation will be launched will be key to the success.

For this reason, it was decided to focus on a product/service solution for one of PVH's consumer-facing brands by analysing the consumer-brand relationship, brand identity and narrative connected to this innovation.

Tommy Hilfiger was chosen because:

1. The global team of Tommy Hilfiger is located in Amsterdam, so it is most accessible for collaborations and validations.
2. Within PVH's portfolio, Tommy Hilfiger is used to push the industry forward and test new innovations.
3. Of all PVH brands, Tommy Hilfiger is furthest in the transition to 3D design, and therefore also have the most assets available for prototypes.
4. The brand has a rich and strong portfolio with clear values that intent to complement Gen Z.

1.2 Objective and research questions

1.2.1 Research objective

This thesis aims to contribute to Area52's objective to deliver continuous innovation by exploring innovation opportunities that enable Tommy Hilfiger to be in the changing playing field of their future consumer Gen Z, while leveraging their digital designing skills.

As digital fashion is undiscovered terrain for Tommy Hilfiger and most of the fashion industry, the aim of this research is to provide Area52 with a recommendation for how to pursue digital fashion innovation within the coming ten years in the form of a future vision and a strategic roadmap.

Deliverables:

1. A future vision for digital fashion
2. An innovation roadmap for Tommy Hilfiger
3. Guiding principles for digital fashion product/ services

1.2.2 Research Questions

The main research question (MQ) this thesis aims to answer is:

How might we create value for Tommy Hilfiger, by anticipating on Gen Z's needs related to fashion through the introduction of digital garments?

To get there, the sub questions follow the golden circle structure of Simon Sinek. It is an inside-out approach that starts with the why, moves on the how and ends at the concrete offering, or the 'what'. By starting with the why, inspiring solutions can be created.

Respective sub-questions:

- Why should Tommy Hilfiger offer digital fashion?
 - What are the future fashion needs of Gen Z?
 - What are the requirements and opportunities for Tommy Hilfiger?
 - How can digital fashion respond to these needs?
- How should Tommy Hilfiger best offer digital fashion?
 - What should be the future interaction?
 - What should Tommy Hilfiger's digital fashion strategy be?
- What should Tommy Hilfiger offer?
 - What should be our guiding principles?
 - What should they do now?

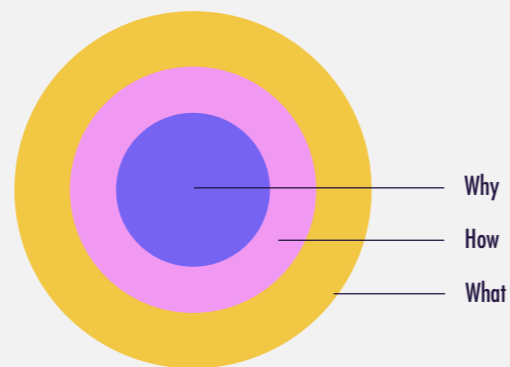


Figure 3
Golden Circle of Simon Sinek (2013)

The final deliverables form a recommendation for solutions in the digital fashion space, that have a strategic fit with the Tommy Hilfiger brand and will be assessed on desirability, feasibility and viability. To assess the desirability of future digital fashion products a set of guiding principles are developed in line with the future vision.

1.3 Approach and report structure

This thesis is divided into 5 sections. The overall thesis approach follows the double diamond structure. The two creative-diamonds represent a process that alternates between divergent and convergent activities, focused on answering each sub-question. The vertical axis represents the time, the horizontal axis the number of ideas or data. In divergent activities as many ideas and insights as possible are generated, based on the idea that 'quantity breeds quality' and 'postponing judgement' (Guilford, 1950; Osborn, 1957). Consequently, these ideas and data are structured and selected in the converging phases.

Even though the overall approach seems linear, the process is highly iterative in reality, where newly gained insights are constantly tested against previously stated findings or theories. In this report, only the relevant information for the final conclusion is presented. Secondary data is presented in the appendix.

Discover

In the discover section, the foundation of this research is laid. Here all useful information is collected through primary and secondary research. The goal is to understand the essence of the topic. Digital fashion, Gen Z, brand and future trend analyses are conducted to empathize with the domain.

Why

In the Why-section, the collected insights are clustered to form the driving forces of our future context. Together these forces define expected future needs of Gen Z. Based on these needs, a future vision - or *raison d'être* - for digital fashion will be identified that answers the first sub-question.

How

After the vision formulation, the desired interaction between Tommy Hilfiger and the consumer is defined. Then a digital fashion strategy for Tommy Jeans is created and visualized in a roadmap that shows the strategic fit with the market and brand over time, and describes the road Tommy Hilfiger should take to find the right 'What' in 2030.

What

In the fourth section of this report a set of guiding principles is defined that describe how the interaction vision should be translated in digital fashion products. These principles are then put to practice and, with the roadmap as a starting point, with a demonstrative concept.

Conclude

In the last section the outcome of the research is discussed and evaluated on desirability, feasibility and viability. Finally, I conclude with a personal reflection.

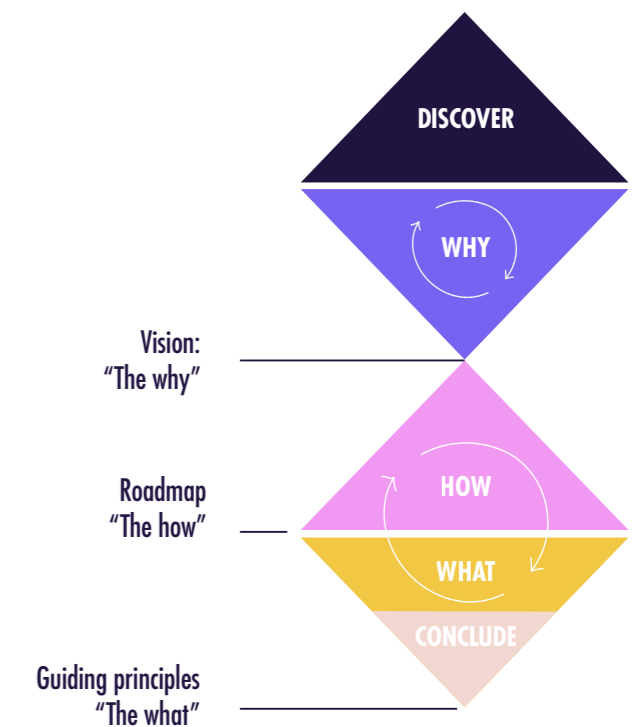


Figure 4
Double diamond research approach

1.4 Methodology

During the research, various design methodologies were used to get to the final research question. The Vision in Product (ViP) design method was particularly used as an inspiration to come at the Why, How, and What.

In ViP, "The designer tries to understand upfront what kind of product qualities are meaningful in relation to a future context" (Hekkert & Van Dijk, 2011).

The method consists of two main steps: the deconstruction of the current situation and designing the future.

Figure 5 presents how the before-mentioned research-phases fit into these two parts a visualisation of the research phases and represent the time spent on each phase.

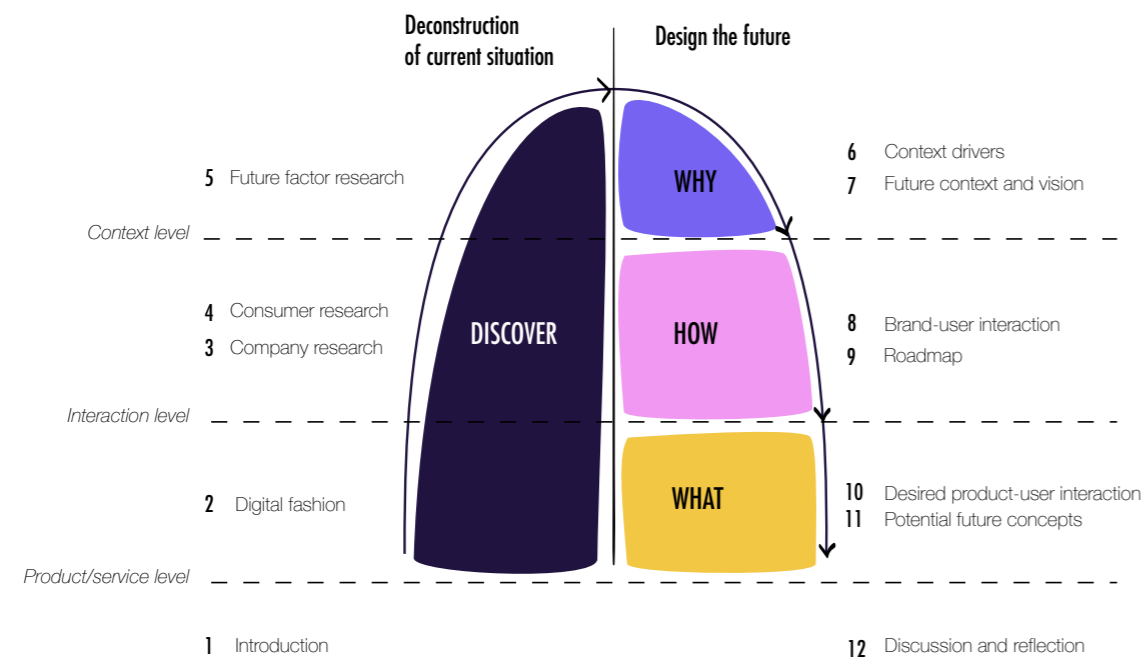


Figure 5
Methodology inspired by the VIP method of Hekkert and van Dijk (2011)

DISCOVER

In this section we will collect the research insights by analysing the digital fashion domain, consumer, brand and future trends. The chapters in this section explain the way insights are gathered and list the key outcomes.

First the research domain is defined. Then consumer, brand and trend analyses are conducted to empathize with the domain and deconstruct it into relevant components.

Want to cut the clutter and skip to the conclusion? Flip to the next section “Why” on page 31, where all insights are clustered into the driving forces of our future vision.

Chapters

2. Digital fashion domain
3. Company
4. Gen Z
5. Future factor

2 DIGITAL FASHION DOMAIN

The purpose of this chapter is to examine what minimum requirements digital fashion should meet to maximize consumer adoption. Or simply said what should it meet to work?

First, we define the term 'digital fashion' and create a typology of digital garments. Then we discuss the philosophical and sociological role of fashion in general, and examine how the value of fashion is created.

The results of these studies are then translated into domain requirements that are both used for further explorative research and as design requirements.

KEY TAKEAWAYS

- In this research we will focus on Digital fashion solutions that are enabled by AR technology.
- Digital fashion is relatively cheap to produce, scalable, update-able and requires limited physical resources. This way a constant stream of new products can be launched with minimal environmental impact.
- Digital fashion is size-independent making it an inclusive product.
- Fashion is a way to express identity.

Requirements:

- (Digital) Fashion must exist in environments where people regularly have interaction with other people. This can be both digital as physical.

2.1 What is digital fashion?

Definition

Since the fashion industry is still exploring the future of digital 3D garments, the exact definition of digital fashion is still in dispute.

Some say it is the visual representation of clothing created using computer technologies and 3D software. This implies however that designs are limited to the aesthetics and functionalities of the physical world. Amber Jea Slooten, the founder of the first digital fashion agency *The Fabricant* has a different take on digital fashion:

"Digital fashion is anything that has to do with fashion beyond the physical realm - fashion you can wear with your digital identity" (Fabricant, 2019).

In line of that thought, in this thesis a distinction is proposed between two types of digital garments: digital twins, and digital fashion.

Digital twins are 'digitized' versions of physical clothing. They represent the physical clothing we produce. These assets can serve purposes like reducing consumer returns with an accurate virtual try-on, or reducing operational costs by replacing influencer-samples or physical photoshoots with AI photography.

The second garment type, digital fashion, is designed without the intention to produce it in real life, and has the main purpose to express identity. This opens a new window of opportunity as the designs won't be dependent on physical limitations or conventions. Digital fashion can be eccentric, made of non-conventional materials (steel, water, light), is independent of body type, size or seasonal production and can be used to dress all digital identities.

A second distinction can be made between the bodies that wear the fashion, which could either be an avatar (digital body), or a physical body (by using AR technologies).

In this research we will investigate opportunities of digital fashion for the second body type, where AR will be the main technology, and include both types of fashion. However, avatars are essential components of any digital fashion product as the 3D modelled garments are created around a digital body to get its shape. This means that a choice for AR fashion does not exclude VR applications.

Properties of digital fashion

Production

Creating digital fashion is a process that requires a lot of manual work. However, once the 3D model has been created, it is infinitely scalable. As there is no need for physical materials, the total production is relatively cheap (Interview Durand). Once a default design is created, new designs can be launched relatively easily. This way a constant stream of new products can be launched without the environmental impact. Moreover, as digital fashion is software, the same model could be up-dated to take on new shapes and functionalities.

Ethics

In essence digital fashion is more ethical than physical fashion. First of all, it is more sustainable. The use of a cotton t-shirt equals 7.8 kg of CO2 from production to disposal, whereas a digital-only t-shirt generates 0.26 kg CO2 (Borgers, 2020). Next to that, the model can be reshaped and scaled infinitely so there is no need for sizes which makes it a more inclusive product.

Form

The shapes digital fashion can take are only bounded by ones' imagination. You can make things prettier than they normally are, create fantasies that won't be possible in the real world or combine aspects of different realities. Shapes can move, float, vibrate or glitch all at the same time.

Analyse and Optimise

The fact that digital fashion is 'digital', creates new possibilities for analysis and optimisation. For instance; finding an object can happen within a click, data can be collected, and consequently machine learning can be applied to optimise the shape or form of the product.

Accessibility

Digital fashion is naturally on-demand. As it can be saved in a digital cloud, it can be accessed, shared, controlled anywhere at any time.

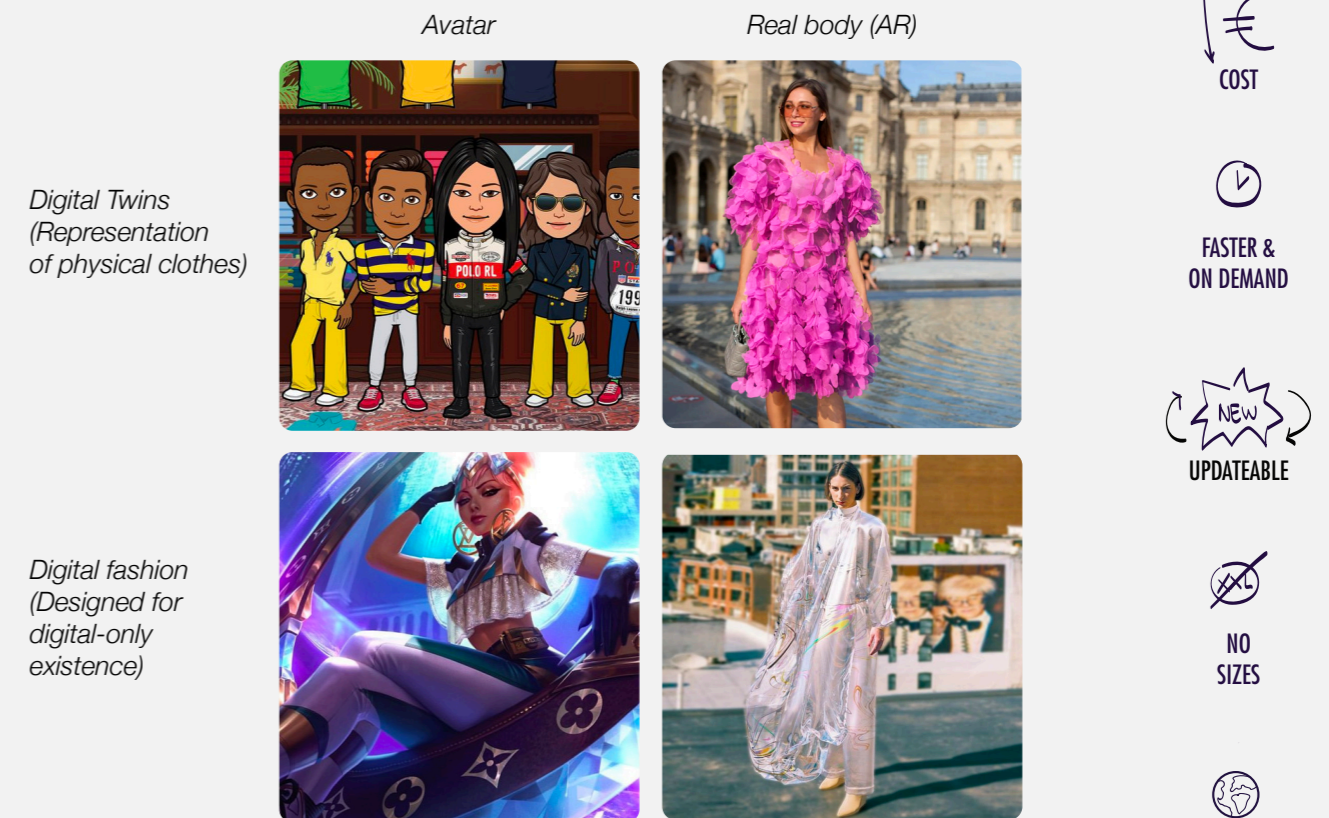


Figure 6 Digital fashion scope. Pictures (lr,tb) courtesy of Ralph Lauren, Dressx, Louis Vuitton and The Fabricant.

2.2 Value of fashion

Cambridge dictionary gives the following definitions (2020):

Clothing: "Things that you wear to protect, cover or decorate your body"

Fashion: "A style that is popular at a particular time"

When evaluating these definitions, it is easy to recognise that fashion motivations go beyond the mere functional features and benefits of a product, as it contains an element of aesthetics, public opinion and time. Multiple researches have tried to pin down the various motivations for fashion shopping, but all insights boil down to the following value-category.

- Utilitarian-motivations:** the functional abilities a product solves (Aulia et al, 2016) including quality, comfort, protection, versatility, durability, ease of care, and economic benefit (Ko et al., 2010).
- Hedonic-motivations:** adventure-, social-, idea-, gratification-, role- and value-shopping (Arnold & Reynolds, 2003)

Both types of consumer motivations can be linked to the different ways products gain their value. In Table 1, four ways of product-value creation are defined according to Baudrillard (1976).

Product use-value is the ability of a good to fulfil a need, and is commonly associated with physical needs, granted by the physical attributes of the product (Martin, 2008). This can be linked mainly to utilitarian motivations.

However, value can also be derived from the symbolic meaning we give products, or hedonic needs. Symbolic value isn't limited to material context, but gains its value from differentiation from alternative products (sign-value) and symbolic exchange. This suggests that product value can also be non-physical such as digital fashion.

Sign value however only exist in a relation to other people, and when related to a broader system of signs. So when following this reasoning, digital fashion needs to exist in a place where the owner of the product interacts with other people with similar products, for it to obtain value. Similar products will in this case mean fashion as ways to express one's identity.

2.3 Sociological role of fashion

Because we analyse the role of fashion in context of interaction and appearance, an analysis of the sociological role of fashion is done.

From adolescence onward, one is engaged in developing and carefully constructing his/her identity. A conscious process called 'self-design' (Pan et al., 2017), where one discovers the stories and means to present oneself. In this process there is a continuous comparison between ourselves and others: "What do I identify with, and how am I different". In the awareness of similarities there is a growing need to distinguish oneself and at the same time find the communities we want to belong to (Scarf et al., 2016). People want to be unique and belong.

A distinction can be made between "I-identity", one's own cognitive and emotional understanding of himself (Bourdieu, 1980), and "Eye-identity", the way a person is perceived by others (Reiter, 2014) which is registered during social interaction.

Fashion and online social profiles help to show the parts of our interior world we want to be seen, and are therefore selective means of communication. It has an important role in shaping ones Eye-identity, as it helps the perceiver to understand the observed person, and in turn affects the way people behave towards us (Forsythe, 1990).

Discrepancies between attire and registered eye-identity can result in less positive judgments by a perceiver, which clarifies the pressure people feel when dressing (Kodžoman, 2019) or posting something on their social channel. Again, It is the process of showing where you want to belong, and where you want to be different.

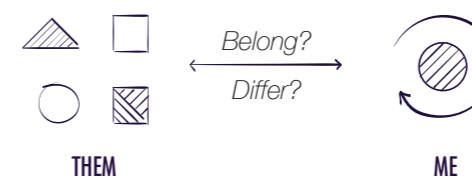
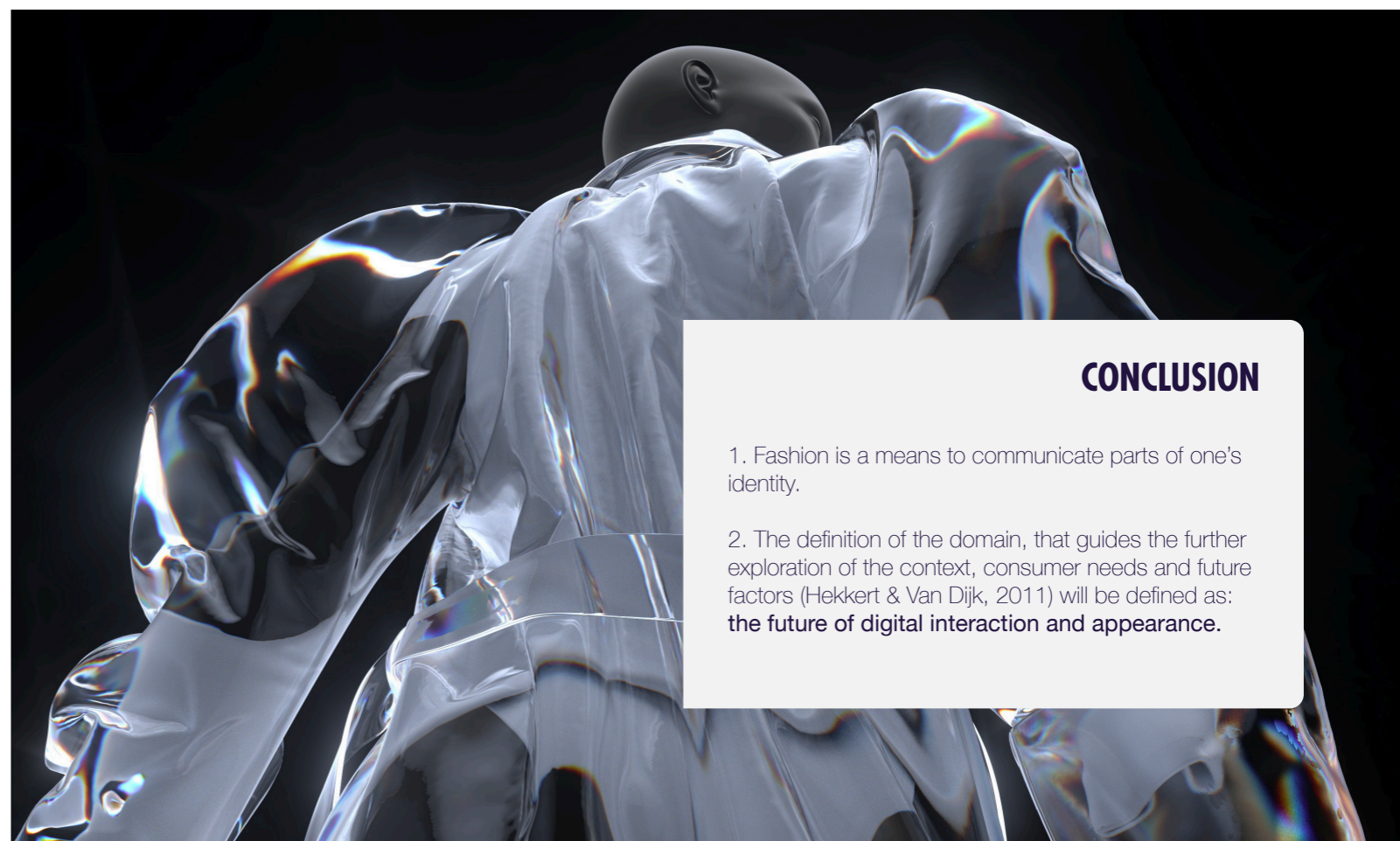


Figure 7
Process of self-design

	VALUE CREATION	CONTEXT	VALUATION	EXAMPLE
USE VALUE	A functional value	Universal context	What the object does	A pen writes
EXCHANGE VALUE	The economic value	Market context	What it's worth	1 pen = 2 pencils
SYMBOLIC VALUE	Symbolic exchange: The value a subject assigns to an object in relation to another subject	Relational context	Relation to the object	A gift or wedding ring
	Sign value: The ability of a good to differentiate the subject from others	Cultural context	Relation to other signs	Fashion differentiates people, logo's differentiate companies

Table 1
The four ways of value-creation (Baudrillard, 1976)



CONCLUSION

- Fashion is a means to communicate parts of one's identity.
- The definition of the domain, that guides the further exploration of the context, consumer needs and future factors (Hekkert & Van Dijk, 2011) will be defined as: **the future of digital interaction and appearance.**

In this internal analysis the brand requirements and opportunities for digital fashion initiatives are studied. The research is based primarily on an interview with Farrah Almira (senior brand strategist TH) and a SWOT session with the digital innovation team, and informal conversations with all Area52 Team members. Additional information has been retrieved from internal diagnostics reports, and personal analysis.

The key requirements are used for the final design brief, the key opportunities for vision forming.

KEY TAKEAWAYS

Company requirements

- Digital fashion should be a part of the road toward the company vision 'wasting nothing, welcoming all'.
- Digital innovations should put extra effort into protecting the brand's realness-principle in terms of spontaneity and honesty.
- Brand needs a coherent narrative that underpins deeper values, and that steps away from white elitist image.
- The product should be a twist on the brands' heritage.

Digital fashion opportunities

- Consumer facing digital fashion best fits the Tommy Jeans label because of its younger (Gen Z) and bold target audience, and its desire to be disruptive and to push boundaries.
- The recognizable and visual identity relies on the logo and iconic red, white and blue colours. Together they form the heritage's flexible 'building blocks', that are open for new interpretations.
- The strong digital innovation mindset and robust sustainability strategy can be the basis for the shift toward digital fashion, but technical expertise in translating these assets to consumer facing content is lacking. However, the collaborative mindset in both design and business operations opens opportunities to discover new markets with external partners.
- Data collection of the consumer currently ends after purchase. Digital fashion could be a means to extend this data collection.

3.1 Tommy Hilfiger Heritage

Founded in 1985, Tommy Hilfiger is a premium lifestyle brand that operates globally. With a diverse product portfolio the brand has built an extensive distribution network in over 100 countries and more than 1600 retail stores. Global retail sales reached \$9.2 billion in 2019.

Tommy Hilfiger's first store People's place in Elmira, New York still serves as the foundation of the brands' values. It used to be a place where people of all walks of life could come together and celebrate pop-culture, art, fashion and music.

The brand's **core DNA has always been rooted in its heritage** of 'Classic American Cool'. The brand managed to grow along with its customers over time and to stay relevant the new generations by keeping up to trend, without losing their recognisable brand identity.

Consistence in the brand's image is kept by constantly looking back at the archive and translating previous designs to current day standards. The repeating use of the logo and the iconic blue, red and white colours, has given the brand a visual trademark over the years. This has made it possible to change their portfolio along with trends while staying recognizable. Archive designs are in that sense used as building blocks for future designs.

In the early 90's Tommy Hilfiger's designs got picked up by the American Hip-Hop community. Tommy leveraged the hype, and started designing new clothing specifically for the target group. He discovered that artist-endorsement was a great way to promote clothing to the younger generation, and soon enough all the younger American kids wanted Hilfiger's designs. The brand still holds this strategy, and the street-style of oversized 90's denim has turned into a second line of heritage used for the Tommy Jeans label.

Paradoxical to the heritage focus, **Tommy Hilfiger has always been driven by innovation**. In January 2015, the company launched a first in its kind digital showroom, that transformed the B2B sales process to a digital and more sustainable alternative. This has marked the companies' road to digitization. Currently digital innovation is woven throughout the entire company, pioneering in cutting-edge digital programs and integrations that set new industry standards.

"I opened my first store, People's Place, in 1969 in my hometown of Elmira for people of all backgrounds to come together and share exciting pop culture experiences. As our brand has evolved over the years, driven by this inclusive spirit, so has our commitment to social and environmental sustainability."

- Tommy Hilfiger

3.2 The brand

While the visual brand identity of Tommy Hilfiger stays tightly linked to its heritage, **'celebrating the essence of classic American cool with a twist'**, the company has recognised that in today's day and age - even more-so since the pandemic - only brands with a purpose will survive, and that inclusivity and sustainability are values that should actively be pursued and communicated.

That is why, Tommy Hilfiger has launched an ambitious sustainability strategy and rolling roadmap toward their 2030 vision: **Wasting nothing, Welcoming All**. In this strategy all brand efforts are focused on delivering products and initiatives that are sustainable and inclusive, guided by their brand purpose; **We make it possible together**. They believe that through shared optimism, the power of the collective is harnessed that makes opportunities happen. Collaboration and innovation are therefore key components of their brand DNA.

While striving for this vision, they want consumers to see them as: **inclusive, real, cool, quality-obsessed and circular**. Especially the sense of 'realness' should be considered closely when designing digital fashion solutions as they are artificial and can therefore be perceived as fake or pretentious. Tommy Hilfiger defines its realness principle as 'embracing spontaneity and honesty' so that should be the perspective rather than non-artificial.

"It's all about finding the right balance between projecting "realness" and giving the freedom to consumers to embrace some extent of "fakeness" as escapism/entertainment. But I feel brands shouldn't encourage people to be who they are not i.e. causing low self-esteem and other negative repercussions"

- Sr. Brand Strategist Tommy Hilfiger

WE MAKE IT POSSIBLE TOGETHER
MODERN AMERICAN BRAND PRINCIPLES
WASTING NOTHING WELCOME ALL **COOL REAL QUALITY INCLUSIVE CIRCULAR**

Achievements to date in the inclusivity pillars include the Tommy Hilfiger Adaptive collection that enable people with disabilities to wear clothing with complex details like magnetic zippers, and the ZendayaCurve collection expanding the portfolio to include bigger sizes.

Within the circularity pillar the company has launched worlds' first 100% recycled denim jeans, and Tommy for life: a resale initiative for damaged, second hand or unsold retail pieces.

3.3 Digital Design

One of the **future targets is to digitize 100% of the design process by spring 2022**. Various pilots that use these digital assets to reduce the amount of waste have been executed and planned within the Area52 Innovation team. Examples are AI photography, 3D size studies, and virtual try-on.

Next to that two digital startups were born from Tommy Hilfiger initiatives including *HATCH* - a digital showroom enabler-, and *STITCH* that helps companies digitize their entire design process. The companies still have tight links, and collaborate continuously. *STITCH* trains and educates all Tommy Hilfiger product teams and supply chain associates in 3D design. They also develop PVH's 3D fit-avatars that are used for product fitting, and are in conversation with developers of 3D models, like the Diigitals to explore 3D advertising. This would enable shoots with photo-realistic digital avatars rather than human models.

The tight links with *STITCH* and startup incubators like Fashion for Good, and Plug and Play enable Area52 to test and implement cutting edge innovations in collaboration with external experts. This opens ways for advanced technological functions or features that are required in digital fashion.

3.4 Consumer perceptions

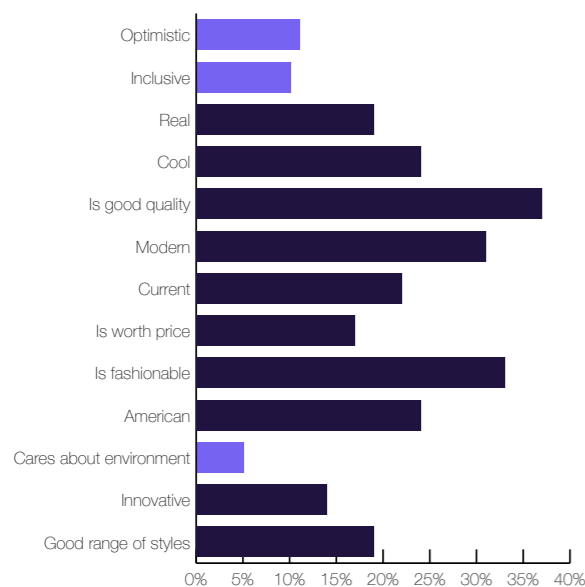
Tommy Hilfiger is a globally well-known brand, with 74% of the target consumers that know the brand globally (TH research). Spontaneous associations with the brand are: America, quality products, preppy or 90's styles, iconic colours and the logo. All these associations refer more to the trend and quality of the product, than the deeper brand meaning. Something that, as mentioned before, is particularly important to Gen Z consumers.

In addition, the associations with the name and the past imagery of being an American brand are mentioned to be elitist, carefree, white, and superficial. This doesn't make the brand relatable to today's day and age. This discrepancy between brand values and associations is clearly shown in Figure 9.

"I would love the brand to be closer, more transparent, less 'I'm an American brand', be more personal and relatable."

TH Focus Group, FR"

There is an opportunity to expand associations beyond product, with products that strengthen the connection between consumer- and brand values. Consequent alignment between these initiatives is necessary, so all communication 'ladders up' to a larger narrative that could change consumer perception. Next to the before mentioned associations a consumer study showed that Tommy Jeans is considered to be rather 'male'. Opportunities to attract female consumer to the subbrand are preferred.



22 Figure 9 European brand associations

3.5 Tommy Jeans

Consumer segmentation within the company is based on lifestyle and can roughly be split into two: 'World of Hilfiger' and 'World of Tommy'. While the worlds share the same brand DNA that radiates a modern American spirit, they have a different brand identity.

World of Hilfiger targets consumers that are between 25 and 40 years old, and buy into the preppy heritage of the brand. They use art as an amplifier for their lifestyle, and family-related imagery to create a sense of belonging.

World of Tommy adds a youthful energy and irreverent twist to the Tommy Hilfiger brand. It targets the 18-30 year old consumer, that is bold and curious. They mostly buy into the street and Hip-Hop heritage of the 90's. Music is used as an amplifier for this lifestyle by sponsoring events, or using (local) artists as brand ambassadors. To secure consumer interest past the current 90's hype, Tommy Jeans wishes to be a platform for emerging talents and opinion leaders.

As the target audience is younger, it uses groups of friends to portray a sense of belonging. At the same time its products are designed to make their consumers stand out. This way they aim to fulfil the fundamental needs of community and autonomy. The *World of Tommy* designs more radical change along with current trends.

A more in-depth analysis on the target group will be given in the next chapter: Gen Z.

The Tommy Jeans label is used to introduce most radical and sustainable innovations. Their goal is to 'Being experimental and experiential' in ways that shape culture and standards rather than following them.

In a SWOT workshop with the digital team it is decided that digital fashion innovations will initially fit the Tommy Jeans label best, because of its younger target audience and bold and innovative portfolio.

3.6 Consumer data

The company has an extensive network of touchpoints (Appendix 1), but most of them still sit within inspirational (pre-purchase) and purchase phases, such as their social media channels and their e-com website www.tommy.com

Even though several initiatives have been launched to gain insight into consumer uses and lives post-purchase, such as the Tommy Xplore collection that added Bluetooth chips in sweaters and offered various post purchase perks, the right fit for collecting data in a non-intrusive way is still to be found. Innovations that help to understand the consumer better are sought-after as that would allow them to optimize their offerings and increase their customer base in a more targeted manner. The big question is:

"How can we be closer to consumers in a way that we stay true as a brand, but in their digital playing field?"

– Sr. Brand Strategist Tommy Hilfiger

WORLD OF TOMMY

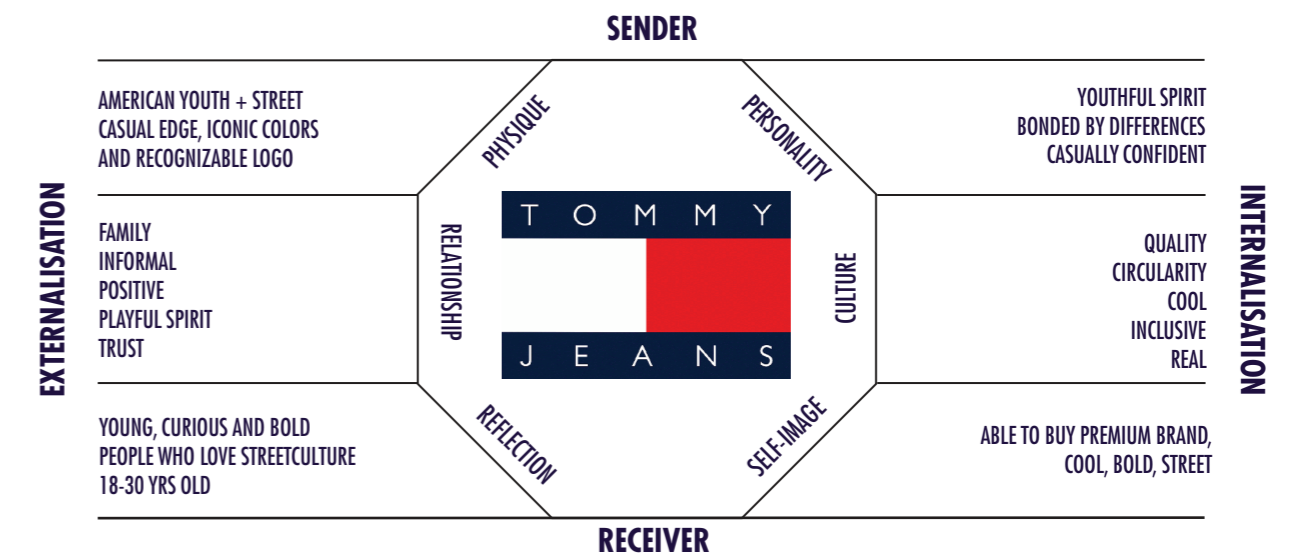


Figure 10 Brand Identity Prism Tommy Jeans

In this chapter a profile of the target consumer is sketched that should help Tommy Hilfiger employees to empathize with their consumers in the context of digital fashion.

From the domain exploration, it was concluded that a solution for digital fashion needs to exist in places where social interaction and comparison takes place. There are various channels through which Gen Z interacts or is visually present, ranging from social media channels to online games. To identify future needs and values of the target consumer explorative qualitative research is conducted in the domain 'future of digital interaction and appearance' across these different channels.

Eventually these insights will be combined with larger market- and technology trends to get insight in possible future needs in the next section.

To structure this consumer research, the following research questions will be answered:

1. What are the underlying needs and motivations for the target group's fashion behaviour in general?
2. What are the needs and problems encountered by Gen Z in online appearance and interaction?

KEY TAKEAWAYS

- Gen Z's digital identity is an extension of their physical identity. It should add something new, but shouldn't be pretentious.
- There is a constant desire for newness, where one wants to develop and change one's identity to be unique and progress.
- Gen Z sees identity as a compilation of all aspects of a person's life, that is fluid and constantly changes.
- There is a need to connect with brands that share the same (sustainability and inclusivity) values.
- Money and sustainable impact are limiting factors for optimal self expression through fashion.

4.1 Method

Context mapping tools are used to emphasize with the consumer and uncover their needs. The path of expression (Sanders and Stappers, 2014) is used as a set structure that guides the participants through their present, past and eventually future experiences (see Figure X). This way a rich understanding of people's experiences can be crafted, as the participant is carefully guided through their thoughts.

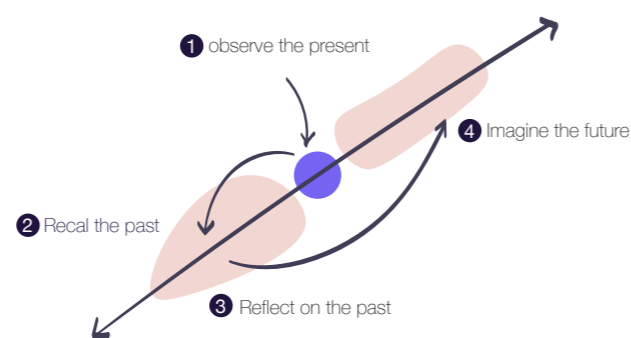


Figure 11
Qualitative research approach: Path of expression

Focus group

A focus group researching the domain of "the future of digital interaction and appearance" was conducted via Zoom and Miro. The goal of this session was to understand the choices Gen Z makes when profiling themselves online and what aspects around interaction and appearance they find important or problematic. The group consisted of four girls (21-23 yo), and a boy (22 yo). The process and extensive insights of the focus group can be found in Appendix 2.

The sample deliberately consisted of more girls as Tommy Jeans wants to increase their reach with the female consumer. Unless mentioned otherwise, the quotes in this chapter refer to statements made during the focus group.

Internal consumer studies PVH

Next to primary consumer research, internal consumer studies of PVH have been used. At the beginning of this year, Protein Agency has conducted a major research on Gen Z and Alpha (born after 2010) for PVH, around their behaviours and attitudes with a specific focus on technology and fashion.

A 'Corona virus update' that covers insights and data focused on the shifting consumer behaviour, values and brand diagnostics since the pandemic. Results come from a longitudinal research across France, UK & Germany, April - Sept 2020, and a digital platform & focus group with 12 people/market with a mix of target segments, men and women aged 20-45yrs. The insights of these reports are used to add nuance and substantiate previously found insights.

Fundamental Needs

The fundamental needs typology is created by Desmet and Fokkinga (2020) as a resource for user-centered design practices. It gives an inclusive overview of 13 basic human needs and 52 sub-needs (four for each fundamental need), that can guide a designer through the process of clustering and processing "the hundreds of context-specific needs captured in a study" (Desmet, 2020) to create a practical understanding of psychological needs.

Like any theory it is a simplified representation of reality and it should be applied appropriately, as the universal principles translate into an unlimited amount of interpersonal differences depending on person, context, etc. Therefore, the typology is used in two ways.

1. First a few poetic interpretations of each sub-need are created that are used as primers throughout the context mapping sessions (Appendix 4). This way we hope to reveal deeper 'latent' need of the user.

2. The model is then consulted after initial data gathering, to cluster and analyse the insights from user research, trend research and literature review. This way a rigid overview of the needs in digital fashion can be crafted without losing nuances.

Traditionally, the five most important elements in the apparel industry are: quality, variety, avoiding hassles (comfort), design and aesthetics (beauty) and the amount of time spent (competence and comfort) (Bain&Company, 2018). However, the shift of fashion to a digital domain could potentially drive a shift in what consumers value most. Will the quality of visualization for instance be as important as the quality of fabric, or will other needs surpass?

The results of this research we will try to uncover what value fashion should be giving in the digital domain.

4.2 Findings

Technological and environmental developments have resulted in conflicting standards within the generation. On one hand they increasingly expect brands to offer sustainable products (Portell & Kleinewilling, 2019), being confronted with the negative impacts of consumption. At the same time, their consumption behaviour shows the opposite; moving onto new trends quickly and expecting instant gratification, induced by global connectivity and constant algorithm-generated exposure (Protein Agency, 2020). This exposure doesn't only create a shorter trend-shelf life but also an interest in a broader spectrum of trends and style influence. The generations don't want to box themselves into one style or 'identity', but want to experiment with aesthetics and are open to adapt influences quickly (Rowe & McKracken, 2017).

The idea of self-expression through fashion is not a new concept (Roach-Higgins, 1992), people are naturally curious about experimenting with this medium (Sellerberg & Aspers, 2015). However, the pace at which this is taking place is much quicker than with previous generations. Not only inspiration for expression is gained from the Internet, they express themselves on-line as well. They meet their friends on-line on various platforms more often than they do in real life (Anderson & Jiang, 2018). Digital tools have allowed an explosion of new self-expression and play with identity, such as snapchat AR-filters.

The fast fashion industry has tapped into this phenomenon effectively by offering short-cycle fashion products at a low price (Cook & Yurchisin, 2017), giving people the possibility to express different parts of their identity every day. The environment had to pay the price for this success however, with the industry quickly evolving into the second biggest polluter in the world. As before mentioned, this is in conflict with the generations' desire for sustainable products. Finding a solution for this conflict while creating long term opportunities for the industry will be the main focus of this research.

"Our identity is the result of constant negotiations with the world around us" (Odenwalder, 2021)

Current needs in fashion behaviour

Variety and newness

They want instant gratification and newness in fashion because of rapidly changing (online) trends. They link this newness to their confidence level, feeling more confident when they can wear new or different outfits.

- *"I just don't get the thrill anymore after I wear it three times.. Besides, a lot of times I try something and when I look at it later I cannot believe I really wore that, so it's better I leave it there"*

Finding solutions for cost and sustainability

However, the cost of clothing and the environmental impact of clothes hold them back. They value sustainability but don't want to compromise for style. Resale and vintage clothing gain popularity, but convenience of traditional shopping still prevails.

- *"Ideally, I would of course have an endless wardrobe so that I can wear something different every day, but unfortunately i don't have that kind of money... Sometimes we fake that a bit by borrowing each other's clothes, but that's only possible when you have the same size. "*
- *(guilty) I would go to Zara when I quickly need something nice to wear. I know it's bad, but they always have cute stuff that's still affordable.*

A social activity

Fashion is also something to play with. Deciding what to wear with friends is already a fun activity on its own, especially for special 'events'. Now that they have less occasions to dress up for due to the pandemic, they fake dressing-occasions.

- *"I just feel good when I look nice but my favorite evenings are when we all think about what to wear together."*

Brands should lead the change

Even though they desire sustainability, they expect brands to take responsibility and act upon it.

- *"I just think it's bad that all major brands are so polluting, it's easy to say that we should buy something else but they just have to change"*
- *"But I feel brands also just go along with the hype. For example, those pictures of BLM, you can easily post them without really knowing what you are talking about. I think I am just critical there, but I don't buy what they say straight away"*

Be everything

Perceive identities as a fluid construct; a compilation of pieces that can change over time. It is a combination of: What they like, find important, what they can do or create, what they look like and what they experience, and therefore changes constantly.

- *"I find it very annoying when people say to me that I am a 'certain type of girl'. I am a lot of things, you have no idea.."*
- *"I am constantly changing, deleting and uploading my feed. It's just that it doesn't feel like me anymore, so I want it differently. "*

Offline comfy cool, Online quirky creative

They are looking for comfortable and versatile clothes at home, which they can use for both formal and informal moments (in video calls). However, online at the channels with larger networks (Instagram, TikTok) they prefer to show and experiment with their creative and more bold outfits. This partially has to do with the fact that they feel freer to make bold choices online.

- *"In my story I'll wear my denim suit. Because it just makes me feel like a superwoman. "*
- *"I actually think that cow shirt is very cool, but I don't dare to wear it to school. I do online"*

Needs in online appearance and interaction

Extend my eye-identity

Use online channels to create an image of themselves, and in turn make assumptions about others based on their profile.

- *"You can create a whole identity for yourself"*
- *"In any case, I have that with my posts, that I want to show different things. I would never post the same outfit or activity twice"*
- *"Love to stalk others on Facebook or Insta, just to check in advance what kind of person it is."*

No pretenders

However, what they post is not just about what they look like, and should suit the person. There is a growing allergy to "pretenders" and a growing demand for sincerity.

- *"I want to be admired for my ideas or qualities, and show my creativity or the things I do, both online and offline"*
- *I liked her because she's normal, showing her double chin and not filtering away her pimples... but now she's constantly repeating herself, so it's not real anymore in a way (de grap aan het uitmelken)"*

Fake is oké when entertaining

Artificial is not necessarily seen as fake. They like to use AR filters both for fun and beauty purposes. It's more about the belief with which a person posts something; to be themselves and be funny or the try and make others like them.

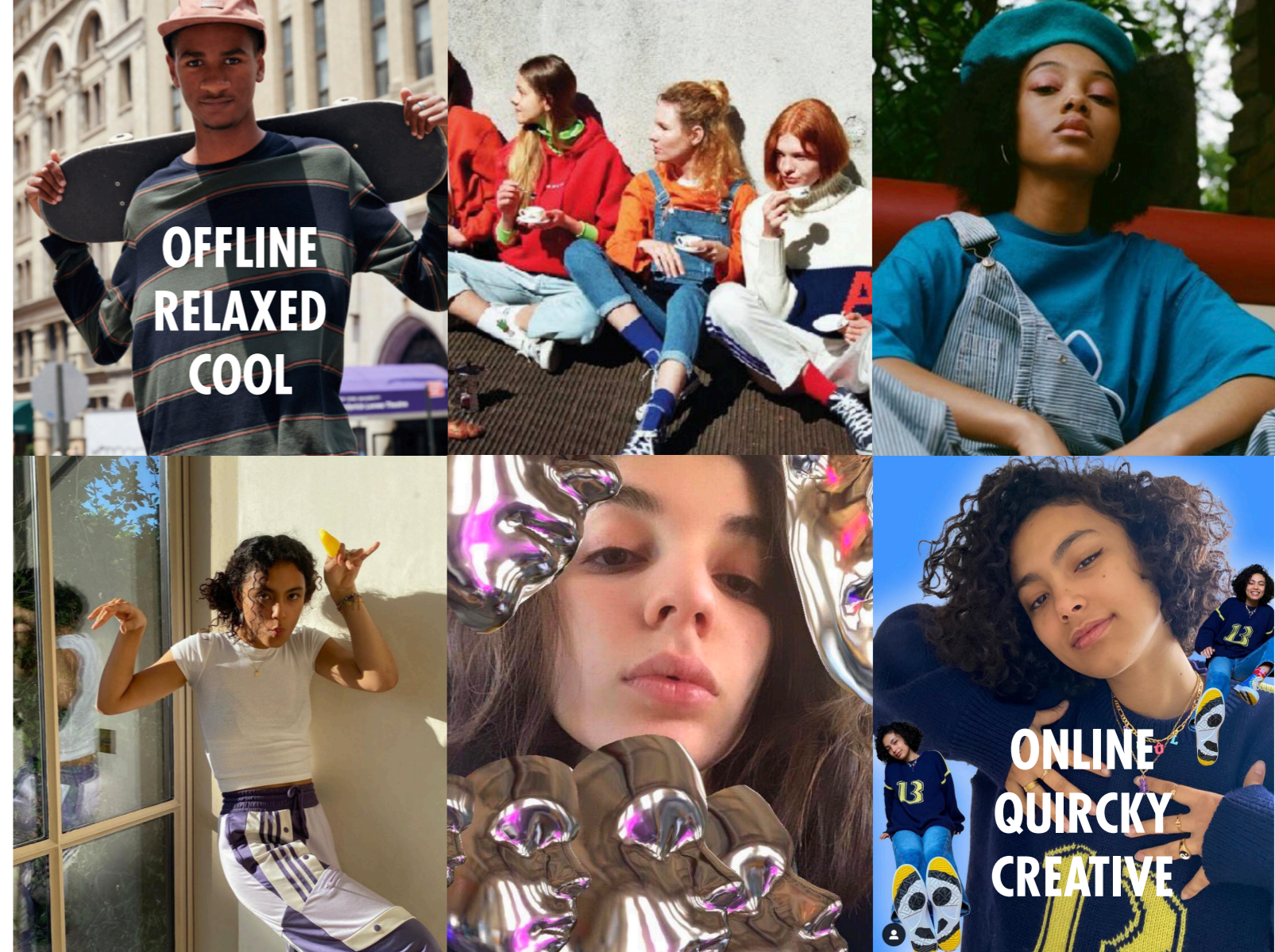
- *"I don't know, I just think filters are really funny. And handy." - Gaming interview (appendix 4)*
- *"I know that it's fake, but it's just good content, so I don't mind."*

4.3 Target Consumer

As stated before, Tommy Jeans targets the young and urban consumer aged between 18 and 30. They are on the pulse of Hip-hop-culture, and into fashion. In the coming 10 years these consumers belong to 'generation Z' (born between 1996 and 2010). They have some generation wide characteristics with technology as their first nature. They grew up with the internet operating advanced technology and all have an online identity on social media. This is seen as an extension of their identity rather than a sole representation (Protein Agency, 2020).

At this age one of the reasons for fashion behaviour is the desire to belong to a group. The way they 'belong' however depends on someone's role within a group (Desmet, 2020). As digital fashion will be a disruptive change of expression for the end consumer, we will target the opinion leaders that 'belong to the group' by inspiring others, not those who belong to it by following. These opinion leaders will likely belong to the early adopters, the key consumers in disruptive innovation (Rogers, 1995).

After empathizing with the Tommy Jeans customers, and gathering input from the Consumer-Insights Team a consumer profile was created that is visualized on the right.



OUR GEN Z 1996-2010

Characteristics

Express themselves through fashion

Live in the bigger cities

*Always online
"Before you know it you will be on TikTok for 3 hours"*

Original but not too crazy

Values

Identity is fluid

Creativity and authenticity

Conscious, and desire sustainability and inclusivity from brands

*78% Are looking for brands that align with their values
(VICE Voices – Spirituality, 2020)*

Desires

Look effortlessly funny and cool

Like to 'tell a story'

Constantly new and personalised content

*Want Instant gratification
"Don't want to wait 4 days before my order arrives"*

5 FUTURE FACTORS

The purpose of this chapter is to identify future factors that are likely to affect the domain and change our consumer's concerns in the coming 10 years. These future factors are trends and developments from both within and outside the domain that together create a holistic view of the future. In the next chapter I will combine these future factors with the states and principles from the previous chapters to form a total picture of our future context.

KEY TAKEAWAYS

- Environmental awareness increases
- Vast developments and adoption of AR technology
- Personalisation and instant gratification are essential
- Growing life in virtual spaces, through avatars

Method

Input for future factors within the domain was gathered both internally and externally. Internal expertise was consulted in a creative session with the digital Innovation team. External knowledge was gathered in three expert interviews (Figure x.1). In these interviews knowledge on developments within the (digital) fashion industry, digital fashion acceptance, avatar usage and fashion technologies were shared.

Factors outside the domain are selected using the DEPESTE model (Daalhuizen, 2020), and cover demographic, economic, political, ecological, social, technological and environmental trends and developments.

Final selection of relevant future factors is done using two conditions; (1) Relevancy to the domain and (2) originality to the domain. Factors should meet both conditions in order to develop an interesting perspective on the domain.

For readability purposes, this chapter only presents the numbers that substantiate the chosen future factors. An in-depth explanation can be found in the next chapter.



Benoit Durand

Digital Design Lead at STITCH 3D



Jana van den Bergen

Digital acceleration at Fashion For Good



Adriana Hoppenbrouwer

Partner and Commercial Director of The Fabricant 'The First Digital Fashion Agency'

Figure 12
Expert interviewees

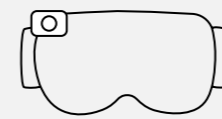
DISCOVER

THE FASHION INDUSTRY IS RESPONSIBLE FOR
10% OF HUMAN CARBON EMISSIONS
(MCFALL-JOHNSEN, 2019)



86% young women boycott brands that don't align with their values 'sometimes or 'every change they get' (VICE, 2020)

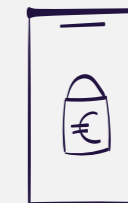
FACEBOOK SPENDS **\$10 BILLION ANUALLY** ON SPATIAL COMPUTING (BOLAND, 2020)



FACEBOOK, APPLE, BAIDU ARE LAUNCHING AR GLASSES FOR CONSUMER MARKET IN 2022

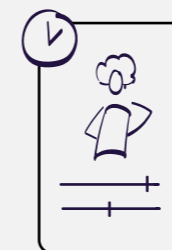
250% + COVERSION

FOR PRODUCTS THAT WERE SUPPORTED BY TRY-ON TECHNOLOGY ON SHOPIFY. (BUSINESS OF FASHION, 2021)



ALREADY 100 MILLION PEOPLE SHOP ONLINE VIA AR (OMALE, 2019)

ONLINE FASHION'S MARKET SIZE GROWS TO ~\$1 TRILLION BY 2025



CREATE NOVELTY WITHOUT WASTE: RESALE AMONG GEN Z GROWS AT 13% CAGR (PLUMMER, 2020)

1 IN 3 OF GEN Z WOULD RATHER BE **UNIQUE** THAN REAL (DAVIES, 2020)

40% teens state that social media primarily influences their spending habit (Business of fashion, 2020)

Figure 13
Future factors infographic



Courtesy of The Fabricatn (2019)

DISCOVER

Insights summary

What are the future fashion needs of Gen Z?

- Gen Z's digital identity is an extension of their physical identity
- There is a need to be unique
- There is a need to develop and change one's identity (desire for newness)
- People dress to belong, and trends change quickly
- There is a need for sustainable and ethical products
- There is a need to connect with brands that share the same (sustainability and inclusivity) values.

How can digital fashion respond to these needs?

- In this research we will focus on Digital fashion solutions that are enabled by AR technology.
- Digital fashion is scalable, flexible, update-able, on-demand and requires limited physical resources. This way a constant stream of new products can be launched without the environmental impact.
- Digital fashion is relatively cheap to produce and size-independent making it an inclusive product.
- Fashion is a way to express identity. With digital identities becoming more and more important, digital fashion could step in.

Requirements:

- (Digital) Fashion must exist in environments where people regularly have interaction with other people. This can be both digital as physical.

What are the requirements and opportunities for Tommy Hilfiger?

Company requirements

- Digital fashion should be a part of the road toward the company vision 'wasting nothing, welcoming all'.
- Digital innovations should put extra effort into protecting the brand's realness-principle in terms of spontaneity and honesty.
- Brand needs a coherent narrative that underpins deeper values, and that steps away from white elitist image.
- The product should be a twist on the brands' heritage.

Digital fashion opportunities

- Consumer facing digital fashion best fits the Tommy Jeans label because of its younger (Gen Z) and bold target audience, and its desire to be disruptive and to push boundaries.
- The recognizable and visual identity relies on the logo and iconic red, white and blue colours. Together they form the heritage's flexible 'building blocks', that are open for new interpretations.
- The strong digital innovation mindset and robust sustainability strategy can be the basis for the shift toward digital fashion, but technical expertise in translating these assets to consumer facing content is lacking. However, the collaborative mindset in both design and business operations opens opportunities to discover new markets with external partners.
- Data collection of the consumer currently ends after purchase. Digital fashion could be a means to extend this data collection.

“Nomads are constantly on the move. They are seekers, movers, wanderers. Identity Nomads do the same, redefining themselves on their journey ... Once the customary boundaries loosen their grip, the self becomes a construct, changing constantly as a response to an ever-changing world.” (Odenwälder, 2020)

WHY

In this section all gathered insights from the discovery phase are clustered into future drivers. These future drivers form the basis of the future fashion context. Based on this context, a vision is created that will be the answer to SQ1: Why should Tommy Hilfiger offer digital fashion?

Chapters

6. Future drivers
7. Future Context and Vision

The goal of this chapter is to combine the states and principles retrieved from consumer, brand and domain chapters with the development and trend factors into clusters that drive our future.

Together with the digital innovation team, a selection of most relevant and interesting clusters has been made, that serve as the building blocks of our future context. In appendix 6, you can see the process that has been used.

By discussing interpretations with other employees and designers in three sessions, clusters were rearranged and formulated more sharply to avoid overlap and to align interpretations. A total of 17 clusters were identified based on all the insights gathered, and the complete overview of these clusters can be found in the Appendix 5. In this chapter we will only highlight the clusters that were selected.

KEY TAKEAWAYS

The drivers for our future context are:

- The Identity Nomad
- Ethical Consumerism
- On the way to an augmented society
- Everything On-demand

Driver 1: Identity Nomads

Gen Z is constantly exploring and redefining their own identity, and use fashion as a means to express this evolving or 'fluid' identity. In that sense they are identity nomads, never settling for one stereotype.

For Gen Z, the notion of authenticity is shifting from being real and true, toward being unique. 1 in 3 Gen Z-ers even says, "I would rather be considered unique than real", which is a complete pivot from their previous generations (Davies, 2020). The shift can be linked to two fundamental needs a) They want to belong, and within that group, b) they want to differentiate (Desmet & Fokkinga, 2020).

In order to belong in a world with rapidly changing online trends, the generation must constantly adapt to fit in. At the same time, because of the scale of their online network, this also makes it difficult to stand out. The pressure to find your own way of doing things and to change constantly therefore increases. As identity and authenticity are seen as something dynamic rather than something fixed it is an ongoing process of constant experimentation and change. To distinguish and present themselves in new ways, Gen Z increasingly uses digital tools that enable creative and unique twists. It has become common practice to apply filters to selfies, edit group-pictures or even interact and follow synthetic media Figures (@lilmiquela and @shudugram) as real 'life-influencers'.

At the same time there is a growing demand for "realness" in the form of relatability and vulnerability (Consumer Research, 2020). If other people are vulnerable, by showing their creations, blunt thoughts or imperfections, one can identify with that. They are seen as more personal, and therefore also unique.

This seems contradictory to the use of digital tools, but the solution lies in the changing nuance of the word.

Real used to be a term that was defined as *genuine, natural, not-fake, not-artificial or not-imaginary* (Cambridge Dictionary, n.d.). To Gen Z however, the nuance seems to shift more toward: *genuine, non-pretentious, and honest*. As the digital and physical worlds collide, digital and artificial tools have become part of their 'reality'. Digital has become an extension of themselves, and is therefore considered real. Their daily exposure to artificially modified content has changed their view on what is fake, and the emphasis of realness lies on relatability and honesty.

Opportunities to experiment and express online are endless, and Gen Z experiences more safety, control and autonomy online than in real life (Rich, 2020). But it is a fine balance. Posts shouldn't be too pretentious and should always fit someone's identity, while simultaneously pushing the idea of what their identity entails. They look for the sweet spot that lies between being real (genuine and honest) and constantly discovering and redefining their unique self.



Driver 2: Ethical consumerism

Awareness around ethical and environmental consumerism continues to grow, and so do the generation's expectations. Gen Z consumers are demanding brands to take responsibility (Gen-Z Shopping : Separating Myth from Reality, 2020). Even though the generation is acceptant of people with different values or beliefs, they mainly connect with brands that share their own values. 88% of consumers want brands to help them make a difference (Forbes, 2018)

They connect to peers and brands based on interest and value rather than on demographics (Francis & Hoefel, 2018).

Gen Z easily picks out the 'followers' who merely post to fit in or to be cool, and use social media to publicly pillar greenwashing or pretentious behaviour. (Ewe, 2020)

Most important values they look for in brands are equality, sustainability and inclusivity. Already 55% of consumers are willing to pay 10% more, for more sustainably produced goods (Nanda 2020).

They don't want brands that make them feel exclusive, but look for brands that foster inclusivity and create communities.

Influencers with niche-expertise that share (activism) values or practical educational content serve as inspiration for Gen Z's daily life. It is important what they stand for. The original 'glamorous' influencers are increasingly seen as pretentious and out of touch with reality.

It is important for brands and influencers to be transparent about their values and pick sides, but even more so to act accordingly.



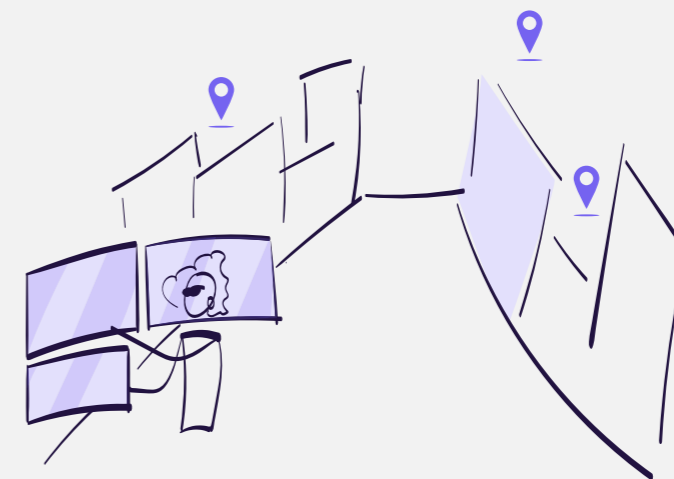
Driver 3: Augmented society

Augmented reality is taking the world by storm. On a consumer level AR is already enhancing peoples' faces on Snapchat, placing virtual furniture from IKEA in your room, or intuitively pointing the way with Google Maps. But these enhancements are only the beginning of what some call "the shift toward web 3.0".

We're getting used to sensors all around us that see, track and record everything. From governmental tracking apps in the pandemic, to the bodycams of police-officers or people on the street who unabashedly film everything they see happening. But the way these sensors capture the world is changing from 2D to 3D. This gives way to a 1:1 digital copy of our physical world, which people refer to as AR Cloud, spatial web or Web 3.0 (Kelly, 2019). This copy will give everything we see a digital enhancement, and creates possibilities for visual search, making information accessible at any location that's relevant, in an interactive manner.

On a hardware level more conventional visual interfaces, such as navigation screen in cars or our smartphones, are bound to be the most common AR interface for the near-term. However, we're entering the decade of connected eyewear. As all major technology companies – like Apple, Facebook, Microsoft, and Baidu - are planning to launch connected AR headsets and glasses in the coming 2 to 4 years (Future Today Institute, 2020). Tim Cook, apple's CEO expects it to replace the smartphone at the end of the decade in high-end western markets (Haselton, 2019).

On a fashion level, the benefits of AR try-on are easy to imagine. Google has launched a beauty try-on feature, that allows the consumer to try and buy via the Google app (Mackenzie Baker, 2021) AR virtual try-on is already available for products with static materials such as shoes. Even though accurate fit and complex features, like the drape or lighting of fabrics, can be particularly difficult to render effectively right now, the technology should be ready to simulate complex dynamic features in the coming 3 years (Meepl Correspondence, 2020). This will open a whole new world of opportunities for dematerialisation of fashion.



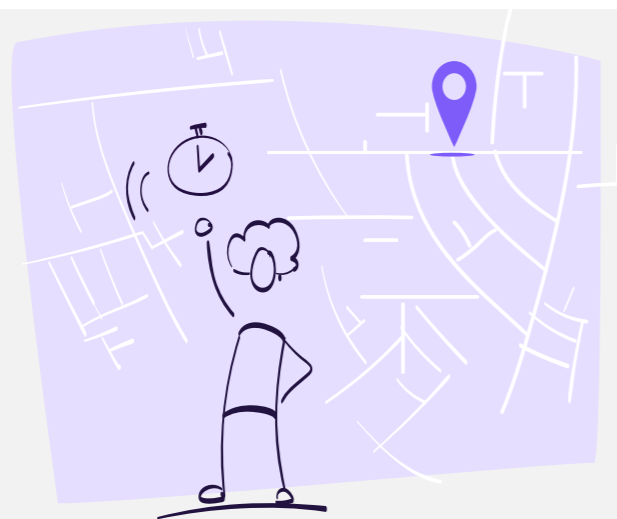
Driver 4: On-demand world

People are naturally short cut seekers, and integrated technology systems increasingly enable advanced shortcuts. They have pushed the need for instant gratification and an on-demand mindset. Where on-demand means at any time that someone wants or needs something. Consumers expect relevant content in relation to what they're doing anytime, anywhere, in the format and on the device of their choosing. The integration of AI in decision making enables the shortcut for on-demand information.

Trends have an increasingly shorter shelf life, as the speed of technology enables news to spread and explode quickly. This leads to an even more frequent on-demand mentality. An extreme example is the 'purchase, Instagram, return' phenomenon in fashion. Where people buy fashion to only wear it once.

Streaming platforms such as Netflix and Spotify give us on-demand entertainment, Uber gives us on-demand cabs and the roll out of 5G across Europe will give us on-demand, real-time and high-quality experiences anywhere we are. Think of lifelike holographic streaming, or AR and VR immersive experiences. The next decade will be hyper-connected, and real-time.

Not only digital content but also physical production is adapting to this on-demand mentality with local micro factories and 3D printing technologies. This on-demand production promises to increase customisation options for the consumer, while decreasing production surplus.



**I NEED IT HERE
NOW**

7 FUTURE CONTEXT AND VISION

In this chapter first the future context will be described. Then a future vision formulates how we should intervene in this future context. A future vision can help to secure long term goals within companies. It expresses a desired future and serves as a strategic reference point for future innovations (Simonsen et al., 2015). Designing a future vision is an iterative process. Via multiple internal validation workshops and presentations, a shared future vision is created that serves as the north star for our digital fashion innovation strategy.

7.1 Future context

Imagine, in 2030 the gap between the physical and digital world is forever merged and wearable AR glasses open the gate to an immersive 3Dimensional environment where all digital creations are brought to life. We will experience AR around us every single day, enabling us to better see, understand and control reality. Every sign on every street corner is personalised just for you. You will never get lost because directions pop up in front of you wherever you go.

But it also allows us to imagine an environment. You can find out the history of a building by projecting real size people walking through it in their 1800's costumes. The need for disposable decorations disappears, as it they are replaced with a digital alternative that change every season. Or, imagine that you are walking down the street and you suddenly see a product that you need. A shopping cart will appear right next to you, filled with the product and the variants you were thinking of. You stop, confirm payment vocally, it is sent to your house, and within seconds you continue on your way.

The prospects of living in an immersive phygital world are beyond imagination.

And these prospects are set to disrupt the fashion industry as well. Environmental awareness has led to a completely different view on fashion over the years. Not only is expressing identity with clothes in a traditional way considered polluting and wrong - people prefer vintage or rental -, with all the digital enhancements that entertain us daily, traditional fashion will be considered boring and static.

It makes it both difficult to keep up with the quickly changing trends, and to be unique.

KEY TAKEAWAY

The selected future practice, that is characterised by identity nomads, an on-demand and augmented society and a crave for ethical consumerism, describes a future where there is a need to continuously enhance digital identities in new and unique ways. Tommy Hilfiger should respond by offering augmented digital fashion as a means to express and stretch your identity through experimentation.

Simply put: it's out of fashion.

When the future of fashion should be more about expression than the product on its own. The form in which fashion comes should adapt to its future.

In 2030, every machine, product and human will have a digital enhancement that gives us tons of new functional and symbolic value. So, what if Tommy could tap into this experience by providing the digital enhancements of fashion: real-time digital overlays that express your identity in a sustainable way?

The only physical thing that remains is the clothing you wear to protect and comfort your body.

We will be able to save, track and buy anything we see intuitively, wearing various outfits a day just by projecting it on ourselves.

The augmented environment will also bring new goals when it comes to fashion. The visible and invisible sensors in our phones, glasses, or cameras on the street, that are peaking at us at every step of the way, make us increasingly aware of ourselves. And if big brother, or better said, your entire community is watching, people wish to present themselves more consciously, constantly adapting to the situation or group they are in. At the same time, they wish to stand out and are constantly looking for new impulses and trends. They want to experiment to stretch their identity and find their unique self.

7.2 Future vision

IN 2030, AUGMENTED FASHION WILL BE THE ETHICAL MEANS FOR GEN Z TO EXPRESS AND STRETCH THEIR IDENTITY THROUGH INSTANT EXPERIMENTATION

Tommy's purpose is to make it possible, and move forward together, so let's give their consumers exactly that. I want digital fashion to become an experimental means with which you explore the boundaries of what you can be, and enjoy the possibilities of the digital world: Its sustainability, flexibility, and limitlessness.

I believe digital fashion facilitates change and experimentation. Where one can switch, adjust or erase their appearance endlessly. It gives Gen Z the opportunity to be more diverse and bolder. An opportunity to keep changing without fear. Fear for the boxes that other people have told them to fit in, or fear for the environmental impact. Constantly discovering new sides of their fluid identity.

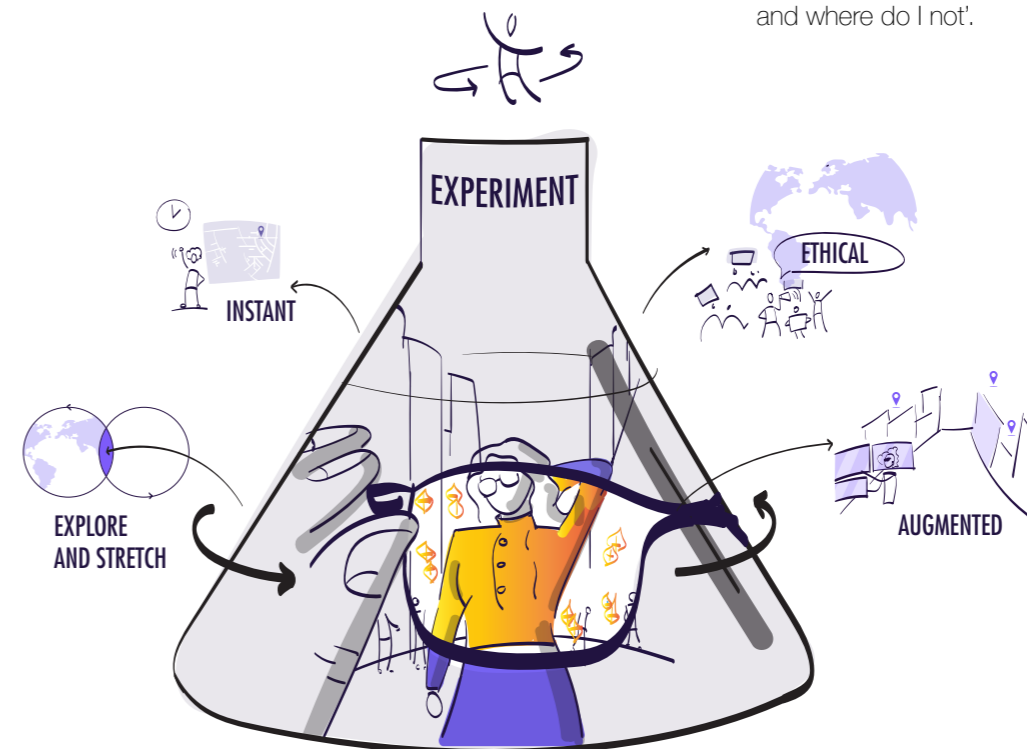
Just like you learn life lessons in a playful way when practicing a sport - such as dealing with setbacks, group-spirit and criticism -, digital fashion becomes a playing field for 'self-design'.

It is not escapism where you forget who you are and live in a dream, because the end goal is not the game or the experience.

It is also not just 'an easy way to try on a piece of clothing in a virtual try-on, to see how it fits. You will actually live in it. Taking it to the test ground, or even out to your everyday life.

It is experimenting with styles, ideas or links to communities that lie outside your comfort zone.

Self-design through experimentation: continuously asking yourself the question 'where do I want to belong, and where do I not'.



DEFINE

7.3 Video

In order to increase the support from the business for the vision, a video is made that can easily be shared throughout the company. It can be used as a conversation starter or alignment tool at every new digital fashion project.

The video is supported with a narrative that describes the vision in a way that is timeless. The visuals create a feeling of relevancy and trigger imagination.

The structure of the video is as follows:

- A. Set the stage: what is the world we live in now
- B. Identify drivers for our future
- C. Pivotal point toward digital fashion
- D. Vision: Digital fashion to experiment and stretch identity

Scan the QR code to view the video.

A *Life as we know it, has drastically changed
We had to adapt
Change the way we interact*

B *For some this came as a shock
While others were already evolving
And let's be honest
Why would we want to go back?*

C *If before us lies a world beyond imagination
Unbound by physical limitations*

C *A chance to be original
The future of fashion .. is digital*

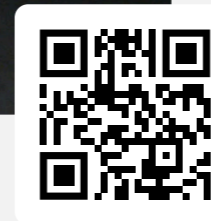
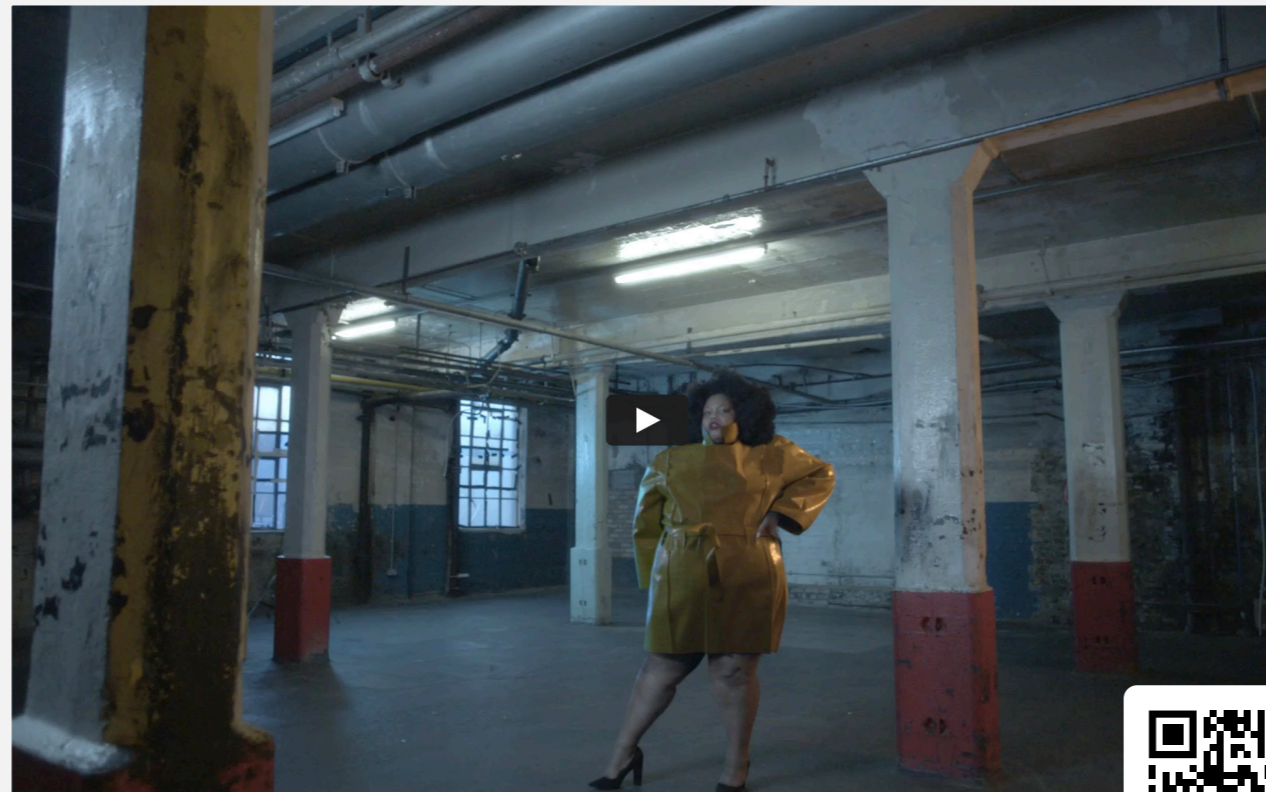
C *I am never going to be the same again.
As I'm talking..
'now' ... is already 'then'.*

D *We move forward. Change. For the better.
Don't let fear hold you back
But explore, expand
and experiment!*

D *Am I a different person than I was yesterday? Maybe...
Change is a never-ending story;
let's bring it to life
And move forward together.*

D *I'm looking forward to who I'll be tomorrow.
What is it that would you like to show?*

D *Digital fashion to experiment endlessly
So, we can stretch our fluid identity.*



Scan QR to see the video



WHY

ANSWERING SQ1: WHY SHOULD TOMMY HILFIGER OFFER DIGITAL FASHION?

Because the drivers in the future context of appearance and interaction are:

- The Identity Nomad
- Ethical consumerism
- The Augmented society
- Everything On-demand

Design Problem

With our digital fashion product we want to meet new consumer needs of Gen Z. In our envisioned future, Gen Z are identity nomads that want to be unique, and constantly develop and discover new sides of their identity through the fashion they wear. They would prefer to have an endless wardrobe with which they can try something new every day. However, the environmental impact and cost hold them back.

This leads to our final problem statement: How might we help Gen Z to continuously experiment with fashion in a playful and sustainable way?

Future vision:

Tommy Hilfiger can strategically meet the needs of Gen Z that these drivers entail, by pursuing the future vision:

In 2030, augmented fashion will be the ethical means for Gen z to express and stretch their identity through instant experimentation.

HOW

Before we can realize the proposed future vision, some necessary technical and market developments must take place. The purpose of this section is to answer the second research question: How should Tommy Hilfiger offer digital fashion? First the desired interaction between Tommy Hilfiger and Gen Z is defined, after which a strategy is developed following the strategic cycles of innovation (Simonse et al., 2015) and visualized in a roadmap. The roadmap shows the strategic fit with market and brand over time and showcases various product/service scenarios.

Chapters

9. Interaction vision
10. Strategy Roadmap

INTERACTION VISION

In our future vision we come to understand the boundaries of our identity in the same way that we come to learn how to play a particular game: namely, by playing it. An act of trial and error. The digital fashion solutions we provide must allow for experimentation. How should Tommy facilitate this experimentation, and what exactly are the properties of experimentation in this context?

Currently, fashion still has a relatively straightforward and static interaction, where brands create products with a certain symbolic association that is desirable. By buying that product, the consumer in essence 'borrows' that association and thus presents itself with this desired identity. The old interaction is visualised on the right.

Consequently,

A) As soon as the consumer no longer identifies with that association, he will no longer want to wear that product and look for something new.

B) Also, people want to identify with multiple associations simultaneously, which drives the demand for various products. A person consists of hundreds of puzzle-pieces and likes to show that diversity. Not only because it gives them more depth but also because it allows us to connect with different people.

C) And finally, people change. Based on the principle of "progress", they want new and different products as time passes.

This way of experimenting with identity is not sustainable in terms of environmental impact but is also limiting because of cost, fits, sizes or general availability. Barriers that do not apply in the digital world.

In my vision, digital fashion changes the interaction between consumers and fashion from a one-way stream to an infinite interaction loop. Where Tommy facilitates the continuous discovery of the identities a person wants to identify with.

The interaction vision is in that sense two-sided; as both Gen Z and Tommy Hilfiger will experiment.

1. Gen Z

With digital fashion, you can not only change colour, shape or type of appearance a la minute, but you can also adjust your appearance to your mood or the specific people you interact with. This will add a new level of depth into identity expression through fashion.

The garment and the way of wearing become dynamic. A further exploration of what experimentation with digital fashion will mean for Gen Z will be given in the next subchapters.

2. Tommy Hilfiger:

Digital fashion becomes a platform for Tommy to experiment with new product offerings, but more importantly, it becomes a way to get richer consumer-data that goes beyond purchase.

They can find out:

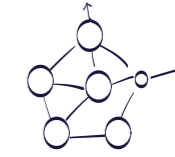
- When consumers wear what
- With whom they wear what
- .. and potentially what they wear where, doing what or what they want to wear depending on how they feel

The more often the customer changes, the better the consumer profile becomes so that Tommy Hilfiger, in turn, can suggest better new outfit 'experiments'. They can adapt their physical and digital collection to improve efficiency and effectiveness. It is in both Tommy Hilfiger's and the consumer's favour to offer as many experiments as possible.

The experimentation loop can also be used for other purposes like putting certain designs online prior to production to measure traction. Marketing with digital fashion can be even more targeted, personalising each visual for the relevant consumer, without a lot of extra costs.

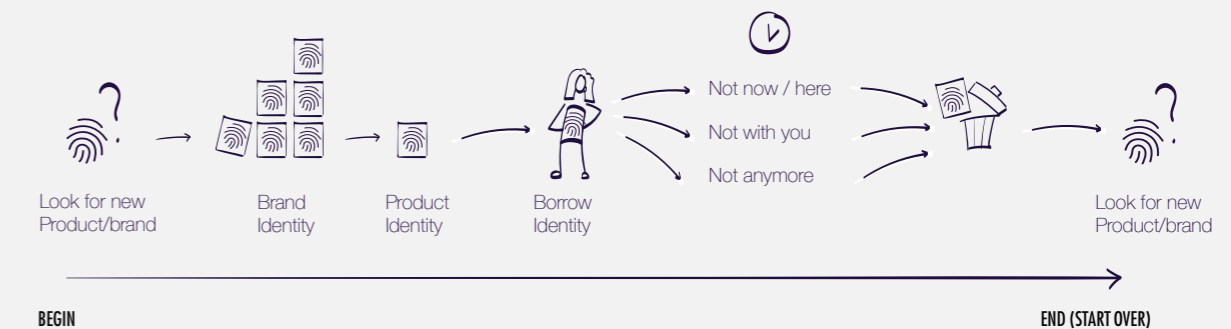
Second, the idea of experimentation offers an opportunity to move away from the traditional seasonal calendar (which is irrelevant in digital fashion). Instead of creating 4 large collections per year that have to be "right first time", there will be a continuous stream of designs that will be optimized through trial and error. They can use this principle for both "digital-only" and physical fashion.

Instead of constantly reverting to heritage designs, the digital loop also gives the brand the opportunity to write new history. The online identity of Tommy Jeans can be a flexible concept that grows like a platform structure. It will be "a platform for change, which must constantly be able to test, undermine and redefine its own meaning" (Vorst, 2007). As the portfolio changes, the brand identity slowly evolves along with the consumer's desires.



Grow brand Identity in a platform structure

OLD INTERACTION: STATIC PHYSICAL FASHION



NEW INTERACTION: DYNAMIC DIGITAL FASHION LOOP

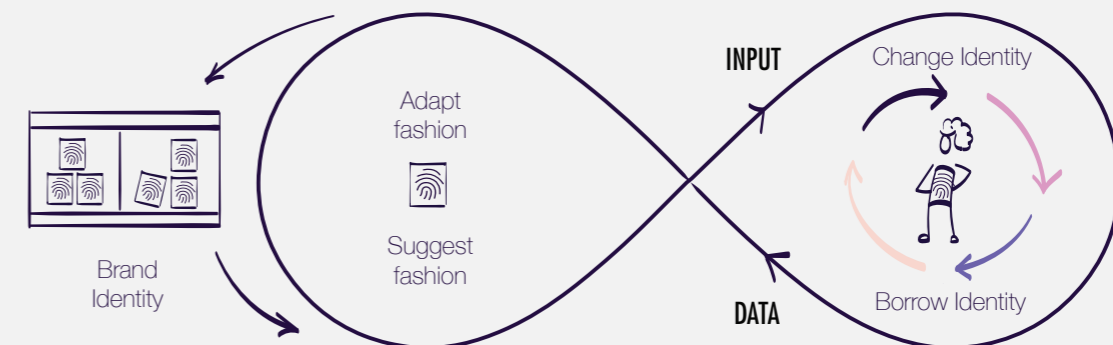


Figure 15
Old and new interaction between fashion brand and consumer

A CONTINUOUS FACILITATION OF FINDING OUT WHO YOU WANT TO BE

9 STRATEGY ROADMAP

In order to realise the future- and interaction vision a strategy is developed and visualised in a roadmap.

9.1 Three Horizon Strategy

The purpose of a roadmap is to visualize the strategy that leads to the future vision. In this case we will prepare Tommy Hilfiger for a situation where augmented digital fashion offers continuous experimentation for Gen Z. To deliver continuous innovation on the long term, the Three Horizons model (Curry & Hodgson, 2008) is used. In this model three life cycles of strategic business innovations are developed, that run parallelly as shown in Figure 16. Each life cycle conceptualizes new business development (Simonse et al., 2015).

In Horizon 3 after 2028, when the AR cloud and AR hardware technologies have come to maturity level, experimentation with digital products in the physical domain can take place as described in the future vision. The expected development of relevant technologies is visualised in Figure 16.

However, experimentation with digital fashion can be offered in other ways before we arrive at that stage. The Three horizons model helps to ensure a continuous loop of innovation.

With this strategy I propose a way that prepares both Tommy Hilfiger and the consumer for Horizon 3, while enjoying early experimentation with digital fashion to stretch their identity.

H1: Enhance physical fashion

In the first horizon, incremental innovation is proposed that builds upon the existing product. The physical product is used as a trigger for an augmented fashion experience, bringing the benefits of digital to the physical world. This way we stay close to our core product, enhance brand awareness while offering consumers carefree sustainable expression in a solution that blurs the line between the offline and online world. The main goal is to get the consumer acquainted with digital fashion in a playful way.

H2: Build key elements for the phygital fashion experience

In the second horizon user-centered value is created by introducing new technologies in the existing market. In this horizon the key elements for the final horizon will be developed. 3D fashion will be monetized and the shift is made to digital-only fashion that is unrelated to the physical product. This step is the stepping stone toward the final horizon.

H3: Infinite experimentation with augmented digital fashion in the physical domain.

The end of this horizon leads to our desired end state: the future vision. Digital fashion will be the standard way to experiment with new styles and stretch your identity continuously. At this point, we introduce disruptive innovation that has the potential to replace the existing value proposition of fast fashion (Simonse, 2015).

Throughout the horizons, concepts develop along multiple dimensions:

1. The evolution of products is mainly affected by the maturity of AR technologies. The amount of places where digital fashion will can be used increase over time, from 2D social media and gaming, to immersive social media, and finally bringing it to the everyday physical domain with AR glasses.
2. The idea is to give Tommy Hilfiger's logo more 'depth' over time. By linking a digital experience behind every Tommy logo, the consumers gradually become curious when they see the logo. They will know there is something to be sought which increase brand engagement.
3. Over the course of this roadmap, our customers slowly build their digital wardrobe, starting with basic digital enhancements, to fully immersive outfits. This means they can replace their physical one-off outfits.
4. Already in the first horizon Tommy will receive new consumer data. Throughout the roadmap they will adjust their portfolio to be more data-driven.

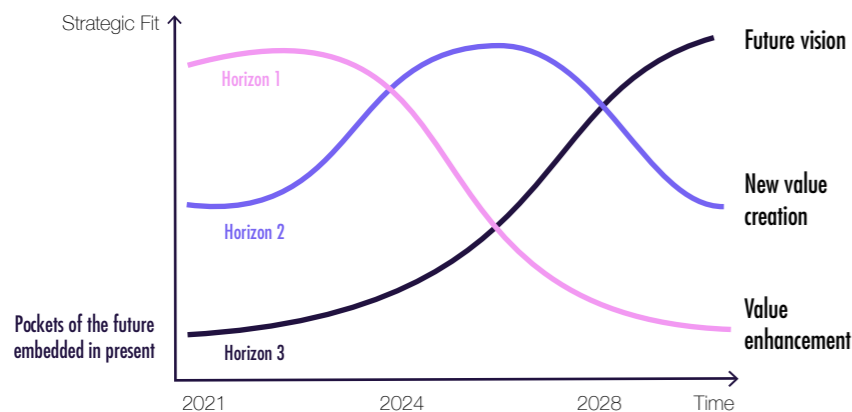
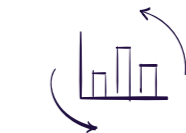
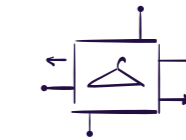
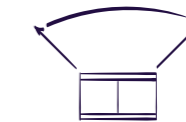
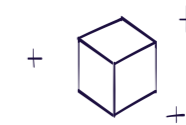


Figure 16 Three Horizons model (Curry & Hodgson, 2008)

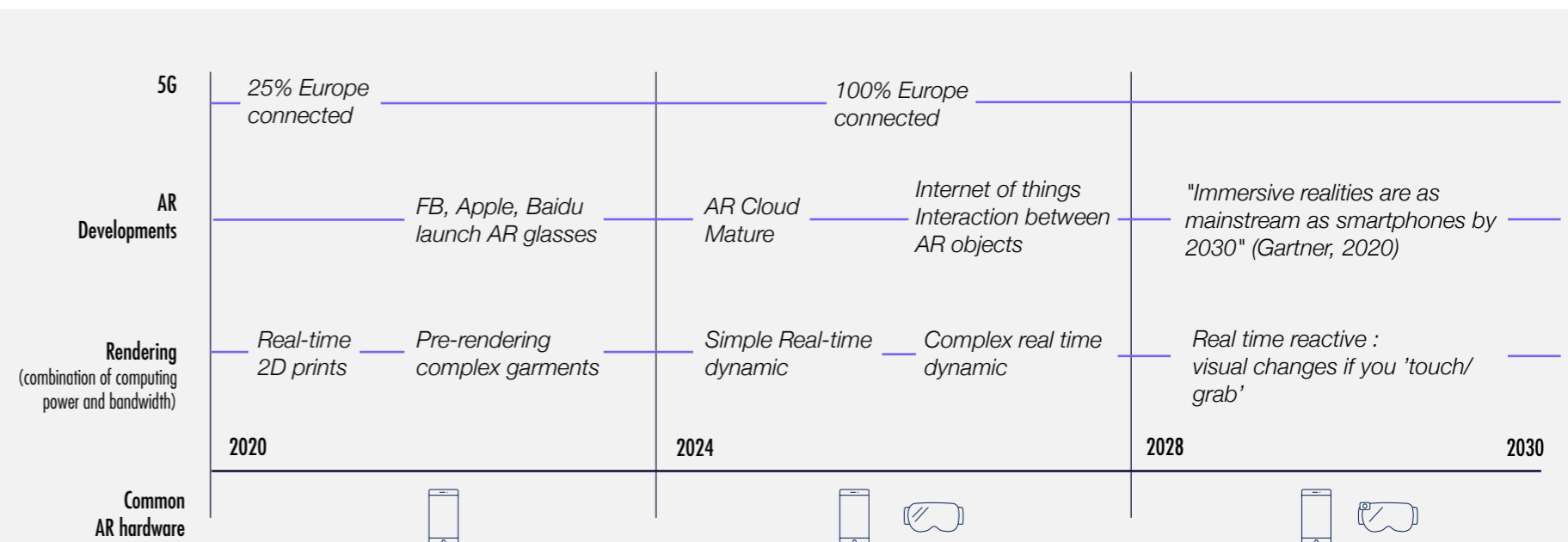


Figure 17 Expected technology developments (Interviews Benoit Durand, Future Today Institute, 2020; Macdonald, 2020; Omale, 2019; Plummer et al., 2020)

HORIZON 1: ENHANCE PHYSICAL OUTFITS

9.2 Scenarios

Developing a shared understanding of a project's future vision and the practical steps toward it can be challenging, especially in design-driven or cross-functional innovations (Steen et al., 2014). Yet shared understanding is critical for success. Demonstrative scenarios are a way to secure this understanding. They describe product- and service ideas, and are means to visualize strategy and should be understood as 'pathfinders'.

Four creative sessions were organised to explore multiple product ideas for each horizon: One internal workshop with the business innovation team, two brainstorm sessions with four IDE designers and 1 creative workshop with four Gen Z girls (aged 17-21).

Final ideas were clustered and selected together with Area52 team members based on the following KPI's:

- Match with key competences Tommy Hilfiger
- Ease of experimentation
- Solves a Gen Z needs
- Potential sustainable impact
- Logical succession of concepts

On this roadmap 5 scenarios across the three horizons are described, that show possible ways Tommy Hilfiger could navigate through the three horizons. The depicted scenarios should be treated as ways to "explore and frame the problem and to explore and develop possible solutions and not as specifications for any real product that would be realized" (Steen et al., 2014).

The common thread throughout these scenarios are the value proposition of enabling experimentation and stretching identity.

Q1 2022 Scenario 1: Tommy Tomorrow

The Tommy Tomorrow is a basic sustainable shirt that comes with a series of digital AR prints that are dropped in Tommy's Dropshop each month. By scanning the logo on the shirt with their phone, AR filters are unlocked. These AR filters turn the piece of clothing into 'fashion', and are the way the customer can express their identity. They can be used on social media or video conferencing platforms and give users an entire 'Tommy experience'. The focus is on providing different virtual 'prints', but virtual backgrounds can also be offered to complete the experience.

Each month the filters tell the story of different protagonists. The first protagonists are the music artists Tommy has planned to work with in 2021. The enhancements will be a combination of artwork impressions that describe the story of our protagonists, and their songs. This makes the fashion truly come to life, opening up the first thought that digital fashion is way more than just a digital representation of what we know in the physical world.

Also, it reinforces Tommy's brand connection with modern pop culture. Later, the protagonists also include inspirational Gen Z people that share their stories on topics of sustainable innovation or inclusivity to emphasize the company's wider vision.

The filters are only accessible to people with the physical t-shirt, but will be free for them to use. In this scenario users don't yet 'own' the digital fashion, they merely use it.

Value proposition: Buy one shirt, get multiple prints to experiment with. Stretch your identity by endorsing different stories or the Tommy-artists.

What's in it for Tommy:

1. Receive consumer preferences to predict future demand
2. Make sustainable statement and build personal relationship through local artists

Business model:

3. Sell physical t-shirts, and limited-edition filters on a blockchain.

Q2 2022 Scenario 2: Tommy Tomorrow 2.0

In the second scenario the digital drop shop expands to include the possibility to personalise your own designs with provided Tommy Hilfiger building blocks. Gen Z is empowered to use their creativity. Now the user can tell their own story and one can upload their own designs to the marketplace, which will be available to other consumers. Popular designs get promoted on the Tommy channels, and produced in limited physical editions. Top designers can earn points to spend in the Tommy shop.

In addition, several Tommy Tomorrow products are now being made. For example, hero products such as the Tommy denim jacket also receive enhancements online so that each sustainable garment is an experience. Exclusive designs can be bought.

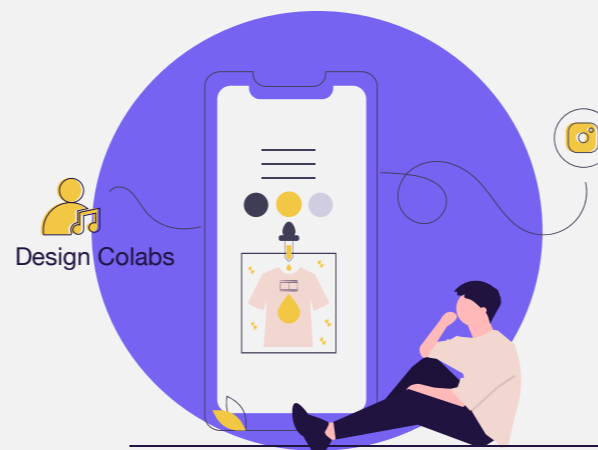
Value proposition: Buy sustainable outfits and create your own digital enhancements. Experiment with digital impressions and stretch your identity with your own stories.

What's in it for Tommy:

1. Use data to recommend personalized designs of both digital and physical product
2. Increase product attachment and lifetime because of co-creation.
3. Strengthen brand through co-creation

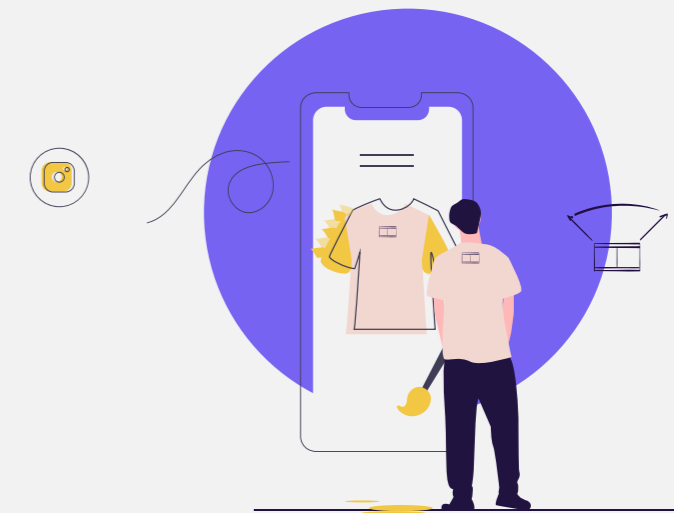
TOMMY TOMORROW

Enhance Your T-Shirt With New Prints And Effects



TOMMY TOMORROW 2.0

Customise Designs With Tommy Building Blocks



HORIZON 2: BUILDING BLOCKS OF THE FUTURE

Q1 2024 Scenario 3: Follow update-able designs

At this point in time, 5G and AR Cloud technologies will allow users to render and simulate complete garments in real time. The digital designs won't be limited to the shape of the physical clothing, but can take on every shape, size, or material. Any Tommy Jeans logo can be used to unlock digital fashion in the physical domain, and becomes a true sign for curiosity.

In this horizon we move from selling enhancements, to full 3D fashion designs that are unrelated to the physical product we sell. The tokenized fashion assets you buy, can be used in multiple applications such as in games to dress your avatar, on zoom or on social media.

The models are authenticated via a blockchain, that stores certificates of the creator, the owner and the edition (e.g. 1/100). This tokenisation of digital assets with NFT's (non-fungible tokens) prevents counterfeiting or 'copying' and therefore secures value for Tommy Hilfiger, and uniqueness for the consumer.

All digital fashion now comes as an updatable product. Fit, shapes, colour or animations of a design can be updated based on:

- Personal preferences,
- Following others, or popular opinion

- Femocratic community designs (collaborate on designs with friends)

Value proposition: Stretch and experiment online by subscribing to changing garments.

What's in it for Tommy:

1. Gain insight into communities: who are the opinion leaders; size of groups. Gain insight when consumers dress to belong and when they dress to distinguish.
2. Less physical 'disposal' garments
3. Create ownership over the fashion and service within a group, and thus shared brand attachment
4. Constant income via subscription models

Business model:

Sell 3D tokenized assets on own E-com platform or via third parties like The Dematerialized or DressX (AR shop)



2027 Scenario 4: Night out in digital clothes

Now that the second-generation AR glasses have launched, we can simulate entire outfits in real time in real place, and step outside the boundaries of the virtual world. Scenario 4 is mainly about testing the use of digital fashion with AR glasses, before they have been widely adopted.

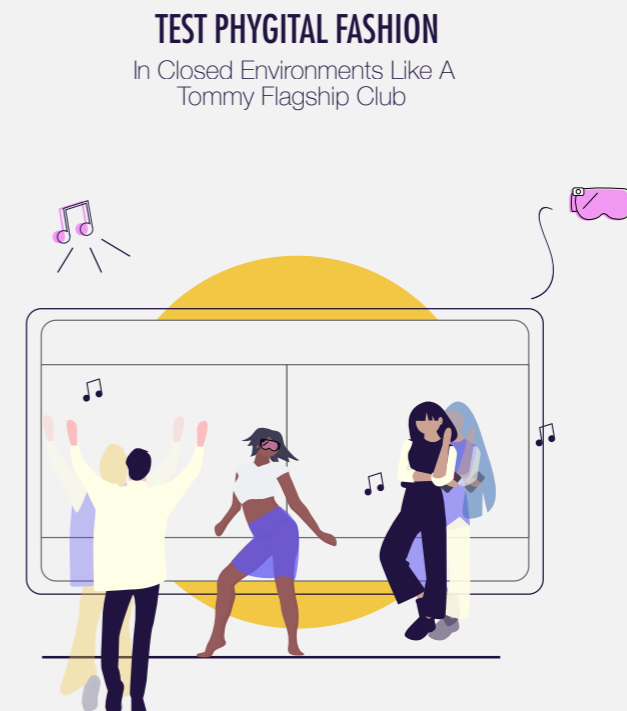
In our flagship stores you can now experience what it is like to really walk around in digital outfits with AR glasses provided by Tommy. These flagship stores host 'AR' parties where you can wear the latest digital designs, and party to the latest pop culture. Every visitor and space is digitally dressed by Tommy. Nostalgic themed parties take you back to Copa Cabana on Friday nights, Lowlands on Saturday or Berghain on a Sunday morning. If the concept catches on, Tommy can even give pop-up parties all over Europe. At these events, both the consumer and Tommy can experiment with the possibilities and limitations of IRL digital fashion. Value proposition: Have fun, experience and experiment with digital fashion designs in the physical domain.

At these parties, consumers can also experiment with the immersive Tommy Now app, that enables visual

search of all 3D garments. This means you can buy and try anything you see anywhere, right away.

What's in it for Tommy:

1. Prepare for everyday digital designs in the physical world
2. Experiment with subjective environments and clothes. Who will dress who and how do they feel about different outfits for different audiences.
3. Get consumer feedback on '360' fashion design requirements and preferences
4. Experiment with AR and VR head mounted devices
5. Strengthen connection to Pop culture



HORIZON 3: INSTANT EXPERIMENTS WITH AUGMENTED ETHICAL FASHION

2028> Scenario 5: Anywear

With the wide adoption of wearable AR glasses, it is possible to wear digital fashion wherever you go.

Now it's not only possible to change appearances everyday carefree, but one can also adopt its appearance to mood, passer-by or context on the go. In order to unlock the right digital enhancement per person, personalised physical clothing is created. Each physical item has a unique Tommy Logo that acts as an AR trigger for our 360° filters, to be detected by any AR device.

Users can:

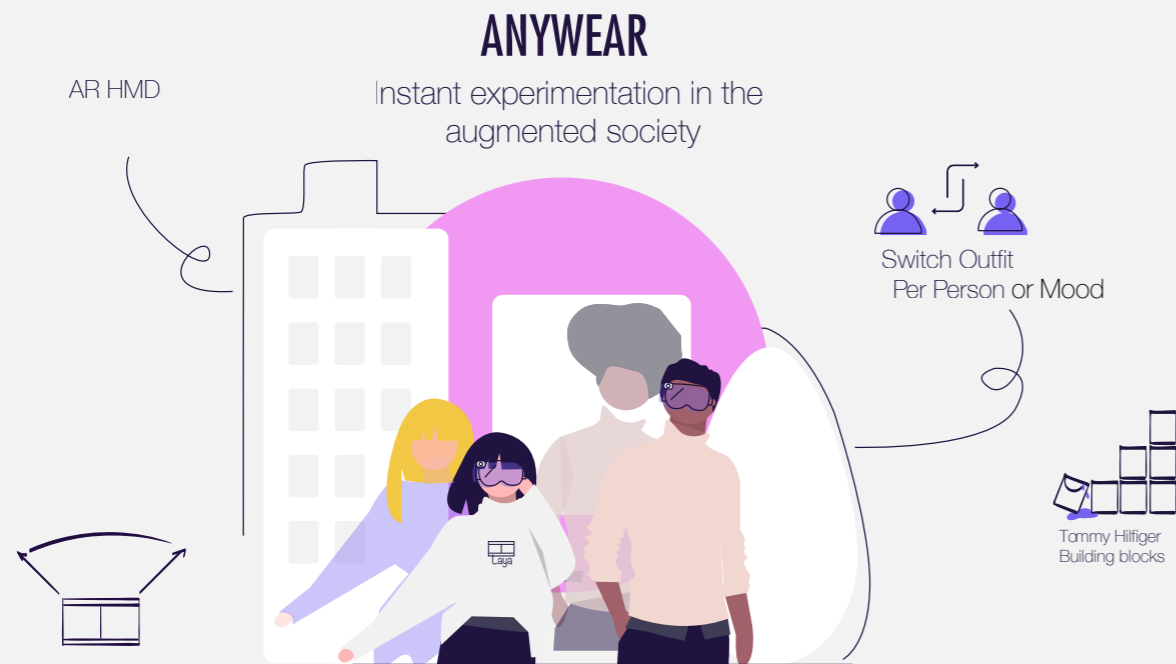
- Switch appearance throughout the day
- Link their phygital wardrobe to calendar and get automated style advice or suggestions for new fashion.
- Set different outfits for specific viewers and decide who, to show what, when
- -Set different AR fashion outfits per mood that change according to your stress level, heart beat etc.

Value proposition:

In 2030, augmented fashion will be the ethical means for Gen z to express and stretch their identity through Instant experimentation

What's in it for Tommy:

1. Insight in how their products are styled
2. New inspiration for designs
3. Customer engagement
4. Data on consumer personality, preferences, community and possibly even activities based on the fashion they choose to augment
5. Data on emotional wellbeing of consumer that can be used to alter algorithms of style/shop suggestions.



11.3 Strategic Roadmap

On the next page you will find the strategic roadmap. In a time-pacing workshop with Alexandra Irimia (Ecom strategy director TH) and Monica Castro (director of digital innovation PVH) the innovation speed of Tommy Hilfiger is mapped, and key moments and transitioning stages were identified. These serve as the innovation clock for this roadmap.

An important note is that agility in innovation is key. With the vision in mind innovation steps are taken, but the results of experiments are always decisive for the next step. Therefore, this deliverable should be seen as a **rolling roadmap** that needs to be updated and adjusted after each experiment, with the future vision as a guiding north star rather than a set implementation plan.

There are multiple rows on the roadmap that will be briefly explained:

Context

As time develops the physical world and digital world will slowly merge into one phygital context.

Consumer

The focus of each value proposition remains the same over time, but the way it is delivered evolves along with the possibilities of technology and is described here.

Product

In this field the product scenarios explained on pages 58-62 are displayed.

Business

The business stream shows the benefits for Tommy Hilfiger in each scenario and horizon, divided into four categories: building consumer profile, reducing waste from both industry- and consumer point of view, building a stronger brand narrative and relationship and finally sales.

Trends / developments

The expected evolution of the relevant technologies for the final roadmap is mapped based on the 'Expert interviews' with STITCH, Fashion for Good and the Fabricant, and research from Gartner (Omale, 2019) and McKinsey (Logaldo, 2016). Next to AR and 5G developments,

also a blockchain stream is added that should secure. Depending on the partner found in Horizon 1, relevant developments should later be added to the stream. Moreover, a knowledge-sharing session with design agencies One-Up and Aimforthemoon secured the final output.

Resources

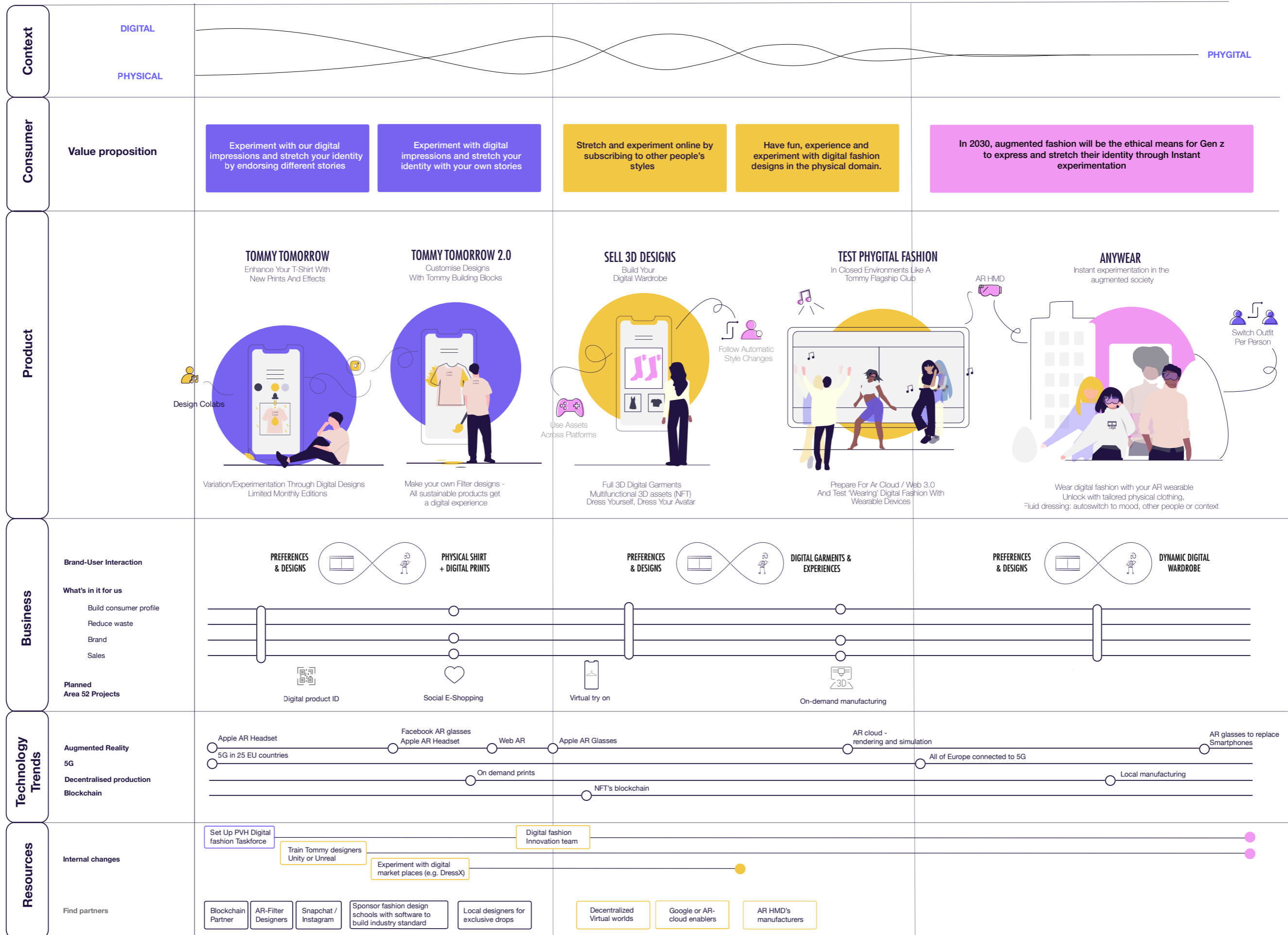
In this row two things are presented. First, the suggested internal actions PVH should undertake to prepare for upcoming scenarios. These are further explained in the final recommendations.

Second, the partnerships that PVH should look into in relation to the horizons and scenarios.

ENHANCE PHYSICAL OUTFITS

BUILDING BLOCKS OF THE FUTURE

INSTANT AUGMENTED FASHION





HOW

ANSWERING SQ2: HOW SHOULD TOMMY HILFIGER OFFER DIGITAL FASHION?

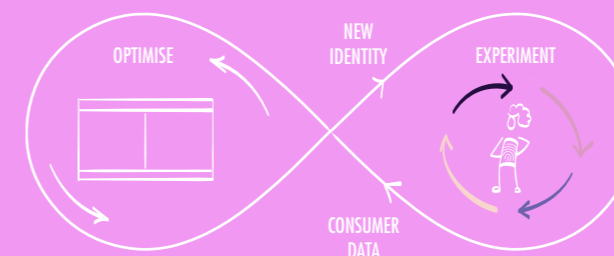
What desired interaction should digital fashion offer?

In the stated vision, digital fashion changes the interaction between consumers and fashion from a one-way stream to an infinite interaction loop. Where Tommy Hilfiger facilitates the continuous discovery of the identities a person wants to identify with, and in turn perfects their consumer profile.

What should Tommy Hilfiger's digital fashion strategy be?

To arrive at the future vision, Tommy Hilfiger should take a three-horizon approach that ensure market fit, brand fit and technology fit over time.

- H1 Enhance physical fashion
- H2 Build blocks for phygital fashion
- H3 Instant experiments with augmented ethical fashion



The roadmap is the answer to this research question.

WHAT

In this section the last research question will be answered:
What should Tommy Hilfiger offer?

With the roadmap as a starting point, new innovations can be created on a product/service level. I believe Gen Z should be able to stretch their identity through experimentation. In this section it is explored what guiding principles allow for the right experimentation. Furthermore, the vision is brought to life with a tangible narrative and a demonstrative concept that shows what Tommy Jeans could offer as a final step on the roadmap.

Chapters

- 10. Guiding Principles
- 11. A vision concept

GUIDING PRINCIPLES

10.1 Desired user-product interaction

Experimenting is to try out new ideas or methods (Pickhardt, 2016). The process of experimentation is visualised in Figure 18.

First a goal is set or a hypothesis is made: "I think this shirt would be really cool". Then it is tested (experience, measure) whether the new outfit satisfies that goal: "How did it feel to wear it, does it fit me?" Finally an analysis is made on the basis of which next steps are devised: "Would I wear something like this again?"

Within the steps of experimentation, a set of five design principles is defined that digital fashion should enable to meet the needs of both Gen Z and Tommy Hilfiger. The design principles describe the way we want our consumers to experience digital fashion. In that sense it describes the desired human-product interaction. The principles function as inspiration points in the ideation phase.

For each principle it is described why it fits Tommy Hilfiger, so that our final design both meets consumer needs and the brands' needs.

In our vision, experimentation should be:



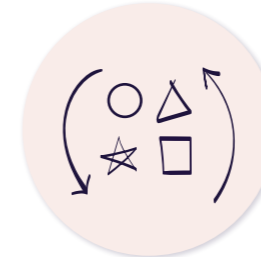
PLAYFUL

Tommy wishes to radiate a playful spirit so the experience should be joyful, where you don't take yourself so seriously, you just try. This removes the pressure to do it right the first time. It also becomes more fun.



DYNAMIC AND ITERATIVE

It is a process of trial and error, that should be dynamic. Where it is easy to change, adapt or delete the decisions you have made. Therefore, mistakes can be made and repaired. Wearing fashion becomes a dynamic practice, instead of a long deliberation until a well-considered choice is ultimately made. This stimulates the bold attitude Tommy wishes to promote.



INTERESTING VARIETY

In order to experiment, a wide range of choices is needed. However, the attractiveness of the product and experiment decreases when there is an abundance, or when it doesn't match the user's preferences. Tommy wants to be perceived as 'cool' which is why they have to ensure a controlled scarcity of products, and personalised offers. There are multiple ways to create that restriction such as; limited sales and barter (1/100), having products on loan (Cinderella's dress and carriage), setting up challenges (games) etc.



ACCESSIBLE

The threshold to try must be low, therefore the experience must be accessible in cost and use, and on-demand so it's available to anyone anywhere.

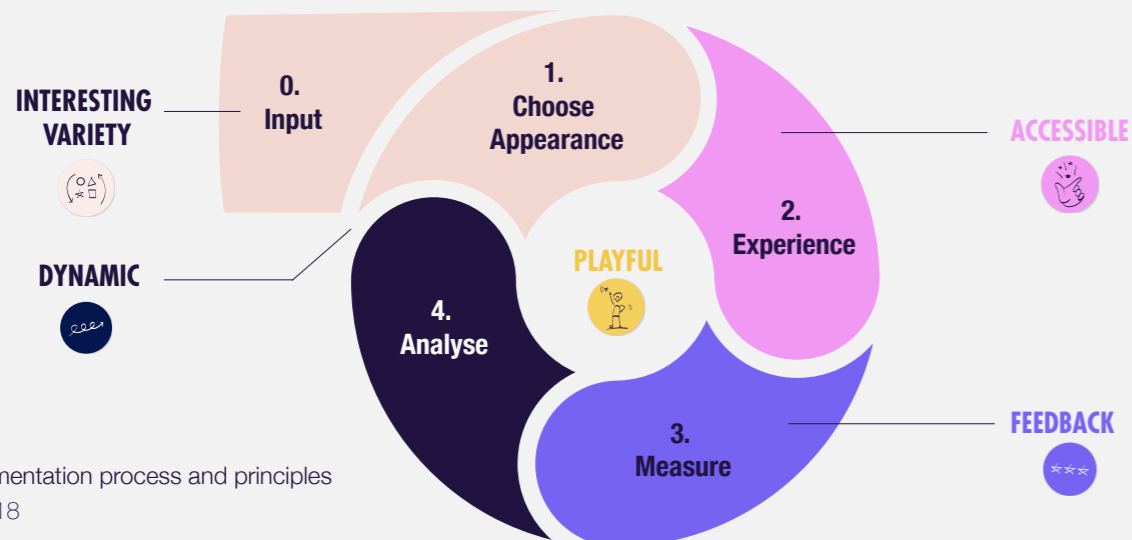
Tommy wants to be inclusive. Even though their physical products are sold in the higher end category because of its quality, the brand doesn't wish to portray exclusivity or elitism. Accessibility in experimentation enforces the brands core inclusivity-value.



FEEDBACK

Experimentation is about learning. Based on the result of your experiment, you adjust your actions accordingly and decide what to continue with and what to do differently next time. Setting a goal can be an unconscious action and can vary from something intangible like a 'feeling of comfort' to something tangible like the number of compliments or likes gathered.

Adolescents strongly rely on external feedback because of their desire to belong to a group, but we should be careful with external feedback systems like likes, as they lower self-esteem (Bergagna et al., 2018). This is a result Tommy doesn't wish to push. A simple solution could be to hide feedback from others, and make it only available to the user itself.



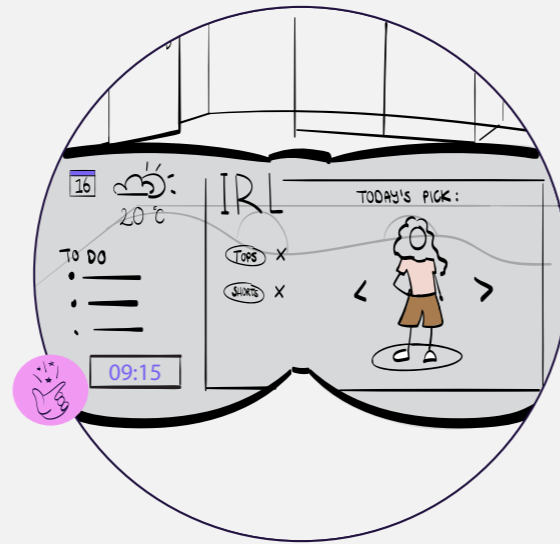
Experimentation process and principles
Figure 18

10.2 A day in 2030

The properties of digital fashion underlie the possibilities for experimentation. Among others, digital is: affordable and scalable to produce, always accessible, sustainable and boundless in shape or aesthetics. In addition, wearing can become a dynamic practice where one can switch, adjust or erase their appearance endlessly.

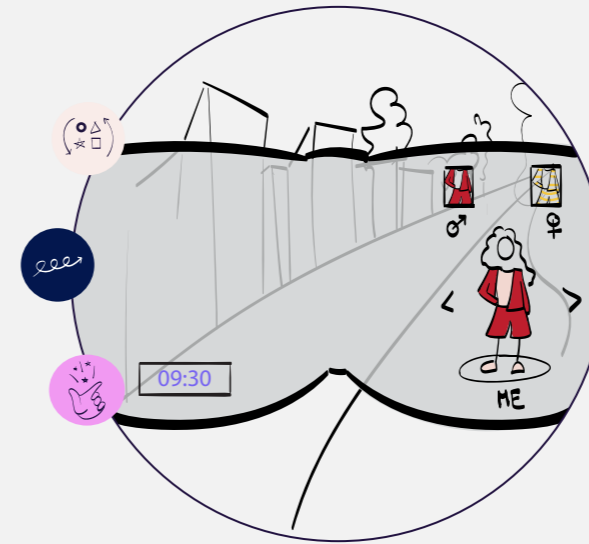
These opportunities will lead to countless new interactions and functions that we will have to experience along the way. To illustrate how the experimentation principles come to live in 2030, a selection of ideas has been explored in the form of a day-in-the-life story of Gen Z. The images show the perspective of the protagonist, looking through its AR glasses. In each scene relevant principles are indicated with an icon.

"Open Wardrobe"



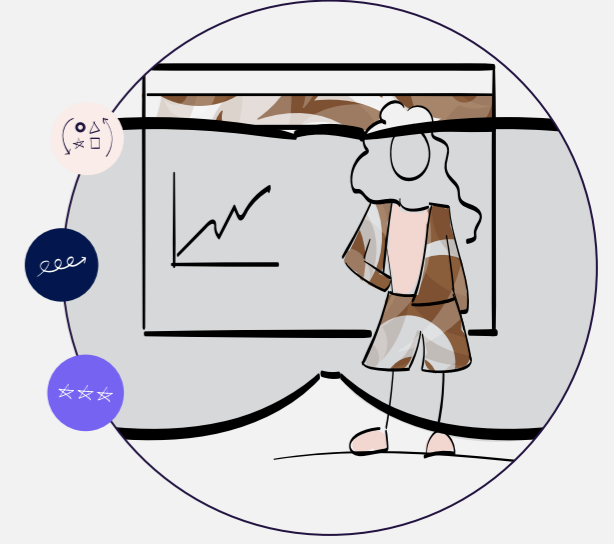
Waking up is never easy. Some days you might get lucky and are straight off to a great start. Other days, not so. I'm expected to pitch my design approach at 10 AM. It's 9:15. Guess it's one of those days. With time being my worst enemy, I go for my trusted basics. Today I will have to rely on my digital wardrobe to make an impact. Luckily, my digital assistant already picked out my clean physical clothes that suit today's weather.

"Set digital outfits"



Coffee for breakfast and we are on the road, 09:30. Could be worse. While traversing the street, I swipe through my wardrobe. Should I go creative entrepreneur or business smart? Who came up with the term business smart anyway? Guess we've got to risk it to get the biscuit. Suit it is. The Red one for the men, striped for the women.

"Chameleon Mode"



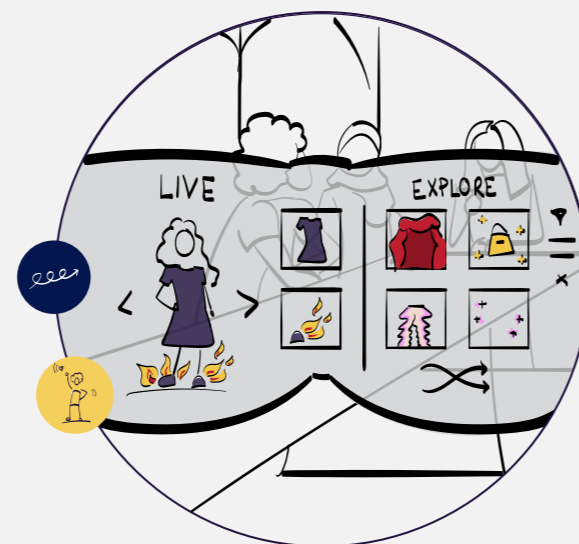
It was a close call, my heartrate was at 110 during the pitch but I'm confident I nailed it. As my mum used to say, clothes do make the woman (or man). You should've seen their faces when my suit changed patterns to match my story. They loved it. Misses Chang even placed a bid on the suit afterwards. Unfortunately for her, it's not available anymore. It's an exclusive digital asset that was part of Tommy's virtual treasure hunt. They do go on the aftermarket for a hefty price because of the scarcity. But I'm not planning to sell. Especially after today.

"Buy and add to wardrobe"



2:30 PM. Meeting up with some friends to celebrate the victory. On my way I notice the AR pop-up shop where they virtually dress me in their latest outfits. Wow, those shoes are fire! But really, the shoes actually have burning animations! Bit much maybe... but they're only 9 euros... what the heck! I add the fire shoes to my digital wardrobe and switch them on with my denim dress for people in my circle, while the public still sees me in my victory suit.

"Change now!"



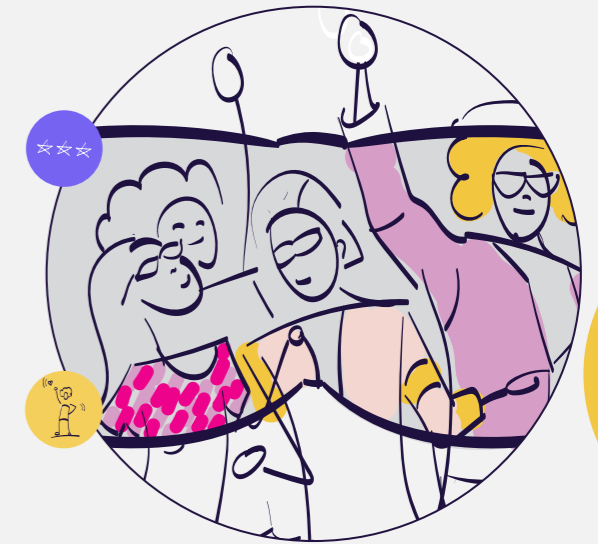
2:45 PM. Instead of my expected victory cheer, they're all laughing upon entry. Turned out that in all the hurry, I accidentally had set my grandma's sweater for the inner circle instead of the fire sneakers... Luckily it was changed in a second and everyone was dead jealous of the design I got recommended. That's what you get when you experiment more often, you get the sickest designs! Mara just started using her digital wardrobe so her recommendations are still a bit mellow.

"Build Design"



21:00 We're preparing for tonight's night out. This time we made a group effort and created a community design with open sourced building blocks. The anime patch on the sleeves is our interpretation on youth-culture and goes great with the red and blue sheer accessories we added last time. Registrations close at 21:30, send it to the cloud!! Maybe we'll make it to the four designs that will be featured in Tommy's subscription updates ...

"Shine"



22:00 The reveal is the best part. You never know what will happen. People come because of the party, but stay because of who they can be; a different gender, different culture, slick or cartoonish. The boundaries end with your own imagination.

VISION CONCEPT

The principles in action

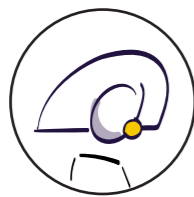
In the before imagined future, multiple new product service concepts arise that enable experimentation. One is highlighted in this subchapter with the intention to spark the imagination, and give depth to the future vision and interaction vision.

It is an answer to the final research question 'What should Tommy Hilfiger offer in 2030'.

The respective principles are mapped out throughout the concept explanation.



influencer



experimenter

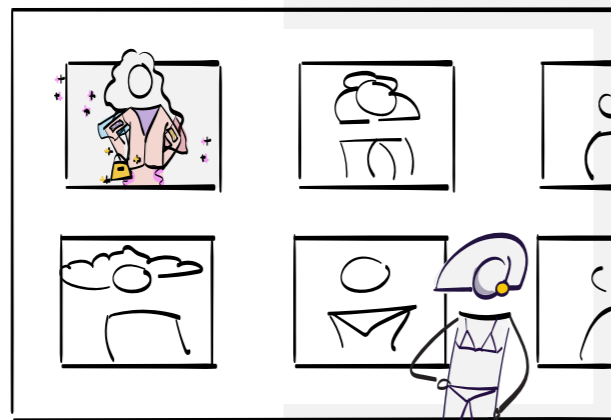
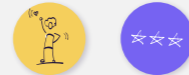
ANYWEAR

ANYWEAR is a platform that connects style-influencers to people who want to experiment with new identities. Through a subscription model, users get access to an infinite wardrobe. There are two modes: influencer mode and experimenter mode. It gamifies fashion and guarantees newness by monetizing success for creators. Based on a credit system scarcity of products is maintained.

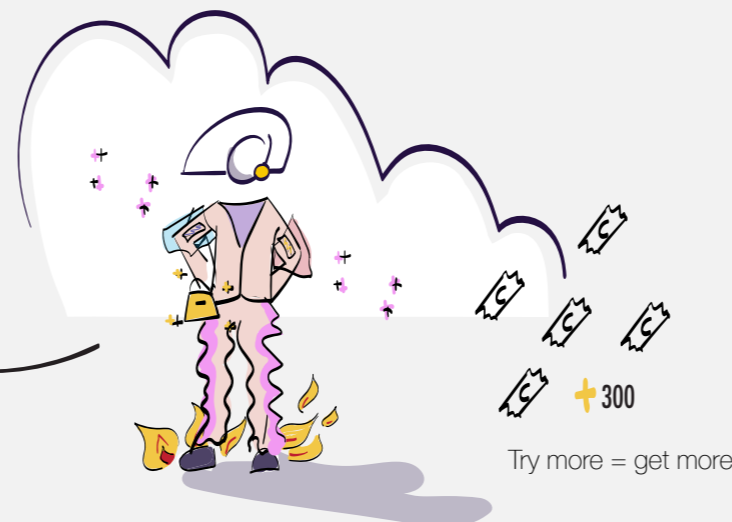
1 STYLE AND CREATE AS AN INFLUENCER

This is a game where you can style, create and earn with fashion digitally!

1. Get access to the unlimited collection of Tommy and use it to style the best outfits.
2. Or use the Tommy building blocks to adjust and create new products.
3. Based on the popularity of your posted styles, you get a commission for each download. Doing really good? Your newly created product will be locally produced for limited sales!



Follow influencers



Wear their digital styles instantly

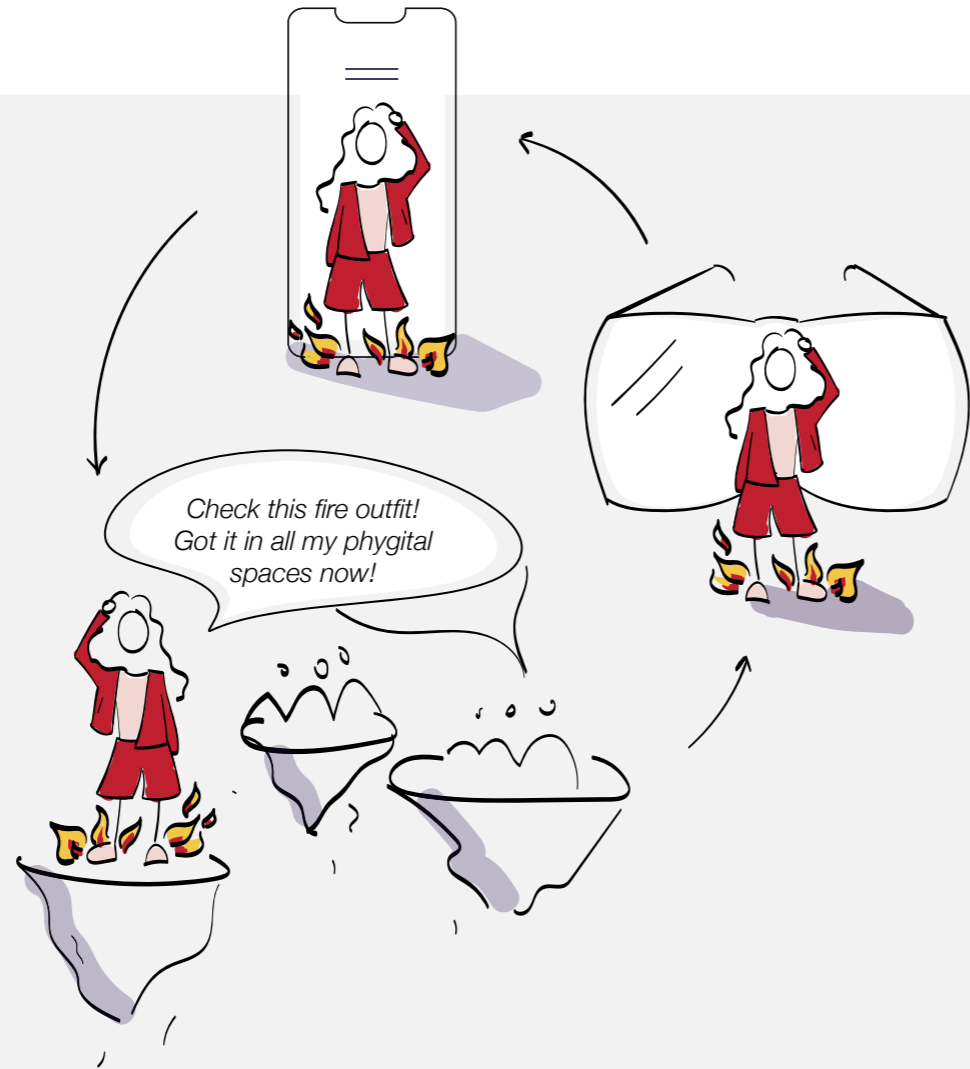
2 FOLLOW AND TRY AS AN EXPERIMENTER

1. Don't just follow people's style, but actually have their style! Choose from our constantly renewed database of digital outfits to see what you want to be today. "Today I want to see how it feels to be Miquela"
2. Get personalised suggestions based on the identities you're currently following, that gradually extends your comfort zone.
3. The more you try, the more credits you receive. These credits enable you to download complete outfits or single items to expand your digital wardrobe.



3 WEAR IT ANYWHERE

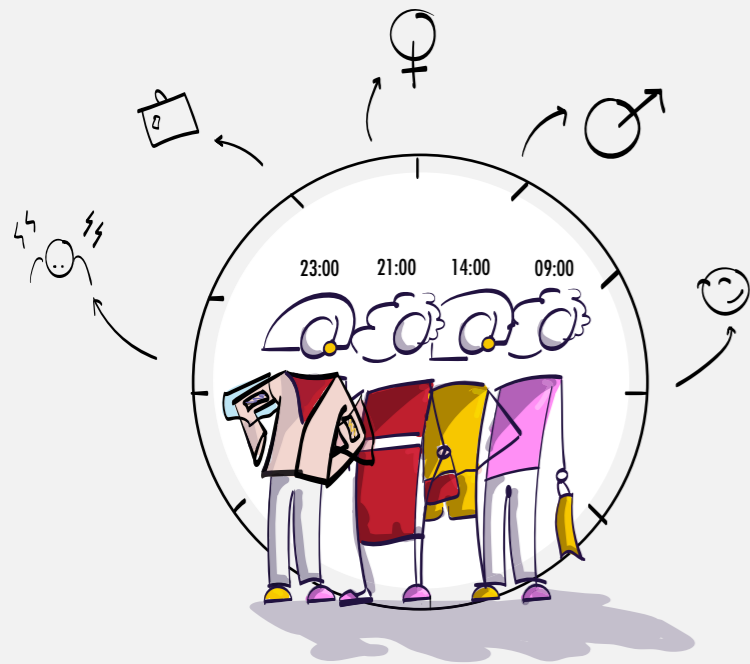
Wear the outfits in any domain you like: with your AR glasses in the physical world, remote calls, or on your avatar in social games.



4 CHANGE AS YOU GO

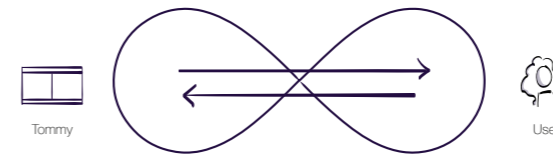
Experiment with your appearance as you go, adapting your digital identity to your mood, passer-by or context

1. Switch appearance throughout the day
2. Link wardrobe to calendar and to set experiments or get specific style advice
3. Set different outfits for specific viewers and decide who to show what, when
4. Set different AR fashion outfits per mood that change according to your heart beat



11.2 Business model

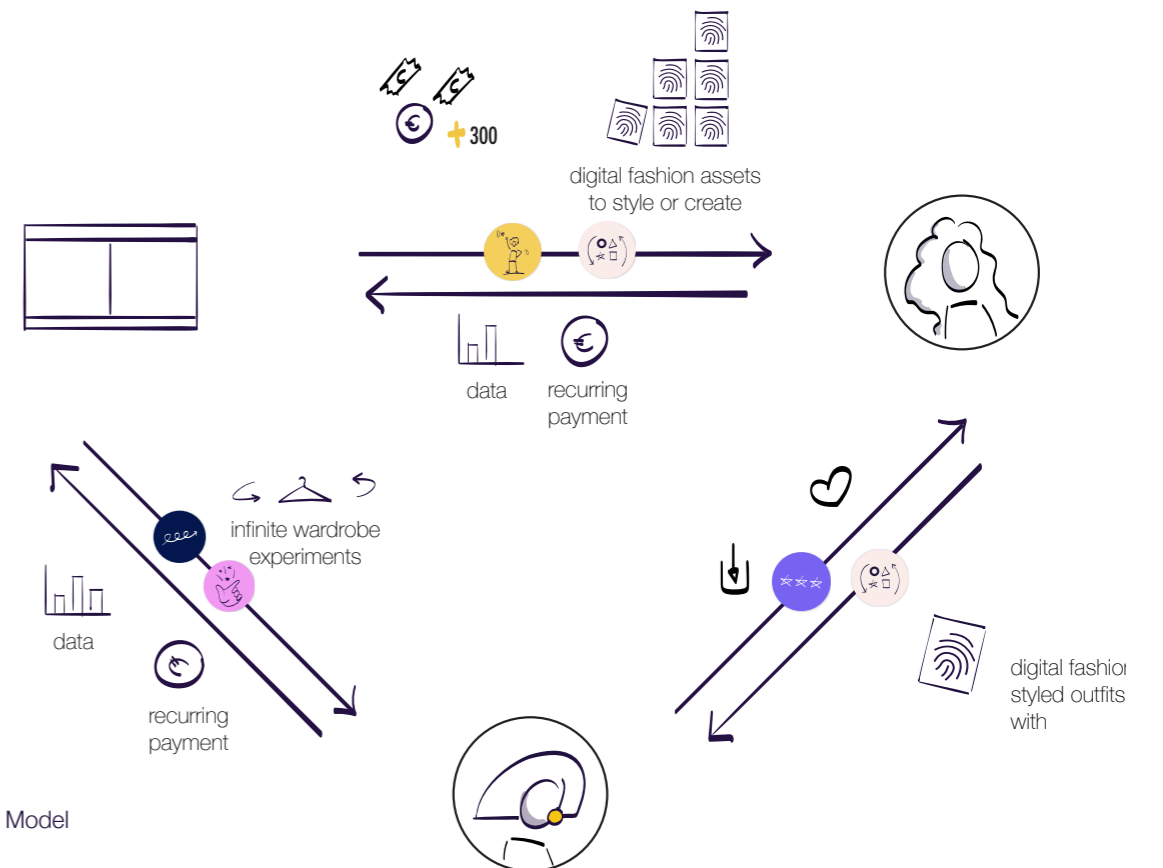
The subscription model gets you a standard number of credits every month. Outfits and items cost a number of credits depending on the scarcity, popularity or creator. If a user runs out of credits or wants more exclusive items, more credits can be bought. To encourage users to experiment as much as possible, you will receive a discount or 'free' credits every time you try an item. In turn, style influencers get paid with credits or money depending on their popularity.



The value streams in the below business model represent the brand-user interaction loop.

WHAT TOMMY GETS

1. INSIGHT IN HOW THEIR PRODUCTS ARE STYLED
2. NEW INSPIRATION FOR DESIGNS
3. CUSTOMER ENGAGEMENT
4. DATA ON CONSUMER PERSONALITY, PREFERENCES, COMMUNITY AND POSSIBLY EVEN ACTIVITIES BASED ON THE FASHION THEY CHOOSE TO AUGMENT
5. DATA ON EMOTIONAL WELLBEING OF CONSUMERS, THAT CAN BE USED TO ALTER ALGORITHMS OF STYLE AND SHOP SUGGESTIONS



Business Model
Figure 20

WHAT



Courtesy of Replicant Fashion (2020)

WHAT

ANSWERING SQ3: WHAT SHOULD TOMMY HILFIGER OFFER?

What should be our guiding principles?

Based on the roadmap, future vision and brand-user interaction, a desired product-user interaction is defined in the form of principles.

We should offer digital fashion that fosters experimentation in a way that:

- Is Playful
- Is Dynamic and Iterative
- Offers Interesting Variety
- Is Accessible
- Is Educational

Conclusion

The Anywear platform functions as a vision concept, that along with the guiding principles gives direction to future innovation as a 'dot on the horizon'.

CONCLUDE

In the last section the outcome of the research is discussed and evaluated on desirability, feasibility and viability. Finally, I conclude with a personal reflection.

Chapters

- 12. Discussion
- 13. Personal Reflection

The initial assignment was to provide Area52 a recommendation for how to pursue digital fashion innovation within the coming ten years in the form of a future vision and a strategic roadmap. The main research question that needed answering was: *How might we create value for Tommy Hilfiger, by anticipating on Gen Z's needs related to fashion through the introduction of digital garments?*

Throughout the report each sub question has been answered, together they lead to the answer of the main research question. In this chapter we will reflect on the research goals. The vision, concept and roadmap will be tested on three dimensions:

1. *Desirability: does it address the users' values and needs?*
2. *Feasibility: can it be done?*
3. *Viability: Should we do it? Will it survive on a longer term?*

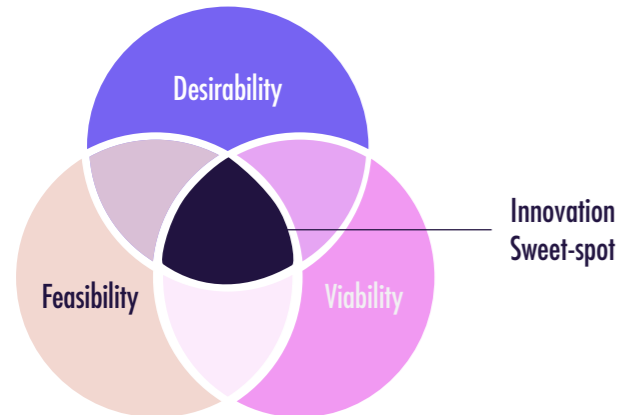


Figure 19
Innovation sweet spot

12.2 Desirability

As stated in the introduction, desirability will be considered for both Gen Z and the environment, in terms of sustainability.



For Gen Z

For digital fashion solutions to be desirable for Gen Z, the future vision and guiding principles directly reflect the insights from the extensive consumer research in the discovery phase. In 2030, augmented fashion will be the ethical means for Gen Z to express and stretch their identity through Instant experimentation. The final vision concept aligns with all five principles.

Whether the final concept will have an exact solution fit for Gen Z in ten years is difficult to test. Desirability should be continuously validated with the consumer on each horizon, and the rolling roadmap should be adjusted according to the results.

Rather than testing the desirability of the first scenario quantitatively with commercial ads, I have chosen to include opinion leaders of the creative community of Gen Z (girls of the Amsterdam Fashion Institute (AMFI)) in the creation of all scenarios of the roadmap.

The main concern people had when evaluating the future vision was the overload of information that would be present in the augmented society. Participants worried that society would become even more stressful and were therefore a bit hesitant in accepting the road toward a complete phygital environment. However, the excitement about the potential of digital fashion in the physical domain was really big amongst all participants. Especially the sustainable aspects compared to fast fashion got people excited.

"I would really like it if you could wear clothes online, how cool... An infinite wardrobe!!"

- F, 21, co-creation AMFI student

Detailed product development and validation is the next step. The co-creation session did already provide interesting input for the development of concepts in the first horizon.

Some ideas to consider in Horizon 1:

- T-shirt prints as a first step are considered a fun way of buying clothes, and to change up old pictures with new designs.
- Explore differences between types of clothing on various social media platforms. The participants mentioned they would be more likely to try eccentric pieces on Instagram, but would prefer outfits that 'could be real' (such as print-modifications of physical outfits) in live interactions like Zoom.

"I would wear bolder things online as it's less confronting than in real life. If you don't find it comfortable you can remove it very quickly, which is really great!"

- Female, 18, co-creation group Utrecht

- Digital fashion could be a wait-reliever for online shopping, where consumers can already dress their avatars, or themselves with the outfits they have bought.

"I am already shopping for summer clothes, which makes me very happy! The wait is just such a bummer for the weather to change and the package to arrive."

- Female, 17, co-creation group Utrecht

- Customization options are considered a plus but should be easy to use. It's all about the time input/recognition output ratio.

"I don't really have to design myself, but choosing more from prints or adjusting certain parts seems cool to me."

- Female, 14, Gaming interviews Amsterdam



For the Environment

As discussed, digital fashion itself has a relatively low impact on the environment and has the potential to reduce the existing effect of the industry. However, this is highly dependent on the purchase displacement rate, a term that has recently been introduced in circular businesses. It refers to "The rate at which using a new circular business model directly displaces the purchase of a new garment in the existing system" (Morrison et al., 2019). This also applies to digital fashion solutions as it could also negatively influence consumer behaviour in a way that it stimulates to buy new physical clothes faster rather than replacing them.

Further research should **identify the key variables that affect this displacement for digital fashion when assessing potential environmental benefits**. It will strongly depend on the type of fashion being sold. One solution could be to focus on digital-only fashion, which cannot be physically produced and would therefore be impossible to replace. A first step is making digital clothing available only in combination with a physical shirt.

12.3 Feasibility

To arrive at the desired future vision, some technological developments have to take place. In general, technology is not there yet to provide an accurate fit of 'real-like' 3D garments. Technology to resize a garment to fit an avatar or model and to animate and render movement & lighting is still maturing. The roadmap provides Tommy Hilfiger with a strategy that develops along with the technology developments of Augmented Reality and shows that digital AR fashion is already a field to further explore for product development.

The roadmap starts by building on the strengths of the current operational capabilities of Tommy Hilfiger as it leverages the 3D designing skills and stays close to their primary portfolio. However, throughout the roadmap, Tommy Hilfiger will have to partner up with technology companies to provide the necessary back-end technology.

The **continuous collaboration between Area52 and start-up incubators** like *Plug&Play* and *Fashion for Good* is critical for the project to be feasible.

12.4 Viability

The vision and strategy are of value to Tommy Hilfiger as it answers Gen Z's needs and brings them closer to their future consumer. It is in line with the two before mentioned innovation North-stars' Win over Gen-Z & Millennials' and 'Commit to sustainability. Moreover, the vision could align with a third Strategic Priority: 'Understand our Consumer', when the collected consumer data is utilized.

On the first horizon, services will most likely not generate significant additional revenue. However, **new products will deliver intangible value in the form of brand equity**. The brand associations will change to be more sustainable, inclusive and innovative. As indicated in Chapter 2, these are goals Tommy Hilfiger wishes to achieve in the coming five years.

When acting on the strategic framework and interaction vision, this could result in significant **cost reduction due to more effective designs in the existing physical market**. Moreover, 3D designs have the potential to unlock a complete new digital market, where new

revenue streams can arise.

The future vision and roadmap were very well perceived by the innovation managers of PVH. They especially valued the fact that it provided them with a vision beyond virtual try-on and saw potential also outside of Tommy Hilfiger.

"I would love for Calvin Klein to also be involved in this trajectory."

Calvin Klein Innovation Manager

"The concept you presented with people wear AR in real life was very interesting!"

Manager Business Innovation PVH

12.5 Recommendations

Based on the result of this research there are several recommendations for PVH:

1. Test MVP's in Horizon 1

As indicated on the roadmap, I would first start with a digital fashion product that is combined with physical fashion products. I would also advise the Area52 team to set up a few MVP prototypes that test various value propositions with real consumers. I suggest that the business innovation team takes up the responsibility for this MVP testing.

2. Create digital fashion taskforce

Digital fashion is still a very dynamic field where standards still are to be set in terms of technology and consumer expectations. However, the excitement around the topic was prevalent from different teams in PVH.

My suggestion is to set up a team with several enthusiastic people from the business who each have knowledge of the key elements of the digital fashion system. This will be someone from business development, STITCH, e-com, digital innovation, brand strategy and the consumer insights team. These people provide new input and state-of-the-art knowledge from their field of expertise in relation to digital fashion on a regular basis to keep the roadmap and vision alive.

3. Data privacy

The interaction vision and final concept are mainly viable for Tommy Hilfiger as they provide them with rich consumer data. Consumer data is becoming one of the most valuable commodities for businesses in the world, and data collected in VR and AR spaces could provide the company with even more qualitative insights due to gesture- and eye-tracking technologies.

However, the collection and use of this data may raise potential legal and ethical risks. Governments are taking precautions and increasingly protect their citizens with laws like GDPR.

I would suggest Tommy Hilfiger to start a study on how to balance data collection through digital fashion and the privacy needs and obligations from society. Both the internal legal team and an external AR expert should be involved in an evaluation of the roadmap to add data-handling goals to each horizon.

4. Unity and Unreal designers

To create digital fashion experiences or marketing material, it is wise to invest in fashion designers with experience with engines like Unreal or Unity. These 3D programs are necessary for the animation of digital fashion, which can be used for both marketing output, but also to make any virtual environment.

Further recommendations:

1. Collaborate with other digital fashion brands

The competition landscape in the digital domain is highly volatile because resources are low, to begin with. Established brands will transition to digital-only fashion, but new brands will also emerge (such as Studio RTFKT).

See if Tommy Hilfiger can use these new brands for their own development in the digital domain by working together instead of seeing them as competitors. They can use the Tommy Hilfiger platform, and PVH can piggyback on the new insights and innovative brand proposition.

2. Evolve to multi-brand

For this research, I made a choice to design something specifically for Tommy Hilfiger because we were curious about the possibilities for an existing fashion brand in the digital domain. Because of Tommy Hilfiger's heritage approach, the freedom of clothes and "identities" that you can provide are limited. It might be interesting to start the service from a Tommy Hilfiger perspective and eventually evolve into a multi-branded solution by including Calvin Klein, heritage brands or by creating a new digital-only brand, or even by attracting brands outside of PVH. PVH's strengths in brand management will allow for this evolution.

3. Digital fashion in the VR domain

This roadmap and vision is based on AR technology but could also be applied to the VR domain. Combine these research output with the gaming-studies the business development team is currently undertaking to update the roadmap and potentially add a second VR stream. There are currently many smaller start-ups that are starting to set up open 'metaverses' (Google' open metaverse' and you will get 14 new ventures claiming to be the internet 3.0). They are decentralized virtual environments between which you can theoretically

travel with the same avatar. This increases the potential of digital avatar fashion and the sale of digital fashion on NFTs (Blockchain). Parties that are now involved in this: TheDematerialized, OpenMeta and The Fabricant.

In line with the roadmap crafted for AR fashion, a first step to enter this domain could be to add the digital twin to each product you buy via a QR code, that you can use to dress your avatar in online games. This way one educates its consumer and slowly builds their digital wardrobe. A similar thing has been done in gaming with Amiibo Nintendo, where interactive physical figures can be scanned to enter the digital domain through an NFC chip

4. Track ethical consequences of digital fashion

It is essential to keep an eye on the ethical consequences of digital, and especially dynamic fashion. Extra complexity to dressing is added as it will be possible to switch appearance throughout the day and set different people. Consumers will be forced to consider what they wear more carefully, which could cause extra stress. It is important to properly regulate the degrees of freedom in setting up "target groups".

I started this project with the expectation that I would show off everything I had learned in my masters in a final assignment. However, I probably learned twice as much during this project as in the two years before.

It has not been an easy journey to get where I am now. I have had to adjust my plans several times and fine-tune my personal learning goals.

My first learning goal was to always keep a critical mindset and keep asking 'why'. It has been fascinating to work on such a current topic but also tricky. The constant change made the problem truly 'wicked'. I had to force myself to stop analysing and start designing even though I never thought I was done learning. My eagerness to learn about the subject in the beginning may have made it more challenging to reach a clear conclusion in the end, but I am proud of the insights I have gathered. Even though I might not have worked as efficiently, all the work I "didn't use" did build-up to the skills and knowledge I am taking home. I can proudly state that I have mastered the know-how of digital fashion to such an extent that I am able to keep up with the conversations of the few experts currently in the world.

Taking a more designerly and philosophical approach rather than analytical was, in hindsight, conflicting with my learning goal to provide data-driven research. Throughout this project, I realized that the reason I wanted to develop my quantitative research skills was that numbers usually give me guidance in the rather abstract world of design. It tells you if something is right or wrong, whether to proceed or not. But when designing for wicked problems, especially those that focus on the future, this guidance isn't always possible or helpful.

I had to let go of my desire to validate with facts, take a leap, and trust my instincts every now and then. Even though this journey hasn't been comfortable, learning to deal with uncertainty is one of the most important lessons of this research. It taught me two rules to live by; instinct and diligence. One gets you into the room, and the second determines if you should stay there.

Looking back, I could have spent more time visualising my ideas rather than perfecting the precise wording of my report. It is clear to me now how visuals are vital in conveying a vision and how timely. Estimating the

time it takes to finish a project to my standards is still something I need to work on.

My final goal was to provide PVH with an inspiring project that would encourage them to step into the unconventional digital and intangible fashion world. The conversations I had with the innovation team and multiple people from the business has proved to me I achieved that goal. Even though there is still a lot to be discovered and developed, I believe I gave PVH and Tommy Hilfiger an inspiring starter. And who walks away from dinner when dessert still needs to be served?

Overall, I look back on this project as a great learning experience. One that has brought me closer to myself. It helped me to identify the points that I am good at and those that need improving.

It showed me how I am a team player and that I get the most joy from creating things together with others. The joined effort and 'building on each other's ideas' are what makes design fun and valuable to me. Even though I would have never learned the lessons I learned doing this research on my own; I can say I am glad it's almost over. That said, it did show me that even when you find yourself amidst a pandemic, there are always people around you willing to help, and again I would like to thank all of you for that.

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