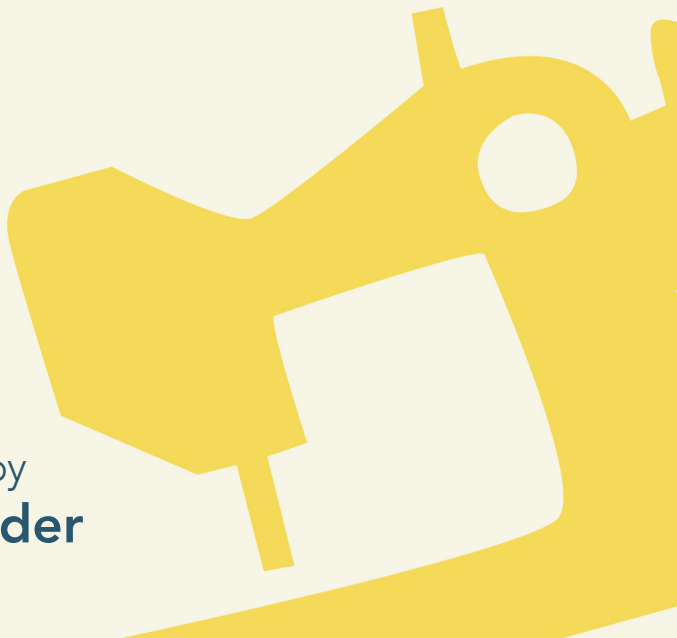
Refashioning Communication.



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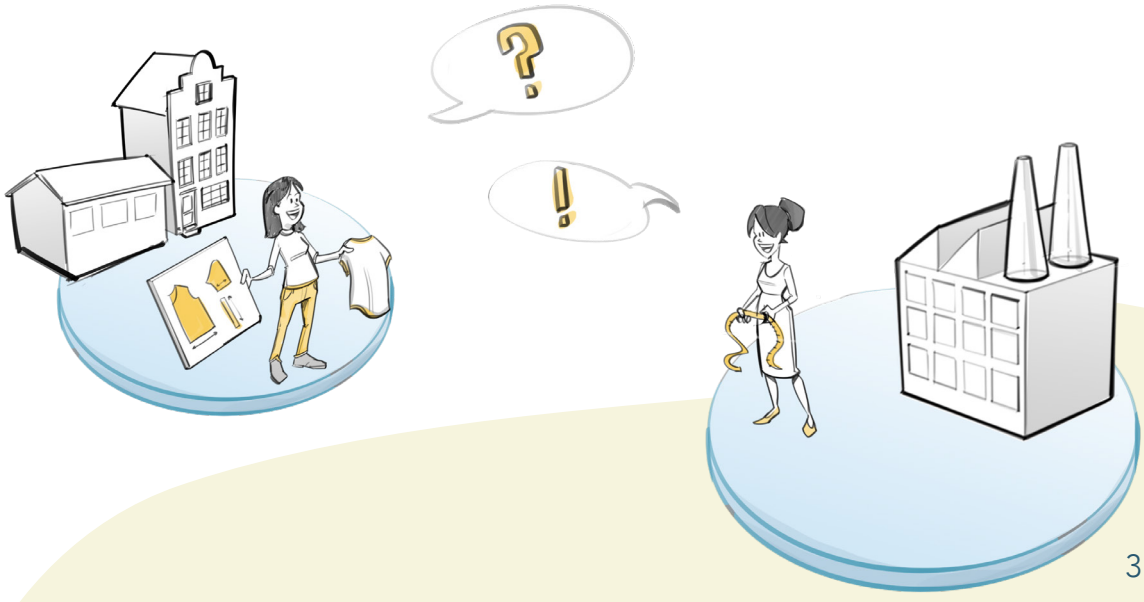


Abstract.

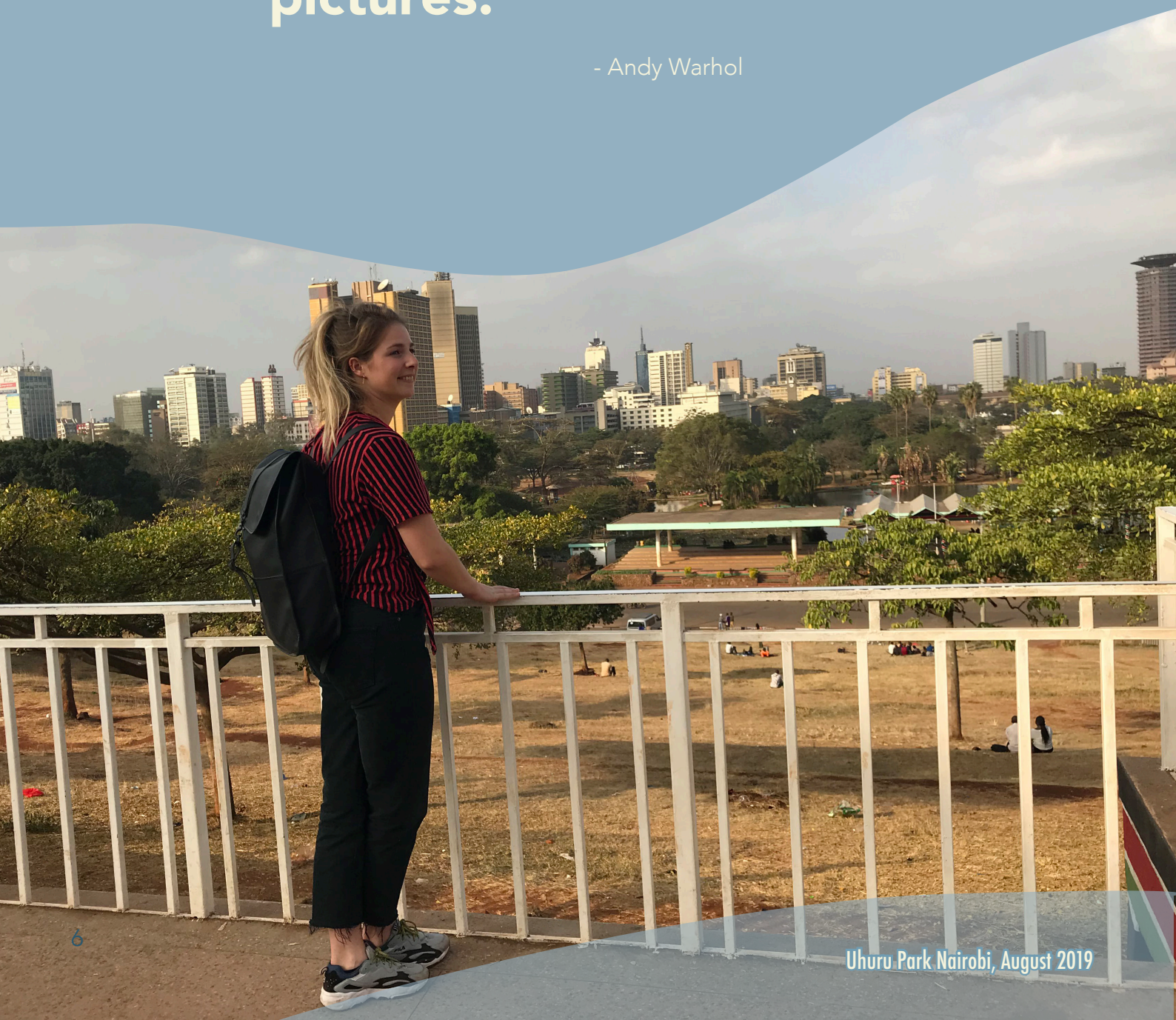
This project was commissioned by Labl Fashion Group B.V. (Labl), a company which focuses on helping small fashion brands gain access to a social and sustainable supply chain, by connecting these brands to their (future) private factory in Kenya. During the first pilots Labl performed with other fashion suppliers in Kenya, the company stumbled upon some issues: the quality of the garments was not up to their expectations and the communication with the factory demanded a lot of time, effort and frustration. Labl wanted to know how to improve this course of events so that, by design, the process of ordering fashion can be improved.

The aim of this graduation project was to design an intervention that would facilitate communication between brand and supplier in the fashion industry, in a way that leads to mutual understanding and will result in production of better-quality fashion over time. Therefore, interviews and context research were performed with Dutch brand owners, Kenyan artisans and factory owners to become aware of the issues that led to dissatisfaction in this collaboration. A cultural analysis was performed to find out how to bridge the Kenyan and Dutch culture, and come up with practices that are suitable for all stakeholders.

Two creative sessions were performed to come up with solutions that could tackle this problem. The design intervention that was created was a digital platform design which is unique in the industry. It offers a solution that is aimed at: 1) enabling clear communication of instructions and feedback, 2) Creating transparency in the supply chain, and 3) Building trustworthy relationships between factory and brand.
A prototype of the interface was developed and tested with Kenyan artisans. Afterwards, iterations were made, and a final concept of the digital platform is presented. Finally, the project closes with conclusions and recommendations for future development.

"I never read,
I just look at
pictures."

- Andy Warhol



Uhuru Park Nairobi, August 2019

Preface.

Before you lies the thesis 'Refashioning Communication', which was completed as part of the master program Design for Interaction of the Delft University of Technology. It focuses on the relation between brand and factory in the fashion supply chain. Other important themes this thesis concerns are; cross-cultural communication and digital platform design.
When I first heard the plans for the startup called Labl in November 2018, I was still working as an intern (in Visual thinking) for another company. I remember being inspired by the idea of empowering artisans in Kenya while at the same time trying to make the fashion industry more sustainable. I have always been interested in the world fashion, but the fact that the industry is one of the planets biggest polluters made me feel very uncomfortable. Even though knowing it would be very hard to make a change in this billion-dollar industry, it still felt like a good idea to be part of the movement. When it was time for me to choose a graduation topic, I saw my opportunity and contacted Labl. So there Labl was, having all the right intentions and motivations, but facing one major problem; the quality of the Kenyan produced garments did not seem to satisfy the Dutch brands. It was hard to pinpoint where things went wrong between the two parties. It was a challenging starting point for me as a designer and researcher.

I enjoyed writing this thesis, because it allowed me to express myself as a designer and a person. The style of it is very personal, through lots of visuals and photographs to narrate the story. The motivation for it is two-sided. The first reason is to put my love for drawing and the skills I learned during my internship to use. Secondly, because it is a way in which I personally like 'reading' best. The amount of times I've successfully finished reading a book for fun during my studies can be counted on the fingers of one hand. Whether it was because of dreaminess or lack of interest, I never seemed to have the attention span to pull through. For that matter, the famous quote by Andy Warhol fits like a glove.

Acknowledgements.

Before you start reading my thesis, I would like to thank the people that helped shape this project to what it is now. Firstly, the team of Labl: Mart, Tristan, Isaac and James, who I could always ask for anything at any time. Special thanks go out to Mart and Tristan, who provided me with not one, but two internships during the course of my master program and served as creative sparring partners. Thank you Isaac for telling me stories about Kenyan culture, being my personal tourguide in Nairobi and introducing me to interesting people.
I am grateful for the brands, fundis, factory owners and entrepreneurs in the Netherlands and Kenya who helped me shape this project by sharing their personal experiences.

I also want to thank my supervisory team Henk and Annemiek from the TU Delft for always asking critical questions, helping me create structure in the chaos and telling inspiring stories. Thanks go out to the dear friends I gained over 6 years of studying in Delft; Anniek, Eileen, Esther, Maartje, Nazlı and Yağmur. You made my time as a student in Delft one to always remember and cherish. You were there when I needed a sparring partner, a coffee date, creative session participants or even a facilitator.

I want to thank Victoria dames 1 for being supportive even though I had to leave for Kenya in the middle of preseason of our most challenging year so far. Final thanks go out to my friends and family who served as excellent proofreaders and support system.

Enjoy the read!

Hannah Klunder
Rotterdam, 19 March 2020

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Chapter 1

Introduction.

In this chapter the company Labl will be introduced through the framework of the Golden Circle (Sinek, 2011). Furthermore, will the company's mission, vision and goals be discussed and how Labl is currently progressing in achieving these goals (§1.1). Afterwards, a brief introduction is given to Kenya's handmade fashion industry (§1.2). Finally, the scope and course of this graduation project are introduced to give the reader an overview (§1.3).

Photo: Labl meeting in Kenya, with from left to right: Mart Veeken, Isaac Waithaka and myself.

1.1 Company Introduction

1.1.1 The Client: Labl

The Golden Circle framework is based on asking the questions 'Why', 'How' and 'What' (see figure 1.1).
The why is the purpose, cause or belief that at the core of the company. It's the very reason your organization exists. The how is how organizations do it, these are the things that set this company apart from competitors. The what concerns the products or services the organization provides.

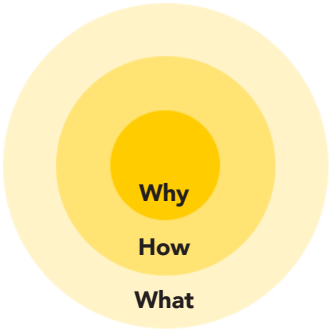


Figure 1.1. The Golden Circle (Sinek, 2018).

The Why

Labl is a startup founded in January of 2019 by Mart Veeken and Tristan Ozero. While working for another company, Mart had visited many different countries, among which Kenya. During his stays in Kenya he found out de handmade fashion industry is rather big there. However, it did not seem to reach its full potential, as it is aimed mostly at the local market and quality can be poor.
Which is a shame, because artisanally produced items are trending in Europe. Around the world, small brands and designers are winning the hearts of consumers away from the fashion giants. Consumers are becoming increasingly conscious about what they buy and where it came from. The handmade industry is predicted to double in size in the next 5 years: the global handicrafts market reached a value of US $526.5 Billion in 2017 and looking forward, the market value is projected to reach approximately US $984.8 Billion by 2023 (IMARC Group, 2018).

Customer Pain

Unfortunately, in spite of the upcoming 'handmade' trend, it currently is very difficult for designers who are building up a new brand to set up a supply chain that is up to social and sustainability standards. The fashion industry, for example, is the second biggest polluting industry in the world and working conditions are often dangerous and unfair.
Despite their willingness, most small brands face issues in scaling up their business in a sustainable and social way. Eventually they give in and end up having their garments produced the 'old fashioned' way, in factories in i.e. China or Pakistan because it is quick and cheap, and still they are not fully satisfied:

"I don't have control over quality"

"I think it's difficult and time consuming to have a trustworthy relationship with suppliers."

"There is a high risk and large upfront investment"

"I'm disconnected from an inefficient supply chain"

"The supply chain overhead costs are too high"

Fundi
UK ['fʊndi:] / US ['fʊndɪ] noun [countable]
Word forms "fundi":
singular: fundi, plural: fundis (South African), mafundi (Swahili)
"someone who knows a lot about a subject, craftsperson, skillful person, expert"

So Mart thought, what if artisans in Kenya, or in other words 'fundis', joined forces with small brands and designers in Europe?

The How

That is how the idea of Labl arose. The company believes that by making Kenyan artisans collaborate with European brands and using emerging technologies, it can create an efficient and affordable end-to-end sustainable and social supply chain. Which will ensure quality, transparency and positive impact.

The What

Labl will create a digital platform that connects Kenyan fundis to brands and designers in Europe. In August of 2019, it was concluded that in order to be able to make a difference on a social level and be sustainable, the realization of a private production facility (or factory, I use these terms interchangeably) is necessary. The company has planned to start building this production facility in 2020 in Voi, which is a rural area in Kenya near the coast. By means of this facility they will provide jobs for people within the local communities to help their communities flourish.

The service Labl provides on the other end is aimed at making it as easy as possible for brands to have a social and sustainable supply chain. To sum it up the service (Figure 1.2), it consists of the following elements:

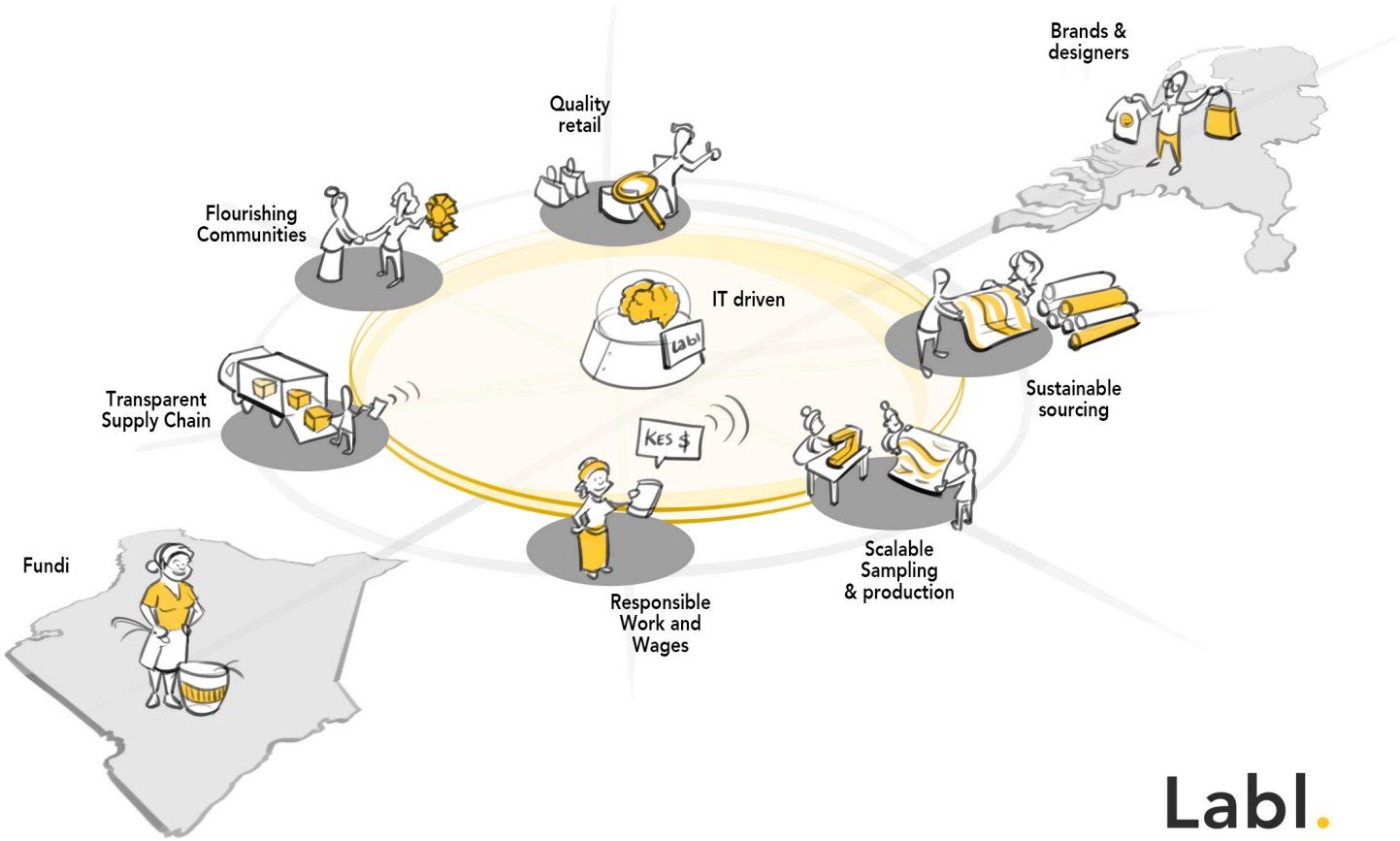


Figure 1.2. Labl's digital platform provides many social and sustainable benefits.

Transparent supply chain
Labl's goal is to bring more transparency in the supply chain and cut out unneeded links. Which will ultimately reduce costs, while increasing efficiency and overhead time to market.

Responsible work and wages
All fashion garments produced via Labl are made responsibly, which means under good working conditions, made by skilled fundis.

Quality retail
Labl promises high quality-controlled garments that are ready to sell.

Sustainable sourcing
The company promises to take away problems that brands might have with finding sustainable sourcing. This is done by offering access to the network Labl has set up with local suppliers of raw materials and intermediate inputs such as fabrics and yarns.

Scalable sampling and production
Labl offers brands and designers the opportunity of doing pilots with product samples and upscaling their production range.

Flourishing communities
Labl will provide jobs for the local communities in Voi, Kenya to help them flourish.

What is a flourishing community?
The definition of a flourishing community was adapted from Cordaid's mission statement:

In flourishing communities people share values, interests and a common purpose. Flourishing communities create space where people can live in dignity, in security, enjoy the freedom to speak their minds, have the opportunity to realize their capacities and to participate in social, economic, cultural and spiritual life. (Adapted from Cordaid, 2013)

IT driven
Technological developments are what drives the Labl platform. Designers and fundis are connected through virtually, which offers a demand-responsive production model. The company will transform the technology already in their hands, mobile phones, into a smart business tool. Via this mobile solution, fundis can receive orders, manage delivery & inventory and get paid directly.

1.1.2 Mission, Vision and Goals
To get a better understanding of what the company Labl is and wants to become, we can take a look at the vision, mission and goals the company has set up for itself. They can be used as a guideline to track whether the company's activities are in line with their beliefs.

Mission
"A mission is a clear and compelling goal that serves to unify an organization's efforts. An effective mission must stretch and challenge the organization yet be achievable. It translates the abstractness of philosophy into a tangible, energizing, highly focused goal that draws the organization forward." (Collins & Porras, 1991)

Labl's mission:
"We want to create a positive impact in the world by producing social and sustainable fashion garments in East Africa through community-based manufacturing leveraged by digital technology."

Goal and vision
Labl has formulated a 'Big Hairy Audacious Goal' or BHAG (Collins & Porras, 2005), which is a highly ambitious, compelling and exciting goal which is the foundation of all Labls activities. It helps set the direction of the company and inspire everyone of where Labl wants to be on the long-term.

Labl's BHAG is to make
1% of the total fashion industry social and sustainable.

What Labl means with social and sustainable is explained through the company's vision:

10x more income for African employees
100% sustainable fabric sourcing
1000 Flourishing communities
10000 successful fashion brands
100.000 jobs created in East Africa

These statements are bold and are very hard to be achieved, but the message is clear.
Summarizing it all; Labl wants to help fashion brands become successful ánd create positive social and sustainable impact by 're-fashioning' the supply chain. The social element is represented through fair wages and better working conditions in the fashion industry. By providing job opportunities Labl can help its African employees sustain themselves and help them build their communities.
Labl also aims to have a positive impact on the other side of the supply chain by making it more sustainable. Brands can shift to more sustainable ways of production and local sourcing of fabrics. A summarizing visual of Labls Vision, Mission and Goals can be found on the next page (see figure 1.4).

1.1.3 The Current Situation at Labl

The vision, mission and goals are inspiring for the future, but the company has just started a few months ago. At the start of this graduation project (May 2019) Labl was in the feasibility research phase, which includes that pilots were being performed to get an understanding of where the challenges lie.

There were a handful of small to medium sized brands connected to Labl, including 'O My Bag' and 'Cottoncake' (see figure 1.3). There was a Kenyan Dutch entrepreneurial partnership set up and the company was collaborating with a handful of Kenyan production facilities in different industries (varying from textile factories, sewing and leather workshops). The first pilots had been run, with 10 sample products, varying from clothes, bags, jewelry and sandals, that were shipped from Kenya. The startup had no fixed infrastructure or digital platform developed. The building of the private production facility was not planned yet (M. Veeken, personal communication, May 28, 2019).

Figure 1.3. Brands currently in negotiation for production via Labl's supply chain:

KRISTAL CONNECTING CULTURES ATELIER COTTONCAKE O MY BAG AMSTERDAM

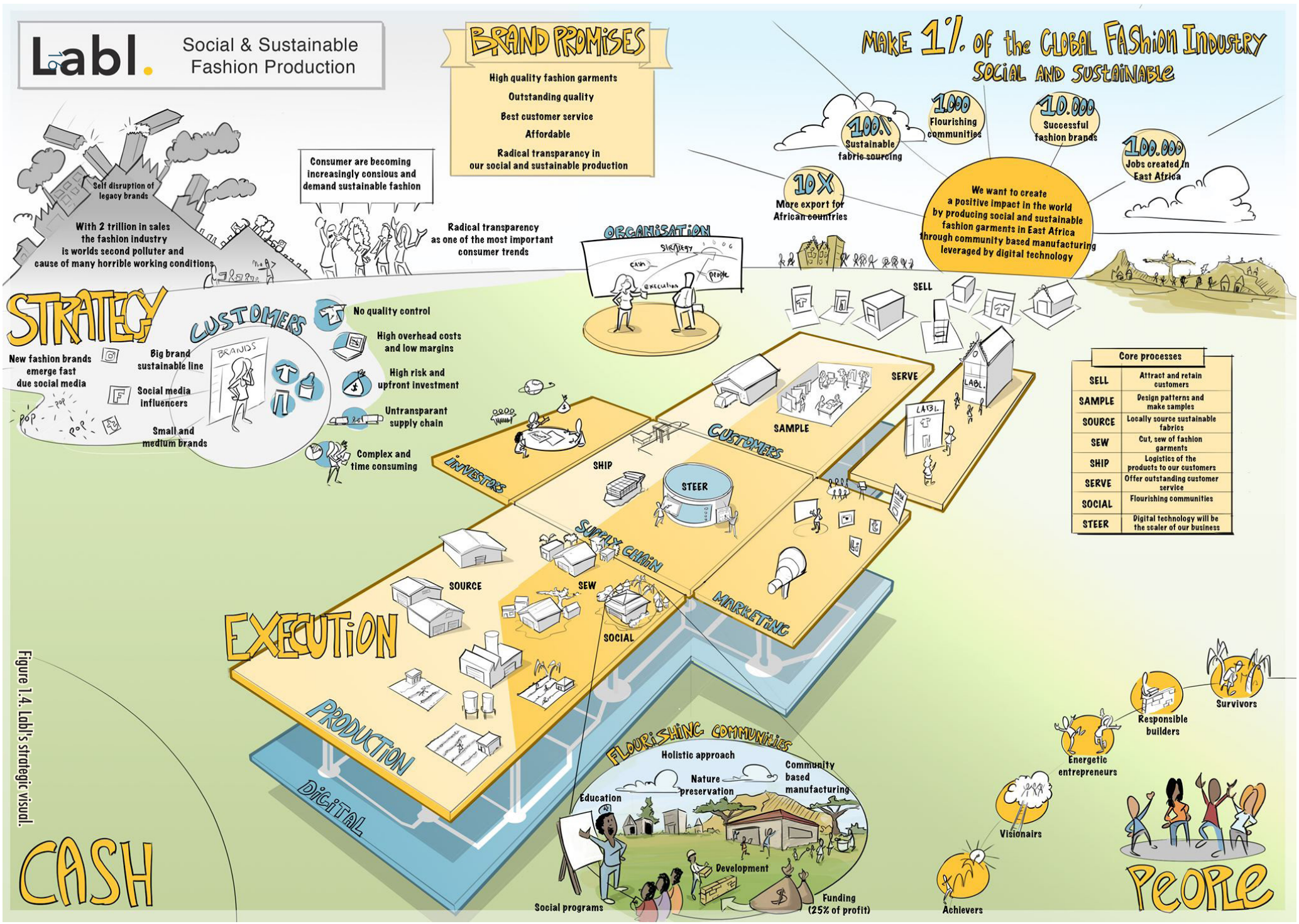


Figure 1.4. Labl's strategic visual.

1.2 Project Introduction

During my first conversations with Mart and Tristan from Labl, it was made clear that the first batch of products they ordered from Kenya were not of the quality they had expected. However, it was hard to pinpoint where exactly things had gone wrong in the process between order and delivery. Because there are numerous factors that could have led to this result, it is necessary to narrow down the scope of this project, which will be done in this paragraph, together with the introduction of the stakeholders. Afterwards, I present an overview of the course of this graduation project. This is done by means of a visual which gives a summary of the project phases.

1.2.1 Project Scope and Stakeholders

Starting with the stakeholders; which parties have interest in the supply of fashion? First, there are the brands who design and sell the garments. These brands have in common that they have limited experience in the industry and are unhappy with their relation to their suppliers. Then, we have the production facility, where the garments are made. And lastly there is Labl, the company which brings these two parties together:

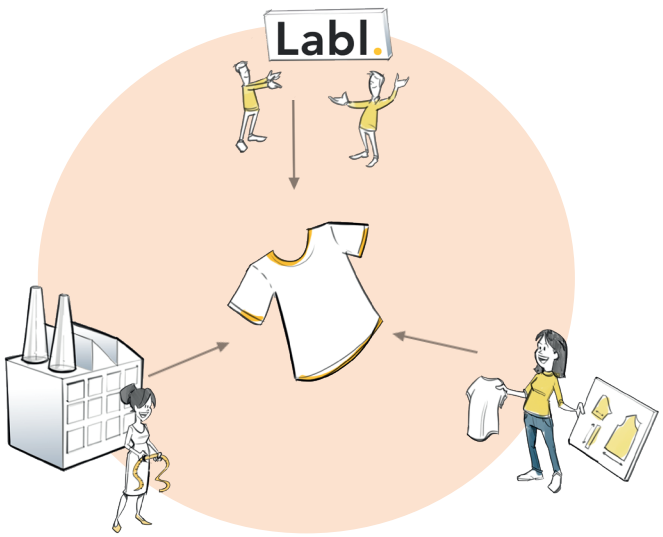


Figure 1.5.Stakeholders; Labl (top), factory (left) and brand.

For the scope of this project it was decided to focus on communication between the brands and factory (facilitated by Labl). Naturally, there are multiple other factors that influence the quality of the garments, such as raw material quality, technical skill and the used machinery. Reasoning that has led to the decision for focusing on communication is because it is at the core of the collaboration. Because, if there is no clear understanding of what needs to be produced, how can it be done right?

Because Labl will be a mediating platform between brands and supply chain, it is essential to keep communicating well among all parties. An additional difficulty is that the communication takes place between different countries. Within these countries they have varying cultural preferences of working and communicating. Labl must find a way to adopt to these preferences to ensure a smooth collaboration.

The project will therefore be inside the scope of:

1. Fashion Supply Chain
2. Communication (between brand & factory)
3. Quality

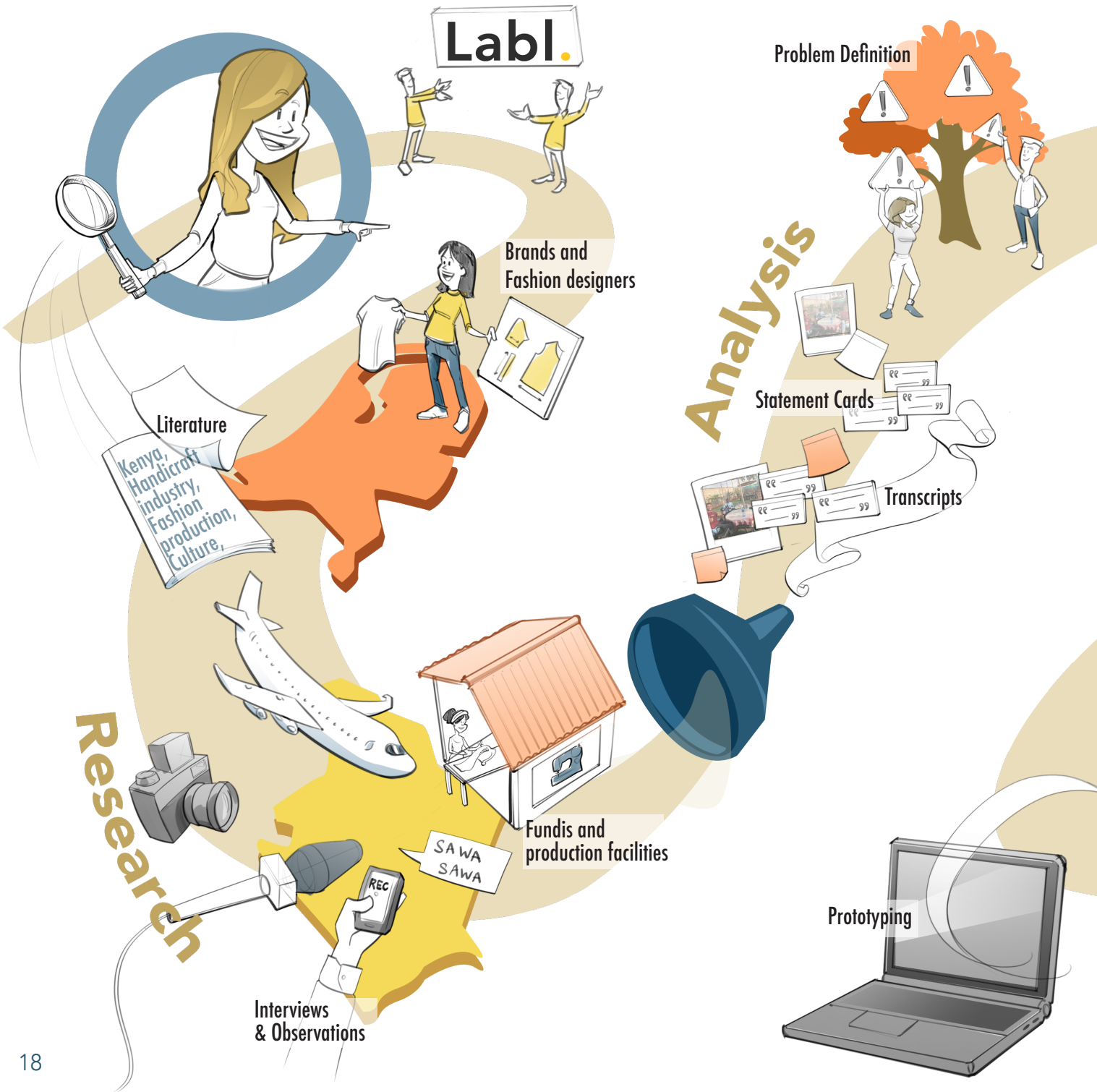
Figure 1.6. Project Scope.

1.2.2 Project Overview

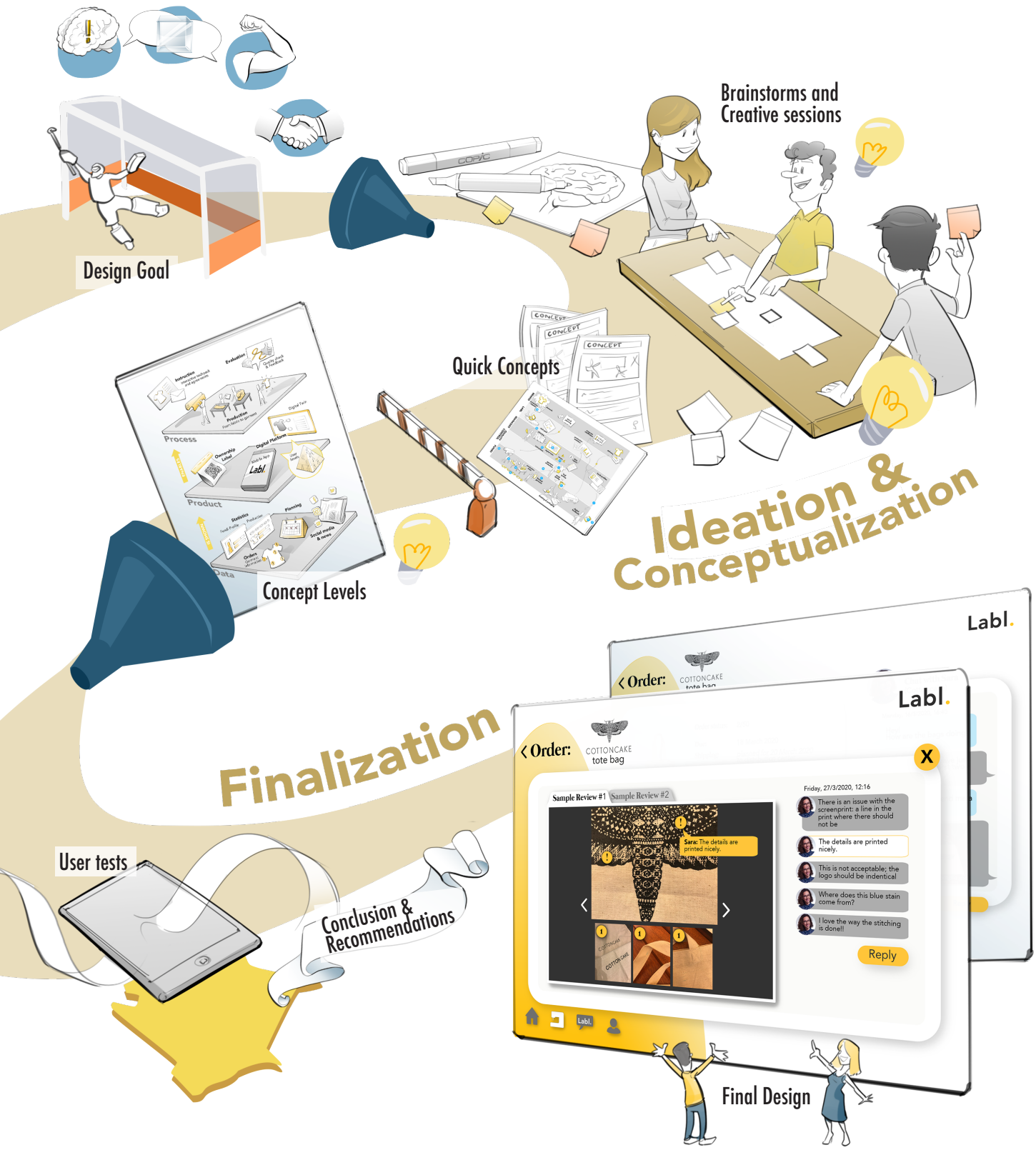
The course of this graduation project is visualized like a long winding road that broadens and narrows down. In text, some significant topics, methods and intermediate results are mentioned. I can imagine the overview can be a lot to take in at once. But fear not, it will repeatedly come back and be explained piece by piece at the start of each of the following chapters.

Phases

The project is split up into phases: 'Research', 'Analysis', 'Ideation & Conceptualization' and 'Finalizing'. At the end of each phase, all information gathered passes through funnels which lead to new insights that kick off the next phase.



The first phase of this graduation project 'Research' was about understanding the context. It started with getting to know more about the company Labl and ends with a field trip to Nairobi, Kenya. Afterwards, all collected data was Analyzed, which led to the formulation of a design goal. Then, the 'Ideation' phase began with brainstorms and other creative sessions. These creative sessions resulted in a number of quick concepts. These concepts were at the base of the 'Finalizing' phase, where this graduation project rounds up. At the end of this report will the final design for Labl be presented in detail.



Chapter 2

Research and Analysis.

Photo: Fundi working on an sewing machine.

In the previous chapter, the company Labl was introduced.

After presenting a short summary of the research & analysis phase, the findings are discussed in depth.

Starting with an introduction to the Kenyan handmade fashion industry (§2.1). Then, topics to be treated are; communication between brands and factories in practice (§2.2) and cultural differences (§2.3).

Personas were created to give an impression of the target user groups: Brands, Labl and production facility employees (§2.4).

Mixed methods were used to research the context; such as literature research, interviews and observations performed in the Netherlands and Kenya.

Various Kenyan production facilities were visited to get a clear view on the production context and target user group. Including a case study where Labl ordered 5000 canvas bags at a local manufacturer.

Summarizing Overview of Chapter 2

The following overview of the research and analysis phase (figure 2.1) was created to provide the reader a quick summary and illustrate how all insights are connected. By means of a 'messy data' session with statement cards (Appendix E) important findings were identified.

The Brands' Experience

Generally speaking, I can conclude that brands are unsatisfied with their current relationship with production facilities. Brands are often suspicious of the factory's intentions, honesty and capabilities.
Based on stories gained from interviews with brands, they often blame the factories for a bad quality outcome because of poor communication. However, communication is two-sided. I think that the brands can contribute to improving communication by following set industry guidelines for instructions and feedback.

Brand perception of quality

During an interview with an expert of the Kenyan fashion Industry it was stated that the perception of European brands on Kenyan production, that Kenyan products are of low quality, might not be correct. On the other hand, it was said that Kenyans might not be aware of what the demands are for entering the European market. At Kiboko Leisure wear, the owner stated that getting certified with the GOT (Global Organic Textile) standard and joining the World Fair Trade Organization (WFTO) gave her credibility towards international clients. It seems necessary to create acknowledgement and proof of quality and more transparent, clear communication throughout the supply chain.

Communication

Communication between brands and the production facility goes via multiple (online) channels. Because mixed media are used for communication (phonecalls, WhatsApp, email, etc.) informations tends to get lost or overlooked. For Kenyans, personal contact is rather important for doing business, as they deem to be more trusting when they know the person they do business with. When talking about quality, the way Dutch and Kenyans interpret information often differs. It is important to create clear guidelines on how to evaluate the quality of garments.

Industry Guidelines for communication and quality

There are industry guidelines for communicating garment demands. However, these are not always used by smaller brands. Information on a garment is professionally communicated in the form of a Tech Pack, or style sheet. In the factory, these style sheets were printed and laid out on tables in the production

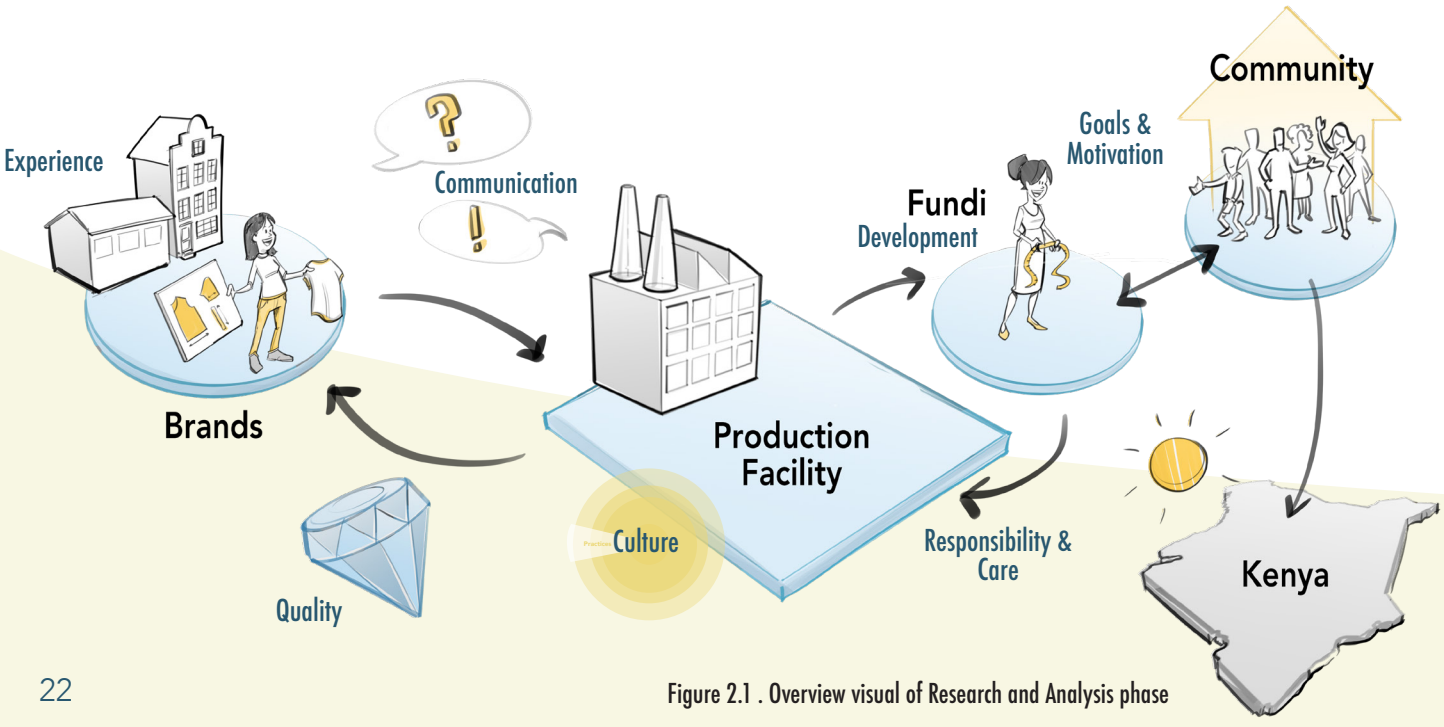


Figure 2.1 . Overview visual of Research and Analysis phase

facility to use as reference.
Quality control is performed by trained quality checkers within the production facility. If these quality checkers follow the guidelines conscientiously, bad quality garments will be spotted in time. However, errors in quality may also be filtered out by fundis along production, if they take responsibility for it.

Culture (within the Production Facility)

The cultural analysis in paragraph 2.3 ends with a summary of the most important cultural dimensions and an advice for Labl on how to cope with them. It is important for Labl to set up a company culture that does not only apply inside the production facility, but exceeds borders to Labl in the Netherlands and their client brands. The onion model (Hofstede, G., Hofstede, G. J., & Minkov, M. (1991)) was used create an overview of important values, rituals, heroes and symbols in Labl's company culture. Useful values for Labl to implement will be:

- Creation of a sustainable fun/duty balance
- Helping fundis become more future oriented
- Creating a sense of 'Ubuntu' within Labl and with client brands
- Stimulate self-development
- Ensuring clear and transparent communication
- Respect the Kenyan custom of hierarchy

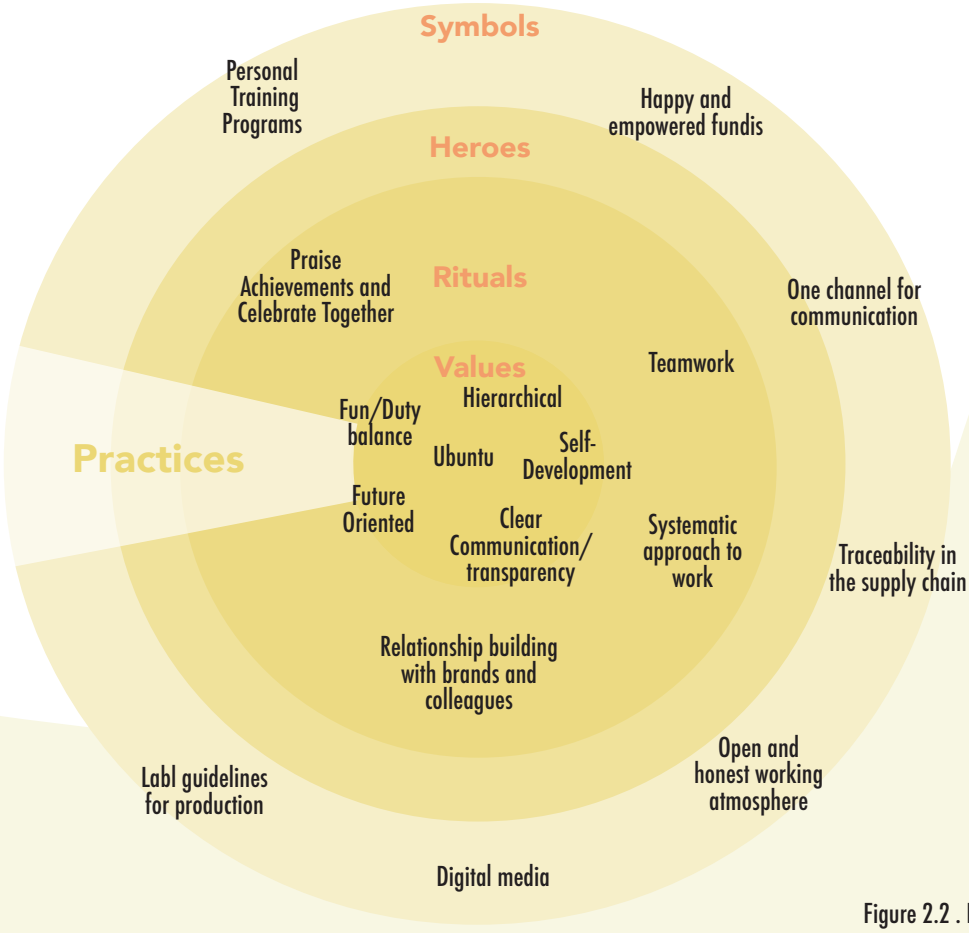
Figure 2.2 presents a simplified version of the onion model in Appendix C. The symbols, on the surface of the onion model, hold the first ideas for the design intervention of this project.

Fundis

Personal development is an important driver for fundis that work in the handmade industry. Many production facilities provide training for their employees, who often join their company with no prior experience.
Owners often expressed the difficulty they had with working with Kenyan staff. Disciplining the fundis was most of their efforts.
Furthermore, fundis are motivated by money. Fundis tend to work harder when paid by piece. Another big motivator for Kenyans is their sense of communalism. When someone from their family or community is in need, they will work to provide for them.

(communities in) Kenya

In Kenyan culture, one's community is of great importance. And when communities start to flourish, they contribute to building a better Kenya for tomorrow. By making Kenyan made fashion known on the European market, it might influence the perception that European brands have.



Values
A culture's values are at the core of all processes. I have identified 6 core values based on the previous research and analysis.

Rituals
Rituals are conventionalized behavioral patterns within Labl.

Heroes (shown in Appendix X)
In the category heroes we find examples of brands and people that serve as inspiration or role models for Labl. These brands are mentioned because they are transparent, sustainable and fair trade.

Symbols
Symbols are aspects of culture that are visible to outsiders, such as products, interactions, media and habits.

Figure 2.2 . Labl's Organizational Onion model

2.1 Introduction to the Kenyan Handmade Fashion Industry

The Kenyan handmade fashion industry was analyzed through literature study and personal communication with Kenyan fundis and entrepreneur. For the research setup, I refer to Appendix B. This chapter provides information on the challenges and benefits of working in the Kenyan handmade sector. It is important to be aware of the activities (and reasoning behind these activities) that occur on a daily basis within the industry, in order to make the cooperation between Labl and the fundis a successful one. Furthermore, is it useful to look at the risks and pitfalls of the industry and see what Labl has already done and could do in the future to avoid them.

2.1.1 Current Situation and Customs

The Kenya National Bureau of Statistics had estimated that, in 2014, the informal sector represents 82.7 percent of employment in Kenya. It is no surprise that the majority of handicraft enterprises also acts on an informal level. I use the term informal (within economic production) as determined by Lloyd-Evans (2008, pg. 1885): "The informal sector is a heterogeneous group of activities and employment relationships that share one common characteristic- the lack of legal recognition, regulation or protection." The lack of government involvement has great effect on the way Kenyan fundis do business, which will be discussed in this chapter.

For many Kenyans the handicraft industry serves as a source of income. Even though they have limited access to the cash economy, it offers fundi families a chance to survive (Dickie & Frank, 1996). This is partly because the handicraft sector is easily accessible; experience is not necessary, and skills can be acquired on the job. What came forward in case studies (Ford & Cooper, 2016; Ndegwah & Kroesen, 2017) is that many fundis hire people from their family or community to work for them. One of the reasons is to provide economic benefits within their close community. Another benefit is that it is cheaper to provide training to unskilled workers, than to hire experienced ones. Even though firm owners do acknowledge the fact that skilled workers are more productive and could enhance business on the long run (Harris, 2014).
A downside to the low threshold to access the handicraft industry and gain skills, is the surplus of skilled workers that is being created. This in turn, has a depressing effect on wages because a skilled worker cannot negotiate wages when the competitor works for free. And because of the economic informality it is not possible to create a more equal ratio between wages and the number of workers. The skilled workers then decide to start their own businesses which result in more competition in the industry (Harris, 2014).

Figure 1: A fundi working inside a shop in downtown Nairobi.

Production facilities

In his analysis of Nairobi's handicraft industry, Harris (2014) distinguishes three types of production locations (table 2.1); Homebased Enterprises, Clusters and Isolated Industrial production facilities.

Homebased enterprise (HBE)	45%	HBEs are businesses based in the home of the firm manager or owner operator.
Clusters	42%	Groupings of handicraft firms in an industrial or commercial area outside the home of the owner. They are major centers of employment and many easily provide livelihoods to hundreds of individuals. Activities are performed in very close proximity and mostly out in the open.
Isolated industrial	13%	Isolated industrial firms are located outside of the owner's home, but not in any identifiable cluster.

Table 2.1. Types of handicraft production locations found in Nairobi, N = 69. (Harris, 2014)

A benefit of producing in clusters is the access to a large labor pool. When a firm receives an order, which is too big (or difficult) to finish in time, a firm owner can choose to subcontract other fundis from within the cluster. However, when a fundi chooses to do production through subcontracting, he can no longer control product quality. In every step of value addition to the product, cheaper materials/processes could be used by the subcontractor without the fundi knowing.

Moreover, there are other downsides to working in a cluster. Even though there is economic informality, every handicraft production cluster requires government intervention to exist. Land must be directly allocated to allow cluster activity. And while the proximity of firms in clusters is allowed, the government may withdraw favors at any time. Because eviction is almost a daily occurrence, fundis see no logic in investing in their firms/workshop spaces.

Another issue that firms operating in clusters have, is the stealing of designs by competitors. Because the different firms work in close cooperation, and sometimes together in the form of subcontracting, it is very easy to copy produce. There are no institutional protections to prevent this behavior. Copying from the business you work for and then starting your own business with the same idea is common practice in the industry. It is not seen as a bad thing, but as a logical step (Ndegwah & Kroesen, 2017).

Local & International sales

Next to production, fundis also carry the responsibility of selling their crafts. This mostly occurs on the marketplace in Nairobi. The handicraft sector is highly instable, because it is predominantly aimed at tourism. This results in seasonal fluctuations of sales (Ford & Cooper, 2016).

Sometimes, produce is sold internationally via orders. These orders are set up through personal contacts. Buyers and sellers have to interact face to face to conduct business. This is especially the case during initial dealings: both parties must be physically present, or one will not know the existence of the other (Harris, 2014).

Selling at traditional marketplaces is beneficial in the sense that it brings in new clients, however it is costly as well. Fundis who are attending three markets per week, have to pay about 128,100 KES ($1500) a year. This is why most fundis see the traditional markets more as an advertising opportunity than a place for sales (Ford & Cooper, 2016).

Since the rise of the internet a shift has been noticed from selling at local marketplaces to online sales (Dickie & Frank, 1996). An example of one of the companies which targets international markets through the internet is Ecosandals. The brand is promoted on its personal Facebook page. In a case study performed by Ndegwah and Kroesen (2017) the founders stress the fact that distribution is difficult and requires planning. "The technologies and capacities need to be taken into consideration before the customer is told when the delivery can take place. There is also need for a built-

in margin, because shipping times are inconsistent. This is necessary to keep the customer satisfied." The fact that the roads in Kenya are bad and can't handle the capacity of traffic, especially in Nairobi, also contributes to the challenge of distribution (Ndegwah & Kroesen, 2017). A final challenge of exporting goods is the limited understanding of consumer demands that is present among fundis (Lee and Littrell, 2003; Dickie and Frank, 1996).

Funding & loans

Because the handicraft industry is highly saturated with skilled workers, competition is stiff. As a result, labor has become cheap, and sales decline. Because of the irregularity of sales, employees are often paid per piece instead of fixed loans (Ford & Cooper, 2016; Harris, 2014). A result of being paid by piece is that the fundis work for an unhealthy number of hours in a row, just to get orders finished. The sooner an order is finished, the sooner they get paid and can move on to the next order. While talking to owners of clothing production facilities, it was made clear that it was not uncommon for fundis to work day and night.
Many production facility owners lack capital to invest in their firms. Examples from case studies performed by Ndegwah and Kroesen (2017) state that fundis can get loans from the bank, but often have trouble with paying back the debt. Others might ask their clients to pay a deposit, because their stock of materials is limited. When clients do not want to pay in advance, the fundi takes a loan from friends.

Buy Kenya, Build Kenya

From talking to several Kenyan brand owners and entrepreneurs, I found out that Kenya does not have a culture of buying new clothes in stores. People get their clothing mostly secondhand, after it is imported from Europe. Part of the reason is that, aside from secondhand clothing being cheap, Kenyans do not believe that locally produced clothing is of good quality. The clothing that is produced for the local market, such as uniforms and tracksuits, goes to schools and businesses.

And this lack of trust in Kenyan produce is not only the case for apparel, but for many other products as well. To solve this issue the Kenyan governmental department of trade has developed a new campaign strategy called 'Buy Kenya, Build Kenya' (Kenyan State Department for Trade, 2017). This campaign is aimed at enhancing Kenya's competitiveness and consumption of locally produced goods and services, by promoting these products on both domestic and international markets:

'Increased competition from imported goods and services is a challenge to Kenyan produced goods and services. Locally manufactured goods compete with cheaper products from the emerging economies and developed countries. The increasing trade deficits have equally weakened Kenya's economic growth and thus compromised the domestic industrial base's ability to generate employment opportunities for the youth.' (Kenyan State Department for Trade, 2017, pg. 15)

Conclusion

Even though there are a lot of challenges within the handmade fashion industry in Kenya, there are incentives to help the country's industrial sector get to a higher level.
By setting up its own production facility, Labl will add to the share of Isolated Industrial firms. Within this personal production facility the risk of design-stealing is minimized, and will hopefully result in more control over what happens to garment designs and a trustworthy relationship with brands. Because within a private production facility there is no subcontracting, there is more control over quality. The custom of unhealthy working hours and low wages can be avoided by embedding a social company culture. The culture of training unskilled workers which is already occurring in the handmade sector, is something Labl may benefit from. Lastly, by bringing in European entrepreneurial knowhow, international markets can be reached more easily.

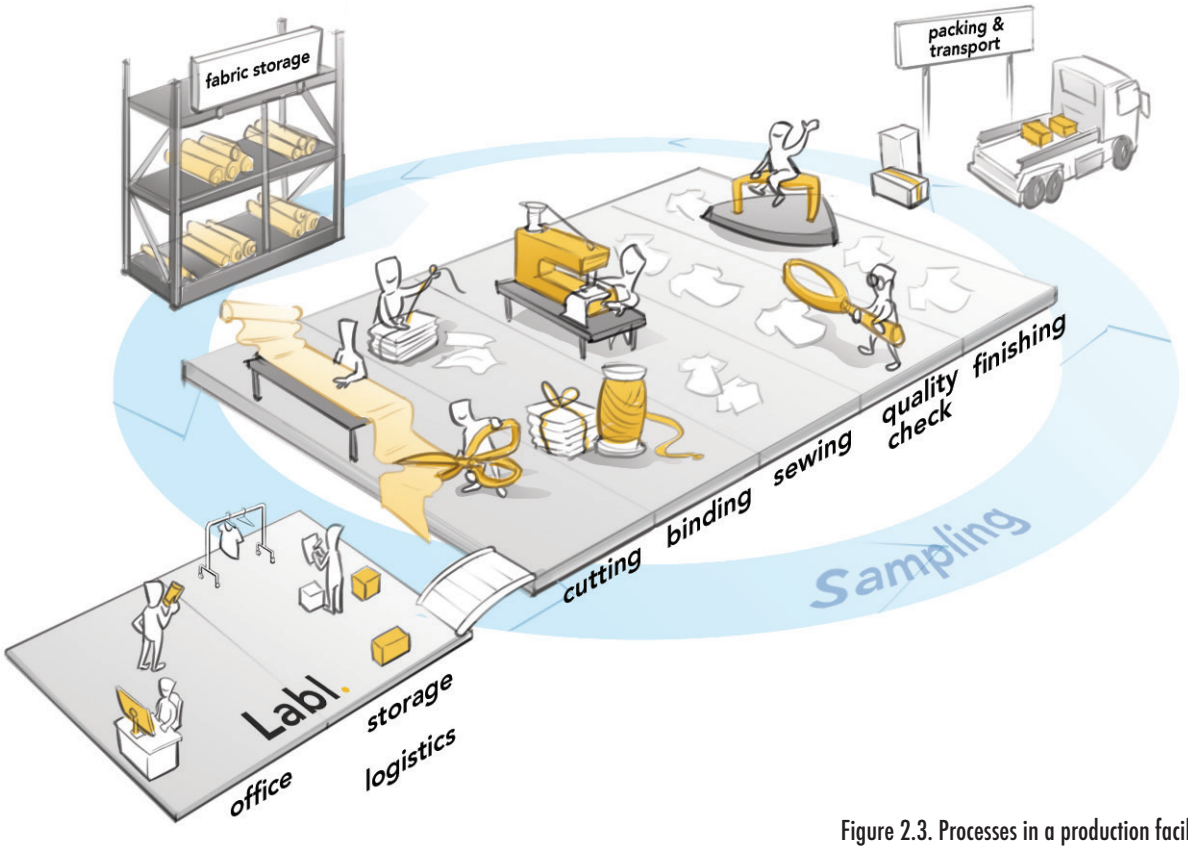


Figure 2.3. Processes in a production facility.

2.1.2 The Production Process of Fashion

This paragraph provides a brief introduction in to how, generally speaking, fashion is produced inside Kenyan production facilities. It is common practice that fundis have a specialty task which they repetitively do day in day out.
Figure 2.3 is a simplified illustration of how a production facility could be set up; orders come in in the office, where there is overview of logistics and storage. The factory floor is divided per task, from cutting to finishing. When all garments of an order are finished, they can be packed and transported.

Fabric

The quality of the fabric is dependant on the supplier. Sometimes fabric is provided by a brand, as they might have a preference for specific prints or patterns. Production facilities can also stock fabric themselves, and let brands choose from a fabric portfolio. It is needless to say that good quality fabric is essential for producing good quality garments. For Labl it means being dependent the quality fabric of local suppliers, as Labl is sourcing locally to be sustainable.

Cutting

The first step in the production chain is the laying and cutting of the fabric, often done by hand. It's important to maintain the same amount of fabric stretching throughout cutting of the entire batch. Furthermore, must the cutting be done with minimal amount of waste possible. However, the texture and print (direction) must be kept consistent as well, so sometimes wasting fabric is inevitable.

Binding

After cutting, the pieces of textile are bundled together to take to the sewing department. Tasks such as binding are rather simple jobs, and therefore mostly done by people with less experience in the industry.

Sewing

After binding comes sewing, which must be done neatly. From overlocking (sewing, cutting and finishing of seams) to sewing two pieces of cloth together. Most stitching is done in production chains; every fundi is responsible for one stitch or seam and then passes the garment on to the next fundi.

Quality control (Q.C.)

Ideally, quality control is performed a multiple points in the production process; at the beginning to evaluate the raw materials when they arrive at the factory for size, color and overall quality.
At mid-point of the manufacture, as the garments progress through the production line. Mistakes can be spotted at different stations in the proces; for example, bad cutting can influence the stitching. The earlier on the mistake is spotted in the production chain, the less work is necessary to correct it. Therefore, it is important for all stations in the production chain to

be communicating well.
At the end, when sewing is done it goes to the quality checking station. Here they evaluate whether the previous steps have been done right and traces of leftover needles are removed. Furthermore, the end quality control checks are to ensure that the garment looks as expected and is in line with the sample, Tech Pack and rest of production.

Finishing
When the garments are approved by quality control, it goes to finishing. Here, final touchups are done such as the removal of excess yarn and the garments are ironed.

Packing
Finally, the finished clothing is packed and boxed at the factory to be ready for transportation and shipping abroad.

Transportation
The boxed clothing is transported to a distribution center and afterwards shipped abroad. What happens to the garments is out of the production facility's control in this part of the process, and the quality of clothing may still be affected. For example, the climate at the distribution center may cause stains or smells.

2.2 Communication between brands and production facility.

This paragraph brings together examples from practice; starting with brand experiences, a case study performed by Labl in Nairobi and finally, various ways of communicating garment demands found in Kenyan fashion production facilities.

Photo: The office of a Nairobi fashion production facility.

2.2.1 Brand Experiences

Several interviews were performed with people working for fashion brands in the Netherlands. As was expected, Labl is not the only company which has experienced difficulties in communicating with production facilities abroad.

None of the brands had experience with production in Kenya (yet). Nonetheless, their stories give insight in problems that are widespread.

Tessa van Doorn (Gstar, big brand)

"I have worked with many factories in different countries: Pakistan, Turkey, China and Bangladesh. What I have learned is that some owners can get quite offended when I tell them their fabrics are not the quality I want. However, it is a truth that must be told. (…) Most of the communication goes through emails. **I try to clarify as much as possible with clear text and added pictures. But it is very hard to control what is delivered**. *I have seen some t-shirts laying in Gstar stores here in the Netherlands, and the color was very different from the sample color that was agreed on, but it was too late to do anything about it as we are on a strict time schedule.* **Sometimes I feel like factory workers simply do not care enough if the quality is insufficient.** *They know our guidelines, which are very strict, but they will not say anything about it because it means more work for them in the end."*

Mats Mohr (Connecting Cultures, small lifestyle brand)

"I have three fixed factories I work with, in Portugal for more 'complicated' clothing, Turkey for socks and China for t-shirts. **I like working with the factory in Portugal the most, because we have built up a trustworthy relationship. If there is something the factory cannot do for me, they will give me a phone call right away.** *I have some funny stories of orders I did with factories in China. After multiple email exchanges with alternations on the design over the course of months, they still managed to deliver 3 identical samples of a scarf. (…) Tech pack? No, I have not heard of it. Most of the time I just sketch out the garment that I want, and add photos and text to clarify. I have learned over time what different information is needed in which countries or factories."*

Example: A scarf for Connecting Cultures

The following chat dialogue is between Mats from the Dutch brand Connecting Cultures and Lisa, who works in a Chinese factory. Mats had made a scarf design which he wanted to have fabricated (see figure 2.4). He sent over the design and specifications by which e thought he had made himself clear. Unfortunately, he was not satisfied with the samples that got sent back. His comments on this experience:

"We have made our requirements clear through chat conversations. In addition, we made our documents in actual size, so that as few misunderstandings as possible could arise. At least that's what we thought… The sample we received was exactly the same as the previous two samples. From this conversation you can certainly conclude that China generally does not think along during production."

Figure 2.4. The design of the front of the scarf. Together with the design of the back, it was sent over to the factory as one .pdf file.

The Chat Conversation

Please read from top to bottom, left to right

We do as per your document sent

Translation

Mats Mohr 2019-09-19 13:55

U have used the old document, please check the last one i sent you

Read

Lin Li 2019-09-19 13:56

The last one you sent, there is no size guide on it

Translation

Mats Mohr 2019-09-19 14:11

No but check this document

Attatchment

this is the right one i sent you before

Read

Because the line was to thick in the picture you sent

Read

If you can't open it, i sent you the file again tonight in pdf

Read

Lin Li 2019-09-19 15:34

We have opened the files many times, can not see the size on the document you sent, just as the picture cut to you before, only scarf shape, no size at all

Mats Mohr 2019-09-19 21:09

This is the right document. I think you used the old file. Because the beige stripe is to thick.

Lin Li 2019-09-20 07:27

Hello Mats, this one still no size on it

Translation

attached is what we see when open

Attatchment

000.jpg

Mats Mohr 2019-09-20 09:14

No it was about the beige line. This document is the right one. Everything is fine now.

Read

What size beige line you want, because your decoument can not see the size

Mats Mohr 2019-09-20 10:29

it's oke now

Read

You can start with the sample

Read

Lin Li 2019-09-20 10:31

ok

Translation

Mats Mohr 2019-09-25 10:28

Hi Lisa,

Would you like to send me a few photos before you send the sample?

Hi Lisa,

How are you? How is the sample proces going?

Kind regards,

Mats Mohr

Read

Lin Li 2019-10-10 08:31

Hello Mats,

Because there a a holiday from oct1-7, so a little delay. Estimate finish this week.

Trans

Mats Mohr 2019-10-10 12:23

Alright, no problem

Read

Hi Lisa, is everything going well with the sample?

Read

Lin Li 2019-10-15 09:45

Hi,Mats will finish today

Translation

Mats Mohr 2019-10-15 12:25

Ok nice!

Read

Hi lisa, can you sent me some pictures when the sample is done today?

Read

Thanks in advance

Read

Lin Li 2019-10-16 12:02

Lin Li 2019-10-16 12:02

The factory who open the hole did not work today Translation

So still wait to open the Translation

Mats Mohr 2019-10-16 13:08

Read Alright, just sent me some pictures when it's done!

Read Than i can see the end result

Mats Mohr 2019-10-18 09:03

Read Hi Lisa, how are you? Is the sample done?

Read Question: we want to do a pop up store begin december. If we agree with the sample. Do you think we make this date for the bulk?

Read That we have it like in the end of november

Lin Li 2019-10-18 09:06

We have sent the scarf to alibaba warehouse Translation

Mats Mohr 2019-10-18 09:27

Read But do you have good pictures of it?

Mats Mohr 2019-10-19 14:57

Hi Lisa, did you read my last question about the production?

Read

Read i hope we can arrange it

Lin Li 2019-10-19 14:58

Sorry, has been arrange to ship after hole open, Translation

Just put the hole Translation

Mats Mohr 2019-10-19 14:59

Read yes i know but if we agree with this sample

Read is it possible to have the scarfs in the end of november?

Read because we want to do a pop up store begin december

Lin Li 2019-10-19 15:00

That will be no problem Translation

Mats Mohr 2019-10-19 15:00

Read Alright, thank you. We keep in touch than. I let you know about the sample

Thank you. The stripe on the Scarf is white for the sample. Because Begie color not available now. But when bulk order can be begie color as before sample. Hope you can understand Trans

Mats Mohr 2019-10-20 13:38

Read Alright i understand, i let you know

Lin Li 2019-10-21 02:55

Thank you. I will wait for your news Translation

Hello Mats,

Have you got the sample?

Best regards

Read Hi Lisa,

Yes we've got it. Only the embroidery is still to thin. We asked for a thicker embroidery... second the is the same thickness as last time.

Mats Mohr 2019-10-26 17:34

Read I don't know what the best solution is now

Read The line*

Lin Li 2019-10-29 07:57

You did not give line size, and we do as the document Translation

Discussion

Even though this chat conversation is not between Kenyan and Dutch parties, the problems that occur remind me of those I heard when first speaking to Labl.

It is safe to say that the chat conversation between Mats and Lisa could have gone a lot smoother. Aside from the language barrier, there were more issues that have led to the delivery of three qualitatively unsatisfying scarfs. Mats phrased it as: 'China generally does not think along during production', which is very subjective.
In his opinion, he had made himself very clear; he added a file in actual size and through the chat he expressed what needed to change in comparison to the previous sample. He refers to an 'old file' and a 'new file', which hold different information.
What I take away from this dialogue is that Mats is constantly looking for confirmation from the factory. He asks for photos from the sample multiple times, as well as updates on the process. Furthermore, he is asking about the final delivery dates often.

Looking at the dialogue from Lisa's perspective, I can imagine Mats could have been unclear. She had explicitly asked for a document with size indications, which Mats did not seem to provide.
When things are not going as planned, Lisa gives reasons for the delay: because there was a holiday, because of an issue with a hole opening, and lastly because the beige color was not available for samples.
Mats seems to be understanding of these issues.

Conclusion

Concluding from both the brands' experiences and the chat conversation, is that there is a need for more transparency in the supply chain. For brands it seems very hard to have control over what will be delivered. They do not know what happens to their designs inside the factory. Generally speaking, **brands want to be kept in the loop in terms of timing and execution of the garment sample.**
Mats stated that he has worked together with various suppliers, and that he valued working with the Protugese factory the most because they think along with him. **They have built up a relationship** over time, and know what they can expect of each other.

On the production side there seems to be a need for **clearer, onesided information.** Referring to different files might cause confusion. Furthermore, **design demands need to be specified through detailed images/ sketches, as well as text** to leave limited room for interpretation.
The brands should **not just assume** that what they have sent over will be understood. When the production side is specifically asking for more clarity on the design, it should not be waived off.

2.2.2 Case Study: Cottoncake Tote bag

Aside from the stories that were gathered from Dutch brands and designers, a case study was performed to experience what communication with a Kenyan production facility is like from up close. In this case, an order for the brand Cottoncake was used.

Cottoncake is concept store in 'de Pijp' in Amsterdam, run by Jorinde Westhoff and Tessa van Herwijnen. They were on the verge of ordering 5000 cotton tote bags for their store when Mart contacted them to ask to do business together. The details of the delivery were specified over a phone call and through email.

Order Specifications

Cottoncake's demands for the tote bags were as follows:

- Maximum production cost of € 1,09 per bag. Costs need to be kept as low as possible, because the bags will be handed out for free with a purchase in-store.
- A maximum of 15 weeks of delivery time from the moment of ordering.
- De delivery will come to the Netherlands as a whole but is transported in 2 batches of 2500 pieces within the Netherlands (because of limited warehouse room in Cottoncake's store). The first delivery is performed directly, and the second one 6 months after.
- As per the delivery costs; they are free for the first batch delivery. Cottoncake will be charged €125 for the second delivery.
- Print should be as specified in the file provided by Cottoncake (figure 2.5).
- Sizing should be as specified in the file provided by Cottoncake (table 2.2).

Cottoncake requested Labl to deliver a sample before confirming the order.

Print & sizing

Cottoncake provided us with a sample bag made in India, to use as a reference. However, the dimensions of the bag needed to be altered in comparison to the sample:

	Measurements (WxL in cm)
Sample (India)	44 x 48
New order	48 x 44

Table 2.2. Measurements of the tote bag.

The files that were handed in were a .jpeg file (figure 2.5) as well as an .eps file (vector based) of the moth logo, without lettering.
In the email the length of the handles was not specified. Therefore, it was assumed that all measurements that were not specified in writing, needed to be copied from the sample bag.

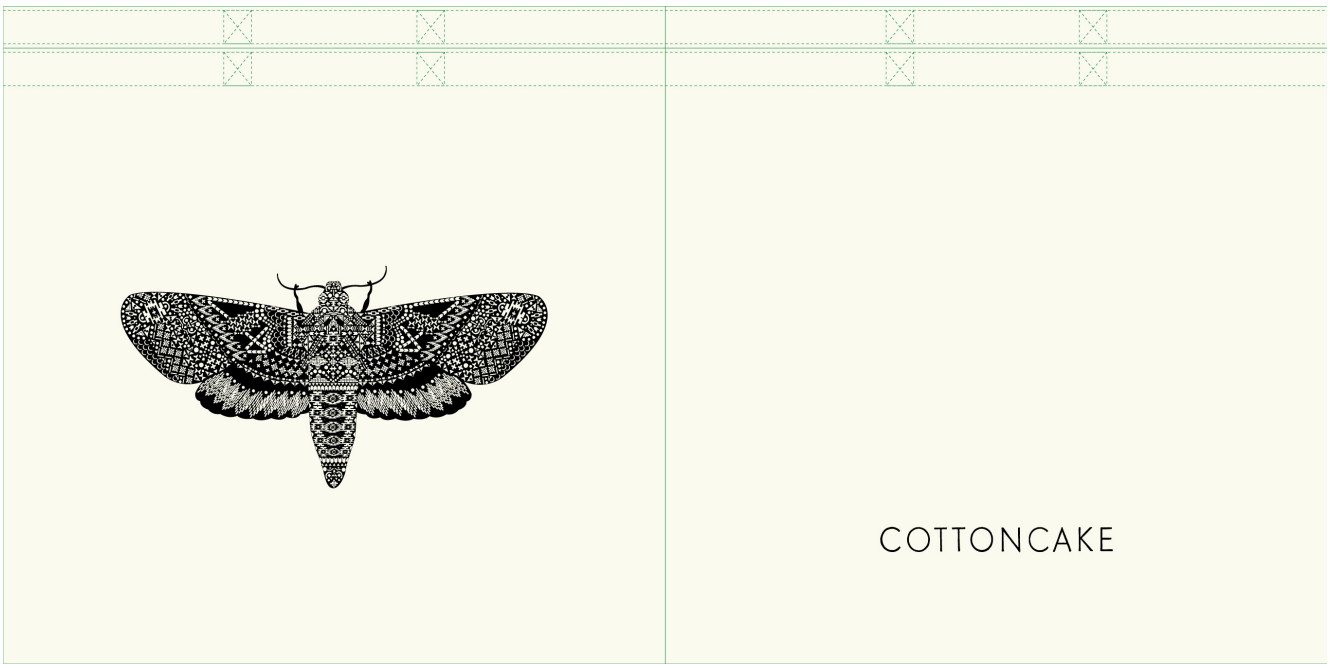


Figure 2.5. The tote bag design sketch that was provided by Cottoncake.

Photo: The Cottoncake store in de Pijp, Amsterdam sets a clear example of the brand's distinct style. (source: www.cottoncake.nl)

The Pilot

During the short stay in Kenya, Labl negotiated with several suppliers in the local clothing industry to see whether the companies were financially and physically capable to have the 5000 tote bags produced.

The Production Facility

The first sample was produced at Joyvet Investments Ltd. in Thika. A small-scale production facility who currently mainly focus on the local market. We could just walk into the production facility unannounced. At that moment they were working on an order of track suits for a local school. We discussed the possibility of producing the bags with the owner.

Evaluation of the Sample

The sample (figure 2.6) was inspected and evaluated by Labl on the topics 'Stitching and Finishing', 'Fabric Quality' and 'Print Quality'.

Stitching & Finishing

The stitching was done according to the file.
The sizing was correct. The inside hem of the bag was done by using an overlock machine. Which was different from the example but looked well done. The bag was also ironed flat, which looked professional.

Fabric

The texture and thickness of the cotton was acceptable at first glance. However, there was blue paint on various spots woven into the fabric. And there was a brownish stain in the corner of the bag.

Print

Overall, the screen printing was insufficient, mainly because the fonts and line thickness did not match Cottoncake's logo design. There was a space between 'cotton' and 'cake'. The execution of the print could also be improved, because there was a white line in the screen printing across the entire width of the moth. The moth was a fraction smaller in comparison to the original sample.

Photos: from top to bottom; discussion of potential fabrics at Joyvet, a fundi working at Joyvet, a fundi explaining the screenprinting process.

Figure 2.6: Comparison and evaluation of the bag samples. bottom; on the left the example provided by Cottoncake which was produced in India and on the right the sample bag produced by Joyvet Investments.

Evaluation of Communication with Joyvet

The order for Cottoncake was one of Labl's first experiences in collaborating with a Kenyan production facility. Beforehand, the fundi promised Labl 'the best of the best quality', by which he raised expectations. In the end the sample was a bit disappointing, which Labl let him know. **The fundi then reasoned why** there were differences between the example we handed in and the sample that he had made: he could not open the file on his phone, and therefore used a different font. Because the time was short notice, het thought it would be sufficient like this.

The cause is probably multifaceted; Labl could have been unable to communicate the demands clearly enough for the fundi and the fundi was lacking knowledge of what good quality is from the brands point of view. Moreover, did Labl expect that if there were going to be any hurdles for the fundi during production, that the company would be notified in order to find a solution together. **The fundi however, made his own interpretation of the situation and tried to solve the problem by himself.**

Because we could already tell that the sample quality would be unacceptable for Cottoncake, Labl provided feedback on the sample to give the fundi a second chance. The company communicated it in their Dutch way; with a list where it was explicitly written what was lacking in the sample and how it could be improved. The second sample they made, unfortunately disappointed as well. The font was thinner, but still did not match the logo. The fundi had a different interpretation of what good quality is.

After a few days, Labl received a Whatsapp message from the fundi we had done business with (see figure 2.7). He expressed that he might be difficult to get in touch with in the future because he was going to sell his phone. He was in need of money to take care of his family. When reading between the lines, one could imply that the fundi was asking for financial support.

The fundi's behavior was considered unprofessional by Labl and as the screenprinting of the tote bags was poor as well, the collaboration between Labl and the production facility ended.

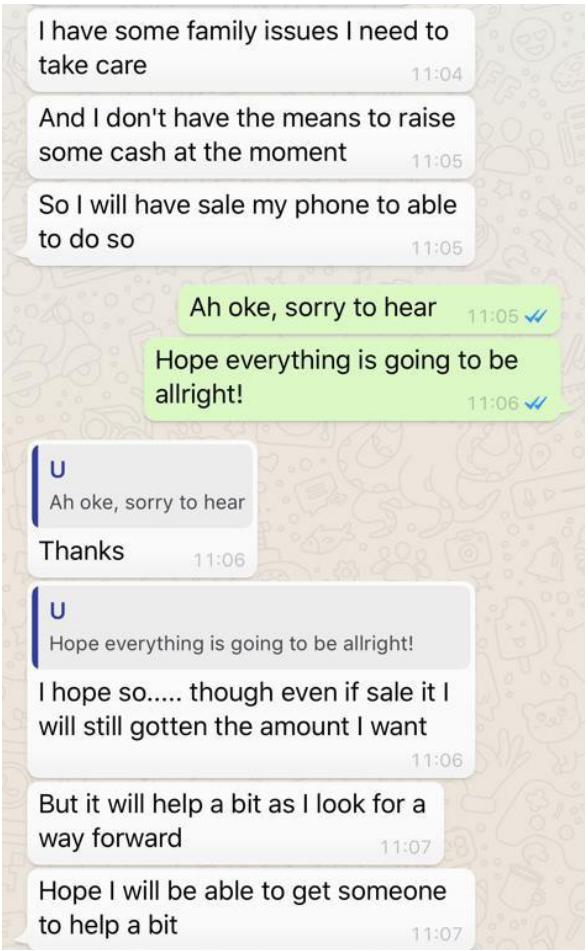


Figure 2.7. Whatsapp conversation between Mart Veeken and a fundi.

2.2.3 Industry Guidelines

Communicating garment demands

This paragraph elaborates on how demands for a clothing garment are handed over to the factory. What was found in research was that there were various ways to communicate these demands: through emails, WhatsApp conversations, photos, illustrator files, samples, tech packs and so on.
In the fashion industry a common way is through a tech pack. Big brands, like Zara and Gstar, can hardly do business without it. However, the clients (small and medium brands) Labl does business with, such as Cottoncake, do not have these strict guidelines for communicating a garment order. And even when a tech pack is used, often additional contact through email is needed for mutual understanding between factory and brands (source: Tessa van Doorn, Fabrics and Finishes manager at Gstar raw).
First, I will dive deeper in explaining the concepts techpack (Figures 2.8 - 2.11), Fabric Technical Data Sheet and Style sheet (Figure 2.12).

Techpack

All information about a single garment is described in a techpack. This paragraph gives a detailed description of what pages a tech pack could contain. However, it describes merely an example of a tech pack, in practice pages or information can be left out, added, or moved around depending on the brands demands anc customs.

Headers and Footers

Generally speaking, the header and footer are consistent throughout the entire tech pack, and hold basic information about the brand, the clothing line, the season and the garment name and code. Moreover, the header could also contain an indication of planning of production of the garment.

1. Garment Sketches

The first page contains finished garment sketches. It includes all the views to highlight any garment detailing and drawings of any specific stitching that might be needed by the manufacturer.

2. Colorways

The second page describes the various colorways of the same garment. It uses color references, such as Pantone universal color codes, to avoid confusion. Often, it needs to be checked with manufacturer if they have the right color or fabric. There are also special 'Tech packs' for fabrics, called Fabric Technical Data sheets (FTDS), which will be elaborated on in the next paragraph.

3. Measurement visual

The next page contains the measurement guides.
The measurements are explained in visual and written form. Each measurement is labelled with a letter code, for future reference throughout the tech pack.

4. Measurement table

The measurements specifications page consists of a table which holds all measurements needed to cut a master pattern.

5 . Pattern

The pattern is also drawn out and given for all sizes.
A separate pattern file can be sent over to the manufacturer, on top of the on provided in the tech pack. This additional pattern will be used in practice.

6. Trims, embellishments, branding

The sixth page holds visual information about trims, embellishments and branding.
Think of buttons, brand labels, size labels and washing labels. If the embellishments are not printed at the production facility but bought, they can also be shown on the list of materials (figure 2.9).

7. Prints and branding artwork

The next page is 'prints and branding artwork'. The artworks will be sent to the manufacturer seperately, but they need to be referenced in the Tech Pack.

8. Labelling, Trims, Packaging

This page describes information needed about labelling, trims and packaging. It contains a large table explaining size, position, quantities etc.

9. Expense overview

Here, the costing of a garment is listed, in order to give clarity on the price structure of the garment.

10. Production breakdown.

The final page explains the whole production breakdown of garment; which steps are taken from beginning to end and in what order?

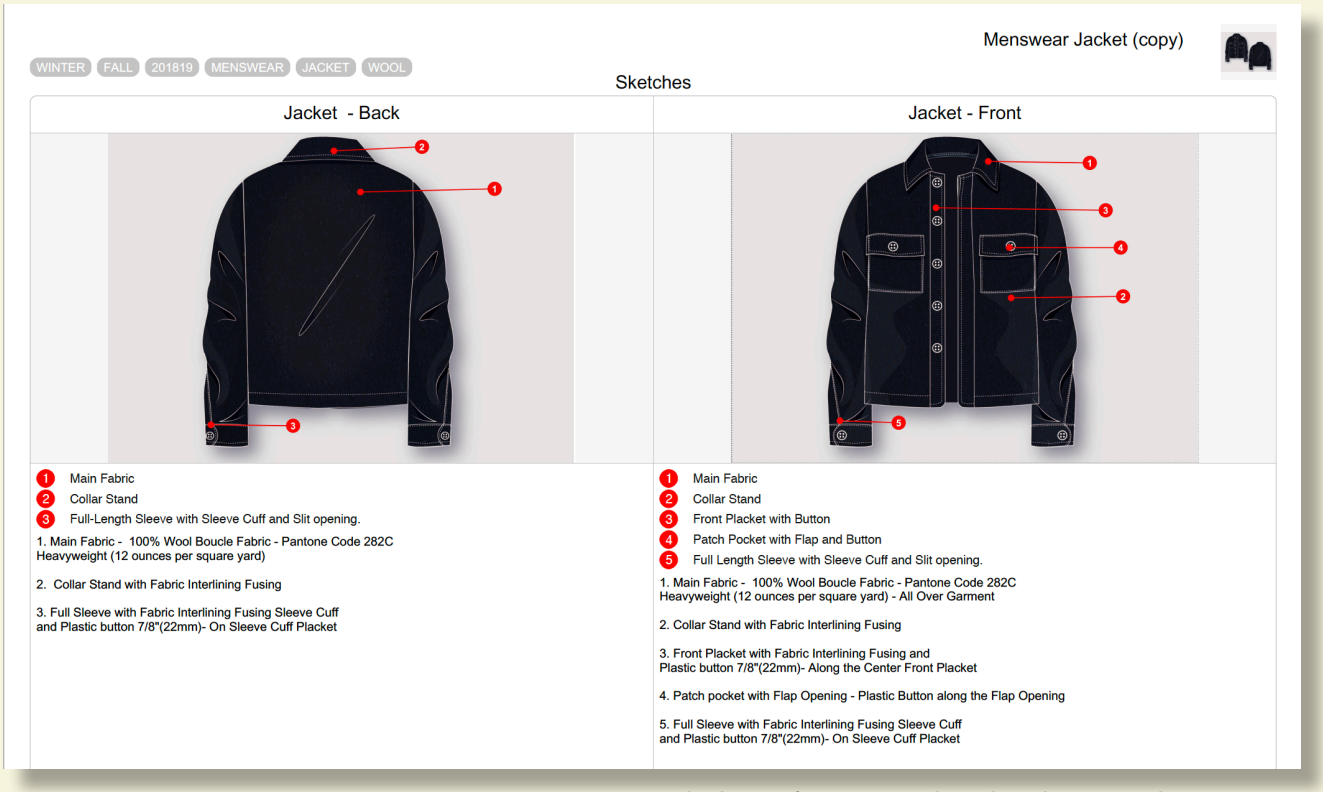


Figure 2.8. Garment Sketch page of a Menswear jacket with explanations on the various parts. (source: Techpacker.com)

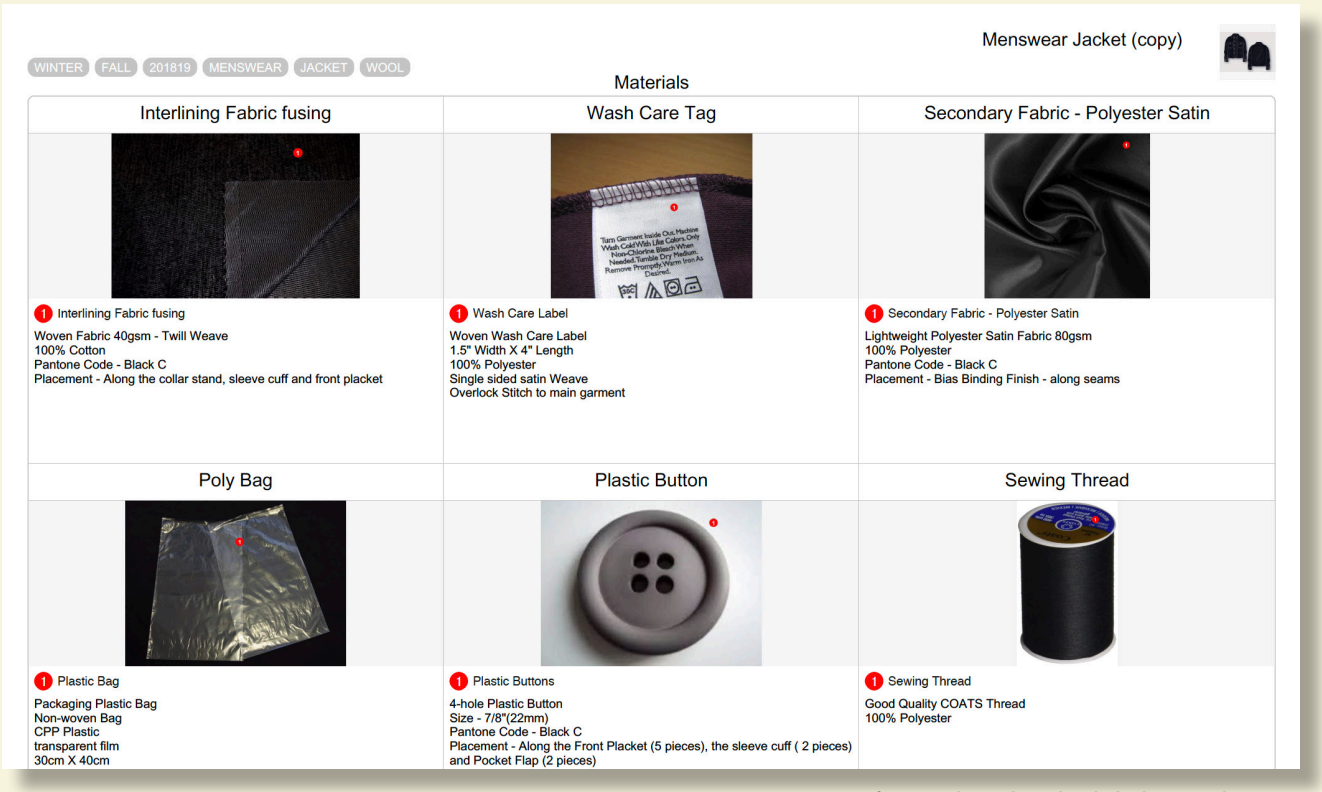
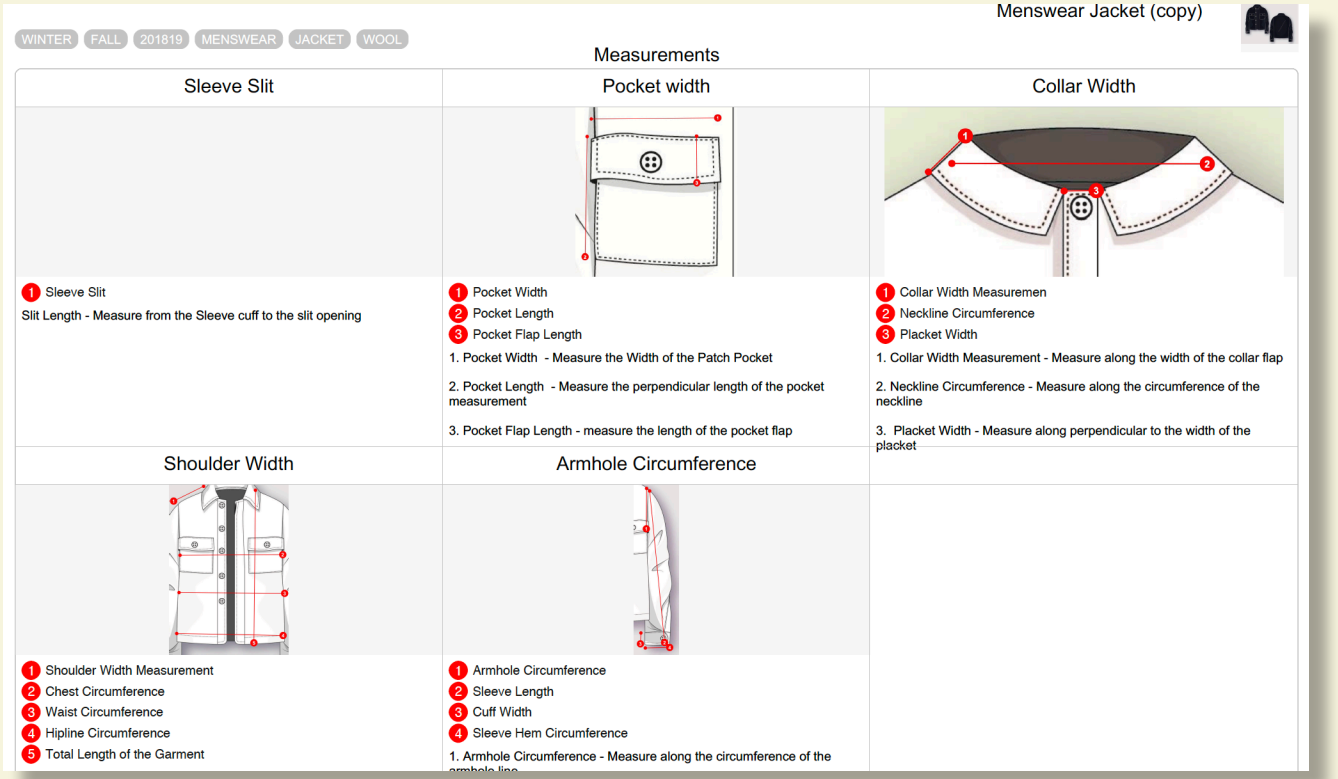


Figure 2.9. List of Materials, explained with both text and pictures. (source: Techpacker.com)



Menswear Jacket (copy)

WINTER FALL 201819 MENSWEAR JACKET WOOL

Measurements

Sleeve Slit	Pocket width	Collar Width
1 Sleeve Slit Slit Length - Measure from the Sleeve cuff to the slit opening	1 Pocket Width 2 Pocket Length 3 Pocket Flap Length 1. Pocket Width - Measure the Width of the Patch Pocket 2. Pocket Length - Measure the perpendicular length of the pocket measurement 3. Pocket Flap Length - measure the length of the pocket flap	1 Collar Width Measuremen 2 Neckline Circumference 3 Placket Width 1. Collar Width Measurement - Measure along the width of the collar flap 2. Neckline Circumference - Measure along the circumference of the neckline 3. Placket Width - Measure along perpendicular to the width of the placket

Shoulder Width	Armhole Circumference
1 Shoulder Width Measurement 2 Chest Circumference 3 Waist Circumference 4 Hipline Circumference 5 Total Length of the Garment	1 Armhole Circumference 2 Sleeve Length 3 Cuff Width 4 Sleeve Hem Circumference 1. Armhole Circumference - Measure along the circumference of the armhole line

Figure 2.10. Measurement names per garment part with added illustrations and explanations on how to measure them. (source: Techpacker.com)

Menswear Jacket (copy)

WINTER FALL 201819 MENSWEAR JACKET WOOL

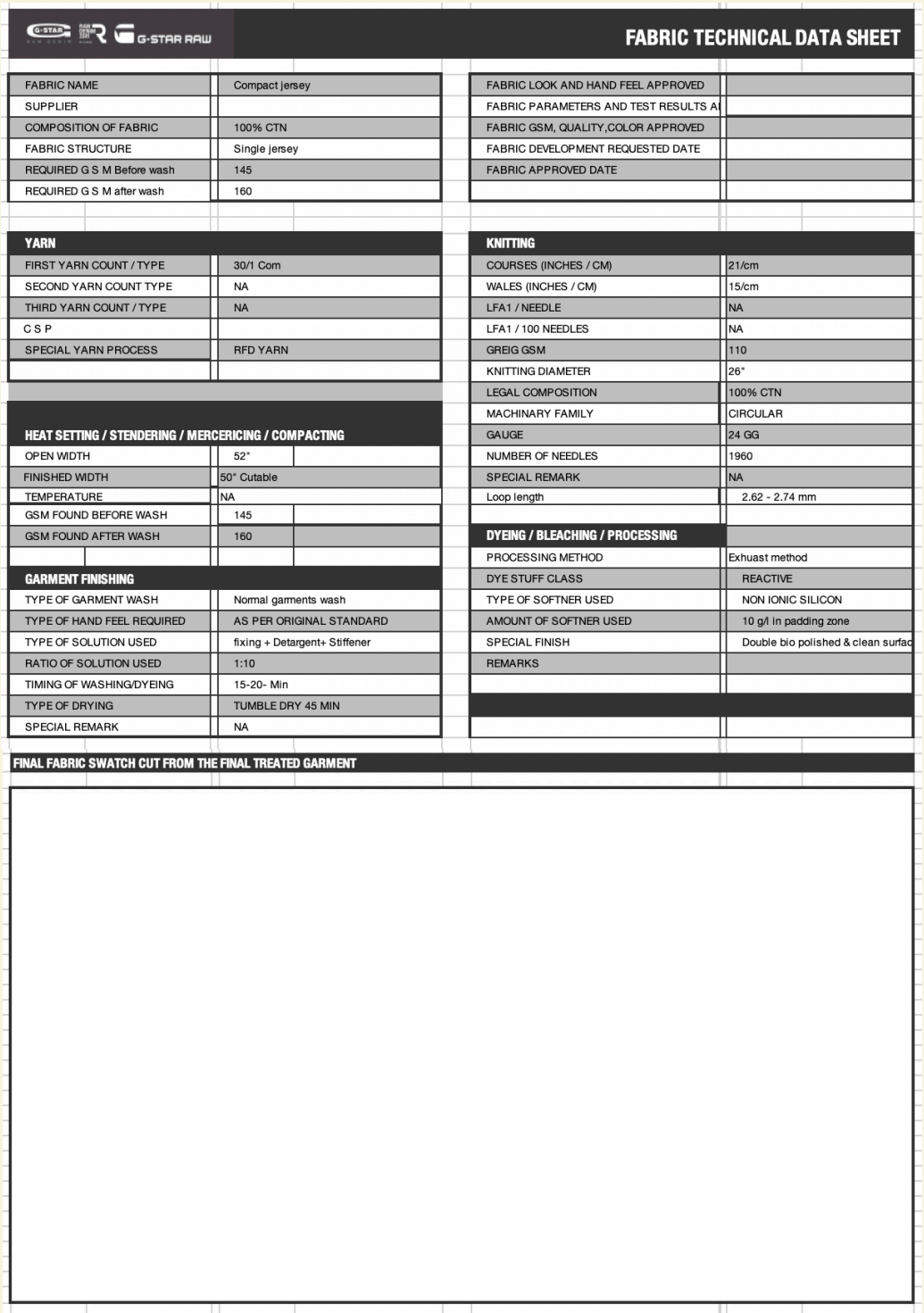
(*) Sample size is highlighted in darker green

Measurements

All measurements are in inches

Description	FIT 1	APPROVED SPEC	S	*M	L	TOL(-)	TOL(+)
Sleeve Slit	5	ON SPEC	5	5	5	0.125	0.125
Pocket width	4 1/2	ON SPEC	4 1/2	4 1/2	4 3/4	0.125	0.125
Pocket length	5 1/2	ON SPEC	5 1/2	5 1/2	5 1/2	0.125	0.125
Pocket Flap Length	1 3/4	ON SPEC	1 3/4	1 3/4	1 3/4	0.125	0.125
Collar Width	1 3/4	ON SPEC	1 3/4	1 3/4	1 3/4	0.125	0.125
Neckline Circumference	15 1/4	15 1/2	15	15 1/2	16	0.125	0.125
Placket Width	1 1/2	ON SPEC	1 1/2	1 1/2	1 1/2	0.125	0.125
Shoulder Width	6 3/4	6 1/4	6	6 1/4	6 1/2	0.25	0.25
Chest Circumference	48	ON SPEC	46	48	50	0.25	0.25
Waist Circumference	47	ON SPEC	45	47	49	0.25	0.25
Hip Circumference	46	ON SPEC	44	46	48	0.25	0.25
Total Length of Garment	26	26 1/2	26	26 1/2	27	0.25	0.25
Armhole Circumference	21	ON SPEC	20	21	22	0.25	0.25
Sleeve Length	24	24 1/2	24	24 1/2	25	0.25	0.25
Sleeve Cuff Width	3	ON SPEC	3	3	3	0.125	0.125
Sleeve Hem Circumference	5 1/2	5 3/4	5 1/2	5 3/4	6	0.25	0.25

Figure 2.11. Measurement table per garment part. This jacket line consist of 3 sizes; Small, Medium and Large with Medium being the sample size. The acceptable tolerances are added in the columns on the right. (source: Techpacker.com)



G-STAR RAW

FABRIC TECHNICAL DATA SHEET

FABRIC NAME	Compact jersey
SUPPLIER	
COMPOSITION OF FABRIC	100% CTN
FABRIC STRUCTURE	Single jersey
REQUIRED G S M Before wash	145
REQUIRED G S M after wash	160

FABRIC LOOK AND HAND FEEL APPROVED	
FABRIC PARAMETERS AND TEST RESULTS A	
FABRIC GSM, QUALITY,COLOR APPROVED	
FABRIC DEVELOPMENT REQUESTED DATE	
FABRIC APPROVED DATE	

YARN

FIRST YARN COUNT / TYPE	30/1 Com
SECOND YARN COUNT TYPE	NA
THIRD YARN COUNT / TYPE	NA
C S P	
SPECIAL YARN PROCESS	RFD YARN

KNITTING

COURSES (INCHES / CM)	21/cm
WALES (INCHES / CM)	15/cm
LFA1 / NEEDLE	NA
LFA1 / 100 NEEDLES	NA
GREIG GSM	110
KNITTING DIAMETER	26"
LEGAL COMPOSITION	100% CTN
MACHINARY FAMILY	CIRCULAR
GAUGE	24 GG
NUMBER OF NEEDLES	1960
SPECIAL REMARK	NA
Loop length	2.62 - 2.74 mm

HEAT SETTING / STENDERING / MERCERICING / COMPACTING

OPEN WIDTH	52"
FINISHED WIDTH	50" Cutable
TEMPERATURE	NA
GSM FOUND BEFORE WASH	145
GSM FOUND AFTER WASH	160

DYEING / BLEACHING / PROCESSING

PROCESSING METHOD	Exhuast method
DYE STUFF CLASS	REACTIVE
TYPE OF SOFTNER USED	NON IONIC SILICON
AMOUNT OF SOFTNER USED	10 g/l in padding zone
SPECIAL FINISH	Double bio polished & clean surfac
REMARKS	

GARMENT FINISHING

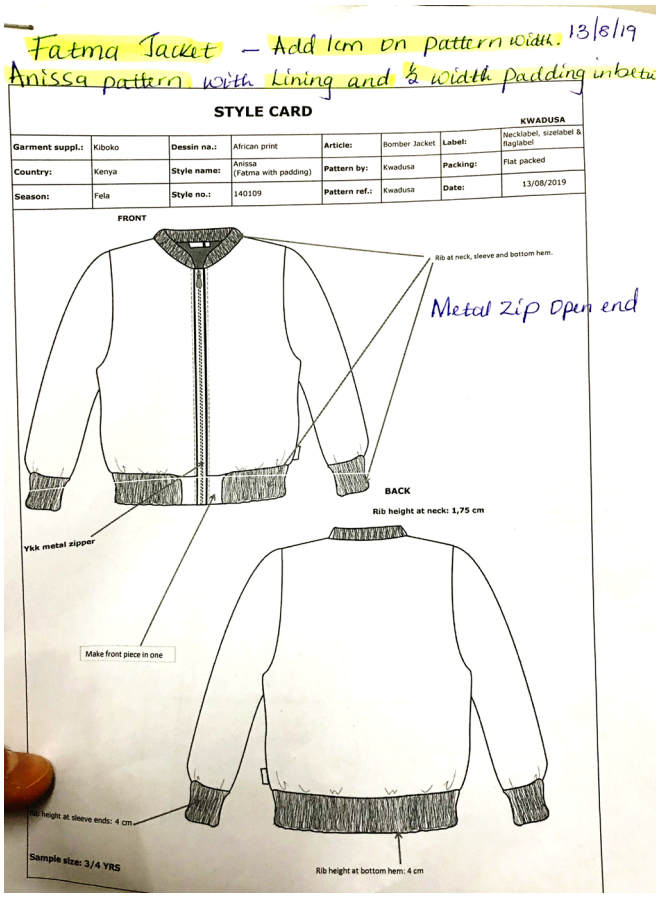
TYPE OF GARMENT WASH	Normal garments wash
TYPE OF HAND FEEL REQUIRED	AS PER ORIGINAL STANDARD
TYPE OF SOLUTION USED	fixing + Detargent+ Stiffener
RATIO OF SOLUTION USED	1:10
TIMING OF WASHING/DYEING	15-20- Min
TYPE OF DRYING	TUMBLE DRY 45 MIN
SPECIAL REMARK	NA

FINAL FABRIC SWATCH CUT FROM THE FINAL TREATED GARMENT

Figure 2.12. FTDS from a Gstar jersey.

Fabric Technical Data Sheet

A FTDS (figure 2.12) holds all specifications that is necessary for a supplier to produce a type of fabric. This is an example which was used by the brand Gstar of a type of jersey, which is mostly used in t-shirts. In this data sheet everything is described; from the type of yarn and the knitting style, to finishing and dyeing methods. At the bottom of the sheet there is space for a physical sample swatch of the fabrics.


Fatma Jacket – Add 1cm on pattern width. 13/8/19
Anissa pattern with Lining and ½ width padding inbetw

STYLE CARD

KWADUSA

Garment suppl.:	Kiboko	Dessin na.:	African print	Article:	Bomber Jacket	Label:	Necklabel, sizelabel & flaglabel
Country:	Kenya	Style name:	Anissa (Fatma with padding)	Pattern by:	Kwadusa	Packing:	Flat packed
Season:	Fela	Style no.:	140109	Pattern ref.:	Kwadusa	Date:	13/08/2019

FRONT

Rib at neck, sleeve and bottom hem.

Metal zip open end

BACK

Rib height at neck: 1,75 cm

Ykk metal zipper

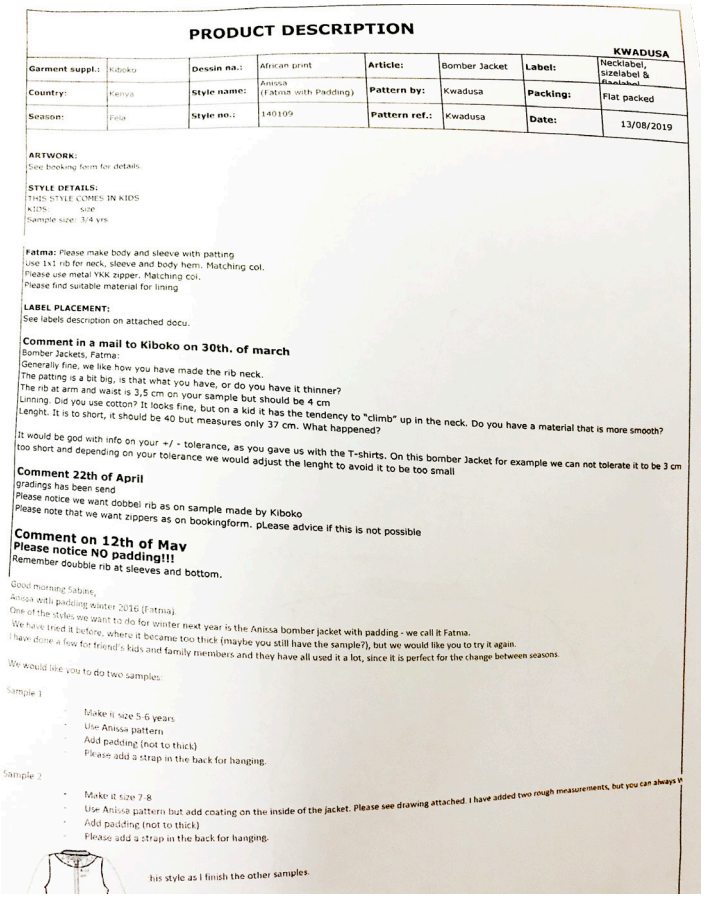
Make front piece in one

Rib height at sleeve ends: 4 cm

Sample size: 3/4 YRS

Rib height at bottom hem: 4 cm

Figure 2.13. First page of the style sheet, with a sketch of the various garment views and added notes.


PRODUCT DESCRIPTION

KWADUSA

Garment suppl.:	Kiboko	Dessin na.:	African print	Article:	Bomber Jacket	Label:	Necklabel, sizelabel & flaglabel
Country:	Kenya	Style name:	Anissa (Fatma with Padding)	Pattern by:	Kwadusa	Packing:	Flat packed
Season:	Fela	Style no.:	140109	Pattern ref.:	Kwadusa	Date:	13/08/2019

ARTWORK:
See booking form for details.

STYLE DETAILS:
THIS STYLE COMES IN KIDS
KIDS: size
Sample size: 3/4 yrs

Fatma: Please make body and sleeve with patting
Use 1x1 rib for neck, sleeve and body hem. Matching col.
Please use metal YKK zipper. Matching col.
Please find suitable material for lining

LABEL PLACEMENT:
See labels description on attached docu.

Comment in a mail to Kiboko on 30th. of march
Bomber Jackets, Fatma:
Generally fine, we like how you have made the rib neck.
The patting is a bit big, is that what you have, or do you have it thinner?
The rib at arm and waist is 3,5 cm on your sample but should be 4 cm
Linning. Did you use cotton? It looks fine, but on a kid it has the tendency to "climb" up in the neck. Do you have a material that is more smooth?
Lenght. It is to short, it should be 40 but measures only 37 cm. What happened?

It would be god with info on your +/ - tolerance, as you gave us with the T-shirts. On this bomber Jacket for example we can not tolerate it to be 3 cm too short and depending on your tolerance we would adjust the lenght to avoid it to be too small

Comment 22th of April
gradings has been send
Please notice we want dobbel rib as on sample made by Kiboko
Please note that we want zippers as on bookingform. pLease advice if this is not possible

Comment on 12th of May
Please notice NO padding!!!
Remember doubble rib at sleeves and bottom.

Good morning Sabine,
Anissa with padding winter 2016 (Fatma).
One of the styles we want to do for winter next year is the Anissa bomber jacket with padding - we call it Fatma.
We have tried it before, where it became too thick (maybe you still have the sample?), but we would like you to try it again.
I have done a few for friend's kids and family members and they have all used it a lot, since it is perfect for the change between seasons.

We would like you to do two samples:

Sample 1
- Make it size 5-6 years
- Use Anissa pattern
- Add padding (not to thick)
- Please add a strap in the back for hanging.

Sample 2
- Make it size 7-8
- Use Anissa pattern but add coating on the inside of the jacket. Please see drawing attached. I have added two rough measurements, but you can always
- Add padding (not to thick)
- Please add a strap in the back for hanging.

his style as I finish the other samples.

Figure 2.14. The last page of the style sheet contains notes and feedback from the brand.

2.2.4 Examples from practice: Nairobi Production Facilities

In this paragraph, examples found in practice in production facilities in Nairobi are elaborated on.

Style sheet

The fundis at Kibiko Leisure wear receive a 'style sheet' (Figure 2.13) which includes all necessary information about a garment, similar to a techpack. This style sheet also included written feedback on the sample and revisions made by the brand, which had been sent over by email.

A mix of visuals and text is used to explain garment specifications. There have been some additions made to the style sheet by someone by hand, seemingly because the instructions were incomplete or needed clarification.
Comments and feedback on the design based on samples are shown on the final page. Even though the garment is specified in the style sheet, dialogue between the production facility and the brand is necessary.

Figure 2.14 shows an example of the email exchange between a factory and a client brand. As you can see, the brand is asking about the possibilities to make adjustments to the last received sample, as well as advise from the factory.
The language that is used seems clear, however based on the continuation of the emails, not all feedback came through in the next sample:

22nd of April: "Please notice we want double rib as on sample (...)"

12th of May: "Remember double rib at sleeves and bottom."

Image 2.1. A fundi working on a bomberjacket for the brand Kwadusa, with the style sheet laid out in front of her.

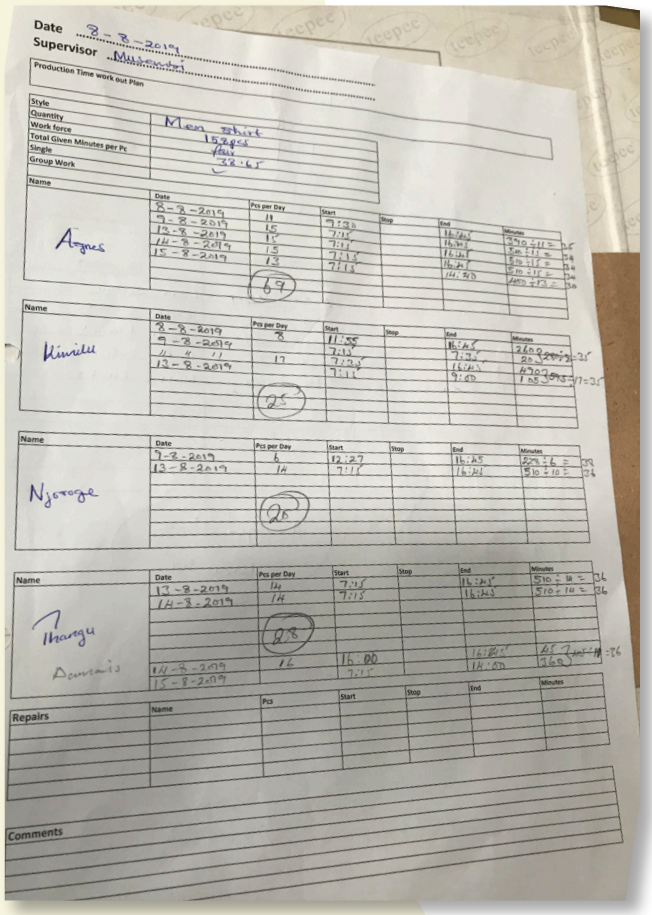


Image 2.2. Sheet for tracking fundi performance.

Fundi performance tracking

In one of the production facilities visited, I got insight in how fundi performance was tracked. For each fundi, it was noted down by the production clerk at what time they started production, how many garments were made and how long it took them.
If there were any additional comments or if the garments needed to be repaired it was also noted. These sheets were collected in a large binder. No data was digitalized.

Communication through Digitalization

Because Labls strives to be an IT driven company, research on the level of digitalization of communication within production facilities was performed.

Communicating with clients can be a hassle and Labl strives to eliminate this issue. Currently, communication between clients and production facilities (B2B) is performed in various ways: phonecalls, Whatsapp, email, and face-to-face communication.
Personal, face-to-face contact is important for Kenyans, as they tend to be more trusting when they know the people they do business with. Whatsapp and email is preferred by some production facilities because it provides the opportunity to add photos and garment sketches.
Production facilities that also sell their own products (B2C) use additional platforms such as: the ecommerce platform Etsy and social media platforms Facebook and Instagram. Orders that are placed through digital media need to be specified in detail, to give buyers a complete sense of the product. The benefit of using social media was the opportunity and a low threshold for clients to ask the production side questions.

Within the few production facilities I have visited, digitalization is very limited. Most production facilities have an office with outdated computers. Production is tracked in paperwork. Most fundis have smartphones, but they do not use them for work.

2.2.5 Conclusion

In theory, everything there is to know about garment production can be defined in a techpack. However, based on interviews with experts from the field (people working for brands who communicate with factories on a regular basis), there still needs to be put in additional effort to get the desired outcome. Which means, somewhere in the process information gets lost or misunderstood.

It is important to have clear, and most importantly generalized, guidelines for an order within the factory. In practice, a mixture of visuals, text, tables and notes are used to clarify the garment demands. There is also a need for dialogue to ask questions and give feedback on de samples. During production there are often alternations made on the design specifications. By facilitating clear communication, a trustworthy collaboration can be ensured.

I would advise Labl to make use of the techpack, because it is the most detailed description and commonly used in the fashion industry by settled brands. However, the small and medium brands that Labl is targeting, might not be familiar with the concept of a tech pack. It could be an idea for Labl to create a tech pack together with the client during a meeting, to make sure all product details are properly described in a way that the fundis understand.
Furthermore, I think it is necessary to build and atmosphere within the organization of Labl where it is accepted to ask questions and leave space for dialogue to get on the same level. It is also important that fundis are motivated to report it, when a garment does not meet quality standards. There needs to be ownership of the mistakes.

Aditionally, Labl can benefit of its strategy to digitalize the supply chain, that would make the garment specifications easily accessible to everyone within the company. The fundis are considered to have sufficient experience with digitalization to adapt.

2.3 Cultures

This paragraph dives into the topic of culture. First, and introduction is given to the concept of culture. The paragraph rounds up with takeaways for Labl on how to deal with cultural differences.

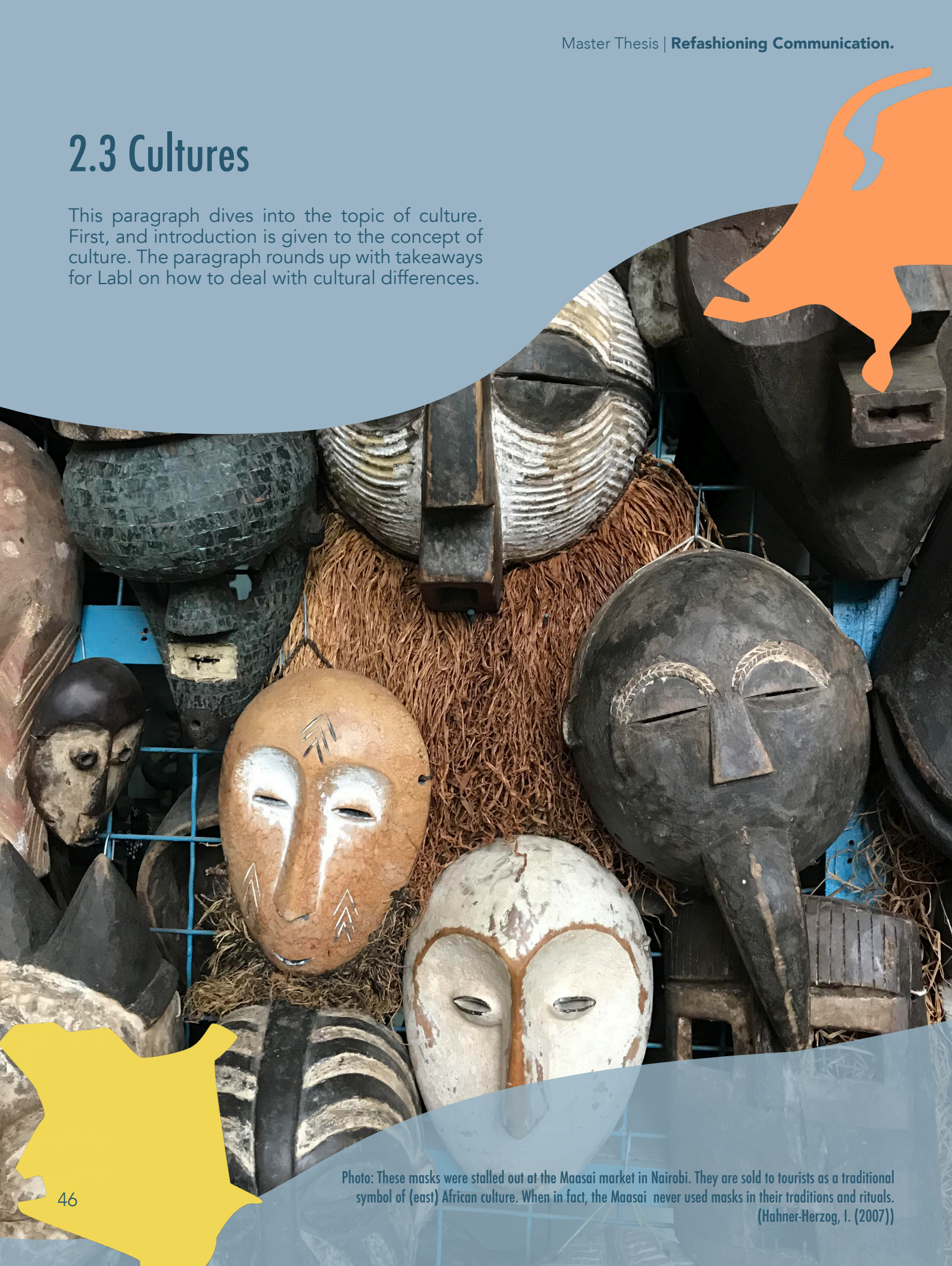


Photo: These masks were stalled out at the Maasai market in Nairobi. They are sold to tourists as a traditional symbol of (east) African culture. When in fact, the Maasai never used masks in their traditions and rituals. (Hahner-Herzog, I. (2007))

2.3.1 Introduction to the Concept of Culture

Because Labl enables the cooperation of parties from different cultural groups on a business level, identification of these cultural groups is necessary. In this report, when referring to the term 'culture', it is meant: 'the system of shared values, beliefs, customs, behaviors and artefacts that the members of a society use to cope with their world and one another. Culture is transmitted from generation to generation through learning.' (Bates and Plog, 1976)

Culture affects the behavior of people, and the way people interpret behavior. Cultural meaning is attributed differently by insiders and outsiders. The foundation lies in the values people share. Based on these values, people perform certain practices which can be observed and interpreted by others.
"Values are profound and often unconscious. They represent broad feelings about good and evil, beautiful and ugly, natural and unnatural, logical and paradoxical, rational and irrational. (…) Practices associated with a culture are more superficial and usually recognized by all. They are the collective habits expressed in such visible things as dress, language and jargon, status symbols, promotion criteria, tea and coffee rituals, meeting rituals, communication styles, and a lot more." (Hofstede, 1989, page. 391)

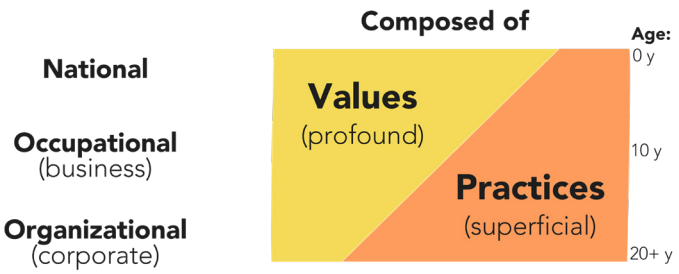


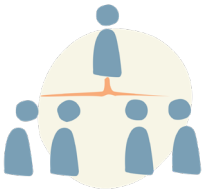
Figure 2.15. Observable practices stem from underlying values that are learned at a young age.

Figure 2.15 identifies the mix of values and practices on different cultural levels; National level, Occupational level and Organizational level (Adapted from Hofstede, 1989, page 391). Values are among the first things which are learned from birth, unconsciously. As people age, they learn about occupational and organizational cultures. Occupational culture is acquired in schools, and organizational cultures are rooted in practices learned on the job.

In Appendix D, after introduction of the various cultural theories used for research, I describe in detail what practices I noticed through observation and interaction with the fundis. Through interviews with Kenyan entrepreneurs, fundis and production facility owners, I was able to identify important underlying values that lead to these practices.

2.3.2 Culture Takeaways for Labl

Based on the cultural research some useful takeaways for Labl were concluded, as well as insights for further in the design process.



Hierarchy

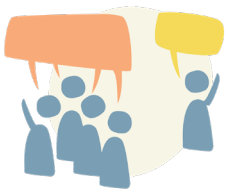
Labl should respect the Kenyan custom of hierarchy. Within the organization, an atmosphere is to be created where there is space for open and honest communication throughout all hierarchical ranks without risking loss of face. It is important to take into account who is giving the correction/feedback and how hierarchy manifests itself in the physical environment.

- Hierarchy is strong and important in Kenyan culture. Employees must always listen to their superior.
- Presence of a superior will mostlikely have effect on functioning of fundis.
- There is a hierarchical structure within the production facility, based on the difficulty of the job.
- Kenyan fundis are used to being separated spatially based on their rank in the company hierarchy.

Attittude

Fundis will work hard as long as they feel motivation to do so. Self development can be one of those motivators, as well as personal or community income. Moreover, should Labl set up company rules, while leaving space for fun and ambiguity.

- In Kenyan culture there are rules, however they are more easily disregarded than people are used to in Dutch national culture.
- Both cultures value the importance of fun, which could be benefitted from by Labl.
- The social factor in the production facility can contribute to a more 'fun' working atmosphere.
- However, there must remain a (economically) healthy balance between fun and duty.



Identification

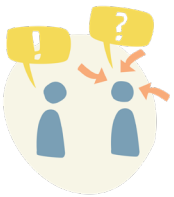
The feeling of togetherness ('Ubuntu') is of great importance to Kenyans and should be strengthened within the production facility, as well as within the entire Labl company. However, individual responsibilty for quality should be taken as well.

- It is important for Labl to keep up to date with the latest developments within the community.
- It is advised to create the sense of 'Ubuntu' within the organizational culture of Labl. Building personal relations among colleagues and with clients are valued.
- Management in the factory is about the management of groups or teams.
- Fundis hold taking care of their community in high regard, which may serve as a motivational factor.

Time

Within the culture Labl stems from 'time is money', but the perception of time among fundis differs quite a lot. Where in Dutch culture time is about planning and making deadlines, in Kenya people are used to adapt and be flexible with time.

- Fundis need help getting more future oriented and keeping track of order planning.
- Labl has to find a way to motivate their employees to work for, when they are living a comfortable life today.
- Fundis are not used to strict (sequential) time planning, as they live by a parallel perception of time and managers are expected to multitask.
- For fundis there is no clear distinction between work time and personal time. Personal relations are valued greatly and might be more important than following a tight time schedule. These values must be respected, while keeping targets in awe as well.



Truth

Bridging the communication gap between Labl and fundis starts with recognizing how their values differ. It is important to find a universal way of communicating an order/ giving feedback that covers absolute and contextual preferences. The following points should be taken into consideration:

- Dutch people value absolute information, for Kenyans the context of a message is important as well: body language, atmosphere, timing, personal interpretation.
- Giving feedback directly and face-to-face is not something that is common within Kenyan culture.
- Kenyans give more attention to positive qualities of a garment. Kenyans might 'oversell' the quality of the garment for Dutch customs.
- In Kenyan culture, feedback is more likely to be accepted given from someone higher up. It is easily missed and should be given in private.

Aim

In general, Kenyans value achievement in life over care. The sense of achievement is reached by fundis when they learn new skills and climb up the company hierarchy. Care is represented in giving back to the community.

- Fundis may be stimulated by encouraging self-development.
- Successes should be celebrated and feeling of pride should be encouraged among fundis.
- Work ethic will be present as long as there is need to work, and most fundis mainly work for an income. It could be helpful to refer to it as partly 'community income'.

Conclusion

It is highly unlikely that the final design of this project will change the users' values and that is also not the intention. I must keep in mind the values of Kenyan and Dutch culture, and design/set up practices that are acceptable for all stakeholders. In other words, what practices should Labl implement in its organizational culture to ensure a smooth workflow in the production facility?

The answer lies in the correct balance. I must keep the cultural takeaways in mind while designing. In some cases the varying cultural values between Labl, the brands and factory employees need to be bridged, i.e. by helping fundis become more future minded. In other cases, a cultural value may be strengthened, such as the feeling of togetherness and a fun-oriented attitude to life. The perfect mix-and-match between these cultures needs to be determined to shape the ideal Labl organizational culture.

2.4 The Target Users

Within this project we have defined 3 stakeholder groups: Labl, the brands and the production facility. This paragraph zooms in on the people who represent these stakeholder groups; the employees, as they will be the users of the design intervention. The goals, needs and motivations of all user groups were summarized by means of user personas.

Charlie, 47
Experienced Fundi

From Mombasa, Kenya
Religion Christian
Experience has worked in the industry for over 30 years, has spent most of it making track suits and school uniforms for the local market.
Family has a wife and two sons who have their own family.

Job description / Responsibilities
Team leader
Sewing
Help out less experienced fundis
Perform most of the quality checks

Motivation for working for Labl
Help the local community flourish
Earn money to sustain family

Experience with Technology
Very limited. Has a smartphone but only uses it for calling and Whatsapp.

Quote
"With the money I make at Labl I can help contribute to building a primary school for the community."

Romy, 29
New Brand owner

From Utrecht, the Netherlands
Religion none
Family lives with her boyfriend
Experience Has worked in various fashion brands for about 6 years and is now setting up her own brand: 'Moontribe'.

Job description
Responsible for fashion portfolio; mostly buying in but has some design ideas herself as well which she would like to have produced.

Motivation for working with Labl
Shorter sample iteration time and a less stressful and more secure collaboration with factories. Knowing there are experienced people at Labl who can help out, when things tend to go wrong.

Experience with Technology
A lot of experience. Uses Instagram and Linkedin daily for marketing, inspiration and networking. Uses the Adobe creative suite for designing.

Quote
"From my previous jobs I know that collaboration with factories from external parties can be risky. You don't know how long it will take to get to the garment quality you want, if you even get it at all. It is very hard to control."

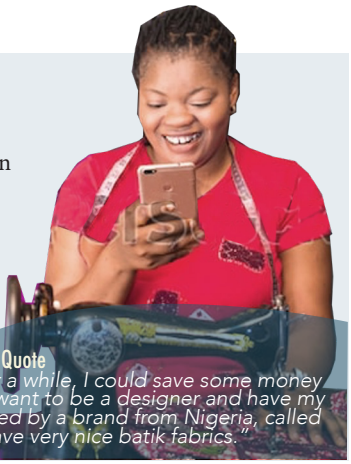
Emily, 19
Fundi in training

From Voi, Kenya
Religion Christian
Family Lives with her parents and little sister
Experience Started at Labl one month ago, is now in training

Job description
Finishing; ironing and trimming threads.
Is in training for becoming a seamstress.

Motivation for working for Labl
Acquire skill for self-development
Earn some money for herself and set up own fashion brand for the local market.

Experience with Technology
Daily use, but not on the job.
Uses Instagram and Whatsapp most.



Quote
"After I have worked here for a while, I could save some money and start my own business. I want to be a designer and have my own clothing line. I am inspired by a brand from Nigeria, called Grandmama. They have very nice batik fabrics."

Dennis, 32
Labl Office

From Amsterdam, the Netherlands
Religion none
Family single
Experience Been at Labl since the first ideas of the startup came, about a year ago.
ng

Job description
Marketing, creating a network of brands willing to produce via Labl.
Monitoring supply.

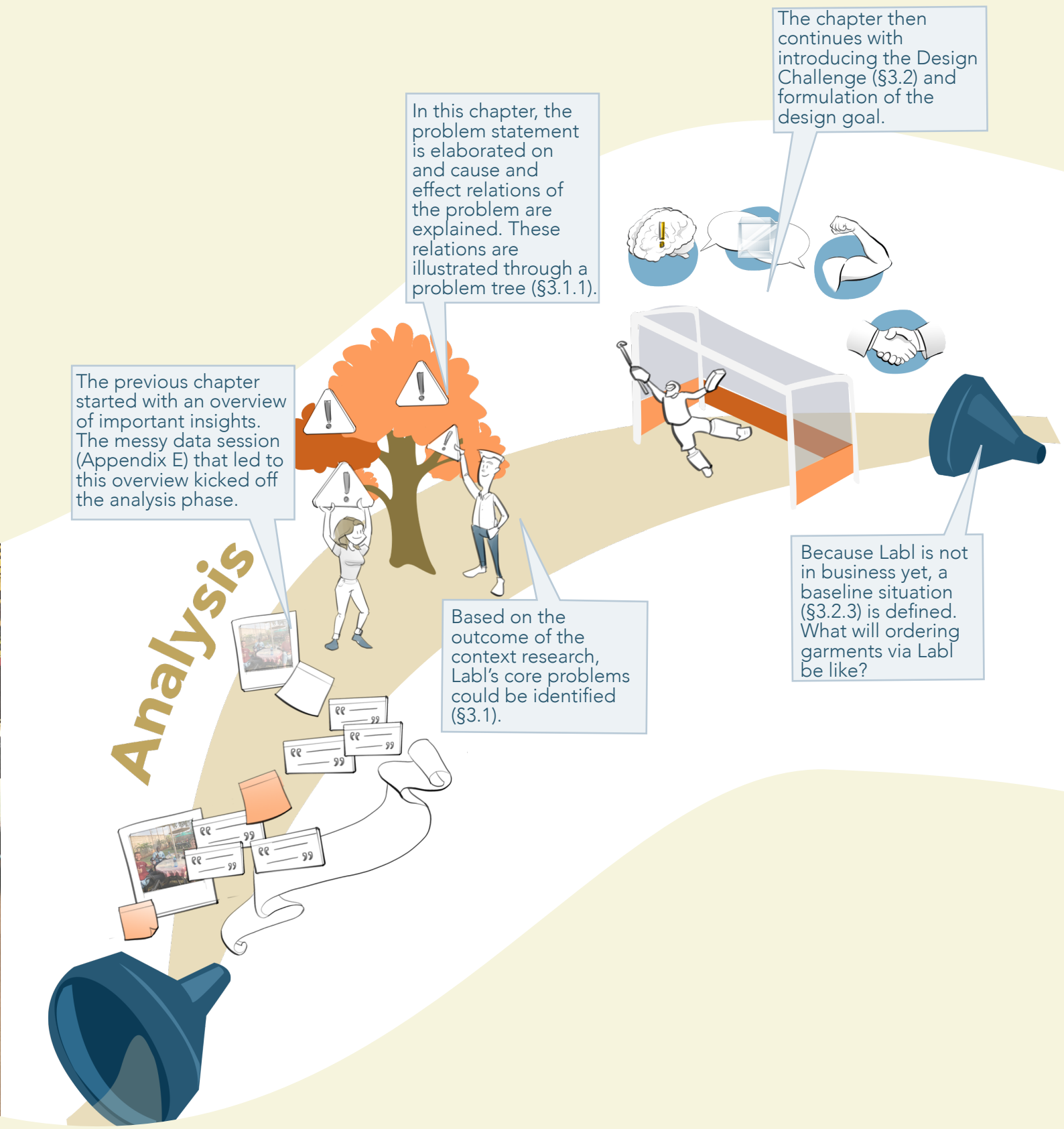
Motivation for working at Labl
Contributing to making the fashion industry more sustainable and circular.
Ethical working conditions in factories.

Experience with Technology
Is a real tech guy and gadget freak.

Quote
"I think it is hard for consumers to judge which garments are produced in an unsustainable or unethical way. Labl can help brands switch to offering better, more responsible clothing without it costing them more. In this way, we help the consumers as well."

Chapter 3

Design Brief.


The chapter then continues with introducing the Design Challenge (§3.2) and formulation of the design goal.
In this chapter, the problem statement is elaborated on and cause and effect relations of the problem are explained. These relations are illustrated through a problem tree (§3.1.1).
The previous chapter started with an overview of important insights. The messy data session (Appendix E) that led to this overview kicked off the analysis phase.
Analysis
Based on the outcome of the context research, Labl's core problems could be identified (§3.1).
Because Labl is not in business yet, a baseline situation (§3.2.3) is defined. What will ordering garments via Labl be like?

3.1 Problem Statement

In this paragraph the problems of the current situation are analysed and discussed (Figure 3.1). What became clear from the brand experiences and the Cottoncake pilot performed in Kenya, is that steps need to be taken to get the collaboration ready for business. Often the quality/execution of the garments does not meet the brands' expectations. Which means that these garments are not suitable for the Dutch market, and will mostlikely go to waste. Aside from the lacking quality, the relation and trust between parties can be improved.

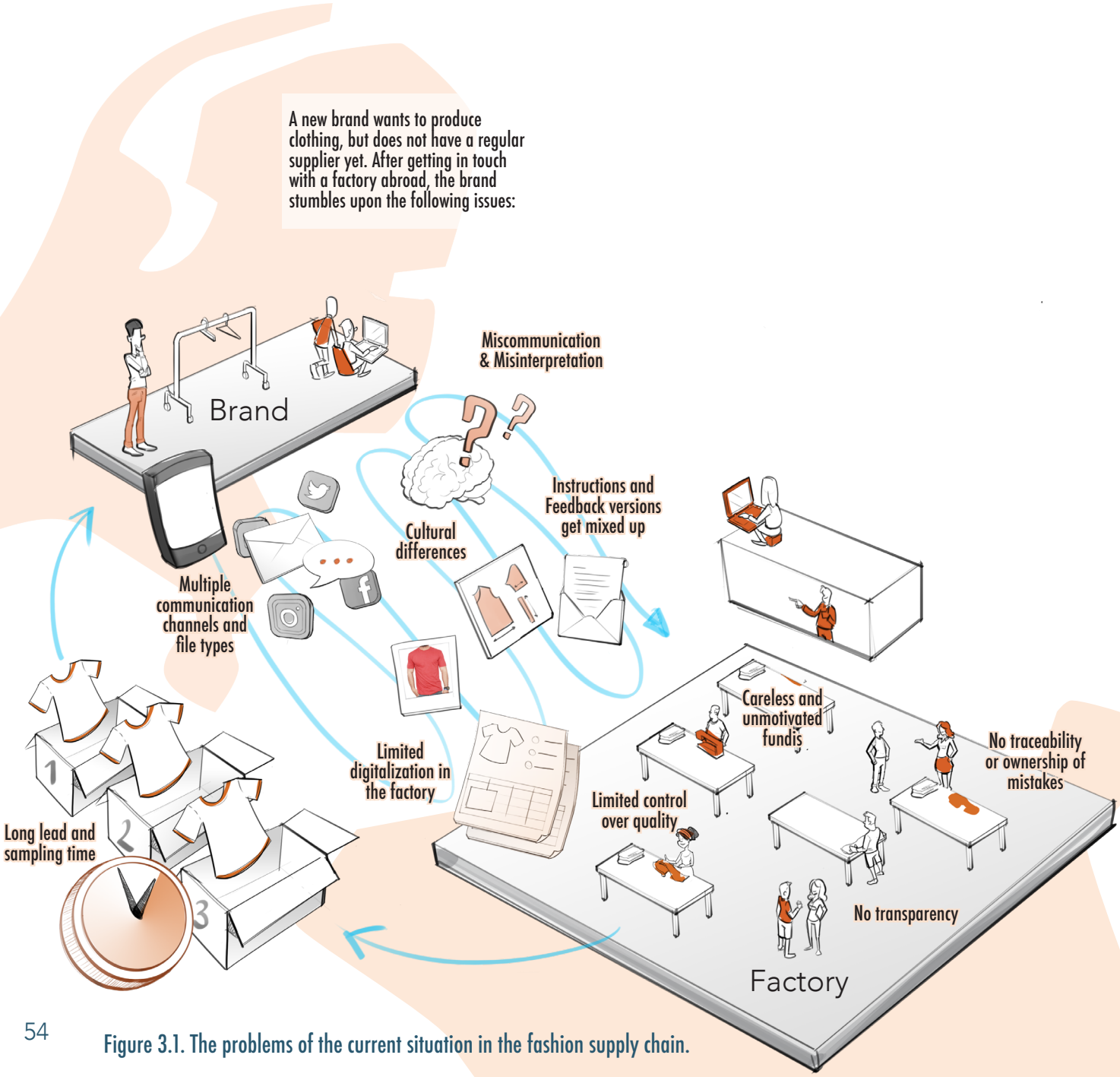


Figure 3.1. The problems of the current situation in the fashion supply chain.

1. Communication goes via multiple channels.

2. Sharing of information via different file types and versions.

3. Miscommunication & misinterpretation

4. Lack of transparency.

5. Limited control over quality (by brands).

6. Careless & unmotivated fundis.

7. No traceability or ownership of mistakes.

8. Limited knowledge of cultural differences.

What are the core problems?

1. Information is communicated over various communication channels (email, phonecalls, WhatsApp), which makes it difficult to keep an overview of all demands. Information tends to get lost in the process.

2. No institutionalized format of communicating demands is being used. Aside from the channel, the form of sharing garment details also varies: via sketches, text, photographs, etc. Because designs are sent over different (types of) files and in different versions, it makes it hard to keep track of for the factory, especially because they work from printed instructions which are dated.

3. Brands often assume that they are being clear, and factory workers assume that they understand instructions right. When instructions are not clear, fundis make interpretations and come up with their own solution. When eventually the garment sample is not up to expectations, it results in frustration and distrust among both stakeholders.

4. The lack of transparency in the supply chain is considered unsettling. Brands have no insight in what is happening inside the factory, which influences trust and causes insecurity. Brands feel like they need to constantly check in with the factory to ensure production is going as intended and according to schedule.

5. Small brands have to work with external suppliers with their own quality control department. As a consequence, there is no way of knowing the garment quality until after it is transported, let alone influence it. Guidelines are sent over to the factory but brands feel as though these are easily disregarded.
Multiple samples are needed until the garment is done right. Because shipping takes weeks each sample, months pass by without much progress.

6. Careless & unmotivated fundis. Brands doubt whether the makers have the right intentions and motivation for delivering quality. Factory owners also express they have difficulty with motivating and disciplining their staff.

7. No traceability or ownership of mistakes. It is difficulty to trace garment quality back to the maker. Even more so because mistakes are often not reported because fundis are afraid to lose face.

8. There is limited knowledge of cultural differences between stakeholders. Which is a shame because it could help to understand each other better and prevent many issues from occurring.

3.1.1 Problem Tree

The problems from the previous page were rephrased and further analyzed. The problem tree format (advised to read from bottom-up) was used to create an overview of how the problem's causes and effects relate. However, it is not possible to tackle all these problems during this design project. It is necessary to narrow down the scope even more (figure 3.3). Which problems will be tackled, and which will be left as is?

The problems marked blue will become the main focus of this project. Yellow issues are related and will be attempted to resolve as well, but are less of a priority during this project.

Problems that are marked orange are issues that will not be attempted to be resolved. In the next paragraph it will be discussed what has led to this decision.

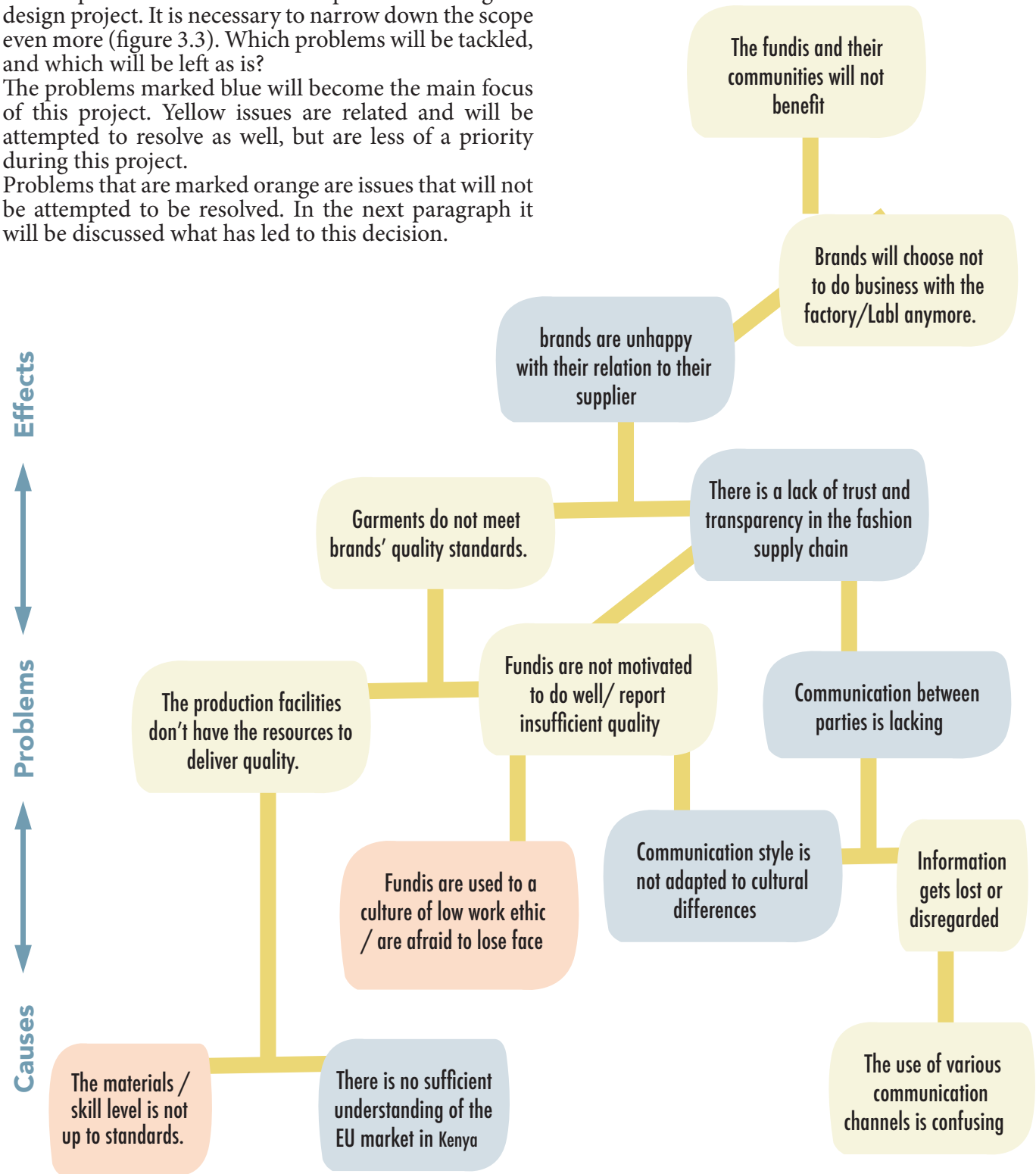


Figure 3.2. Problem Tree

3.2 Design Challenge

Narrowing down the project scope

In paragraph 1.3 we have determined the scope according to three pillars: Communication about quality between brand and factory in the fashion supply chain. Now the most important problems and their causes have been identified the scope can be narrowed down.
I will target the following aspects during this design project:

1. Creating more transparency in the supply chain
2. Building trustworthy relationships between factory and brand
3. Enable communication of clear instructions and feedback.

These issues go hand in hand, one can not be achieved without the other and they all are building blocks for one ultimate design goal.

3.2.1 Design Goal

"To **facilitate communication** between Dutch brands and fundis in Labl's production facility in Kenya, in a way that will improve **mutual understanding** and deliver **better quality fashion** over time."

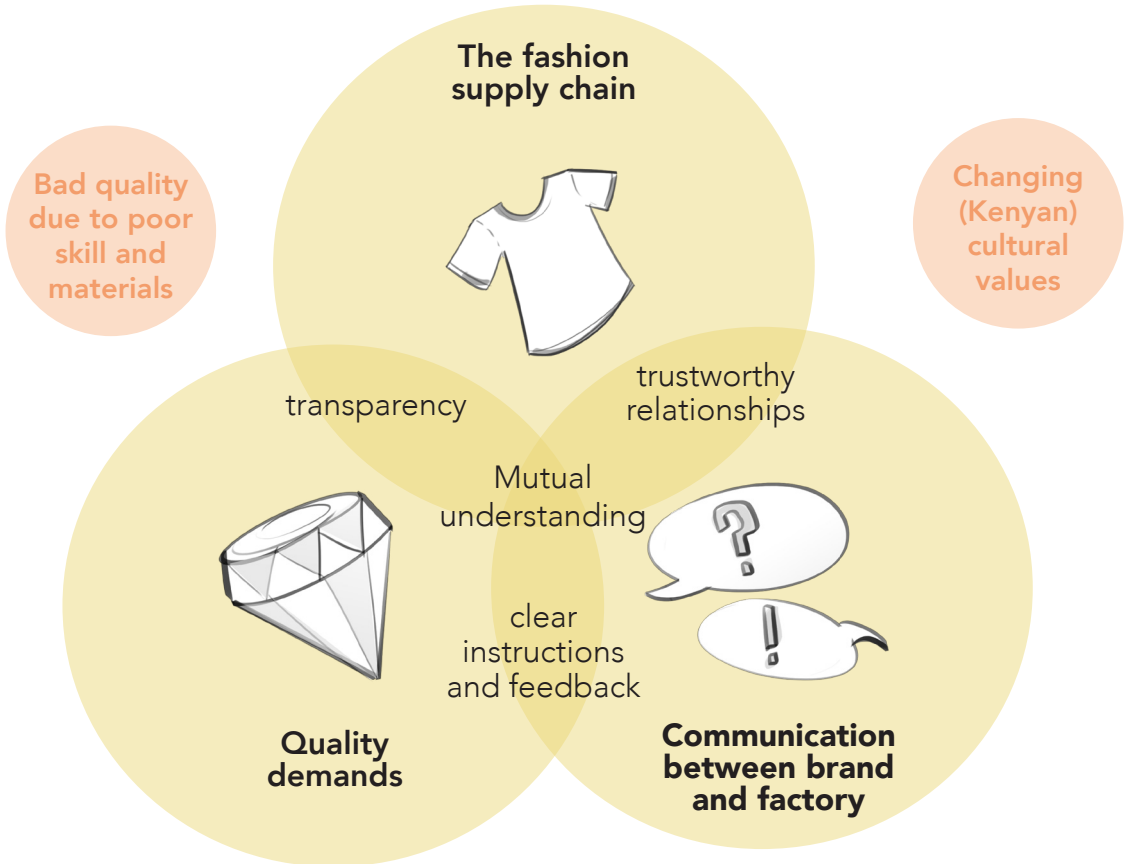


Figure 3.3. What is in (yellow) and out (orange) of scope?

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3.2.2 Discussion

So, what I want to achieve is a smooth cooperation where there is transparent and clear communication between all stakeholders, which will result in the production of quality garments that meet the brands' demands. In order to achieve this, it is necessary to create mutual understanding between brand and supplier.

Creating more transparency in the supply chain

Labl strives for more transparency in the supply chain, which means eliminating anonymity and making production insightful for all stakeholders. It is therefore valuable to find solutions for open and honest communication.
Another essential element for reaching transparency within the supply chain is getting the fundis to feel more responsible for delivering quality. Work is not just checking in in the morning, checking out in the afternoon and getting paid. Insufficient quality must be reported when noticed by fundis or quality control.

Building trustworthy relationships between factory and brand

Trust seems to be lacking in the current relationship between brand and supplier. Brands don't think fundis care or are motivated enough to produce quality garments. And if so, then they do not trust that bad quality will be reported because it would make the fundis look bad. Moreover, if a mistake is found by quality control, it is hard to trace it back to the owner so there is no feeling of ownership of the garment quality. All these reasons contribute to a lack of trust that garments will end up looking as desired.
In context research, brands expressed that they value it when they have built up a relationship with their supplier, mainly because the supplier thinks along with them to accomodate their wishes as much as possible. I believe that in order to improve communication, it is necessary to get to know each other. By building trustworthy relationships between brand and production facility, stress and frustration can be prevented in the future. The supply chain will become more social and personal. This goal also fits Kenyan culture well, where personal contact is valued greatly. All stakeholders should feel as they are working together for the same cause ('Ubuntu').

Enable communication of clear instructions and feedback.

The aim is, with Labl as a facilitating factor, to facilitate and improve the communication between brands and production facility. Which entails; the communication channel, the content, style and frequency.
The information that is communicated should be provided in a way that it leaves little to no room for interpretation. The use of fixed industry guidelines such as a techpack, is advised but should be adapted to be well understood by all stakeholders. Moreover, looking at the current situation, it is beneficial if the communication channels are kept limited to avoid confusion.

What issues will not be treated in this project?

Bad quality due to poor skill, machinery and materials.

On a practical level, there are many issues that could lead to bad quality garments. The practical level is determined by the technical skill level of the fundis, the machinery and materials provided by Labl's production facility. When these are below standard, it is nearly impossible to produce quality garments. Therefore, as a baseline, it is assumed that Labl will provide high standard machinery and supplies and that the fundis are technically skilled enough to handle the machinery.
The company will create a fixed portfolio with fabric swatches, stitches and printing options to manage expectations among brands. Labl has plans to avoid future practical issues due to human inconsistency as much as possible by installing a digital pattern printer/ fabric laser cutter. Therefore, bad quality due to poor skill, machinery and materials were left out of scope during this project.
Issues on a cognitive level are assumed to be solvable by better communication and are therefore considered within scope.

Changing (Kenyan) cultural values

It is not intended (or possible for that matter) to force change of cultural values. For example, the fear of losing face is embedded in Kenyan culture and can not be solved in the course of this design project and is therefore out of scope. However, it can be tempted to bypass this issue (and other issues due to cultural differences) or motivate fundis in another way to solve the problem of unreported issues.

What are relevant context factors?

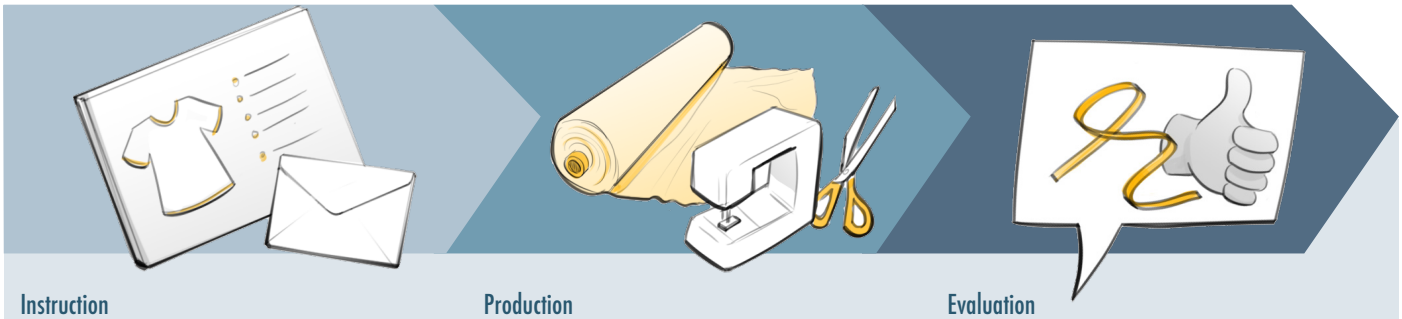
Communication about quality between brand and factory will occur throughout different stages of an order: Instruction, Production and Evaluation (figure 3.4). Communication is an ongoing thing throughout the supply chain, and should be treated as such.

The cultural differences must be acknowledged and respected. The takeaways from chapter 2.3 can be taken as guidelines.
It must be avoided to force the Dutch way of working and communication on to the Kenyan fundis. However, 'the Kenyan way' is not acceptable either. As we experienced from conversations with fundi's working in Kenya, they are used to being paid by piece. Because money was their motivator, they worked for an unhealthy number of hours in a row. The fundis should be disciplined to work hard and precise, however working circumstances must be kept socially acceptable as this is at the core of Labl: setting up a social supply chain.

Furthermore, is sustainability an important issue for Labl. Any solution must keep in mind sustainability issues such as reducing waste and limit the amount of international shipping.

Finally, it is important that fundis are motivated to keep delivering quality. It can be that fundis may be triggered through personal development / achievement. From Labl's point of view, the community-based manufacturing could serve as a motivator: When fundis see the benefits brought to the community, they might become more motivated to deliver quality.

Figure 3.4: Stages of communication throughout the supply chain



Instruction
Instruction concerns all demands that are communicated before production has started. For example, how design specifications are sketched out or written down. Moreover it is about the levelling of expectations; what does a brand aim for, and how are Labl's fundis able to provide and reach a consensus?

Production
When the fundis know what is expected, production may start. When quality issues come up during production, the production chain will be informed in a timely manner. In short, how are intermediate results communicated

Evaluation
After each step of production, and finally the entire production chain, garments will be checked on quality. The garments will be evaluated by quality control inside the production facility, as well as by the client brands. How is feedback provided on the garment quality? and on the fundi performance?

3.2.3 Labl Baseline Situation

Because Labl has no private factory built yet, a situation was sketched on how Labl may establish a more social and sustainable fashion supply chain. Figure 3.5 shows the steps of an envisioned flow of how an order will be processed. Accompanied by the list of requirements (Appendix F) the boundaries for the ideation phase have been determined.

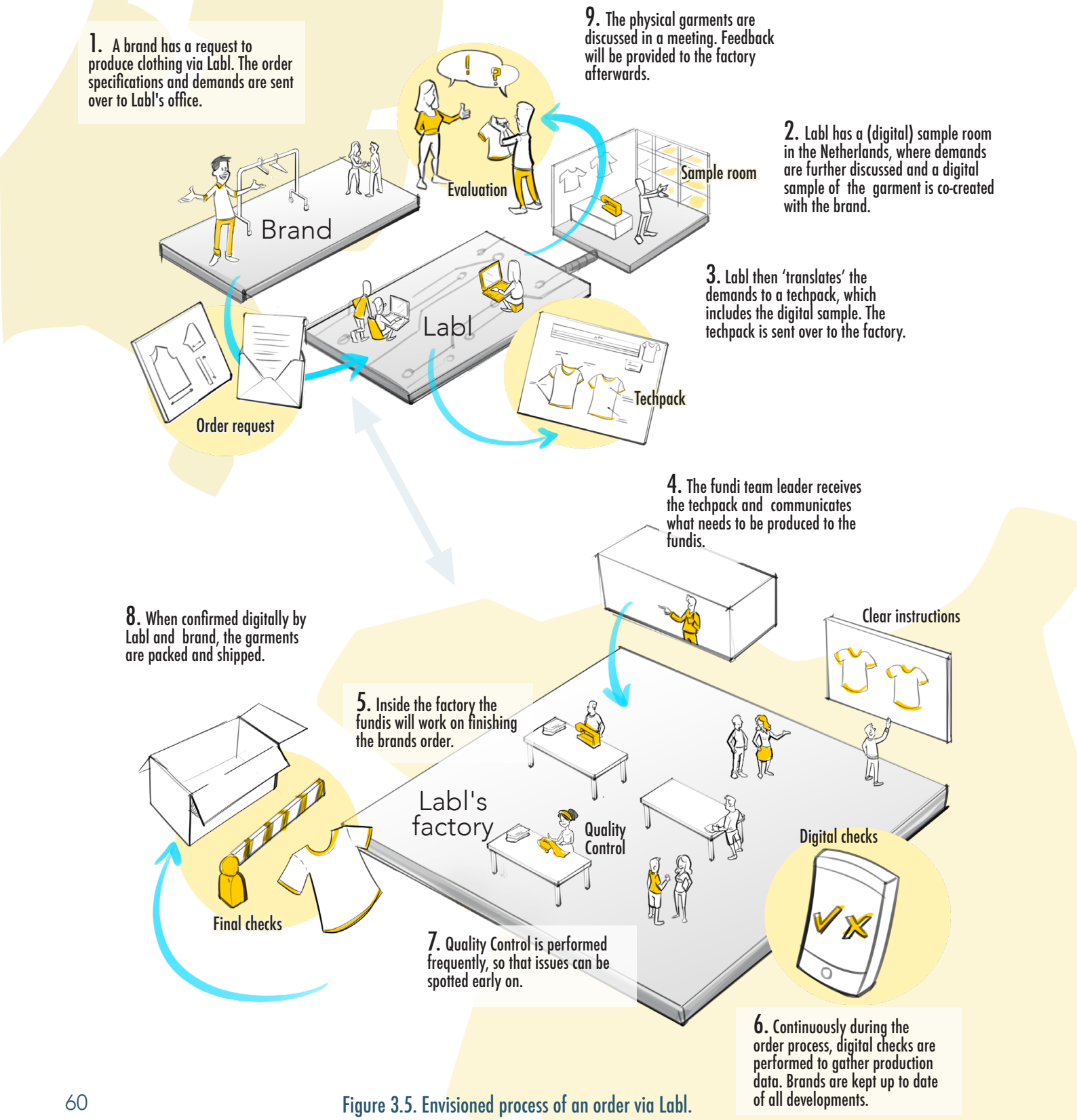


Figure 3.5. Envisioned process of an order via Labl.

Chapter 4

Conceptualization.

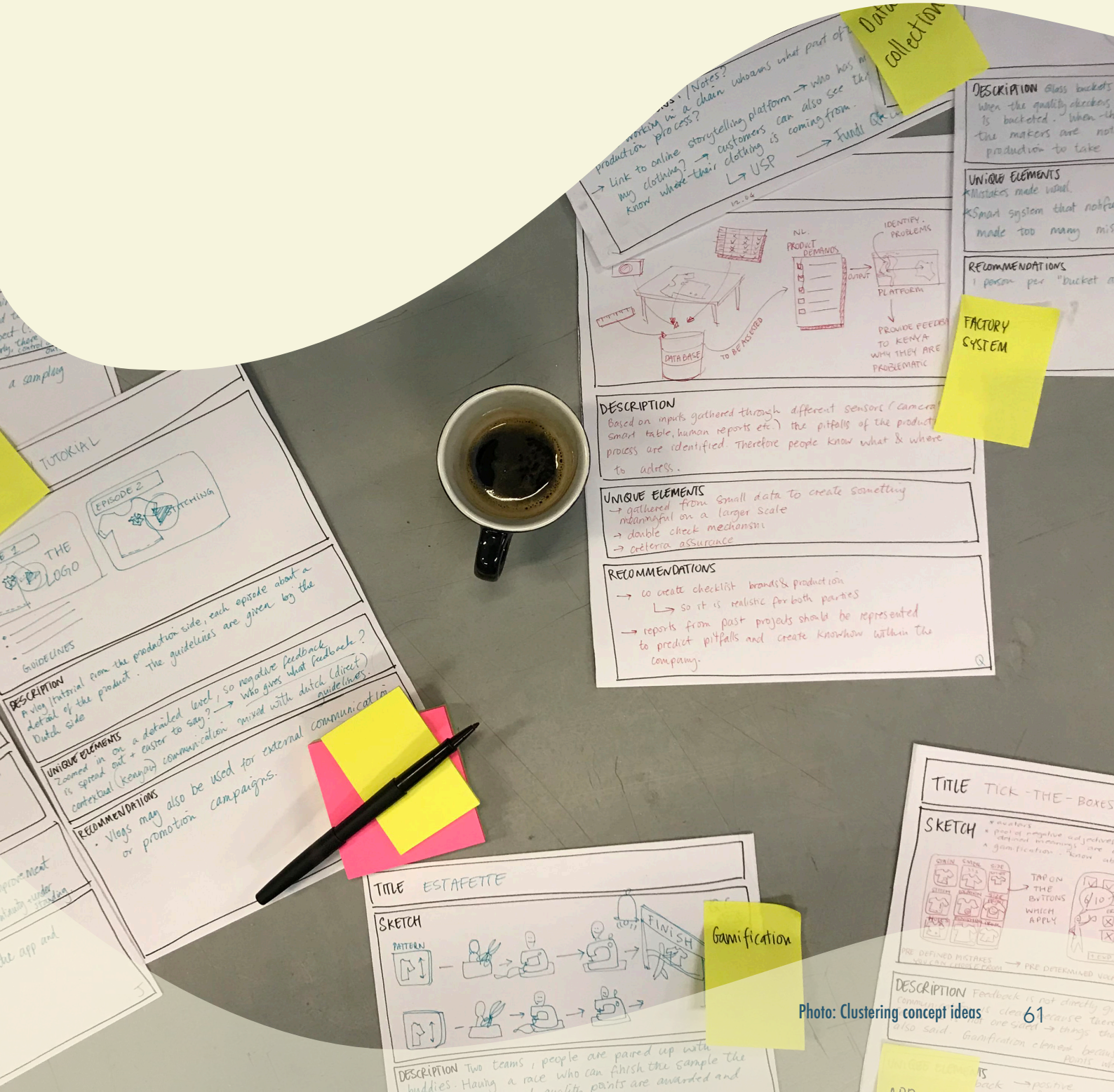


Photo: Clustering concept ideas

Ideation & Conceptualization

During the ideation phase (§4.1), two creative sessions were performed (§4.1.1 & §4.1.2).

The ideas that came up in the creative sessions were documented on quick concept templates...

... which were plotted in the order process (§4.2, Idea Selection) and further explained and reflected on.

The concept idea introduced via 3 levels: Process (§4.4), Product (§4.4) & Data (§4.5).

In the final paragraph (§4.6) the interfaces of the prototype are presented.

4.1 Ideation

The ideation phase of the project was divided into two sessions. First a general session was conducted within Labl. At the time this brainstorm was performed, the design goal was not narrowed down yet to its final form, and therefore the outcomes are more general. Because this session had a broad setup, it was hard to determine how the outcome could lead to useful concepts in the end. It was therefore decided to perform a second brainstorm session. This one was held with merely designers and was more focused: on improving communication between the production facility and brands.

4.1.1 First Creative Session: General

To start the ideation phase, a brainstorm session was conducted within Labl and counted 4 participants including myself.

Agenda

- Introduction of design goal
- Warm up session 'bigger picture' mindmap
- Discussion of premade 'how-to's'
- Formulation of final how to's
- 7 times 3 minutes of answering how to's by brainwriting and drawing

BREAK

- Combining how to's and quick conceptualization
- Discussion of concepts and providing feedback

Session rules

Before the start of the session, the rules of the brainstorm were explained:

1. Postpone judgement
2. Associate on ideas of others
3. Strive for quantity over quality
4. Drawings are encouraged

Introduction and immersion in the context

The following design goal was introduced in group (please note, this is an earlier version of the design goal):

"To help Kenyan fundis in understanding the brands' product demands during the production process and transfer this knowledge into producing qualitatively good fashion in a way that is self-learning."

Further introduction was not considered necessary as all participants were familiar with my project. As a warm up, a quick mindmap was made with the group. The starting point was the sample, and the stakeholders. The design challenge was also formulated on the paper sheet. This warmup session was done to get into the topic and create an overview of the situation. The mindmap was hung up next to the brainstorming table so it could be used as reference and inspiration.

How-to's

Then the session continued with defining 7 'How to'-questions:

- How to give feedback?
- How to explain product demands?
- How can fundis learn?
- How can quality checking become fun?
- How can progress be tracked?
- How to signal mistakes?
- How to stimulate self-development?

The questions were written on yellow post-its and spread over a large sheet of paper. 4 participants got 3 minutes to give as many answers on each how-to as possible. The questions were answered through brain writing and braindrawing. After 7 x 3 minutes everyone had answered every single How-to.

Then random combinations were made by color coding. Every participant had to choose 4 answers from 4 different how-to sections. Then, in a short amount of time concepts were drawn out on an A4 sheet.

The first creative session was held within Labl at the office.

The second session was held with design students as participants and had an external facilitator to guide the process.

The first brainstorm was useful and resulted in various small ideas. However, when looking back to the session, the variety of how-to's was very broad. At the end of the session I had hoped to have more in-depth ideas within the topic of communication about quality, and more results on a concept level.

4.1.2 Second Creative Session: Communication

The second creative session was executed by an external facilitator. This one was done with design students with varying nationalities. The theme of the brainstorming session was cross cultural communication. My contribution consisted of introducing the problem and time keeping, I did not participate in any creative activities.

Participants

6 design students; 5 female and 1 male.
Nationality: 2 Chinese, 2 Turkish, 1 Dutch, 1 Italian

Session rules

1. Every idea is a good idea.
2. Whoever is in the room is the right person.
3. Everything that happens is the right thing.
4. Ideas belong to everyone, let's inspire each other.
5. Visualize as much as possible.
6. Have fun!

The process in three phases

The creative session consisted of three phases: Problem Statement, Idea Generation and Concept Development. Each phase was shaped like a diamond (Figure 4.1), as it was built up from diverging and converging. The complete session program can be found in Appendix G.

Results: Quick concept ideas

Based on all inputs from both brainstorm sessions, 19 basic concepts were created in about 15 minutes per concept. These were developed on an equal level, via a concept template (Figure 4.2). This template included: a title, a sketch, a basic description, unique elements of the concept and recommendations.

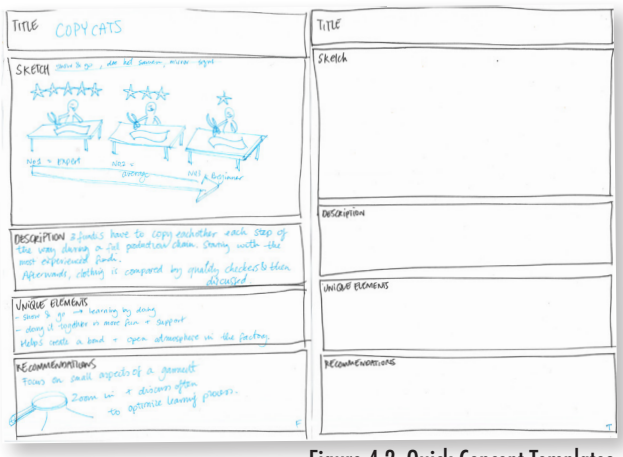


Figure 4.2. Quick Concept Templates.

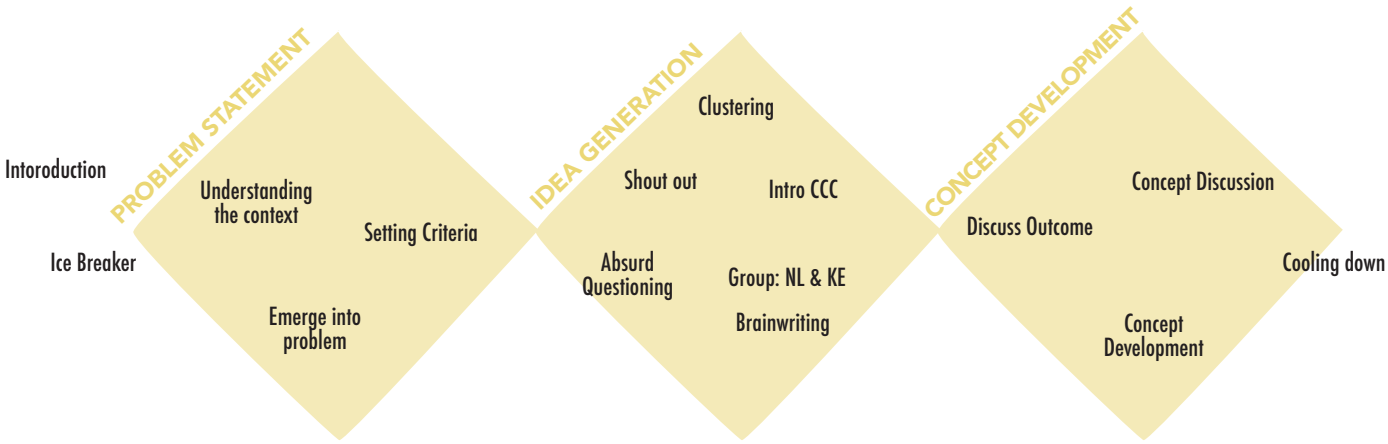
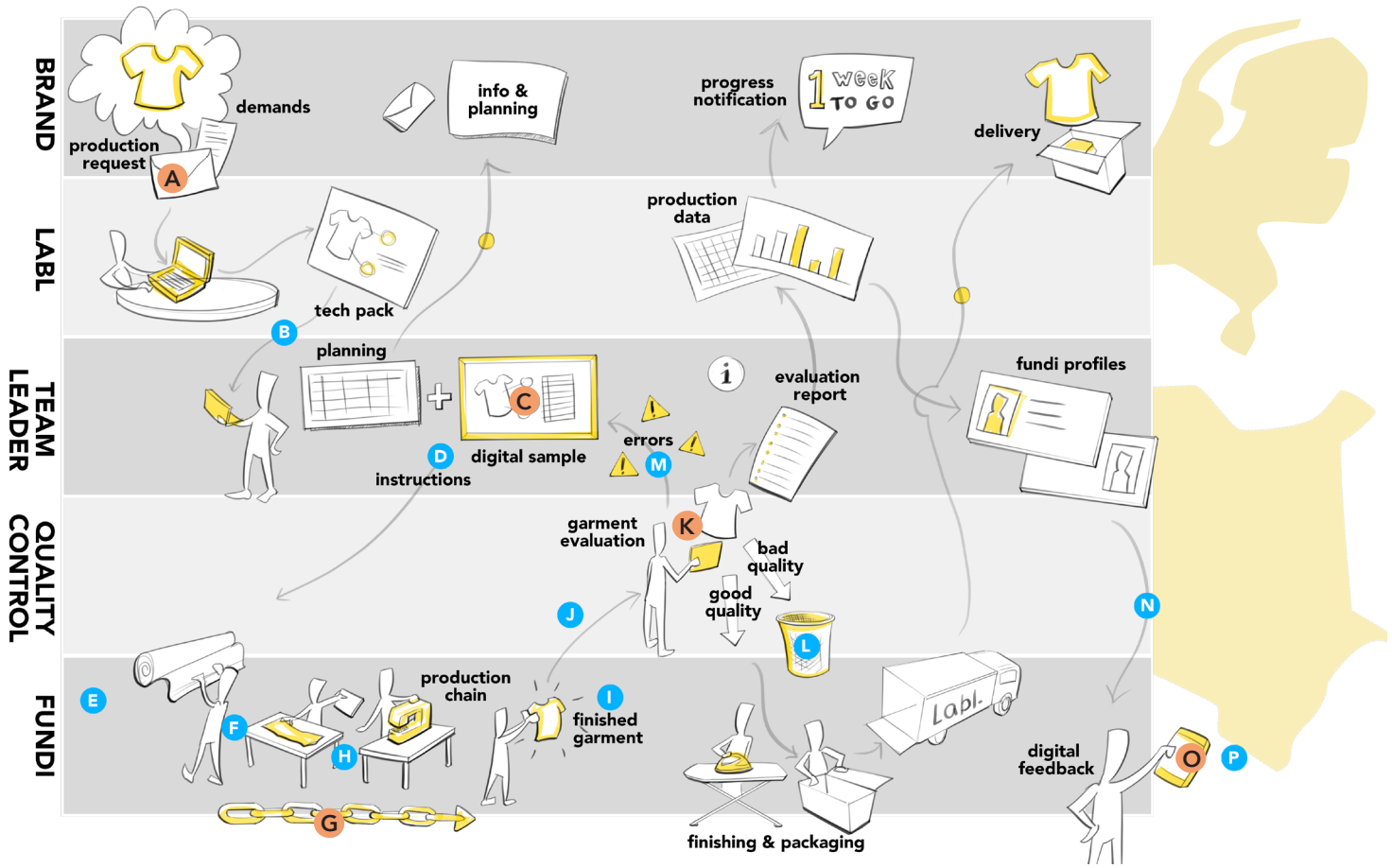


Figure 4.1: The creative session was divided into three diamond shaped phases.

4.2 Idea Selection

The brainstorm sessions together resulted in about 19 concept templates, which all had slightly different takes on solving the problem. Similar or double ideas were combined, which resulted in 16 original solutions. To get an overview of what concepts influences what part of an order, the following figure was mapped out (the letters were assigned in chronological order based on their intervention point in the order process, see figure 4.3).
All concepts were first evaluated according to the vALUE method: the advantages, limitations and unique elements were discussed within Labl. A selection of the most promising concepts (orange) was made, which will be discussed in this chapter. The remaining concept templates can be found in Appendix H.

The figure portrays the potential flow of an order that will be mediated via Labl. It is similar to the one in §3.2.3 but has implemented concept ideas and intermediate result. It is structured according the different user roles (vertical axis).



A Video Chat Check-ins
B Video Tutorial
C Digital Twin
D Internal Teaching
E Brand Quiz
F Estafette
G Fashion Roadmap
H Copycats
I Catwalk show
J Got Talent
K Ownership Labels
L Bucketing System
M Tick Boxes
N Scapegoat
O Feedback Loop
P Virtual Village

Figure 4.3: The order starts with the request from the brand, which is sent to Labl where it is translated into a techpack. The teamleader in Kenya incorporates the order into the factory planning and introduces the digital sample to his/her team. After the instructions, the fundi team starts working on the order in a production chain. When a garment is finished, it passes quality control where the quality is evaluated and tracked digitally. Labl and the brand in the Netherlands are updated on production progress over the digital platform. Fundis get feedback on their performance digitally as well, via their personal profile.

4.2.1 Quick Concept Discussion

The quick concept ideas are first introduced as they were first written down on the concept template (figure 4.2). Afterwards, it is discussed how and in what form they could contribute Labl's digital platform. In Appendix I the concepts are evaluated regarding this projects subgoals.

Concept A) Video Chat Check-ins

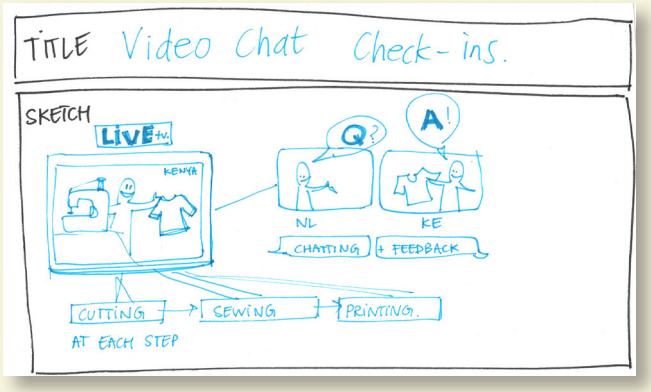
At each step of the process there is opportunity for a short video/facetime/skype update between the fundis and brand. Hereby, a platform is created for asking questions, discussions, providing feedback and sharing knowledge. Fundis could explain reasoning behind production choices or challenges in planning.

Unique Elements

- Personal relations can be built and strengthened.
- There is room for providing contextual information, instead of just only garment demands
- When there are frequent check-ins, the brands have more insight in/ control over the outcome.

Recommendations

- Can be done during the start of a collaboration / sampling process to involve everyone and get to know each other.
- Can also be done in the form of vlogs, instead of live.



I see this concept as an additional feature for communication. The advantage of videochatting is the personal element it brings, which is important in Kenyan culture. Video chatting seems appropriate for getting to know each other and sharing results, it seems less suitable for explaining demands such as measurements because it can easily be missed. It could be effective in the form of a vlog, especially when the brand or designer already has a example to show to the factory to explain.

As fundis value personal contact, this could be an interesting addition to the digital platform. It can be used to raise awareness and responsibility to deliver good quality because they are working to please clients more consciously. And lastly, could fundis be stimulated in order to gain positive feedback from brands.
Furthermore, could videochatting help provide contextual information that is hard to communicate through set frameworks. For example if production is lagging due to illness of a fundi, or how a garment's look must fit the brand's portfolio. With as a result increased transparency, mutual understanding and relationship building.

Videochatting will only work if there is an open atmosphere in which fundis and brands feel free to ask questions bring up issues. It must not be forgotten that fundis are sensitive to hierarchy, therefore who is chatting with whom could have great effect on the interaction and thereby truthfulness and effectiveness of the chat.
The frequency of the video chatting will need some extra thought. How often will be sufficient and remain efficient? And when will it be overkill or too time consuming?

Concept C) Digital Twin (on Info Touchscreen)

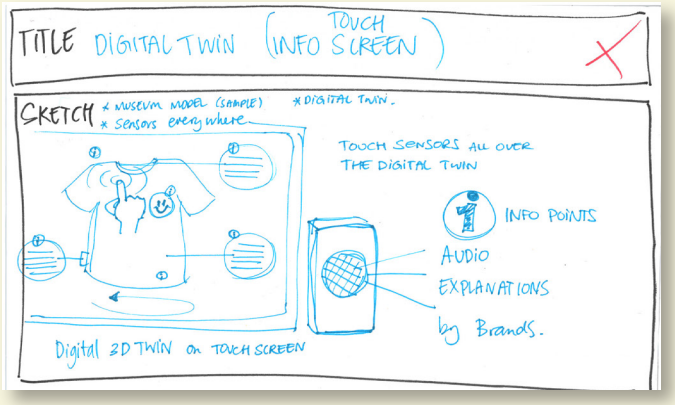
Like an interactive techpack, there is a (3D)model of the garment on a (touch) screen in the factory. This digital twin contains all the information there is to know about a garment. By touching the screen, information on a detail pops up. Explanations can be given in writing and audio.

Unique Elements

- Combines audio, visuals and text, so multiple senses are triggered which will help in understanding and remembering the details.
- The screen is visible from everywhere in the factory which stimulates awareness and learning.

Recommendations

- Team leaders can use it as a teaching board when introducing a new order to the team.
- Fundis can first interact with the digital twin and in this way learn about product demands before making it.
- Additionally, the digital twin could also be made accessible from tablet or smartphones.



It seems like a clear way of sharing garment information, because it uses a combination of text, sketches and photos. This combination leaves less room for interpretation on the production side.
Because the digital twin is interactive, it can reveal just the amount of information that is needed at a certain time, instead of everything at once. This will prevent fundis from being flooded with information. A downside to layered information is that some might be overlooked.

If the digital twin is made accessible from smartphones and tablets as well, the fundis will always have access to information if they need it. They will not be dependant on asking superiors.
The digital twin could give explanations by brands on certain garment decisions or feedback. When fundis know the reasoning behind these choices, they could be more motivated to follow instructions, as it is adapted to their cultural preference of contextual communication.

Per sampling round, the digital twin can be updated by Labl or the brand until the design is agreed upon and ready for production. It is advised to keep Labl responsible for changes to the digital twin, to keep the production facility from having to deal with changing designs mid-production.
Feedback from the brand on the sample can be shown on the digital twin as well, in the form of a review page.
Auditive brand feedback would be more personal than written feedback, but will probably not work on the factory floor as sewing machines are noisy and will probably rise above the sound.
As the board is displayed in a central point in the production facility, this can be used as a motivational factor for fundis. For example, it can show fundi profile pictures (or production chain teams) next to the garment image, so everyone can see who is producing the garment.

Concept K) Ownership Labels

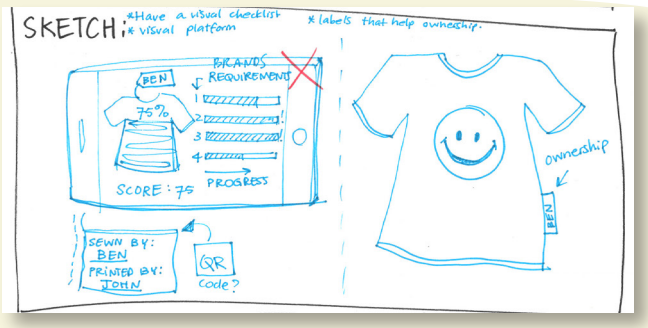
Each fundi (team) has a personal tag label, which is sewn into the garment. At the end of each day the quality checkers have evaluated the garments. This data is recorded on the digital platform by scanning the label on the clothing. The quality of the product is directly linked to their online profile. On this profile the personal progress is tracked and compared to the brands requirements.

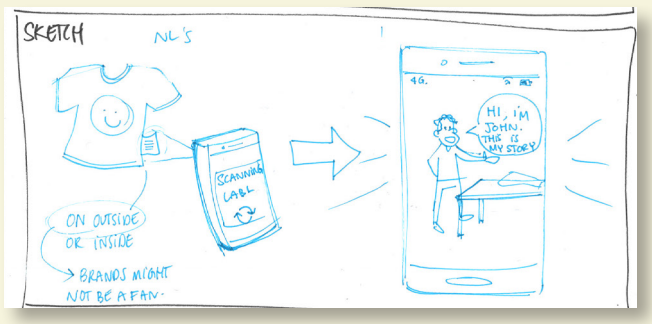
Unique Elements

-Use of QR codes to digitalise production data.
-Can hold various types of data; i.e. production rates and planning, but also personal information about fundis or the community.
- It helps with owning up to mistakes, as every error is directly linked to the maker. (And good qualities are tracked as well, naturally).

Recommendations

- Could link to an online storytelling platform, where brands and consumers can see who has made their clothing and where it came from.





This concept idea is focused on recording production data, and less focused on improving communication. It helps collecting the content of what will be communicated between brand and factory. Making fundis' daily tasks and performance a public thing, could raise the feeling of responsibility of garment quality and perhaps even have influence on work ethics. For example by showing how an order is progressing. Are the fundis on schedule for todays tasks?
Fundis can gain insight in their production rates, time, accuracy, etc. When fundis have insight in their own and others' performance, it could also result in offering help when daily targets appear not to be met. After all, within Labl everyone is working together towards a communal goal. Creating insight in order progress could also help fundis in becoming more future oriented.

Because of the labels, the traceability of the origin of the garments is made possible. Traceability in fashion is a trending thing. There are already similar initiatives such as Circularfashion, which mostly consider the traceability of fabrics and raw materials. The traceability of workmanship is not something that I have seen yet. When garments can be traced back to the fundi that has made them, it will probably increase their sense of responsibility to deliver good quality and trigger their sense of pride and achievement. The other way around, could delivering bad quality garments could lead to loss of face.

Another advantage of this concept is its versatility, because the content that will be uncovered after scanning the labels can be altered.

Concept G) Fashion Roadmap

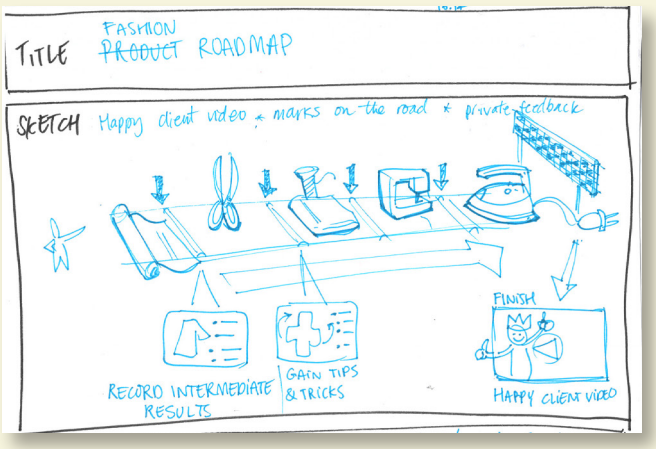
All necessary steps of garment production are mapped out on a roadmap. Access to this information will be over the digital platform, which fundis have access to over their smartphone, or tablets/smartboards provided by Labl inside the production facility. The fundis gain tips and tricks at the beginning of each phase and they have to record intermediate results. At the finishline of the road they receive a happy client video, when they have followed the instructions precisely.

Unique Elements

- Teaching combined with brand feedback.
- More control over how steps are performed because of explanations that are provided at the beginning of every step.
- The recording of intermediate results (i.e. by fundis or quality control) could lead to interesting insights for Labl and brands.

Recommendations

- Production rates and timing could also be tracked.



Providing tips and tricks at the beginning of each phase in the production chain could help remind fundis of the brands' demands. A tutorial format seems like an effective way to communicate order demands. Because information is shared step by step it is easy to follow for fundis.

Having to follow instructions precisely in order to gain a reward might work well for fundis who tend to make their own interpretation of instructions.
The roadmap also gives insight in the deadlines and progress of an order, which can be communicated back to the brands. This will help in expectation management and the brands will appreciate the transparency in the supply chain. Intermediate results could be tracked through photos, numbers or time stamps for example. Because brands will be kept up to date during production, they can intervene in time when something appears to be going wrong. The exact details of to what extent information will be provided to which stakeholders should be further analyzed.
Creating insight in the production process could serve as a motivator for fundis. The journey could be a made visual or gamified, by adding fundi avatars. The happy client video might contribute to the feeling of responsibility, because it refers to the effect the fundi's work has on the client. The video will also give the client a face, and the connection more personal. It might be an idea to not only implement te video at the end of the production chain, but also add an introductory video at the start.

Concept 0) Feedback Loop App

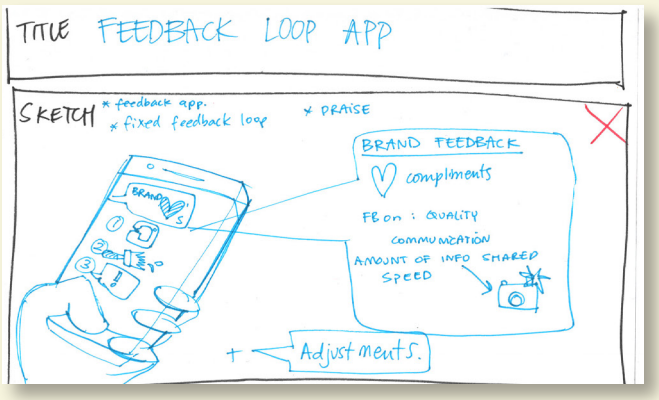
According to a feedback loop with fixed topics, feedback is provided by Labl. A person from Labl has been in close contact with the brand during an intake meeting. This person is the brands' representative. Because the feedback is given according to a fixed structure, it will be easier to accept and understand for the fundi.

Unique Elements

- Compliments/praises, likes are given to keep the interaction positive.
- 'Adjustments'-section is there to communicate where improvement is needed.
- Communication is quick and can be tracked back in time.

Recommendations

- Adding achievement awards.



Feedback giving over an app might be accepted well according to the fundis cultural preferences, as it is indirect and private. On the other hand is it a very impersonal and absolute way of providing feedback which might not be cared for. The tone of the feedback will be crucial. For example, adjustments already sounds more positive than mistakes or errors. The feedbackloop app could contribute to creating a healthy fun/duty balance within Labl.

The format of a fixed feedback loop could work well, as it is something the fundis will get used to. And example could be dividing the feedback into topics, such as stitching, sizing and speed. This way fundis will know exactly what they are good at, and what skills they will need to improve.

Initially in this concept idea, the feedback that is provided is mediated by Labl, which I would not recommend. Even though Dutch Labl employees will have more experience in communicating demands, it is an extra link in the process which makes it time consuming, costly and impersonal.

An added gamification feature could be rewarding the fundis with achievement awards to serve as motivation. This can be for personal development or achievements for the community. An example of an achievemnent can be 'sewn 50 t-shirts', or 'having a fruitful chat with a brand'.

Narrowing down

When looking at the results of the ideation phase, it became clear that the final concept design would be a combination of partial solutions. Since the design challenge is multi-faceted, one idea would simply not be satisfactory in tackling all the problems. As a next step, it was a matter of puzzling all the pieces together. The concept ideas were narrowed down to two products: the ownership label and the digital platform.

Clear instructions and feedback.

Digital Twin on a smartboard in the factory for explaining demands

Techpack contains complete and structured garment info

Sample review is clearly explained with images and text (following a fixed **Feedback Loop**)

Creating more transparency.

Fashion roadmap creates insight in production status

Ownership Labels help record data on fundis and garments

Building trustworthy relationships.

(Video) chat check-ins are held between brand and factory to get to know each other on a personal level.

4.2.2 Conclusion: Three concept levels

The base of the concept idea can be explained over three levels: Process, Product and Data (figure 4.4).

Process

What happens inside of the production facility in real-time is found on this level. The process is successful when theres mutual understanding throughoutthe three phases of communication about quality: Starting with communication of order instructions and demands. Then, production takes place. Simultaneously, quality checks are performed when a garment is finished. Finally, feedback on the quality is given to the fundis. The process is guided by interaction with the design intervention on the 'product' level. How this process will take place will be illustrated through a storyboard in §4.3.

Product

On product level it was decided to continue with two main design interventions: the digital platform and the ownership labels. The other solutions discussed in the previous paragraph are part of these two interventions.
The ownership labels will be attached to each garment produced and form the connection between the physical garments and the digital platform. Because of the labels, data can be collected and be digitalized more easily.
The digital platform is accessible through smartphones and tablets and contains more personal information than the smartboard, which is for general use. Within the interface, there are different user levels, which means people in different roles have access to different data. For example, the manager of the production facility will get to see info about employee performance, but fundis will only see their personal profile and their daily tasks.

Data

The data is the information that is accessible via scanning the Ownership labels and interaction with the digital platform. By collecting data on many different topics, Labl can get insight in how to improve processes that occur on the production floor. It concerns information about single garments, clothing lines, production statistics, order planning, production chain teams and fundi performance.
Finally, data such as news and social activity between brands and factory will be available stored on the digital platform.

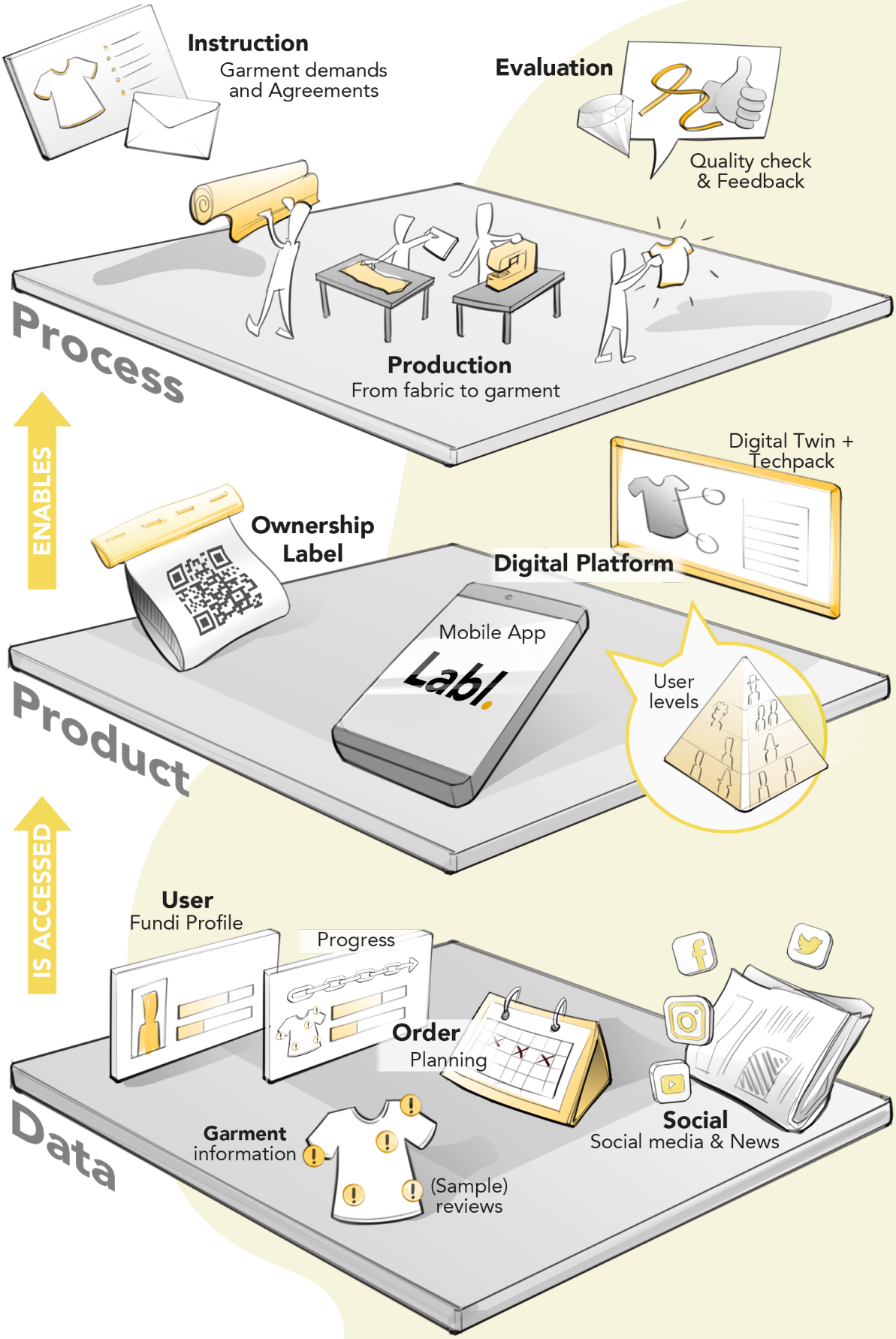
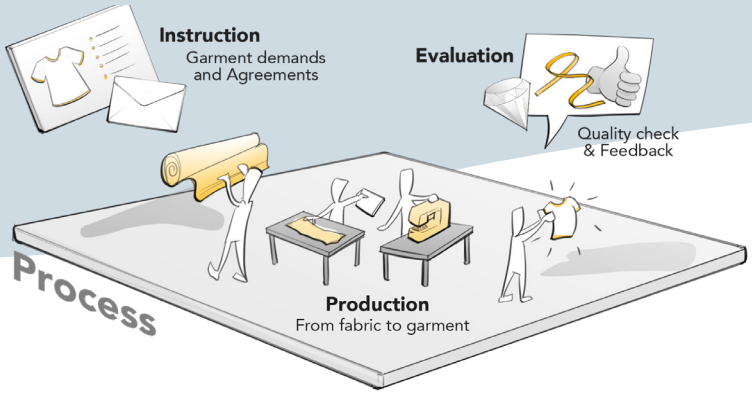


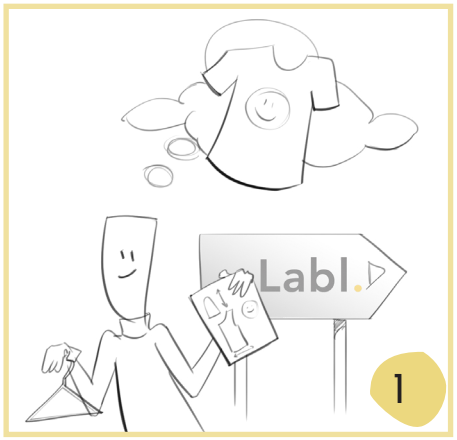
Figure 4.4: The product levels: Data will be presented through an interface, which will have influence on the processes that occur inside the production facility.

4.3 Process

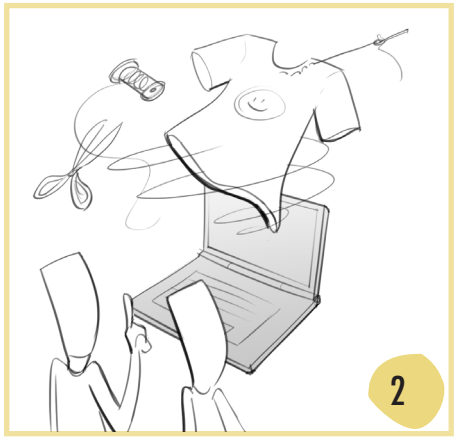


4.3.1 Process storyboard of an order

The following storyboard will give a possible scenario of communication via Labl's digital platform.

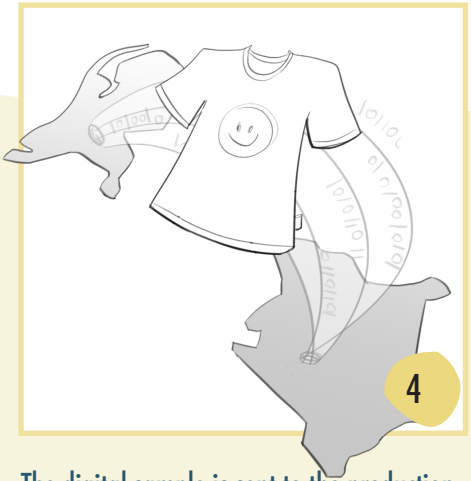


A designer from brand X visits Labl for production of a new tshirt design.

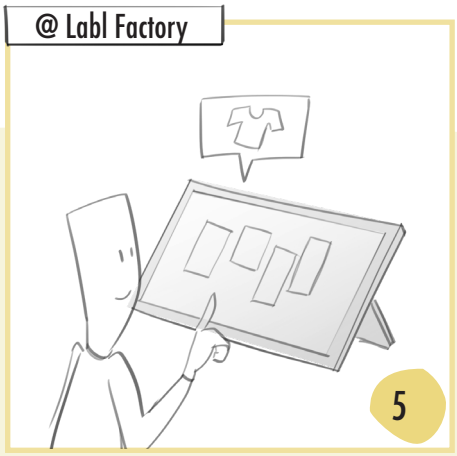


Together, Labl and the brand make a digital version of the sample (digital twin) ...

... which contains all technical information and instructions necessary to produce the garment (Techpack).



The digital sample is sent to the production facility in Kenya over the digital platform.

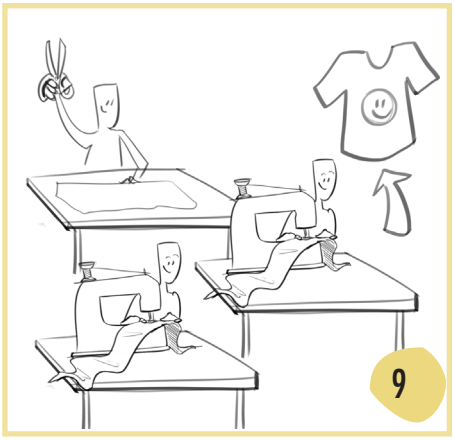


Where the order is scheduled for production by the team leader.

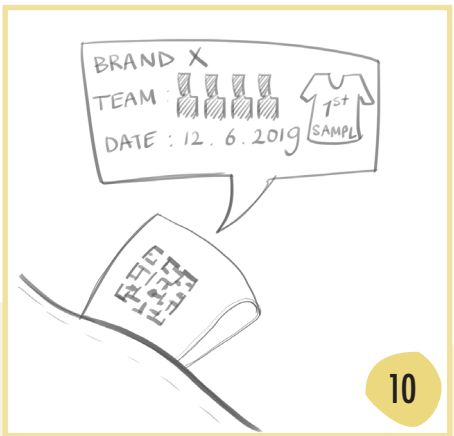
When fundi John arrives at work, he checks the Labl app to see the program of today. He sees which colleagues he will be working with and on which brand order.

The team leader gives further explanation about the order, while showing the digital sample made in the Netherlands. Via the smartboard the techpack is shown, as well as the brand's introduction video.

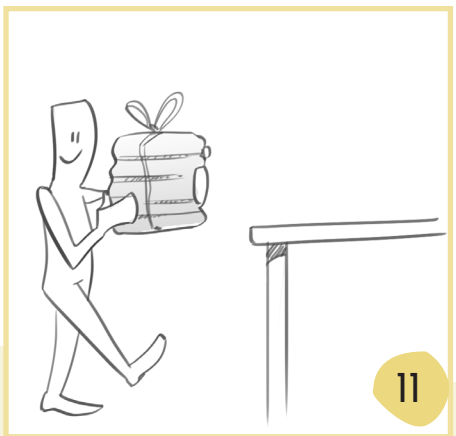
John starts working on his part of the garment. He has the techpack by his side for reference.



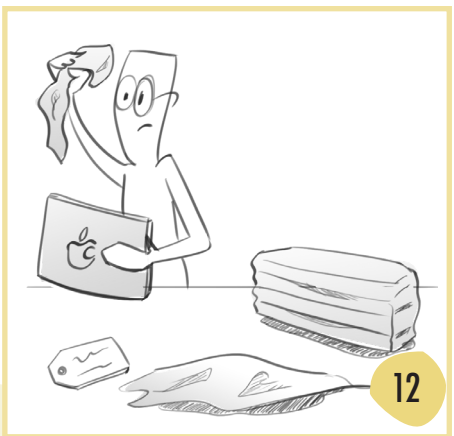
Together with his teammates he finishes the garments, including the sample for brand X.



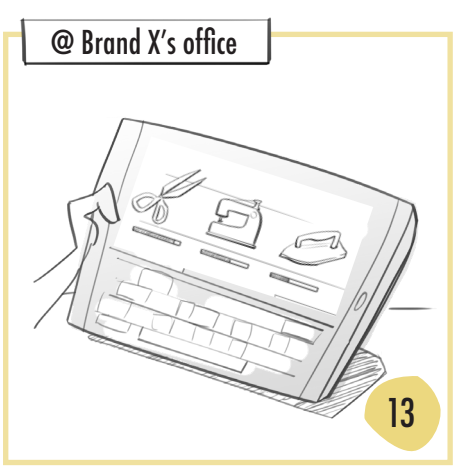
All garments are labelled with a QR-code that holds information on the brand, fundis, clothing line, etc.



After the first sample(s) is/are finished, it is brought to quality control.



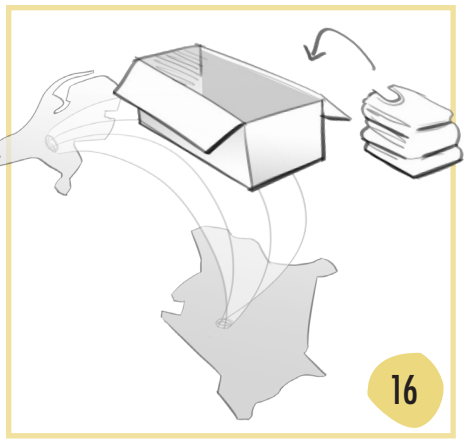
Where the quality checker evaluates and makes records digitally of the garment. This data is recorded by scanning the QR code on the label.



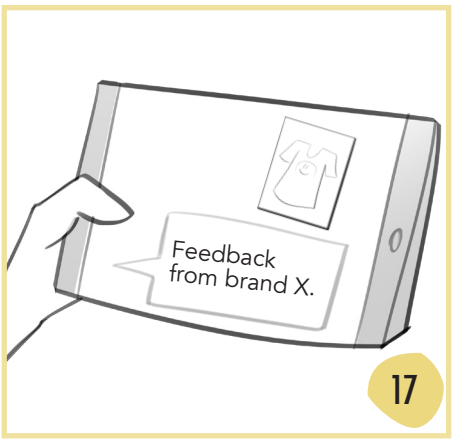
The brand knows exactly how the order is progressing, because it is tracked over the Labl app roadmap.

When there happen to be additional questions, the brand may ask the team leader. In this case, a photo of the sample is requested.

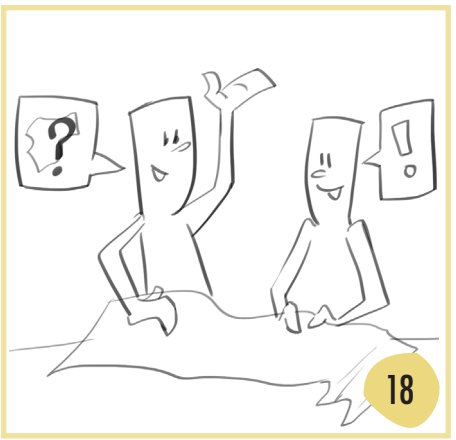
Which the team leader can upload right away.



When the sample is finished and evaluated positively by the factory's quality control department it is sent to the brand.

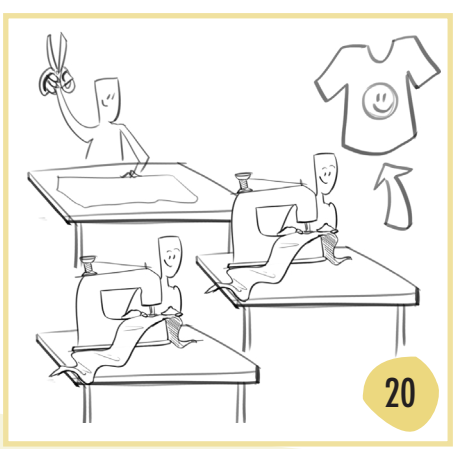


The brand can provide feedback over the Labl digital platform.



Which is then discussed within the production team.

The brand and team leader will discuss an alternative solution.



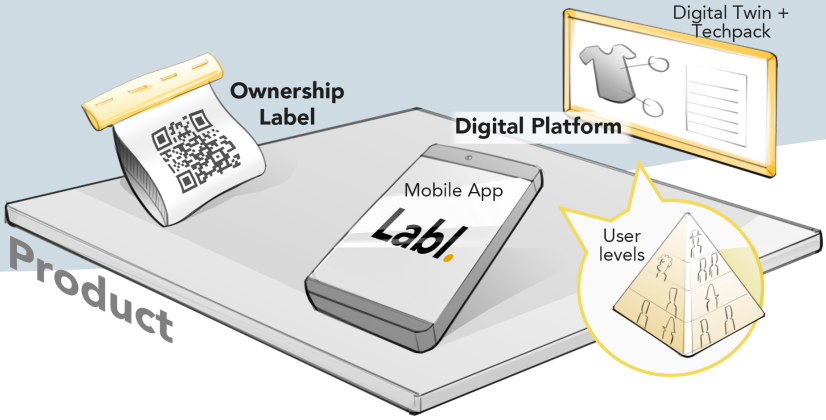
And the fundi team will redo the sample until it is done right.

Discussion

The storyboard gives examples of how certain features of the digital platform could be used in practice. Some features were left out of the storyboard but will be further explained in paragraph 4.4.

In the final design concept, it needs to be clarified how various stakeholders will make use of the data that the platform provides. Furthermore, is it necessary to define some guidelines on how to interact with the digital platform design to ensure the best experience and prevent unintended use.

4.4 Product



On a product level, does the design intervention consist of two elements: 'the ownership label', 'the digital platform'. Where I distinguish two ways of entering the digital platform; via the Labl app for personal use and the factory smartboard for communal use. The ownership labels are sewn into the garments and form the connection to the digital platform. Because this project is focused on communication, I only briefly explain the ownership label concept. This project will then continue on focused on the digital platform.

4.4.1 Ownership labels

Each garment label is unique. And because each garment has a unique QR-code, every piece can become traceable. Inside the factory, the ownership labels are scanned by quality control to record garment data. After production, the codes can be scanned by brands and consumers to find out more about the garment they have sold or bought.

Effect: Transparency & Traceability

The effect of the labels is multifaceted. Because of the ownership labels, production can be made more transparent. Consumers and brands know where the garments come from and to what extent they are made in a social and sustainable way.
On the other hand, can fundi performance be tracked. Garment quality can be traced back to the maker, which will give Labl office insight in how production can be improved.

Why QR?

Basically, QR codes are like barcodes, only they can store more complex information because they are encoded in two different directions. The benefit of using QR is that they can be scanned by both companies as consumers. "In supply chain management, QR codes are important tools for inventory management and manufacturing. Organizations use QR codes to track more than names and prices of products; they include information including serial numbers, part numbers, lots and dates, and other data. (...) QR codes keep costs low because companies do not need to purchase scanners for recording inventory transactions efficiently. Warehouse and storage facility employees prefer to use smartphones for scanning QR codes because they are more convenient and easy to use. Smartphones also do not need to be physically connected to a computer or be in close proximity to one for inventory management operations in a warehouse." (N. Pontius, 2020)
Figure 4.6 explains of what elements QR codes consist, and how one QR code may be distinguished from another.

Size, Materials and placement

Ideally, will the labels be produced in the Labl production facility. The QR code on the label must be at least 2 x 2 cm to be read by scanners.
The labels will be made of woven polyester, which is a fabric most commonly used for labels. Even though Labl prefers using organic materials, it is the most suitable fabric because it holds its colour during fabric dyeing and washing. Because QR codes need high contrast in order to be scanned, using organic material such as cotton would be risky: the label may not be recognized by the scanner when colors fade.

The labels should be sewn flat into the garments, to avoid skin irritation as much as possible. Placement of the labels should be next to sizing labels, such as the back of the neck for tshirts and jackets, and lower back for pants.

More information on the collected data can be found in paragraph 4.5.

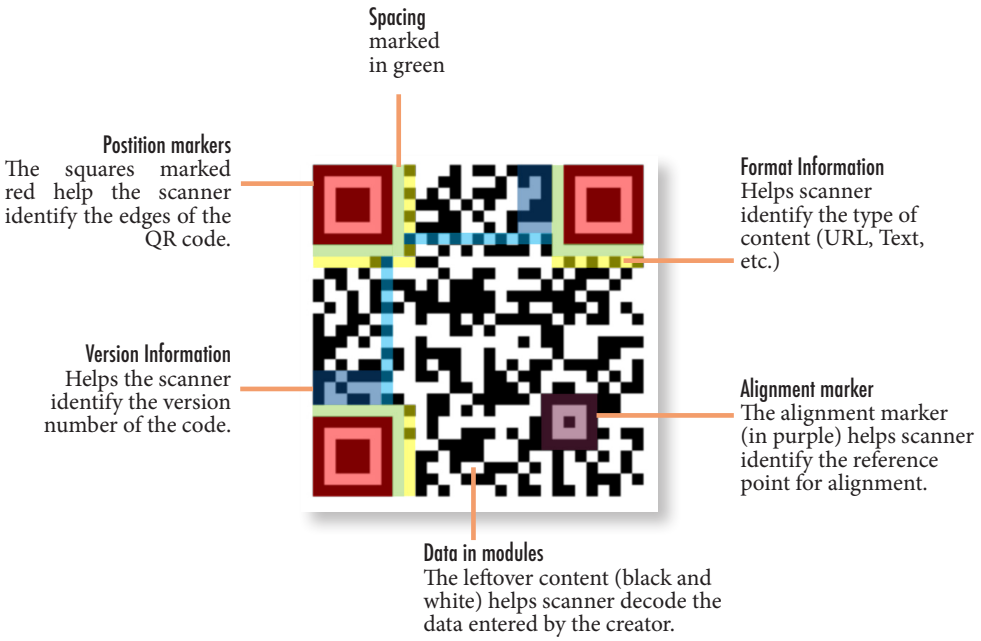


Figure 4.5: A QR code is built upon 6 elements.

Figure 4.6: This ID tag was sewn into a jacket by the brand Silfir..

Source of inspiration: circularity.ID

Transparency and traceability are becoming increasingly important to fashion brands and consumers. There are already initiatives such as circular. fashion which contribute to making the fashion industry more like a closed loop. Which means the garments, fabrics and fibers remain in use and never become waste. circular.-fashion marks these fully recyclable fashion items with a circularity.ID tag (figure 4.7). These tags can be scanned by consumers to find more information on the origin and sustainability of their garments.

Source: Fashion for Good Museum, Amsterdam

4.4.2 Digital Platform

The second part of the design intervention is the digital platform, which can be accessed via smartphone (± 4" - 6" screen), tablet (±10" - 13") and factory smartboard (65" - 86").

UX and UI Vision

The UX and UI vision (figure 4.7) were determined to ensure continuity in the interface design. The choices that have led to this style are explained in this paragraph.

Core Functions

- Communicate garment demands & providing feedback
- Increase transparency and traceability of production
- Raise feeling of togetherness among Labl employees & brands
- Stimulate Self Development of fundis

Core Experience

"Clear communication between brands and production facility."

Character of Interaction and Visual Style

The interface was attempted to be more personal by adressing the user directly with friendly, informal phrases as: 'Good morning [user name]' and 'Let's get to work'. All users get a personal profile picture, through which they can express their personal style and connect to other Labl stakeholders.

Through ambigious and colourful shapes the interface was made playful and fun. The asymmetrical outline of most of the interface screens also contributed to a dynamic and less strict vibe.
The use of lots of visual information was chosen, not only because it fits my personal design philosophy, but also to improve the ease of use. Another reason is that we are dealing with two different cultures, and perhaps sometimes a language barrier. Visuals get a message accross quicker and often more clear as well. Therefore I set up a rule of thumb for the design: 'If it can be made visual, it should'.

Because one of this project's objective is to raise the feeling of unity within Labl, the Labl brand (style) should be apparent. Therefore, design inspiration was taken from Labl's website, to ensure continuity of style on all media. Including: the color palette, fonts, rounded buttons, shading, use of images and icons.

Current UI trends (Fabian, 2019) were looked into to give the interface a modern look and feel. These trends included: bold and varying typography, layering of design elements, skeuomorphic design (use of subtle gradients and shading to look more realistic) and implementation of unique illustrations and animation.

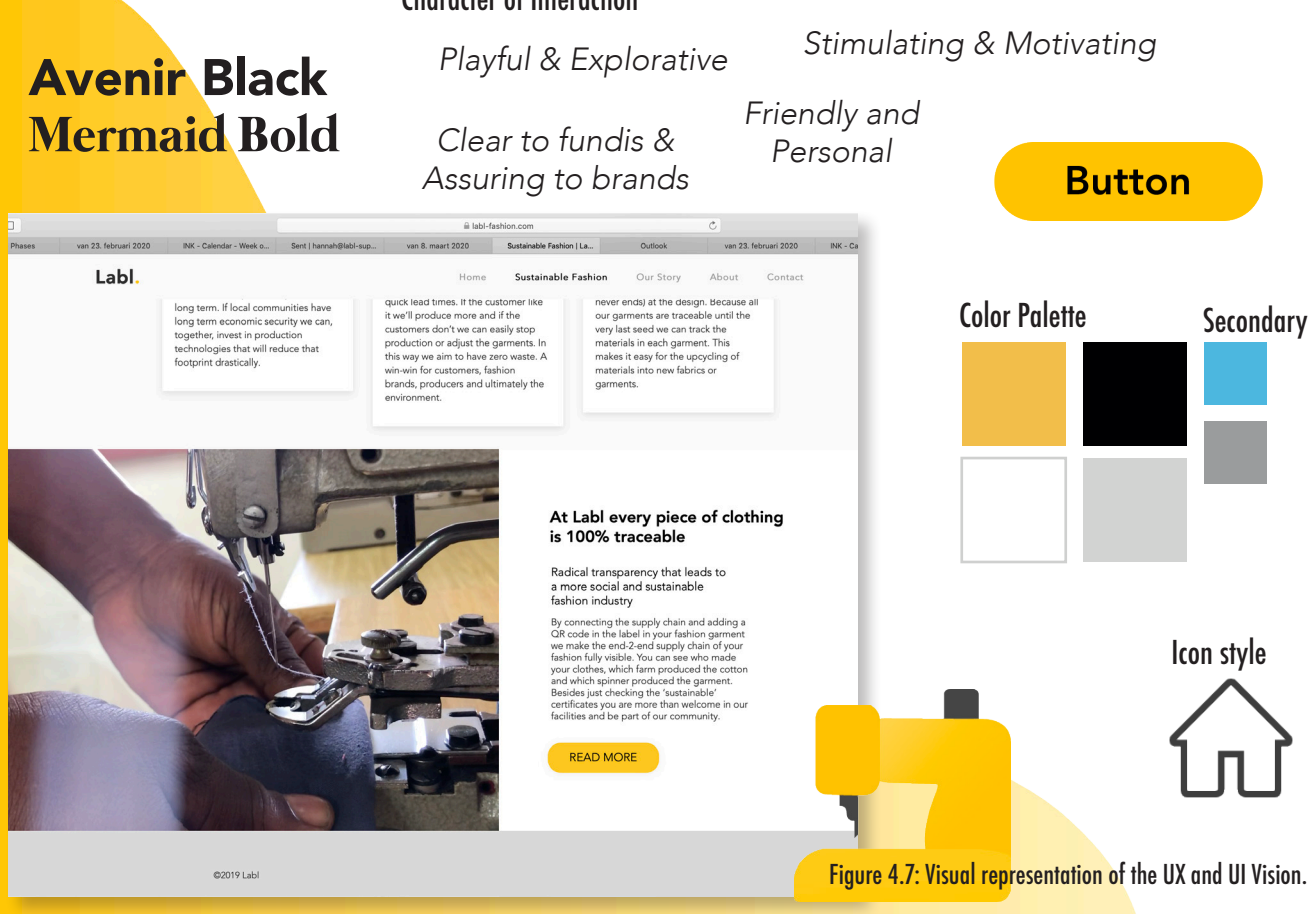
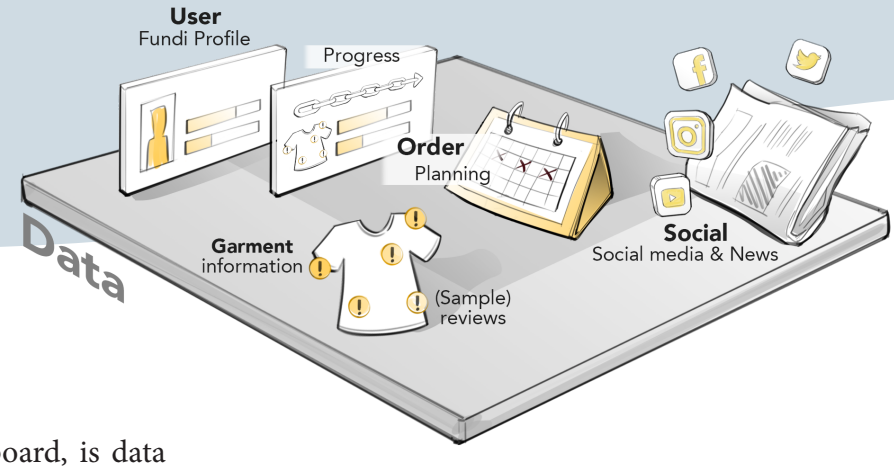


Figure 4.7: Visual representation of the UX and UI Vision.

4.5 Data



As was described in the process storyboard, is data collected and stored on the digital platform.This paragraph gives a brief overview of what kind of data is stored. The user tests have to indicate whether the data is complete, useful and logically structured. The information architecture will be presented in the final design concept in § 5.3.

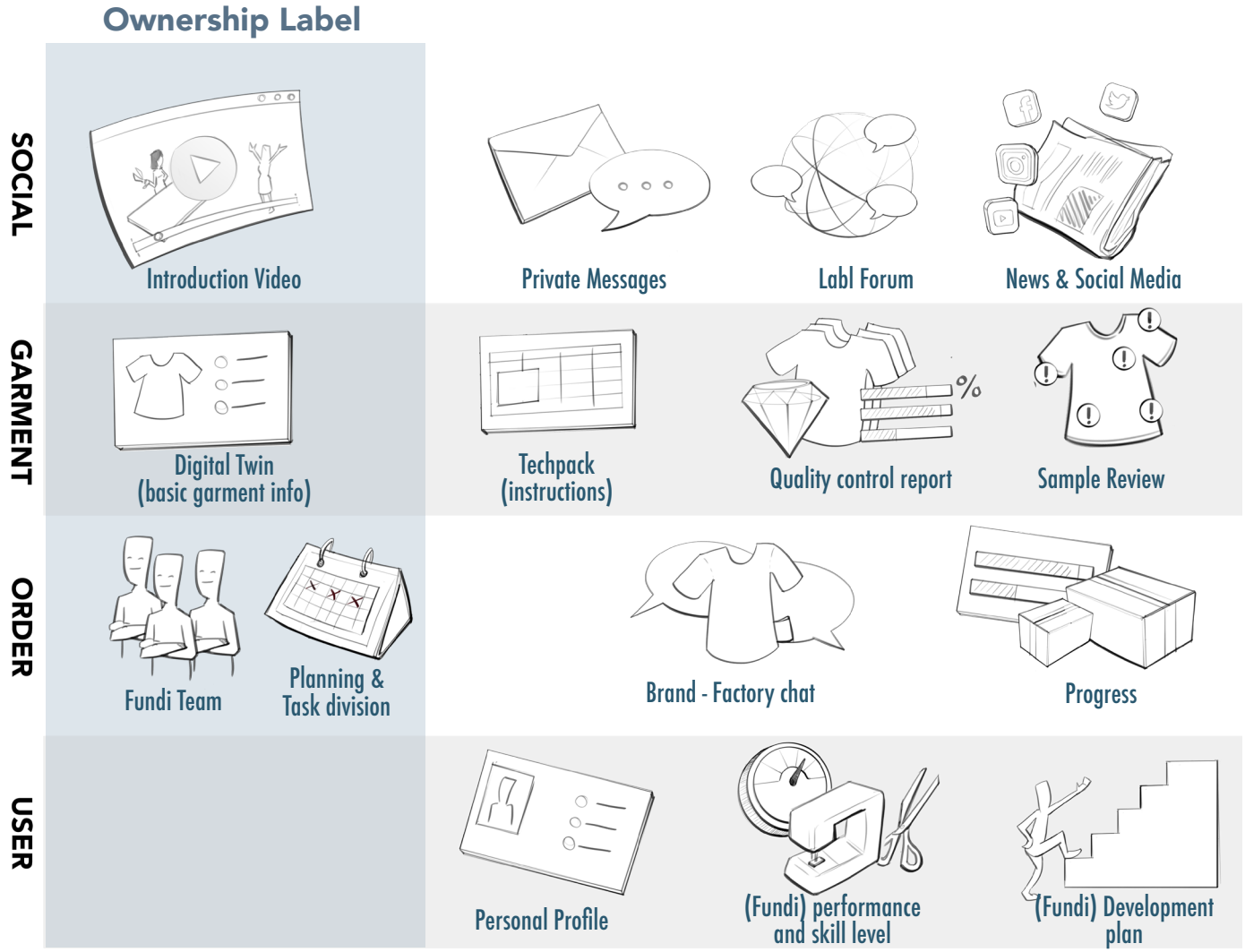


Figure 4.8. Data content of Labl's digital platform.

What data is collected?

The collected data can be classified in four categories: Social, Garment, Order and User data. All of which stored on the digital platform. Some data can also be accessed via scanning the ownership label on the garment (indicated by the blue square in figure 4.9).

Garment data

The digital twin is a digital 3D model of the sample. This contains basic information on the garment, its sustainability and social info about fundis.
The difference with the techpack (order) is that the the techpack contains more detailed and technical information on how to produce the garment (such as yarn serial numbers, patterns, measurements etc). The consumer will only have access to digital twin data via

the ownership label.
After production, quality control will assess the garment and make a record of it through the quality control report. Brands can evaluate the garment samples via the sample review function.

Order data

This mostly concerns information about order logistics. Such as; planning and task division of an order among fundi teams and current order status.
If there are any additional questions about order logistics or just in general, there is a chatting option where brands can contact the factory. The ownership label will hold information on where and when a garment was made and by whom.

User data

User data is private information. The personal profile varies per user and all Labl's stakeholders have one.
Fundis may track their personal development plan and past performance and skills.

Social data

Brands and fundis will make videos to personally introduce themselves to people at the other end of the supply chain. Brands can access these via the platform, and consumers can see who has made their garment by scanning the ownership label.
Social contact is also possible via the digital platform, in the form of a forum (public) and messenger (private). Data on the Labl community is shown via news updates, and social media posts such as articles, blogs and vlogs.

4.6 Prototype Design

In this paragraph the first prototype version of the interface design is presented. It was designed while keeping the cultural take-aways in mind (pg. 48-49). This prototype is made for iPad (10.5 inch, resolution 768 x 1024) and is designed for the perspective of the fundi. Some team leader features were added (such as the ability to actively chat with brands), to provide the opportunity to gain feedback on this feature as well.
The sitemap of this prototype can be found in Appendix K. This version of the prototype is in English, which is one of the two official working languages in Kenya. Ideally, will a final version of the digital platform also be made available in Swahili.

4.6.1 Homepage

The homepage opens up after logging in to the platform. The user sees his/her profile picture, a welcoming message and Labl's latest news updates.
Furthermore, does the bottom menu provide the user three options: 'Home, 'Production' 'Labl News & Community' page and a personal profile. The grey rectangle on the bottom left was added to the prototype to switch between two homepage design versions; the basic design (Figure 4.9) and the dashboard design (FIgure 4.10).

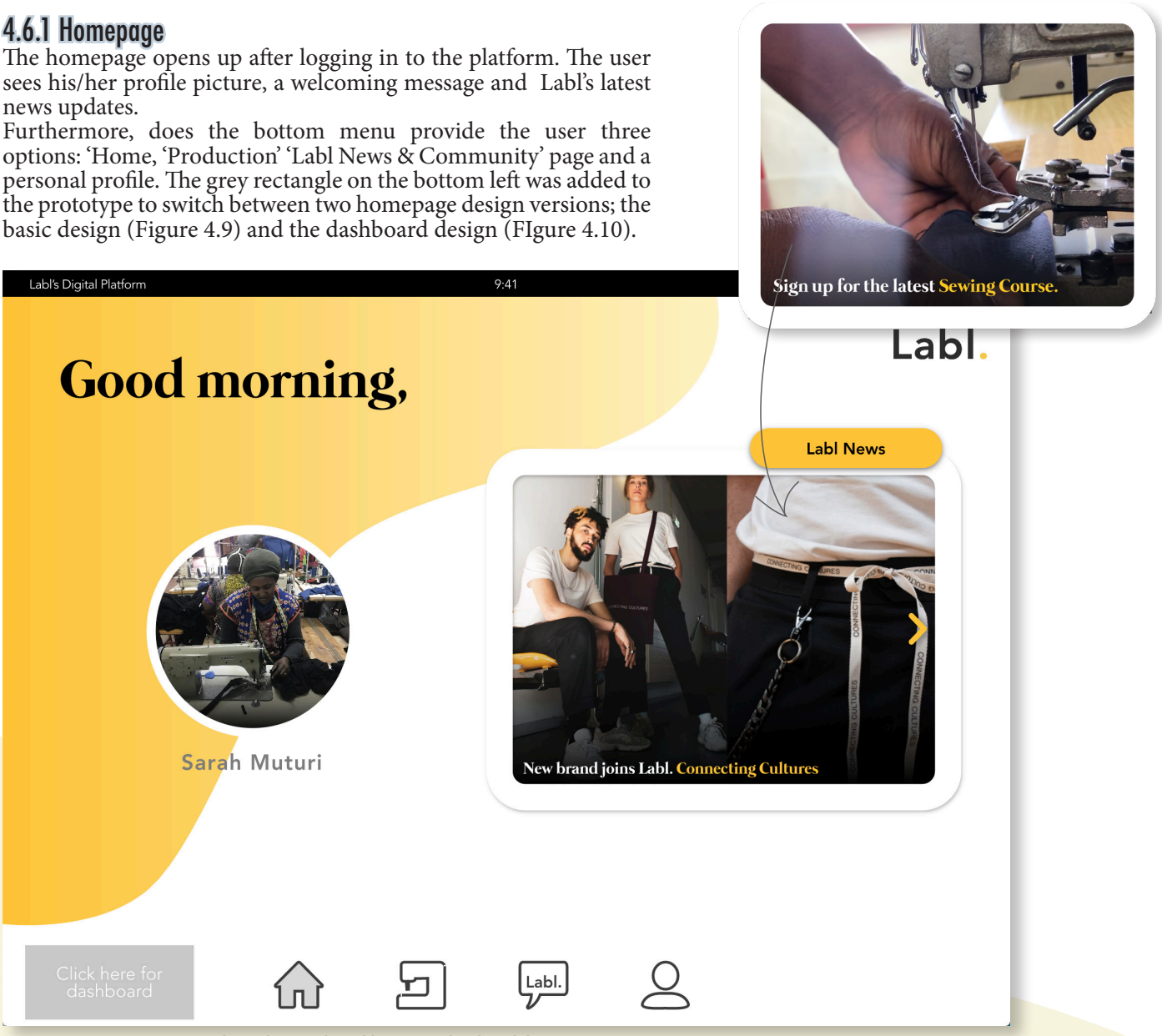


Figure 4.9: Homepage, basic design. The Labl news window has sliding content.

Alternative Homepage design: Dashboard

The dashboard homepage was made as an alternative. It gives the user a complete overview of the most relevant information right after logging in. The rationale for this design proposal is to give the user more triggers to make use of every function of the digital platform. User tests will have to determine which version is preferred and why.
The dashboard consists of: the To-do list, the latest order status, the personal achievement gallery and Labl community news. More information on the content of each topic will be given in the next paragraphs.

Labl News

Everyone at Labl will see a slideshow showing the headlines of the latest updates of the Labl community. The content in this slideshow is updated weekly and will contain news and stories which are shared through various media, such as video and photos.
The slideshow it just a trigger, the complete content will open after clicking the yellow button. Showing the news on the homepage will keep fundis engaged with the brands on the other end of the supply chain (and the other way around). And thus help build relationships and raise the feeling of togetherness among all Labl employees and the brands. Lastly, because fundis are confronted with where the garments end up after shipment, awareness is raised among them to deliver quality.

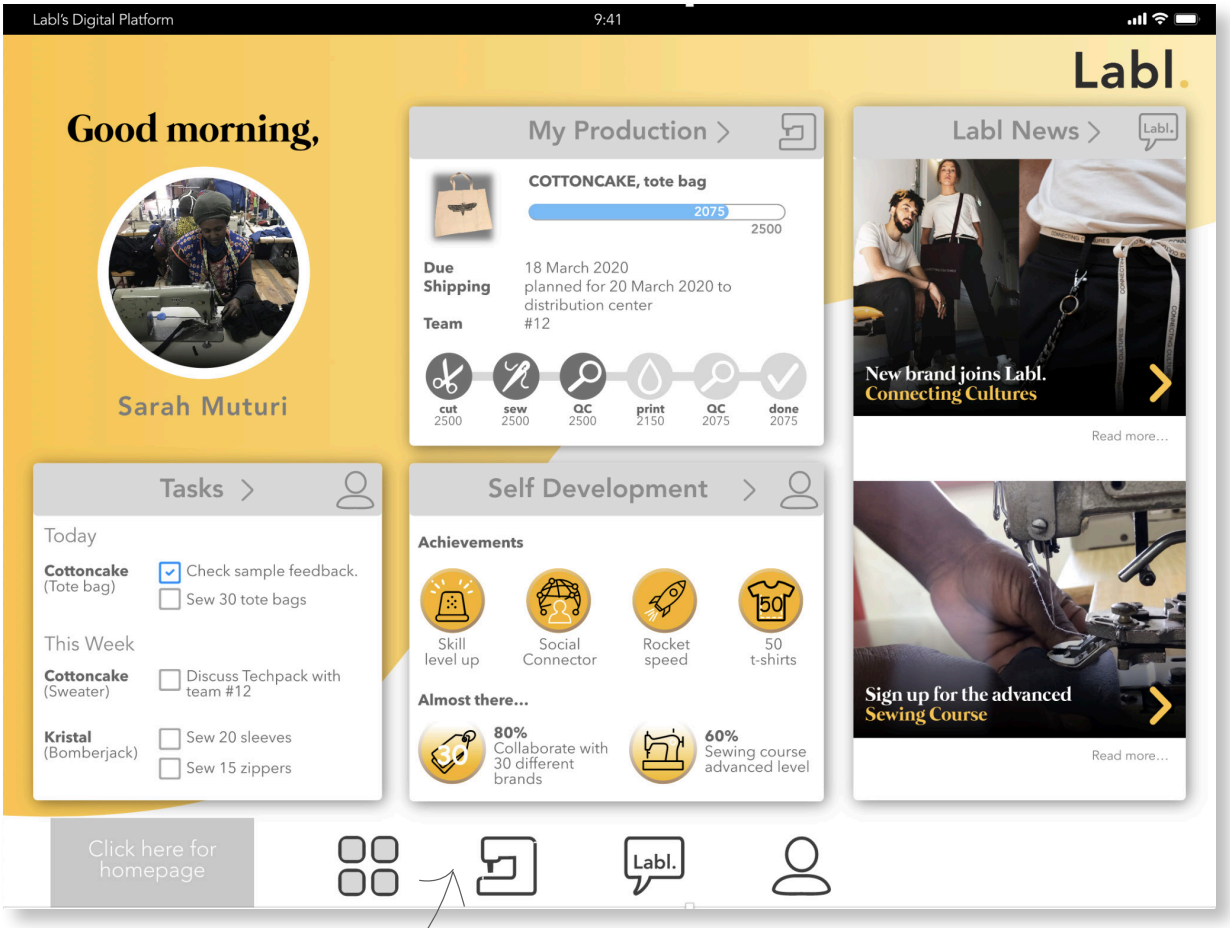


Figure 4.10: Homepage, dashboard design.

Navigation menu

A continuous element throughout all interface screens is the navigation menu bar through which the user can easily switch between content. The icon that is marked grey tells the user in which of the main sections he or she is located.

menu bar icons (from left to right): Homepage, Production, Labl Community News and Profile

The homepage icon differs between the two designs, a house icon for the basic design and blocks for the dashboard icon.

4.6.2 Production page

The production page consists of two main elements: the factory planning (Calendar) and the list of orders. The content is adapted to the user, which means that the user will only see orders that are relevant to him or her. At the top, there is a motivational phrase: 'Let's get to work.'

Calendar

The calender is presented as a block schedule, which gives the user a clear indication of what orders are due and how far along he or she is; a blue line moves up and down the calendar to let the user know how much time has passed.
It was a deliberate choice to use the blue line and larger timeslots, to accomodate to the fundis' cultural preference of parallel time. By also showing orders due this week, fundis are triggered to think about next steps in the near future. Little by little, this can help fundis become more future minded.
At first glance, the block schedule only tells whether orders are on track of time or lagging. After clicking on an order's timeslot, more detailed information is shown. This detailed information is relevant for team leaders, so they know the exact status of the order.
It also meets the brands' needs to be kept up to date of production progress. This information is communicated in a direct and clear manner, conform the brands' preference.

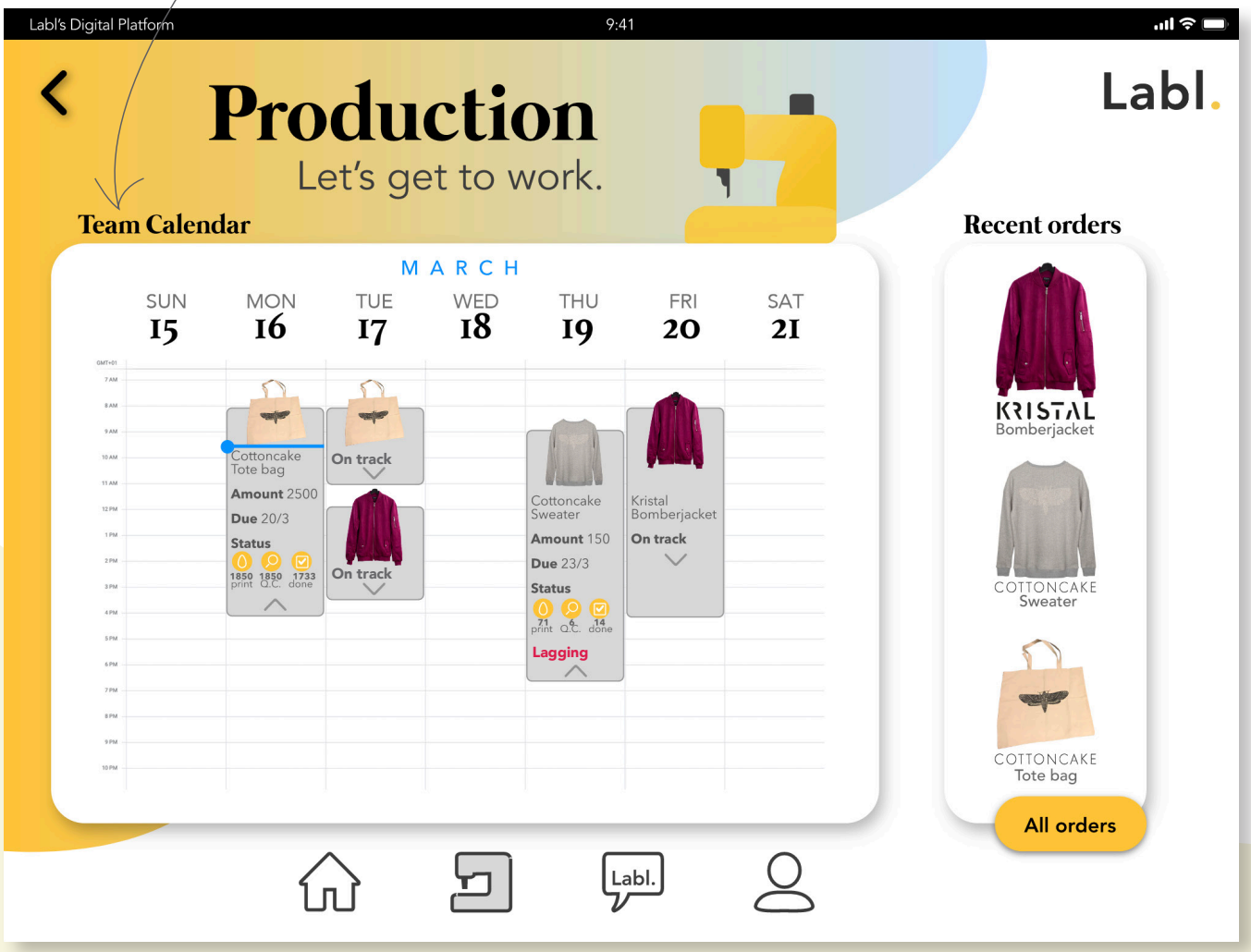


Figure 4.11: Production page.

Orders
A list of orders is presented in a graphic way. The shortlist consists of the most relevant orders; the ones that were recently opened and those that are due this week. To see all scheduled orders the user should click the yellow button 'all orders'.
The image originates from the digital twin that was made in a co-creation session between Labl and the brand in the Netherlands. The name of the brand is also stated to raise awareness among fundis.

'All orders' page
A visual representation of the orders where the user is part of the production team. Listed are the digital twin image, the brand name and the garment type. Clicking on the garment image will redirect the user to the order page.

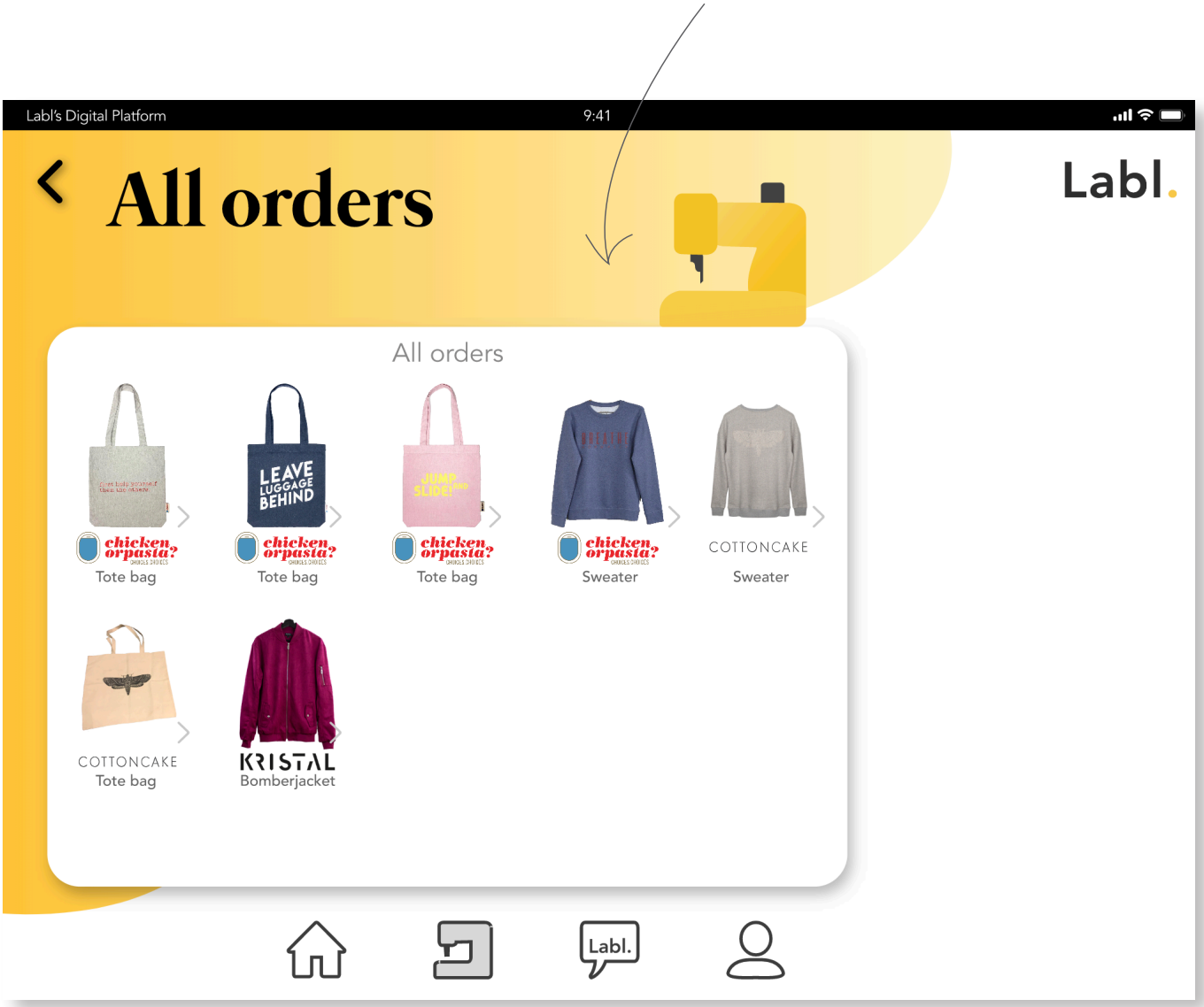


Figure 4.12: All orders page.

After selecting an order, the order page opens, which consists of information details on the order, as well as a chat space with the client brand. Only the team leader will be able to chat with the brands. For the fundis, it will be in read mode. This was decided to limit responsibility for communication about orders to one person, but keep the information transparent and accessible to the entire team. The chat space and order are presented alongside each other to make the relation to the brand (and thereby the work) feel more personal and friendly.

Order Information

The details of an order are shown here so that all stakeholders are up to date on the order status. The fashion roadmap at the bottom gives an indication of how far along an order is in production. It is divided into different stations of the production chain (i.e. 'Cut' and 'Sew'). When all garments have passed a station in the supply chain, it is marked yellow.
The team of fundis responsible for the order are also shown, which will help in building trust between brands and fundis. For example; if a fundi team has done a good job, the brand could ask them to do another order. Lastly, there are two options in this area; launching the 'Techpack' page or the 'Sample Review' page.

Chat space

This is a general chatspace, meant for check-ins between brand and team leader. If there are any questions or uncertainties about an order they can be dropped here.

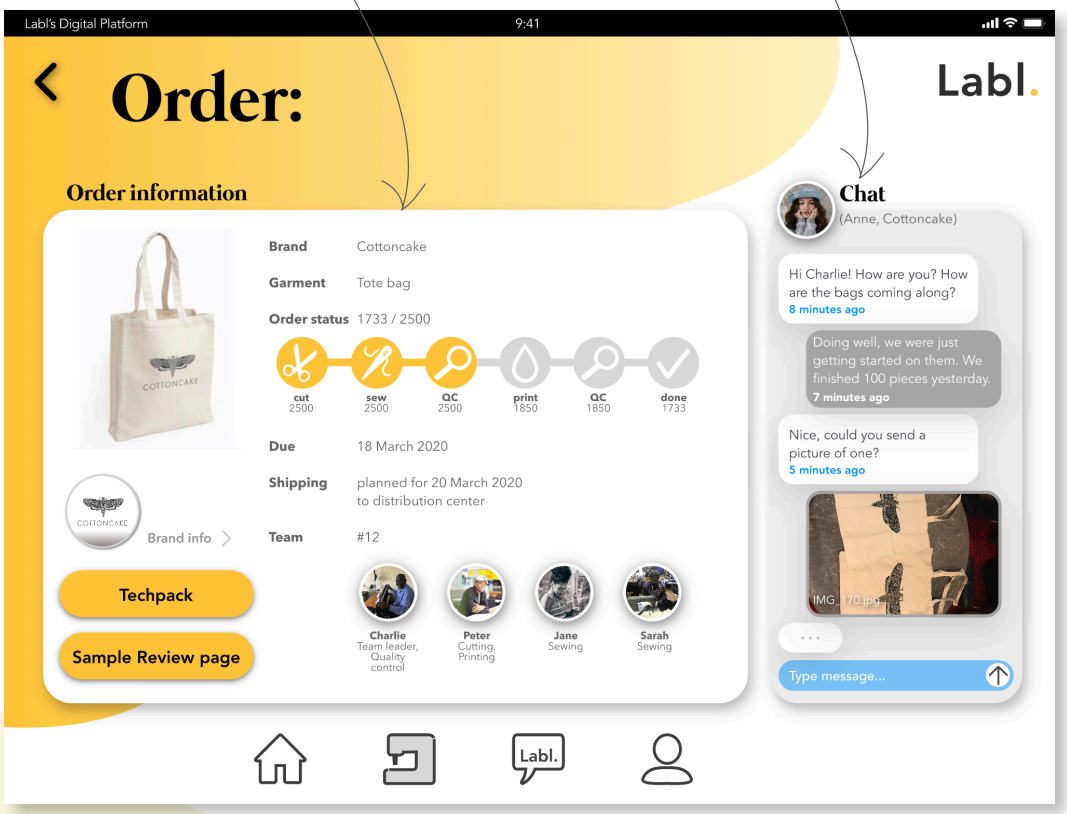


Figure 4.13: Order page: Cottoncake Tote bag.

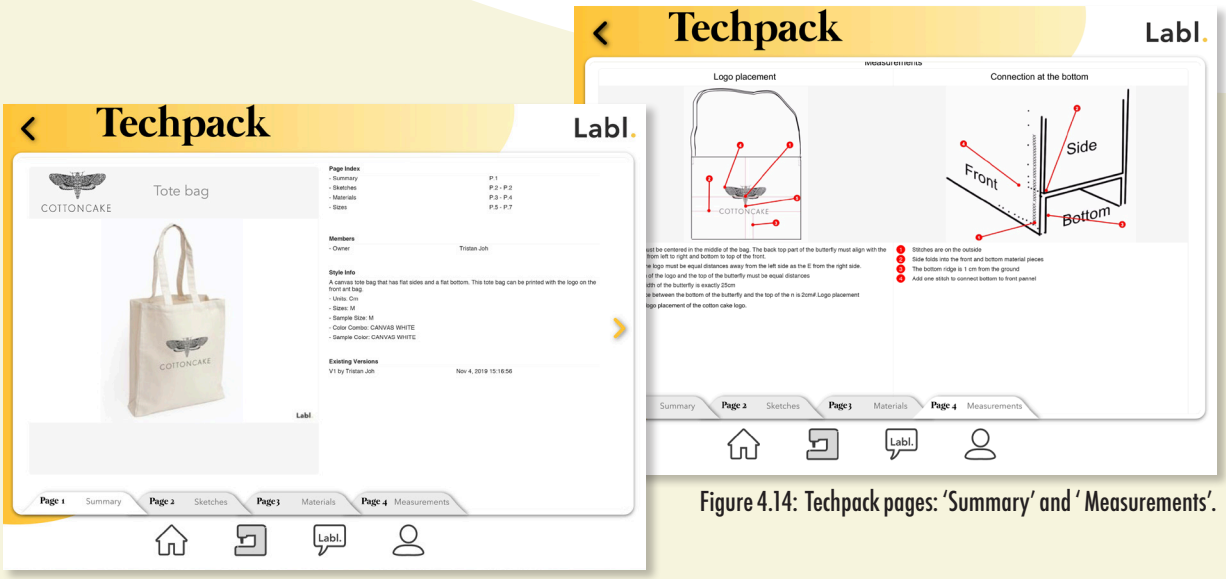


Figure 4.14: Techpack pages: 'Summary' and ' Measurements'.

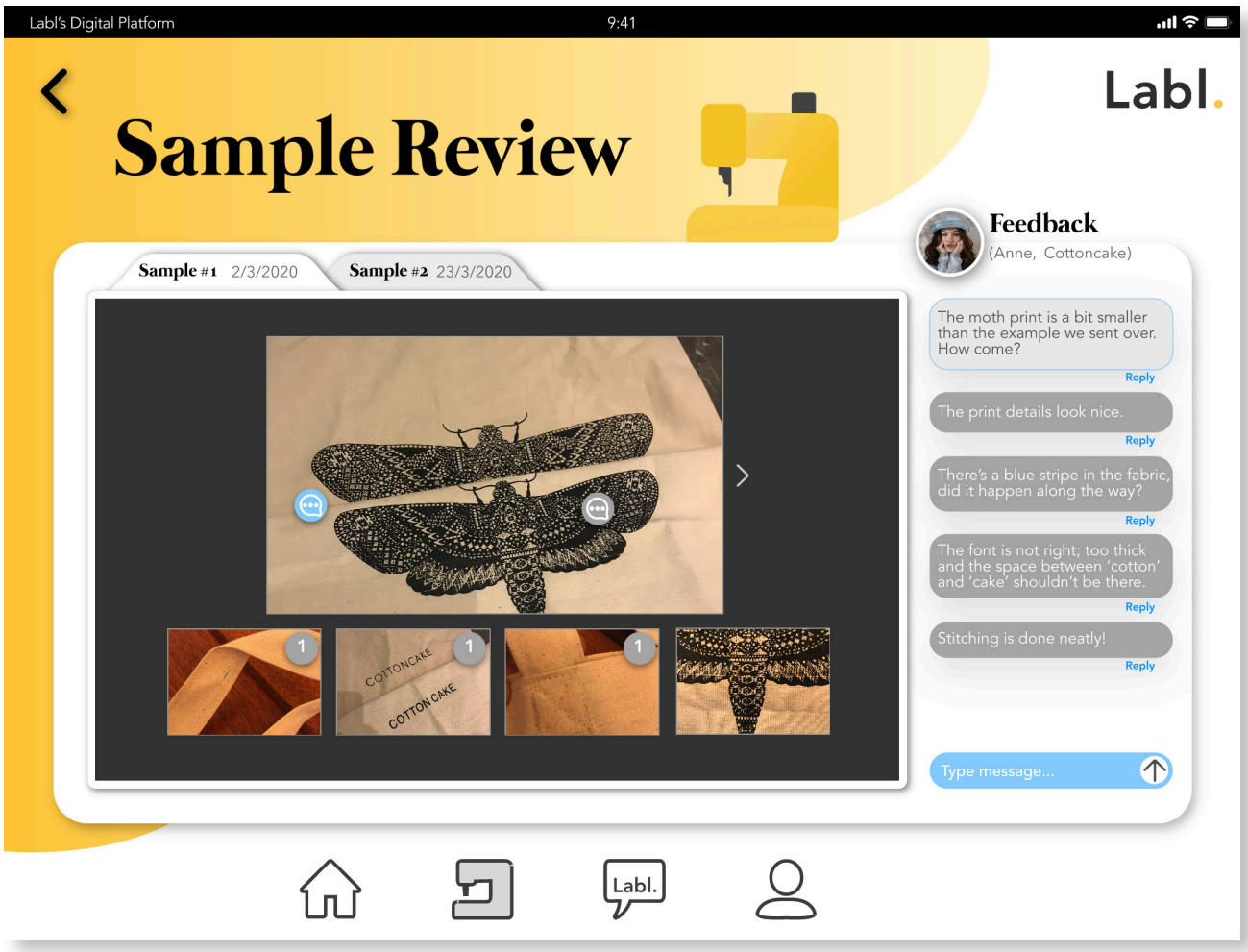


Figure 4.15: Sample review page.

Techpack

After clicking the yellow 'techpack' button on the order page, the user is redirected to the techpack. The content consists of various pages, as described on pages 40-41. The tabs on the bottom help with navigating through the techpack. This example has four tabs: 'Summary', 'Sketches', 'Materials' and 'Measurements', but the content of the tabs can be adjusted to the brands needs.

By using the techpack as a consistent element for all garment orders, the fundis will get a clear and structured way of getting instructions.

Sample Review page

This page is only for communication about samples, such a s providing feedback or asking about production choices. Because the sample photos and feedback is kept in one place, it helps the users keep a clear and structured overview. The brands can indicate where exactly the problems are located, by marking the photos with a comment-icon and adding commentary. Dutch people will probably like the feature because they can create a commentary list (which fits their preference of absolute truth). However the feedback needs to be adapted to Kenyan preferences as well. It is therefore important to also mention positive aspects of the garment. The sample review page offers an indirect way of providing feedback, which is more common in Kenyan culture. Whether the feedback from brands will be accepted by fundis needs to be tested, as they tend to be more open to feedback given by someone higher up.

The team leader may respond to the feedback and explain the reasoning behind production / execution choices.

Brand profile page

Brands can introduce themselves to the factory employees through their own brand page. This example shows Cottoncake's brand page with info on the founders, a vlog and recent orders.

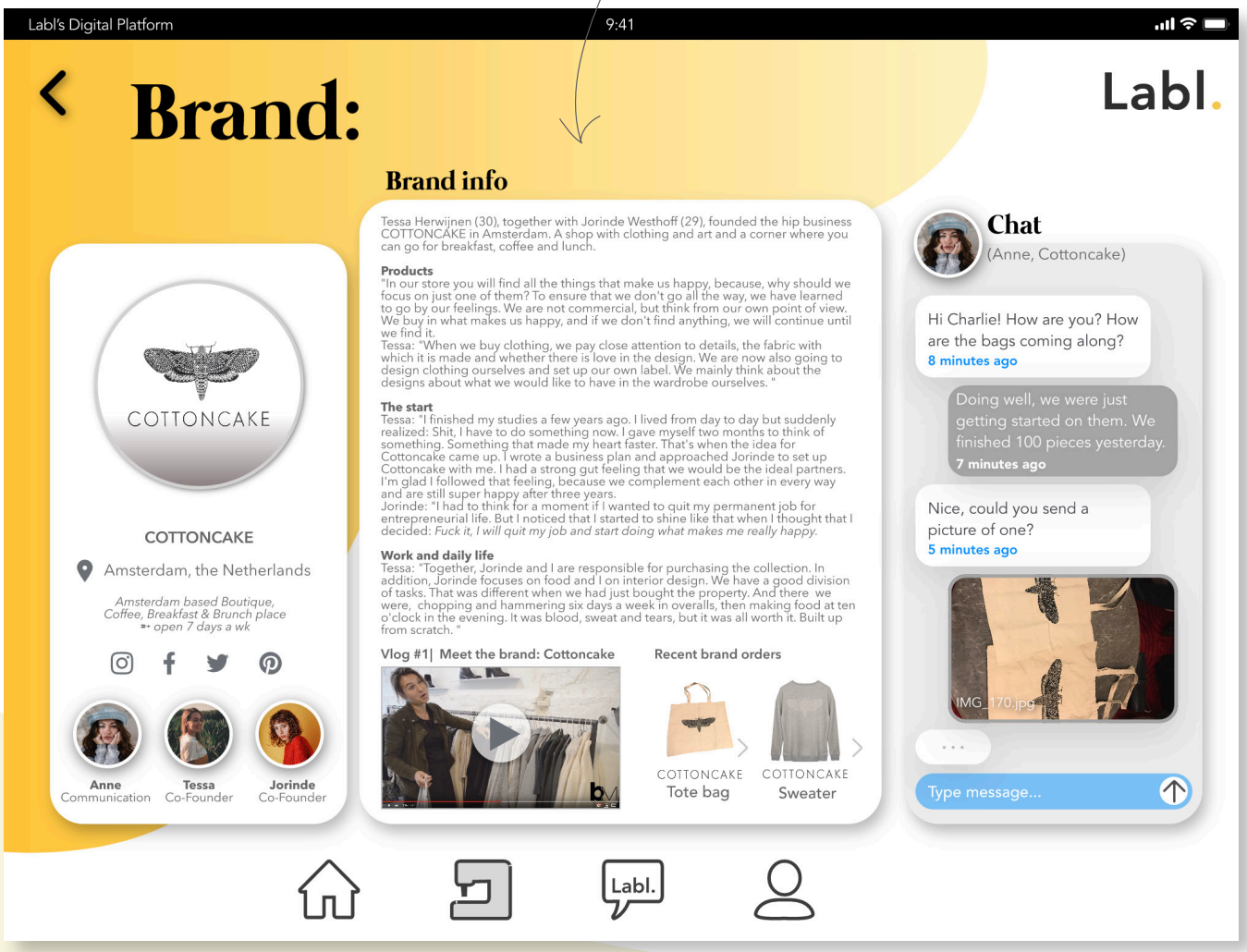


Figure 4.16: Cottoncake's brand page.

4.6.3 Labl Community News

This page contains blogposts that are uploaded by Labl office. The aim is to engage all Labl's stakeholders with the latest developments and each other, which will hopefully contribute to the feeling of togetherness among Labl stakeholders.

In the prototype, this section is limited to one page. However, if there is need for it features may be added (such as a forum, social media links, chat space for fundis etc.)

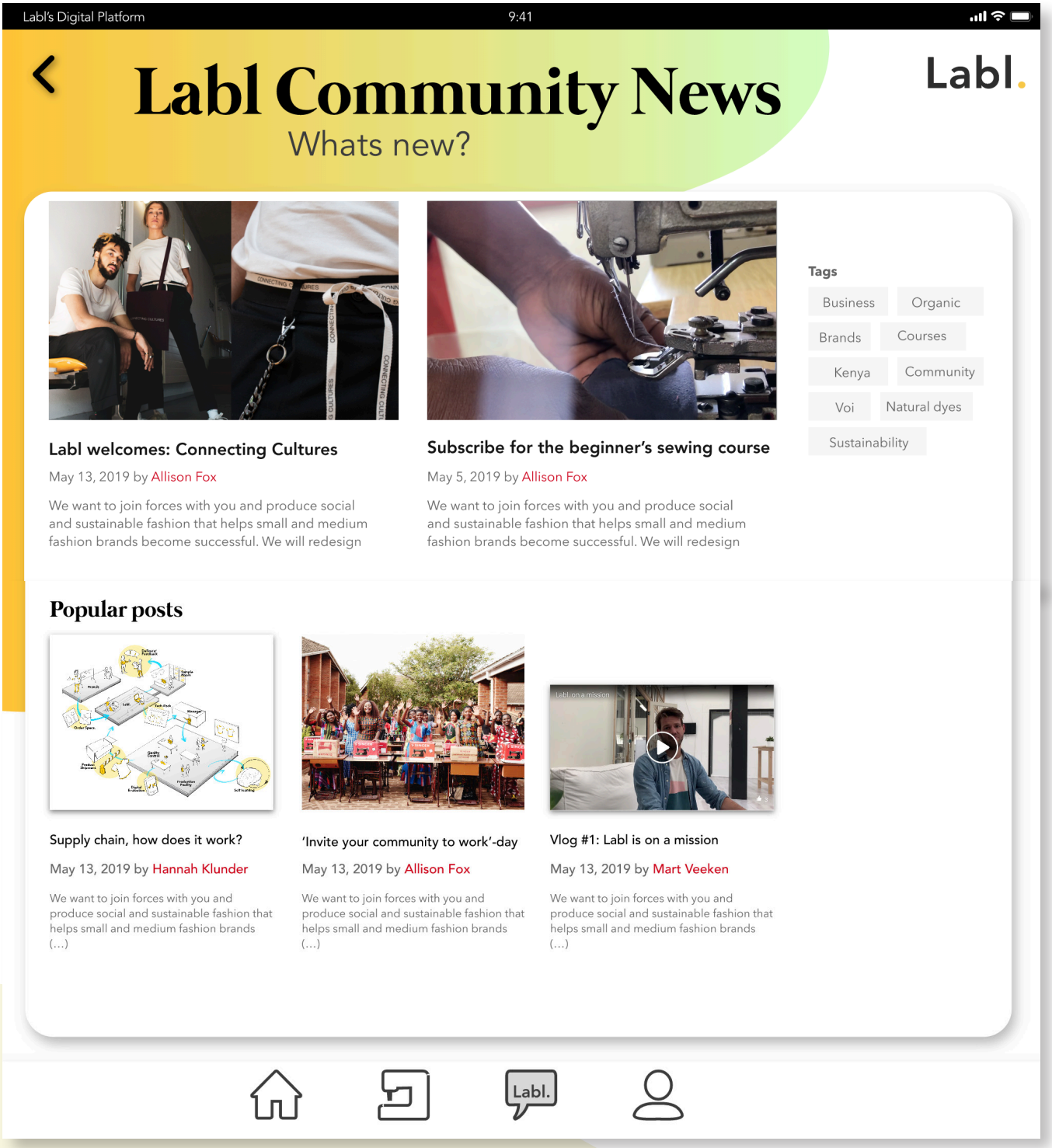


Figure 4.17: Labl Community News.

4.6.4 Personal Profile

The personal profile consists of a profile picture, personal data, a to do-list and a personal development plan including achievement awards.

Personal Development

During interviews, many fundis stated that for them personal development was one of the most important reasons to work. However, the facility owners mentioned frequently that they had difficulty disciplining their staff.
The achievement awards are aimed at motivating the fundis in a fun way (which will also help establish a sustainable fun/duty balance). Notifications will pop up after quality control has assessed the garment quality. Through implementing gamification elements, fundis are motivated to get work done. Perhaps it might even trigger competition among team members, through which they stimulate each other to do better.

To Do-list

The cultural analysis brought to light that Kenyan fundis are not very future minded. The To-do list is aimed at stimulating fundis to work, even though they are living a comfortable life today.
The list is automatically generated and based on the planned orders and self development program.

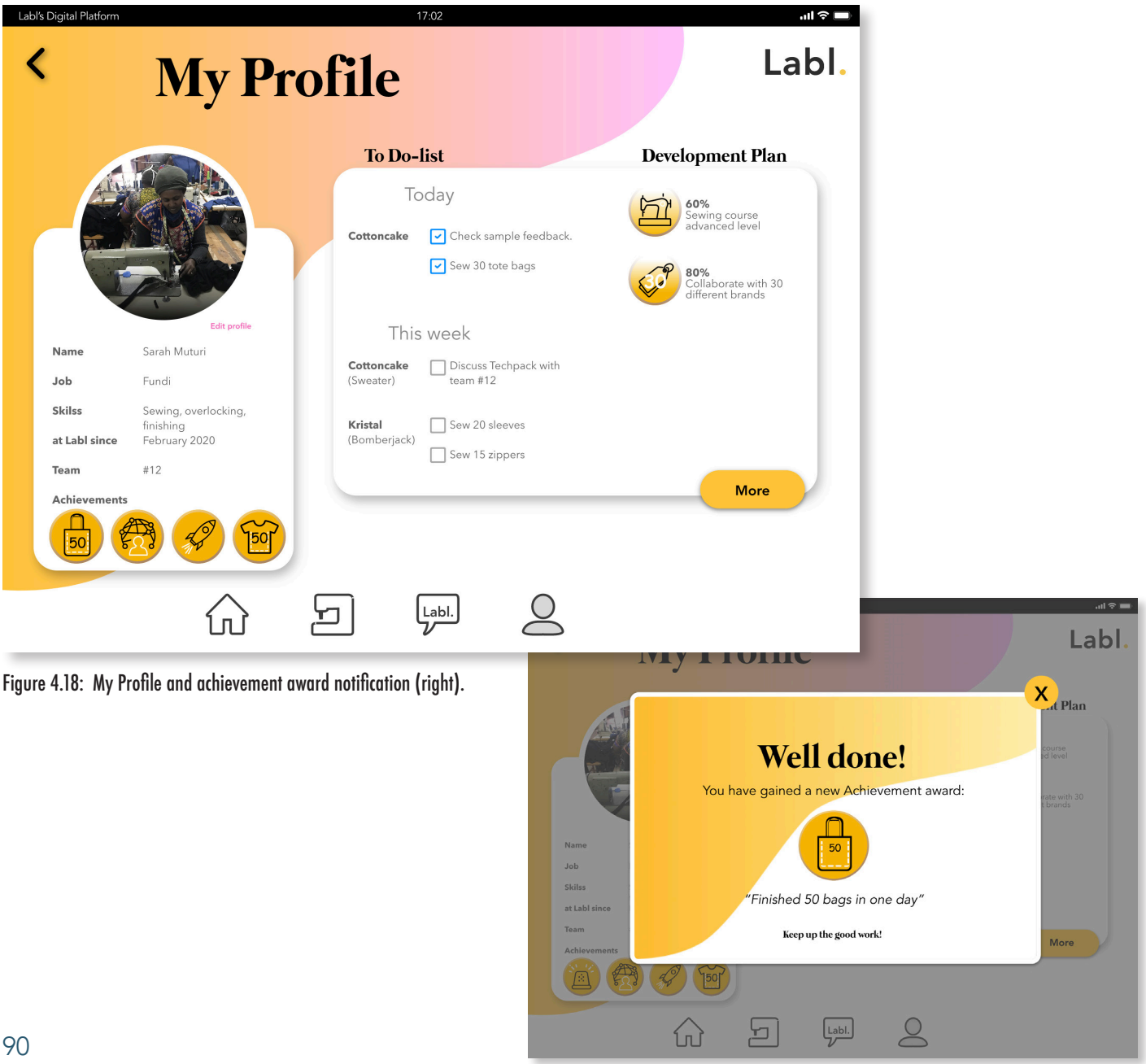


Figure 4.18: My Profile and achievement award notification (right).

Chapter 5

Finalization.

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Finalization

The interface concept from the previous chapter was turned into an interactive prototype.

And tested (§5.1) with various users in the Netherlands and Kenya to find out how to improve the design.

These user test results (§5.2) were analyzed.

And a final design proposal (§5.3)!

At the end of the road (§5.4), conclusions and recommendations for Labl will be presented.

5.1 User Test

5.1.1 Test Setup

Multiple user tests were performed in the Netherlands and Kenya with various stakeholders. A prototype of the interface was presented to the participants, who were asked to perform tasks and evaluate their experience afterwards. The interfaces were designed in the Sketch app, and the interactive prototype was made with Invision Studio. Through screen and audio recordings, the test could be analyzed afterwards.

Participants

The total amount of participants was 11. The group of participants varied widely; from Labl colleagues, friends and family to fundis and fashion industry experts in Tanzania and Kenya. Each group having different experience with digital platforms and knowledge of fashion production.
The nationalities of the participants were Kenyan (2), Tanzanian (2) and Dutch (7).

Research materials

The complete user test setup including the researcher script and other test materials can be found in appendix J.

Research Goal

The main goal of this research is to gather (qualitative) feedback on the digital platform prototype that was developed for Labl in order to improve it. This goal will be reached through:

1. Identifying problems in the design of the prototype.

To find out whether design elements are interpreted as expected (and why/ why not). To check if the user can perform the tasks proposed and to find out if the current interface design is guiding the user enough to evoke the sense of flow.

2. Learning about the target user's behavior and preferences.

To evaluate how the interface content is experienced by the target users and why.
Do they see the added value of the digital platform, and the new way of interaction with brands? And which of the homepage interfaces is preferred?

3. Uncovering opportunities to improve.

Based on above mentioned findings and additional feedback; find out where content is misinterpreted, missing or disliked and how the prototype could be improved in terms of usability, experience and effect.

Agenda

- Casual introduction talk
- Hand out & filling in consent forms
- Warm up exercise to practice thinking out loud (i.e. by writing down name)
- Start screen recording with microphone
- Perform User test: Task performance, Ask questions about tasks
- Evaluation via semantic scale
- Discuss answers scale & overall experience
- Thank user and close

5.2 Results

While evaluating the prototype with the participants, the research goals were kept in mind. The results can be categorized as follows and will be discussed in the subparagraphs: Usability, User Experience, and Effect (evaluation of the design goal).

Usability
- Interpretation of visual design elements.
- What is the users' homepage preference?
- Would the user make use of the content?
- Is the content structured logically?

User Experience
- How do the users feel during interaction? (evaluated by means of semantic scale, is it in line with the UX/UI vision?)
- How is the ease of completing tasks evaluated?

Effect
Does the interface design effectively facilitate communication between brand and production facility, by creation of mutual understanding in order to enable production of better quality fashion? It is evaluated by discussing the effect in terms of clear communication, building trustworthy relationships and creating more transparency in the supply chain.

5.2.1 Usability
The interface design was largely based on graphical content. Generally this was liked by the participants:

Participant quote:
"People don't like to do so much reading, we like to see."

Some participants seemed to have trouble with reading the interface due to an assumed language barrier. Their answers were not in line with what was questioned. However, not completely understanding the question/ English is something that was never explicitly mentioned by participants. Possibly participants were feeling shy or confused.

Visual design elements
Some users got stuck because of misinterpretation, or unclear visual elements.
Some participants did not attempt to click on buttons or content that they did not understand. Perhaps out of fear of doing the wrong thing. It meant, at first, they did not access essential information to complete the task. Eventually, after some help from the researcher, all participants completed all tasks.

Menu
Navigation through the menu was clear to most users. The home icon and profile icon were understood by all users.
The sewing machine icon was recognized as such and the participants could guess that they would get sewing related information after clicking the icon.
The text balloon icon was not always understood. Participants expected to get to a chatting/messages function, instead of the Labl Community News. Another icon design might be more suitable. It might be a solution to add text to
Many participants did not seem to notice/mention the gray icon is the active page.

Buttons
The navigation arrows and big yellow buttons were clear.

Profile picture
Many participants attempted to click on the profile image. This element was not interactive in the prototype.

Calendar
The calendar function was considered informative and the visual elements were easy to understand. However, most participants had difficulty with entering the order page from the calendar. Usecues and triggers were missing to guide the user. The garment images did not look like buttons. This is an issue which must be improved in the final design.

"You don't see you have to click the bag to get to production, the user doesn't know that."

Brand information
The link to brand information was easily missed by participants. Perhaps it was not perceived as a link, because it was situated above bold yellow buttons.

Order page - Progress roadmap
All participants understood that the order status was visualized through the icons on the roadmap. Some participants interpreted the number as 'to do' instead of 'completed'. However, I expect to see a learning curve among users, because this is what the roadmap would look like mid-production. During first time use at the beginning of an order all would count 0.

Order page - Techpack
As expected, were participants unfamiliar with the phrase 'techpack'.
Navigation through the techpack did not bring any issues. The tabs to navigate through the pages were well understood.

Personal Profile
The visual style of the achievement awards was also somewhat confusing, they looked too much like a button.

Homepage
The participants were asked to share their preference for the homepage design: Is the dashboard or the basic design preferred?

"I like the dashboard more because it has everything. I dont need to navigate from here, I can go to any particular area that I want to go."

"The dashboard is too much loaded, even though I prefer to see everything in one grasp. But maybe another person would want one thing at a time."

One fundi expressed he liked the dashboard more, even though het did not fully understand the concept because a lack of experience with similar digital platforms:

"I like it because it gives good information and guides us how to work."

I think more experienced users, such as managers or team leaders, could benefit from using the dashboard because they can work more efficiently and absorb more information at once.
Less experienced users, or users that have difficulty with interpreting the content might find it confusing, or too much unwanted information.
With this reasoning, the basic design would be more suitable for all audiences.

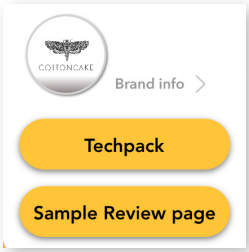
Menu

Buttons

Profile Picture

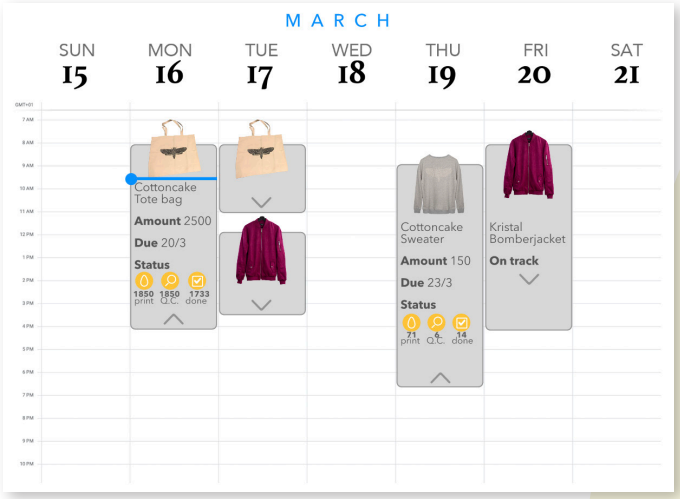
Sarah Muturi

Brand information link

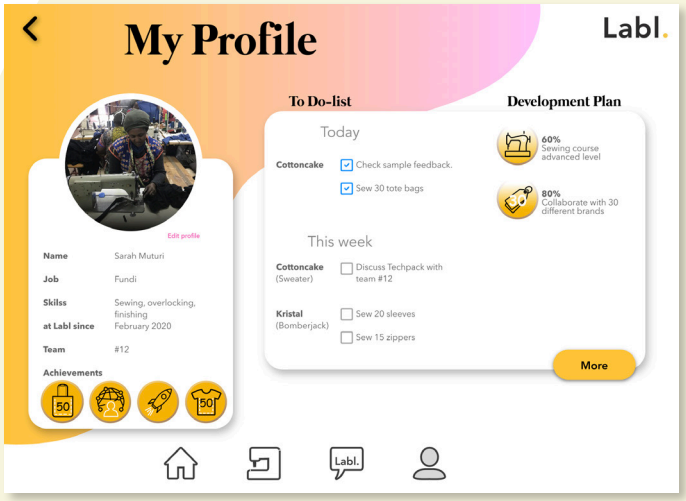


(Please note: these are images to help remind the reader what the page content looks like. For more detailed images I refer to §4.6)

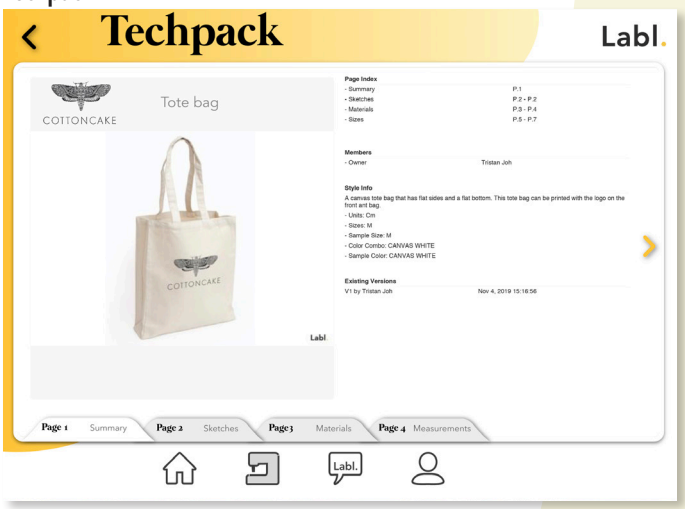
Calendar



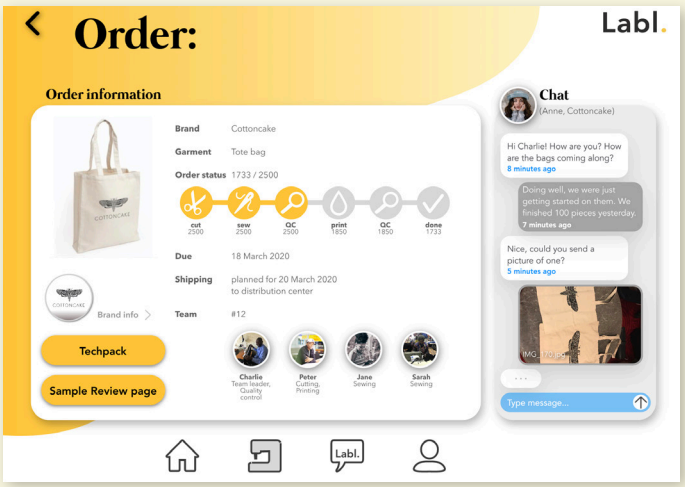
Personal Profile



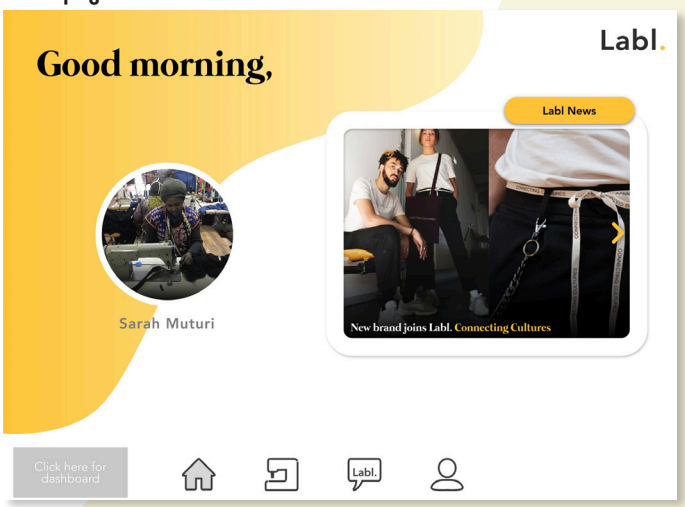
Techpack



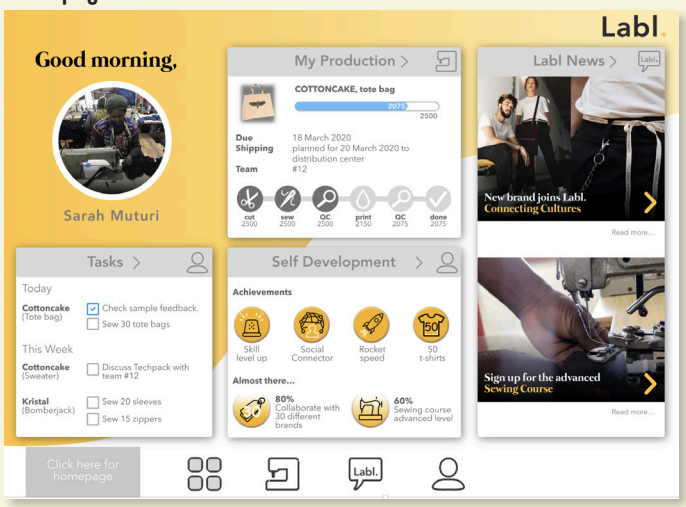
Order page



Homepage - basic



Homepage - dashboard



The evaluation and discussion of the prototype with participants let to new insights concerning the content of the digital platform. Aside from the usefulness of the content and the ease of locating it, was there also some content missing according to some participants.

Fundis were most excited about the digital techpack and production instructions. It was the information that seemed most important to them.
The community platform was commented the least on, but also the least developed feature in the prototype. It is hard to conclude on this feature's relevance.

Content Location

• The placement of the user's 'To do'-list caused confusion. Some participants expected their to do's on the production page, some on the homepage. One participant stated;

Brand information was hard to find. Partly because of the button, but also because the user needed to go through too many layers.

Missing content

• Communication with managers or executives should be more centralized. Because hierarchy is very important, it should be made clear what tasks superiors instruct. This may be solved by implementing the messenger function (which was not prototyped), or through further development of the to-do list.

• A 'resolved issues' function could be added make it easier for users to keep an overview and to assure them that issues are solved.

• Added gamification elements. The achievement awards can be celebrated in a more dynamic and fun way, via animations for example. This was not possible due to limited prototyping resources and skill.

• Some fundis stated that step by step instructions were missing in the Techpack. Other information such as cutting patterns were also missing in the prototype, but can easily be implemented in the final design as a tab in the techpack.

Difficult vs. Easy	Was evaluated as rather easy. Most content was easy to find, or just took a short moment of searching for. There was a difference in experience between fundis and participants of higher functions (managers / executives). Due to a difference in the level of thinking and experience with similar platforms. Some problems can be solved by minimizing niche language, such as 'techpack' and changing 'brands' into customers. Other issues can be solved by filtering out information that is relevant to the user.
Confusing vs. Stimulating	The platform was considered stimulating because of its novelty. The achievement awards felt as encouragement to keep working. Some confusing elements can be solved by guiding the user more through (simpler) text. In terms of assigning tasks for fundis the platform can be clearer, like direct messages from the team leader.
Unfriendly vs. Friendly	The visual style is considered bright, light and friendly. The chatting feature was also considered friendly. However, one participant stated that the digital platform could be made more suitable for users less techsavvy.
Not educational vs. Educational	It was considered educational in the sense that the user can find a lot of information on brands and how to produce garments. This information is quite passive. Some participants thought it could include more learning, such as step by step plans and courses.
Boring vs. Interesting	It is nice to work in a new way in comparison to (dated) traditional ways of production. The way information is shown was considered interesting because it varied; some through icons, loading bars, photograps, text and illustrations.
Useless vs. Useful	There's useful information for fundis, superiors and brands. However, not all information is equally useful for all stakeholders. Fundis are more interested in how to produce, and higher up in the factory hierarchy people are more interested in progress and relations to brands. The feedback was considered useful, however, there was doubt whether the feedback would be taken into account during production of the follow-up sample.
Stressful vs. Relaxed	Overall, in the setting of the user test, the experience was relaxed. The dashboard design was considered more relaxed by some participants, because it creates an overview of all important information, the user does not have to look for it.
Rigid vs. Playful	Has some playful elements, gamification could be accentuated more. The visual style was considered playful, because there were various ways of presenting information: with icons, images, videos, roadmaps etc.
Unattractive vs. Attractive	Overall considered attractive.
Dull vs. Fun	The tone of voice and style is also considered fun and inviting to different stakeholders. The gamification element is considered fun, but can be used more frequently and trigger the user more. There were also some suggestions for new achievement awards such as: "First in the factory today" and "Quickest production of a t-shirt". Adding animation to these achievement awards would increase the sense of fun.
Irrelevant vs. Relevant	Most relevant for communication between Europe and Africa. One participant stated that the fundis get a better idea of what the brand is like, which raises the sense of connection.
Individual vs. Together	Opinions varied on whether the platforms was experienced as individual or together. The feeling of togetherness could be strengthened. In the end, some participants felt it is more a tool to check up on each other than to work together. I.e. the designing of the garments is not done in collaboration with the factory.

Table 5.1. Qualitative feedback on the user experience was gathered via a semantic scale questionnaire (Appendix J). The results are presented here.

5.2.2 User Experience

Participants were asked to rate their experience by means of a semantic scale of 1 to 7 (appendix J). The scale poles were based on the UX and UI vision as described in §4.4.2. The results are shown in table 5.1.

Generally the participants were rather positive about their experience. One participant stated:

"So far we do not have such apps, meant for the employees, usually only for the executives, the manager. This one can revolutionalize the fashion industry because it uses the employee, to empower and improve on their development."

Overall, did the style leave a friendly impression. Because of the tone of voice, the participants felt encouraged, like this example on the achievement award notification:

"I am being congratulated and I feel encouraged. It gives me more courage and I will do more tasks in the future."

5.2.3 Effect

1. Creating more transparency in the supply chain

Because a lot of data traffic is automated via the platform, human shortcomings in transparency are bypassed. Production data is transparent and accessible for all stakeholders, which makes everyone feel like they are up to date.
Order progress is made insightful via the production roadmap. Who is responsible for producing garments was also more clear, because the fundi team was presented on the order page. If in spite of this there were still remaining questions on the order, the chat function could be used.

During the evaluation of the user tests, most information was considered transparent. Users could name how far along and order was, how it should be made, which people needed to work on it and when it was planned for production.
However, the amount of layers in the prototype should be limited to increase transparency even more. Participants had to sometimes dig through the interfaces in order to find the information they needed. If the user is unaware of what information can be found and where he/she should look, transparency is lost.

One participant mentioned the biggest issue concerning lack of transparency with the prototype. Brands need to be assured that everything is going well in the production facility. There were still some doubts about what would come about of the feedback. This was a quality that was still lacking, because there was no confirmation that the feedback came across, aside from what will be said in the chat. In the redesign, a feature needs to be added to give brands assurance that the feedback has come across and will be implemented during production of future garments.

2. Building trustworthy relationships between factory and brand

The need for this effect was confirmed by most participants. One participant stated:

P2: " (While looking at brand information) I think this is important, because you can't do a production of something that you don't know. I would check it. Sure."

From which I conclude, a small step has been made towards relationship building between brand and fundi. Participants saw the community platform as a fun additional feature for connecting brand and factory.

As was also mentioned earlier, did some participants doubted whether the feedback from the sample review would come across. Aside from a transparency issue, is this also a trust issue. There needs to be more assurance that the feedback reaches its goal: ensuring better quality fashion. The brand feedback should be

listed and sent to team leaders and quality control (i.e. in the form of a checklist), to ensure implementation and with that more trust on the brand side.

The experience of working together with the brand on an order did not come across as much. Participants mentioned that they were able to see their colleagues, but the user icons from the brand were barely mentioned. From which I interpret that the users at that point did not notice the relation to them either.
The visibility of the brand should be increased in the final design. The interaction was now too individual, a fundi could just start production without ever noticing any information on/from the client brand. This should be integrated in the design.
I assume these comments are partly because the prototype only offered communication to go one-way. The participants could not type or respond to comments or messages. Ideally, a next user test would include communication to go back and forth. Features that would make communication more personal (and thereby help create a relation between brand and factory) were underdeveloped in comparison to the feature that communicated instructions, feedback and increased transparency.

3. Enable communication of clear instructions and feedback.

This was positively evaluated by all users. Information was considered complete and easy to track and understand. In spite of not knowing the phrase 'Techpack', once opened, the users knew what the information meant:

P2: "I am not aware of what is a techpack.."
opens techpack
"Aha I have come to this (...) style information, the color, the size and all that. (...) I think it is good information. I have to browse through this and once I familiarize myself with it then I know how to do about it. It is simple to use."

P1: "I check this to know what has to be done. It is explicit."

The majority of participants could without mistake find and interpret instructions and feedback on the platform. When asked what was needed from them, most users could reply by reading out loud. It can be concluded that the techpack is an effective way for Kenyan fundis to be instructed, because it provides information that leaves little room for interpretation by offering a combination of graphical content, text, photos and tables.

However, some fundis mentioned they were missing step-by-step garment instructions when looking at the techpack. Also did one participant stated needing more information about cutting. The breakdown of production and cutting patterns were not accessible in this prototype, but according to the techpack guidelines can be implemented (see §2.2.3). So, this issue can easily be solved by adding more instruction pages to the techpack.

Another participant stated that to be able to get started, he would still expect direct instructions from the team leader:

P3: "I need to get in touch with my superior, so he can tell me what to do."

This quote clarifies that the difference in hierarchy could be made more apparent for instructions and feedback. I assume that if the team leader role would be made more prominent in the platform the instructions would more likely be followed.

Also, did one participant find it unclear that the sample gallery showed irrelevant feedback next to that image (it was the feedback that made sense with another image). However, did the same participant think information could still be overlooked when stored in different tabs of the sample review gallery. It would affect transparency if the list of feedback would not be complete or shown as a whole.

5.2.4 Conclusion

The user tests led to useful insights, which will be taken into consideration for the redesign. There were some functions missing, or in another location than some users expected.
Issues which must be resolved to ensure basic usability have been listed and can be taken into consideration for the final design. Furthermore, has the experience and effect of the prototype been evaluated.

The experience was quite in line with the UX vision. Some simple iterations could improve the user experience. Because the participants interacted with a first prototype, the movement in transitions between interfaces was kept rather simple. There were a few interaction qualities which should be more apparent in the final design to achieve the design goal: relatively speaking the prototype scored low on playfulness, fun and togetherness. The use of gamification elements and animation could make the experience more dynamic and fun. In the prototype the interaction was experienced more as individual then collective. The interaction between stakeholders could be made more apparent and personal.

There is quite a gap in educational level and experience with digital interfaces between fundis and their superiors. Generally speaking, fundis tended to have more difficulty finding their way around the digital platform. This should be taken into consideration when designing interfaces for these different user levels. Perhaps the amount of information that is presented should vary. The fundi interface could be more straightforward and guide the user more. Additionally, language should be kept simple to be understandable to all users.
However, a learning curve is expected after first interaction with the platform. Because Labl will be training inexperienced fundis, guiding them how to use the digital platform can be incorporated in the training program.

The basic homepage design turned out to be most relevant for all users and helps maintain simplicity in the design. Employees with supervisory functions, such as managers and team leaders could get added features (similar to the dashboard) on their personal profile to keep track of everything.

In terms of effect, the biggest improvements should be aimed at improving relationship building. The role of the brand in production should become more prominent.
The instructions and feedback were clear, only the implementation of feedback was something that was questioned by users, which was both a transparency as a trust issue.

5.3 Final Concept

The final concept is presented here. Based on the conclusions from the previous paragraph, iterations on the interface design were made. All interface designs are shown in figures 5.4 - 5.17. After discussing the interface design, the sitemap and user task flows are shown. This section closes with introducing 'Labl's Guiding Principles', which are guidelines that should be followed in order to ensure the best user experience for brand and factory employees.

5.3.1 Interface Design

General, reoccuring features in the design are:

- the title/greeting in the top left corner. It adresses the user in a friendly, informal tone of voice.
- At the bottom of each interface the menu is shown (figure 5.1). The icon designs have not changed in comparison to the prototype. However, the style is a bit different: the current menu status now has a gray circle behind it to help with navigation. When shifting through the menu, the gray circle slides from icon to icon. By adding movement, the user notices the change more easily. When pages enable scrolling, a white tab pops up behind the menu, to ensure legibility of the icons at all times.
- The interface uses notifcations (figure 5.2), by which the user is informed of recent developments such as messages, order updates and achievement awards. The notification slide into the screen at the top right corner.

Labl.
Digital Platform

Figure 5.1. Menu designs

Figure 5.2. Notification

Login page

The login page (Figure 5.4) did not undergo many changes in comparison to the prototype design. The main difference is that the user is now only identified by a first name, instead of first and last name. This was done to make the interaction feel more personal and friendly.
Furthermore does the user's profile icon come with a colored border, which has two functions; personal expression and communication of hierarchy. Fundis may choose their own favorite color.
Superiors such as managers and team leaders, as well as brands have a white border. It was chosen to also give brands a white border, because research showed that feedback is more likely to be accepted when given from higher-up.

Figure 5.3. User profile icons

Homepage

The final homepage design (figure 5.5) combines elements of the prototype's dashboard and basic homepage. It is limited to the most relevant information to keep it simple. The user tests revealed that production info and todays tasks were most relevant to the users.
On the left, the team is shown with whom the user will be working today. At the top the user icons of the team leader and brand user is shown, at the bottom the fundis who are responsible for production. These user icons grouped together create the sense of togetherness. No distinction is made between brands and factory workers.

The right part of this page contains the order information. There is a to-do list which is automatically updated. This To-do list is aimed at reminding the user to check information that is essential for production (such as checking instrucitons and feedback). Via the blue arrow buttons, the user can immediately navigate to the destination page (such as the brand introduction video, in this case).
Furthermore, the production roadmap is shown at the bottom. As an order progresses, the roadmap fills up from left to right with blue color (figure 5.6).

Production page

To limit the amount of layers in the interface, the production page now also contains order details on the right, instead of on a separate page.
On the calendar, the amount of information was limited in comparison to the prototype. The icon now only shows the current status of the most recent production step, in this case cutting. When the user taps on a block in the schedule, the order information (right) automatically adapts to the order of that day.
The yellow buttons redirect the user to the brand page, techpack or sample review page.

Brand page

The brand page (Figure 5.8) consists of 3 sections; 'About (the brand)', 'Orders' and a 'Chat'.
About contains basic information about the brand and its employees. Furthermore, is every brand encouraged to upload an introduction video to present itself to the factory workers. This video could serve as a way of expressing a brands style, values and getting to know each other on a more personal level.
You have to be granted access to contribute to the brand chat. By default, this chat is only accessible for people with higher functions ('white border' profile icons). It is advised to use this chat only to discuss production related topics.

When tapped, both the chat and introduction video expand to full screen mode in a flowing motion (see figures 5.9 and 5.10).

Sample Review

New features to the sample review page are two options: 'Resolve issues' and 'Update QC checklist'.

The resolved issues function can be used when a question was answered by one of the users. Only the person who has raised the question may resolve the issue.
The 'Update QC checklist' can be used when an issue was not resolved. The teams quality checker will get notified of the brands feedback. The newfound issues

will be added as notes to the quality checklist, so the quality checker can take them into consideration while evaluating quality. When tapping the resolved issue button, blue icons pop up to adjust the comment list (figure 5.12).
Through an animation (figure 5.13) the user gets confirmed that the QC checklist is successfully updated.

Community page

An added function to the community platform is the private chat. This window slides into the screen after clicking on the gray area. Here, colleagues can have conversations that are not necessarily workrelated.

Personal Profile

In comparison to the prototype, the to-do list was removed from the profile page.
The achievement awards got a new visual style to make them easier to distinguish from buttons. The achievements that can be obtained vary and are not limited to skills. For example, a user can also gain an award by arriving at the factory first. Users will be notified of new achievements by notifications. When the personal profile page is accessed, an animation will show (figure 5.17)
At the bottom, the 'courses' overview was added. This function keeps track of the courses the user is doing in order to develop him/herself and how far along the user is.

The whole personal profile is aimed at stimulating Labl employees to do well and develop themselves. By making self development a game it becomes fun and motivating. Courses may also help fundis become more future oriented.

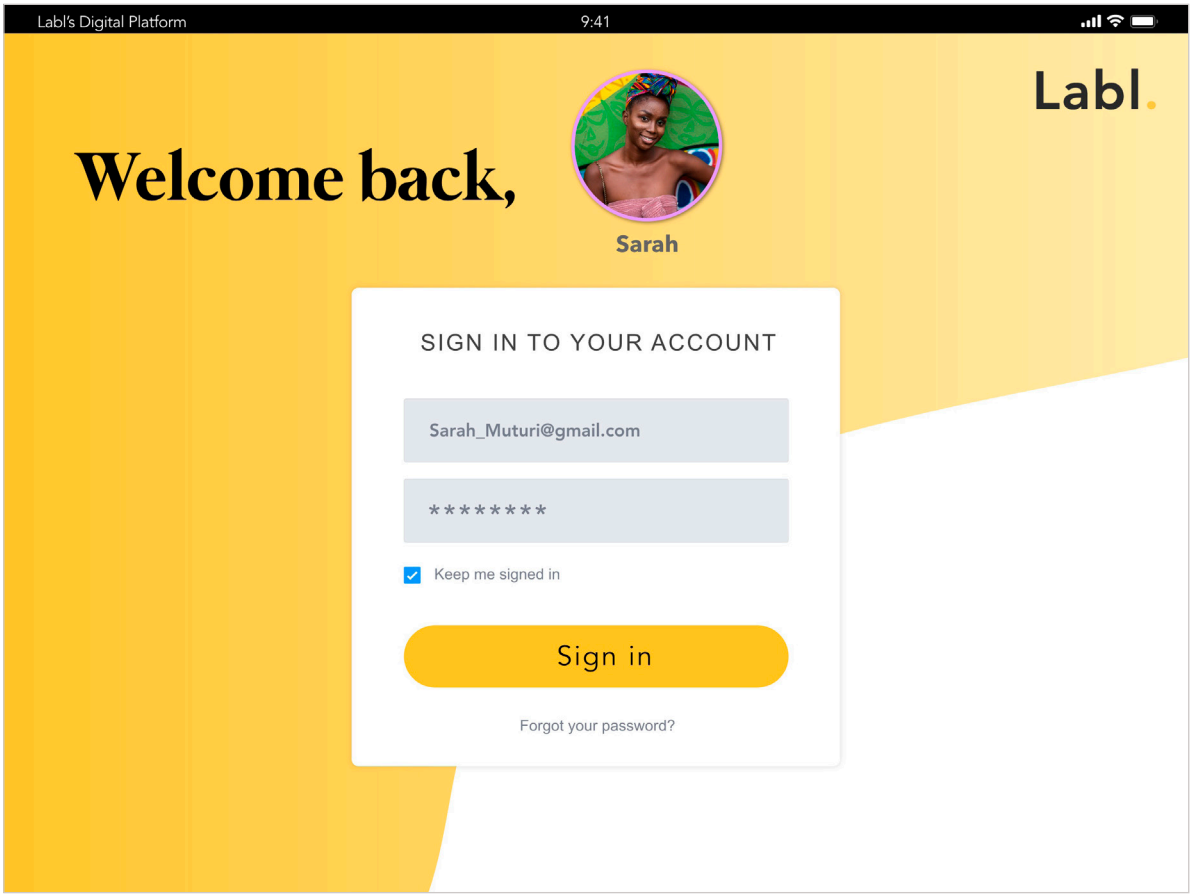


Figure 5.4.Login page

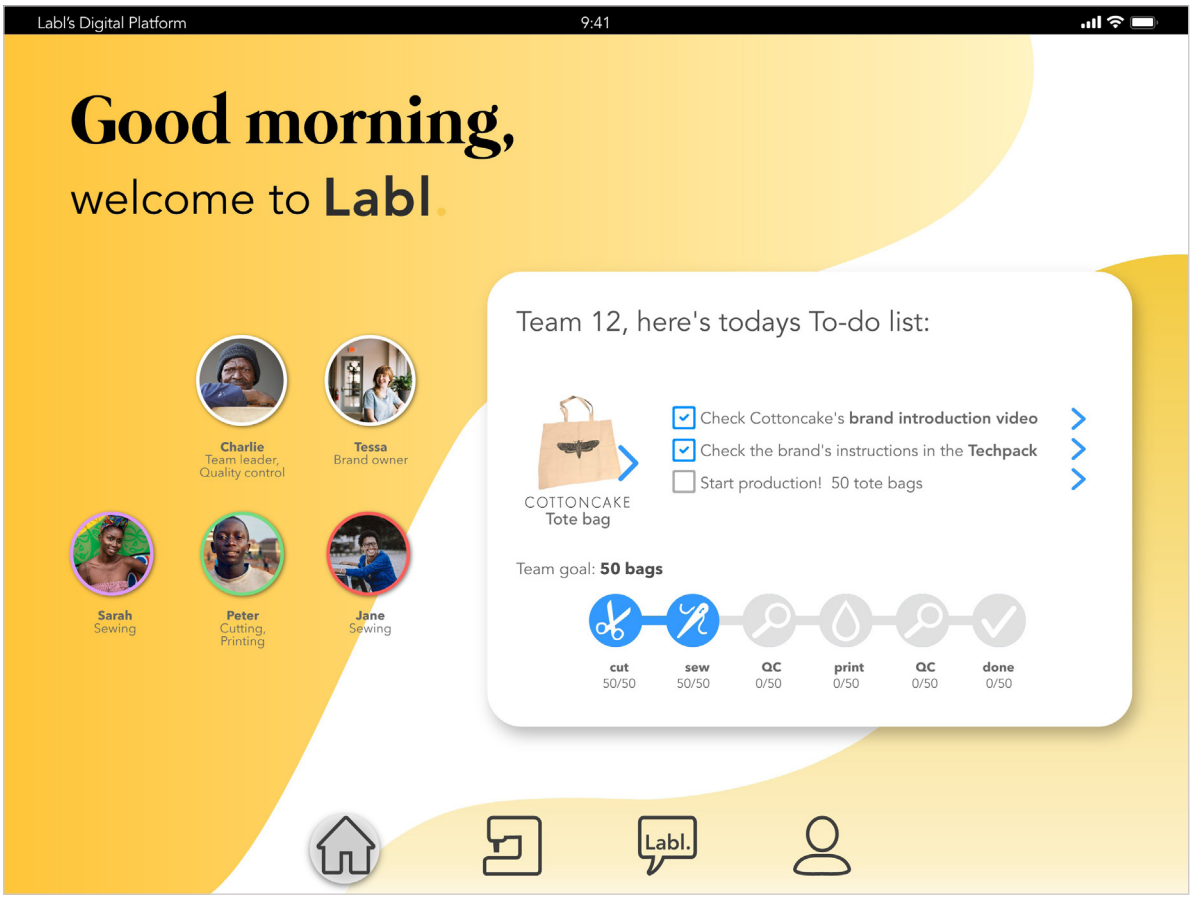


Figure 5.5. Homepage

Figure 5.6. Homepage (With completed roadmap animation and sample review notification)

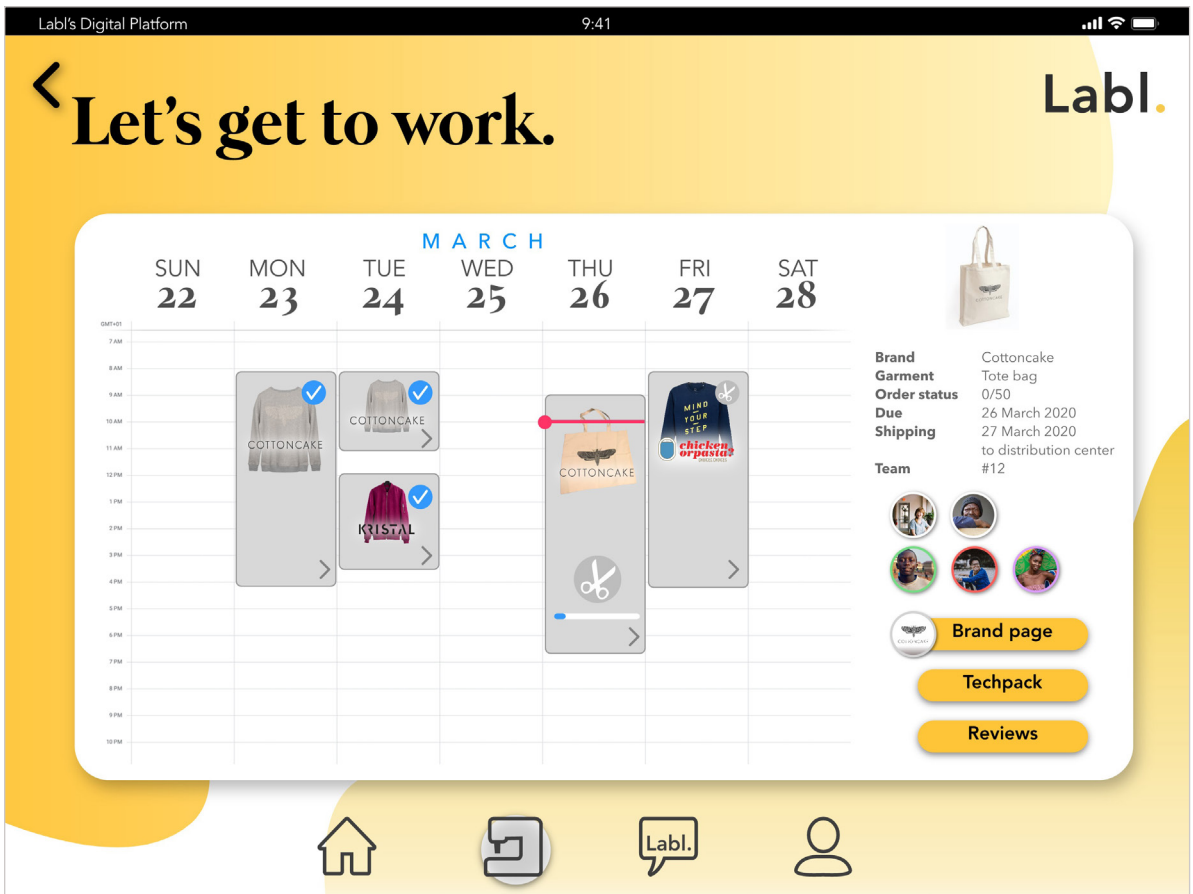


Figure 5.7. Production page

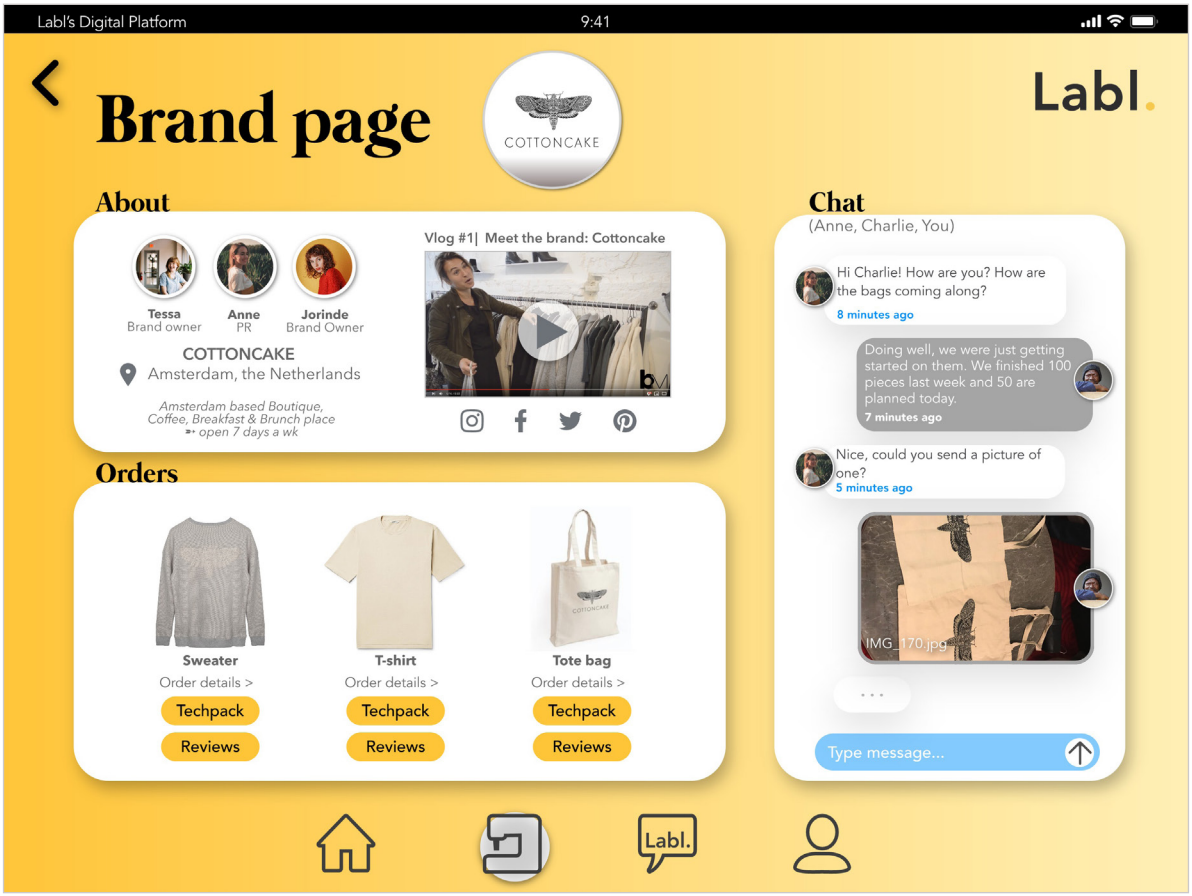


Figure 5.8. Brand page

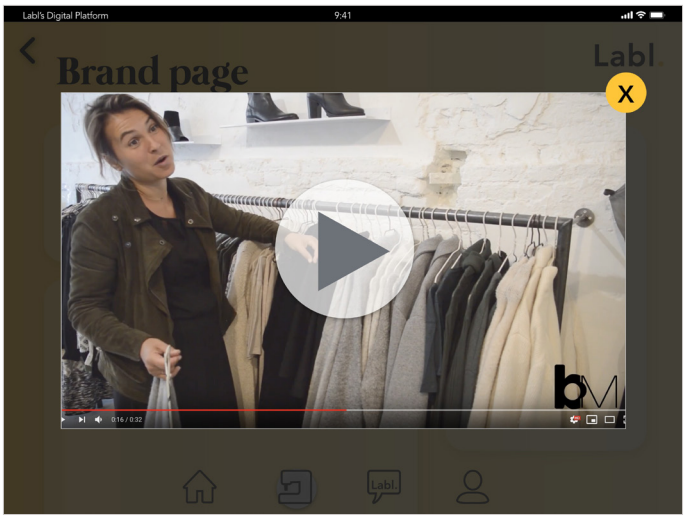


Figure 5.9. When the introduction video is started, it expands to full screen mode.

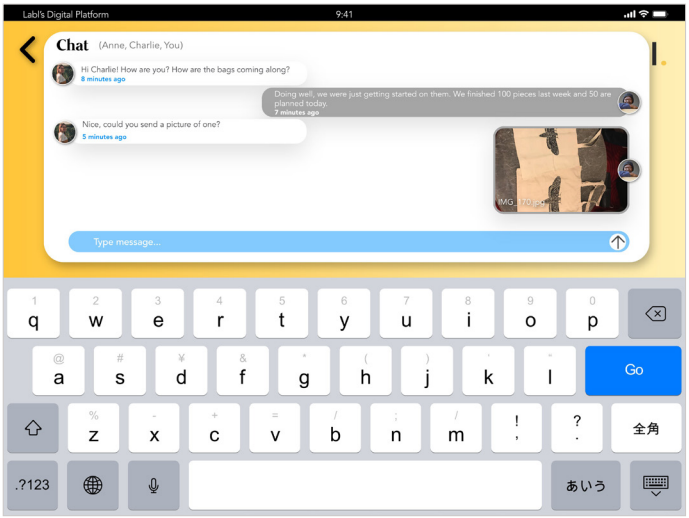


Figure 5.10. The chat function in full screen mode

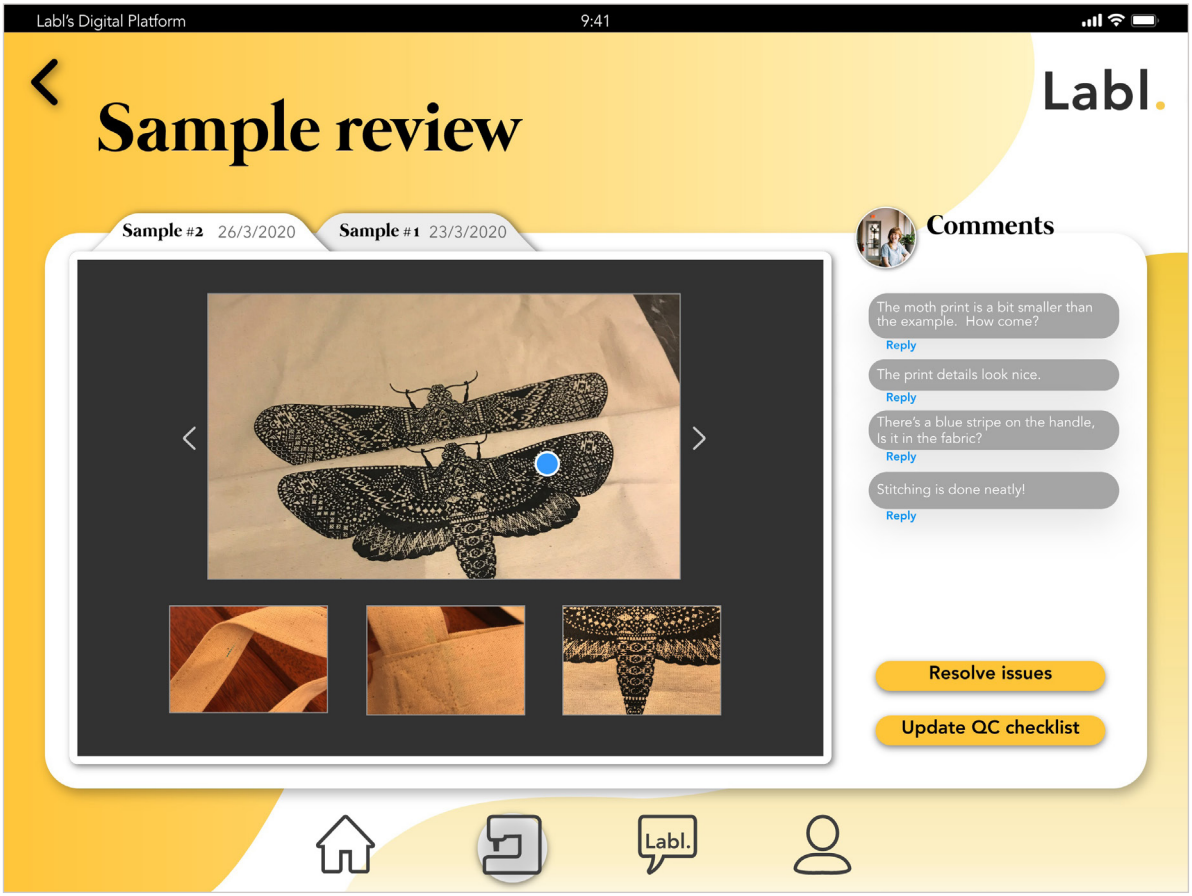


Figure 5.11. Sample review page

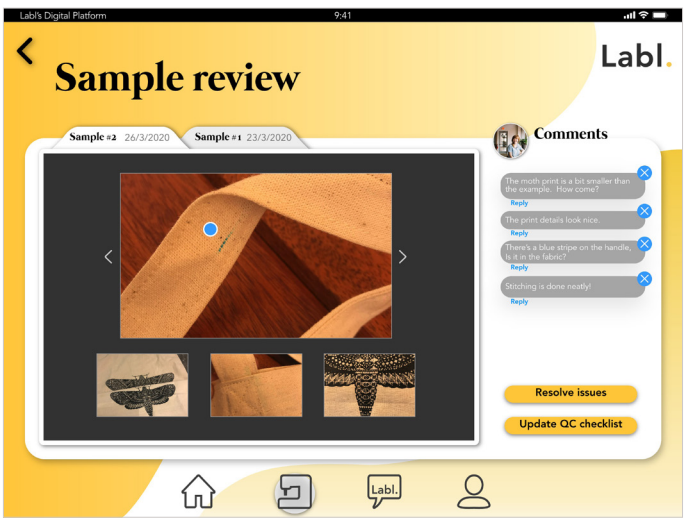


Figure 5.12. Sample review page, 'resolve issues'.

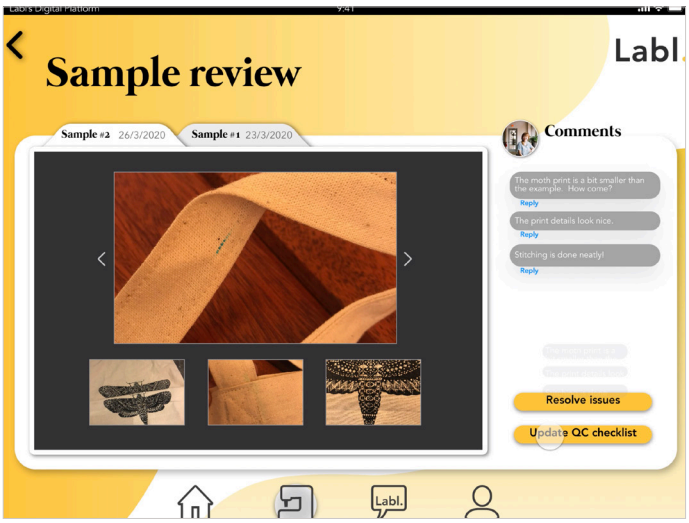
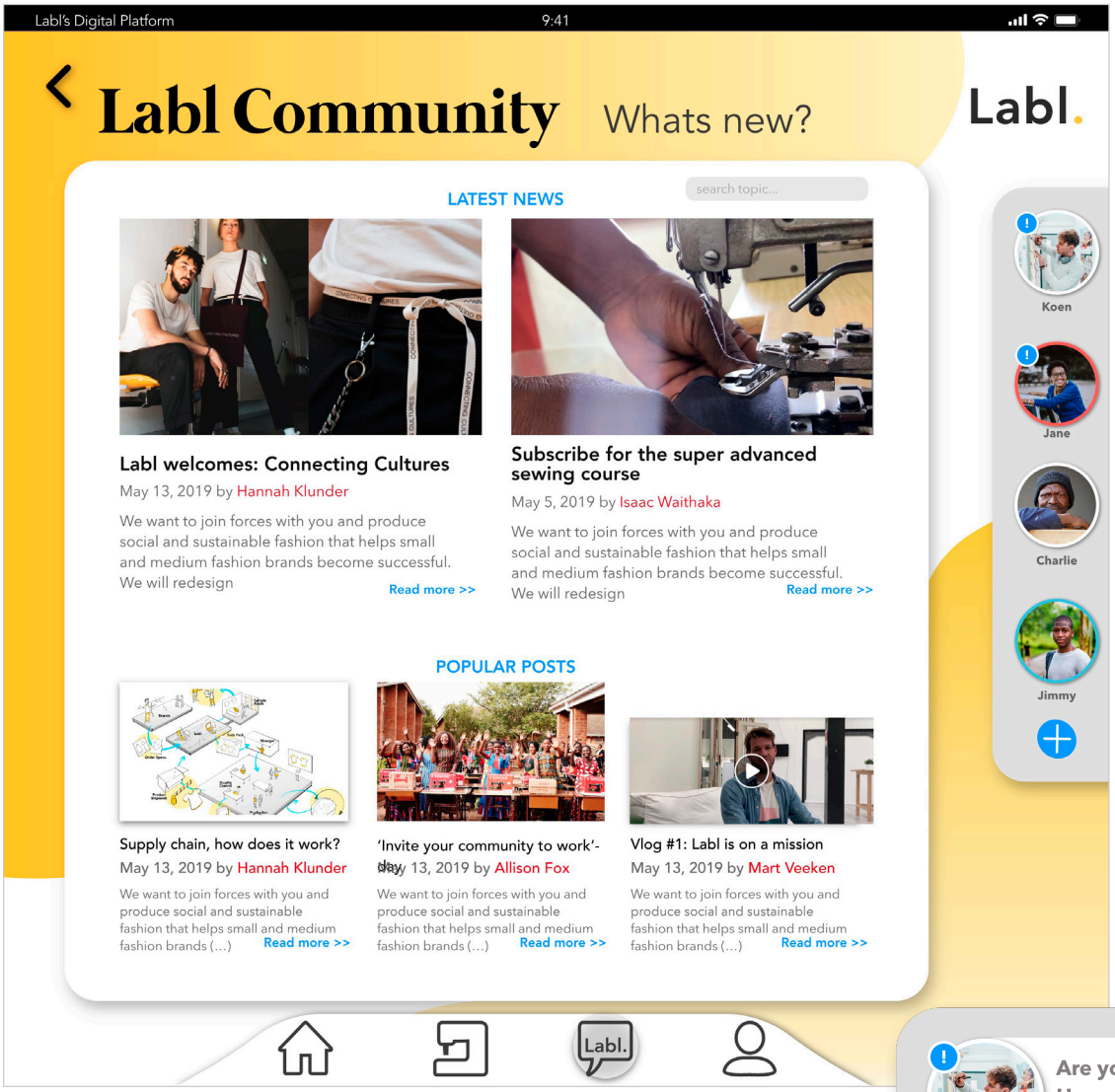
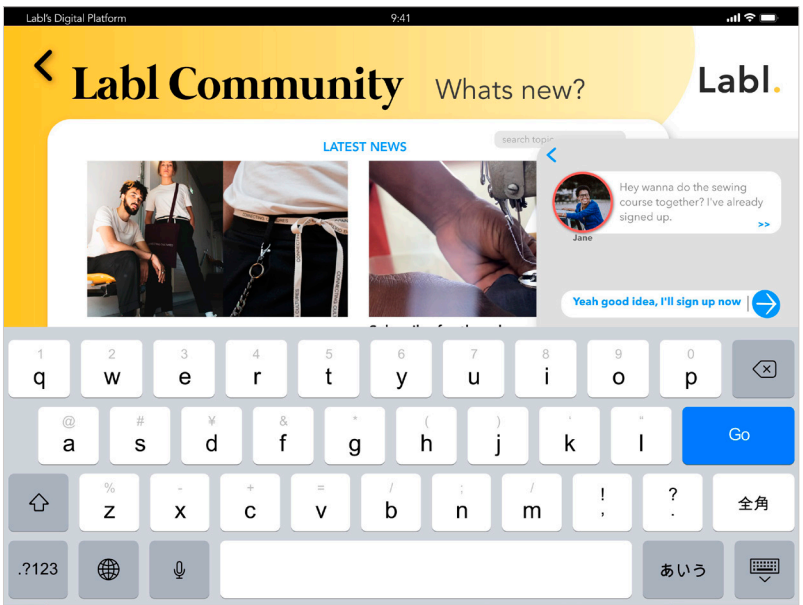


Figure 5.13. Sample review page, 'update QC checklist animation'.





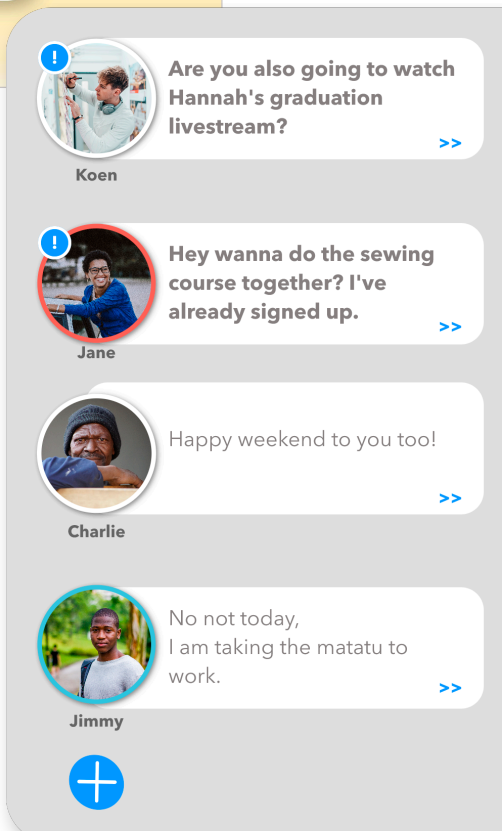


Figure 5.14. Labl's community platform design .

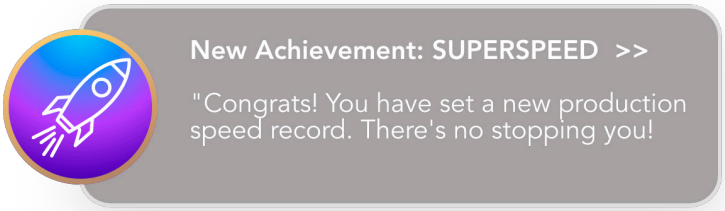


Figure 5.15. Achievement award notification

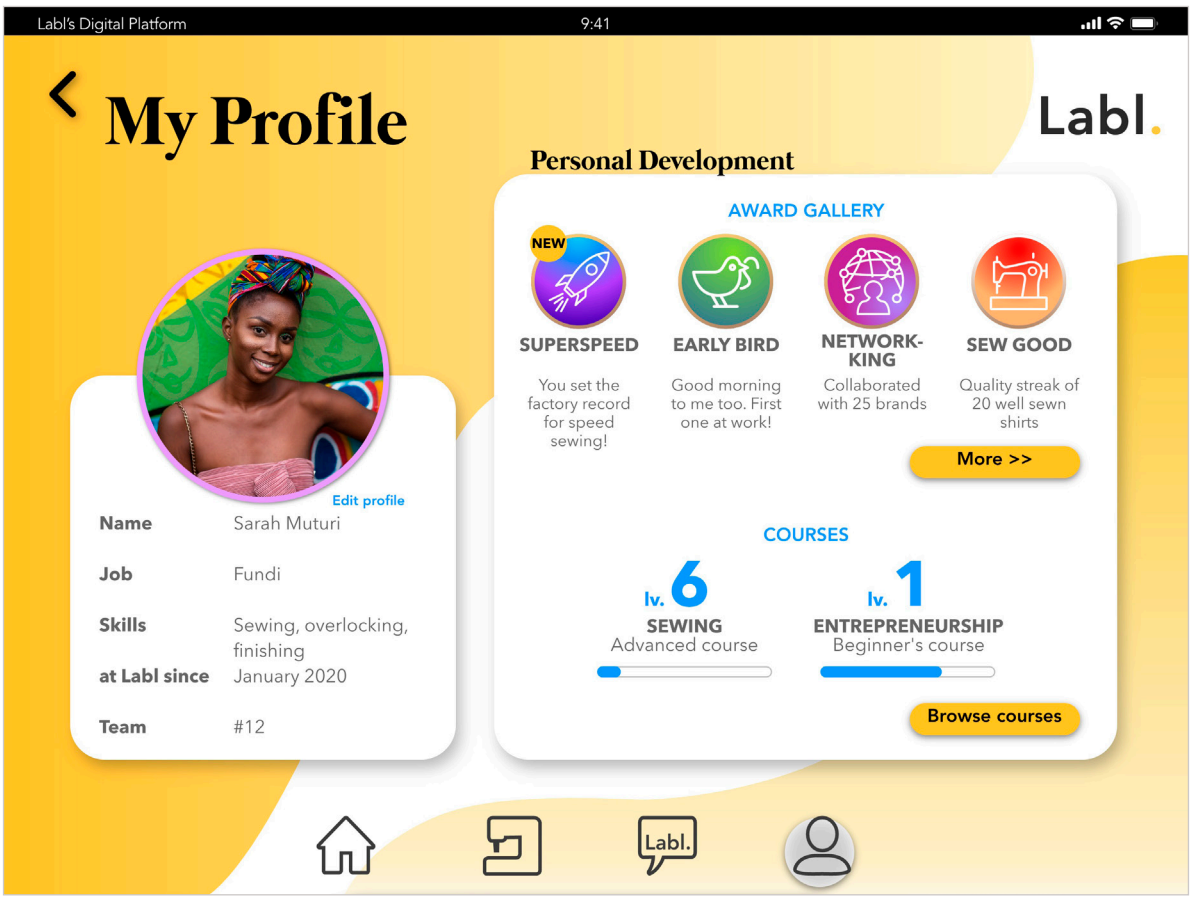
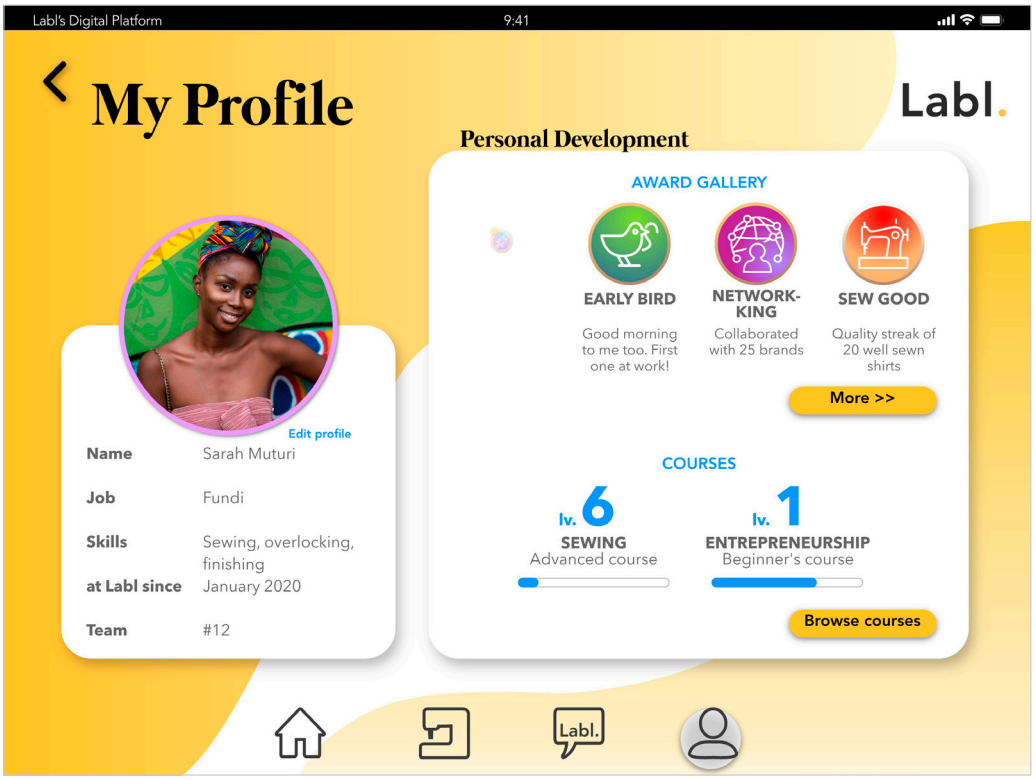


Figure 5.16. Personal profile page .



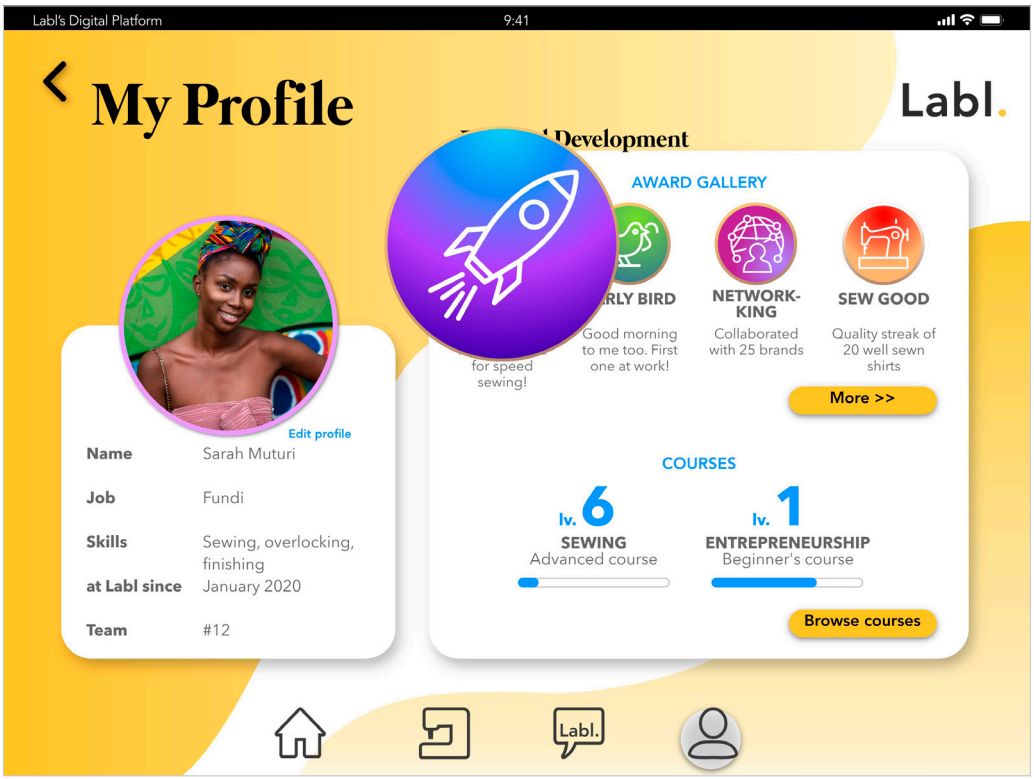
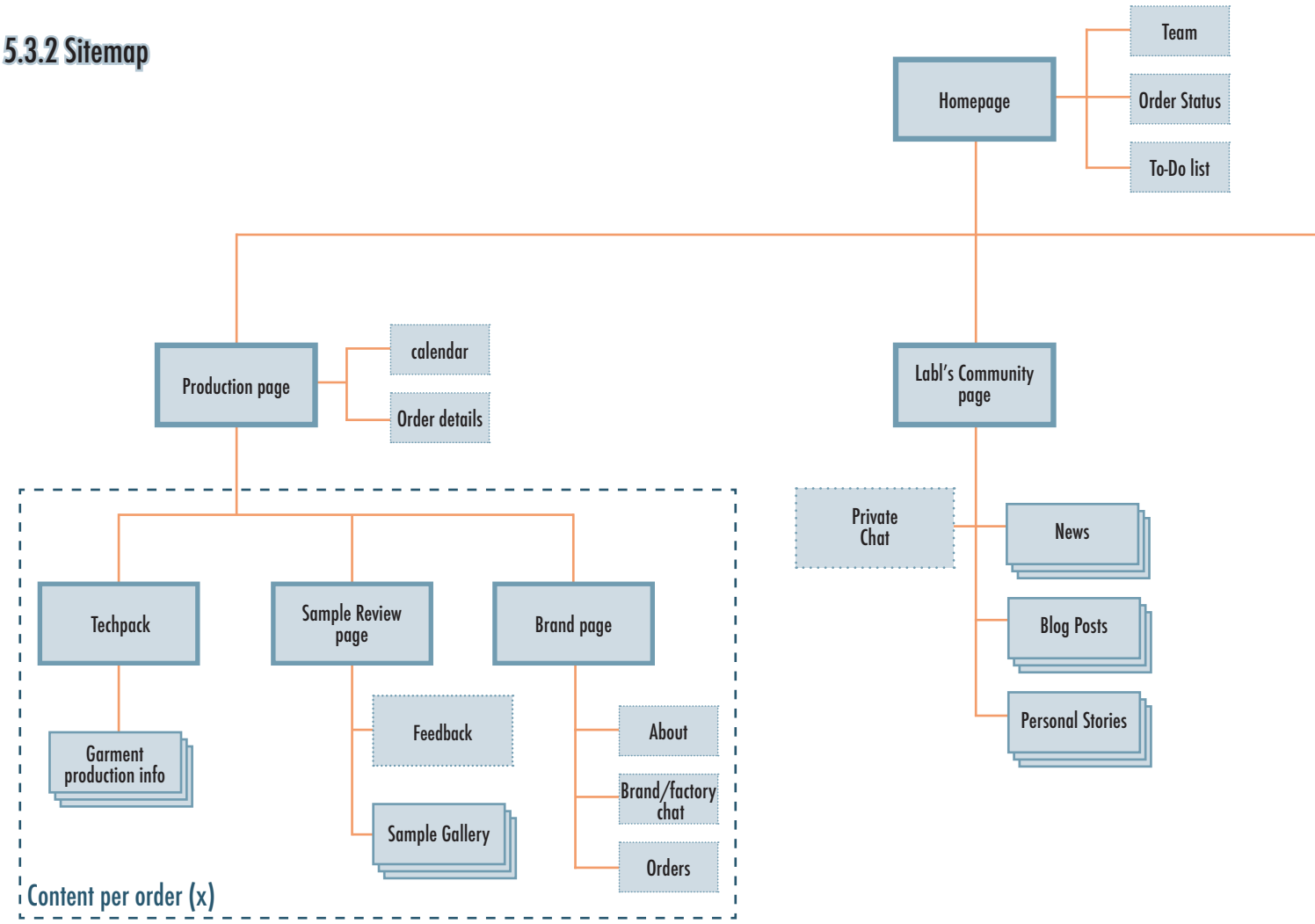


Figure 5.17. Stills from the achievement award notification.

5.3.2 Sitemap



This sitemap is a conceptual one, which means it shows top-level headings, key pages or sections, and key relationships between pages or sections (Spencer, 2010). It does not show all the pages that will eventually be in the platform, only the most important pages. Some pages will be crosslinked to each other (i.e fundis can sign up for courses that are shown on the community platform, even though the course catalog is accessed via the personal profile). However, for the sake of legibility, these crosslinks are left out of the sitemap diagram.

There are multiple solutions to categorise this content and build the information architecture. This sitemap is an iteration on the prototype sitemap (Appendix K). Via another user test, it must be evaluated whether this hierarchy will lead to the best user experience.

Rationale

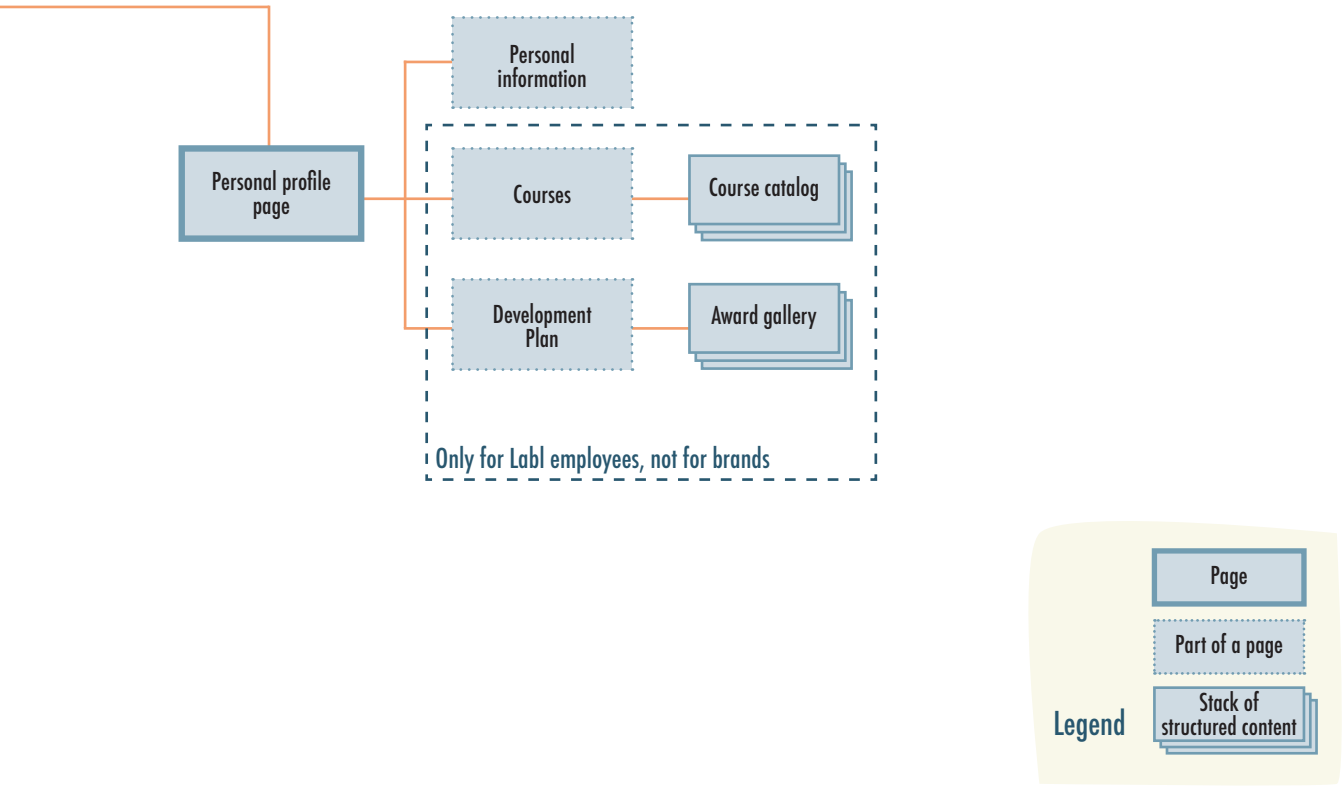
The first draft sitemap was set up following this rationale;

General

- The amount of levels within each section was kept limited. Which means, within a few clicks, the user must be able to access all content. Even if the user can not reach the desired content within three clicks, it is not a big problem as long as the user feels he/she is on the right track.
- The interface was designed with many data overviews and previews, so the user already has an idea of what kind of data will appear after the next click. Which will help with locating data quickly.

Homepage

- There are three options in the main menu (of the homepage): 'Production info', 'Labl Community page' and 'Personal page'. This number of sections was chosen to keep the homepage clean and easy to understand, preventing the user from seeing



information he/she does not need.
- Order status is an important feature for increasing the transparency within the supply chain. Because the research revealed that it is the most relevant information for brands and fundis it is displayed on the homepage.

Production
- The first page in the production section gives the user an overview. It contains the factory planning, as well as the orders the user is working on. The further down this branch, the more detailed the order information gets.
- The feedback space is presented alongside the sample gallery to keep an overview.

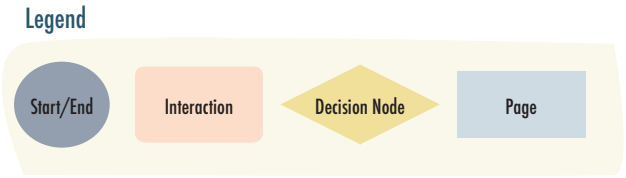
Personal Profile
- As the personal profiles contain private information, the content will vary per user. Labl employees will have an additional functions for self development.

Labl Community page
The Community platform will only consist of one page which is regularly updated. Because it is a collection of news, blog posts by Labl office and personal stories which is presented in chronological order, only one page is needed. The chat function is pinned in place and always visible.

5.3.3 User Task Flows

In this paragraph two examples of a user task flow (UTF) are shown. "It is a representation of user's sequence of interactions with the system to accomplish a certain goal. User flow diagrams emphasize that different user groups may perform different tasks or travel in different paths. User flows are typically attached to a persona and/or a specific entry point." (N. Romero Herrera, 2019) In this case, the user is a fundi and the scenario is first explorations with the digital platform when arriving at work. The user is just browsing, the interaction is slow and open.

Figure 5.18 shows a general use flow through the main pages (Home, Production, Labl Community and Personal Profile). Interactions marked with an * will be further elaborated on in figures 5.19 and 5.20.



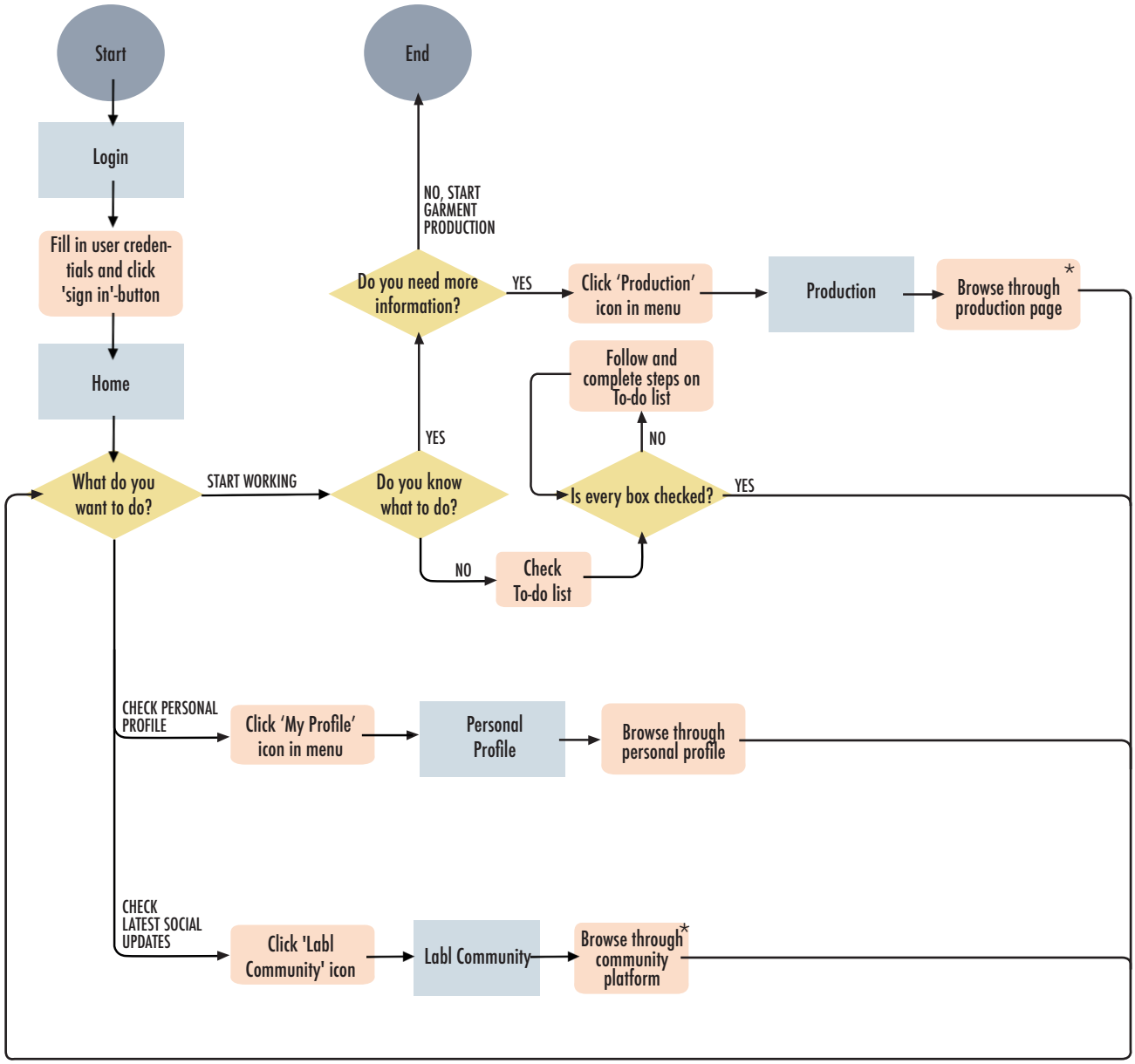


Figure 5.18. UTF; Exploring the homepage from the fundi perspective.

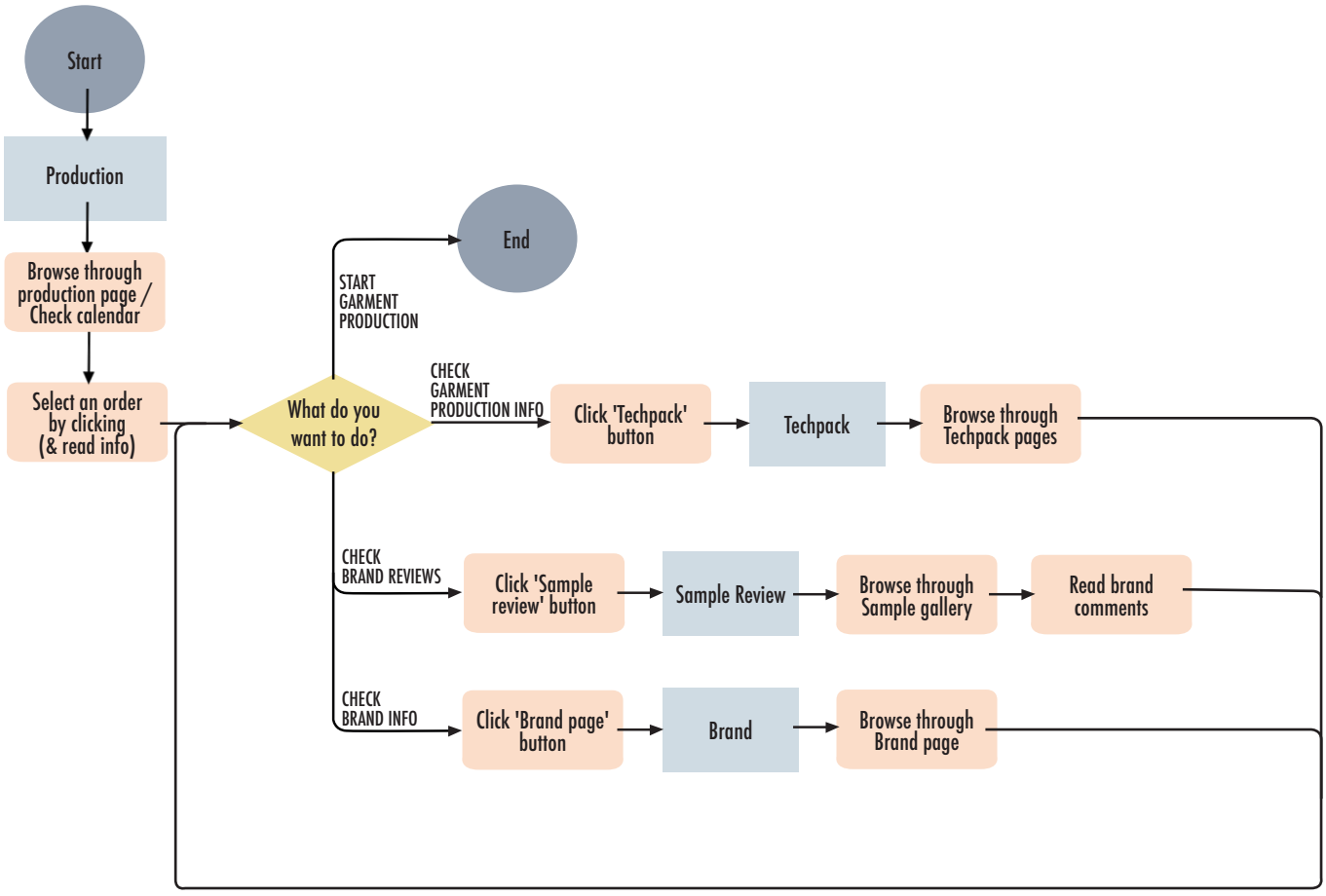


Figure 5.19. UTF; Exploring the Production page from the fundi perspective.

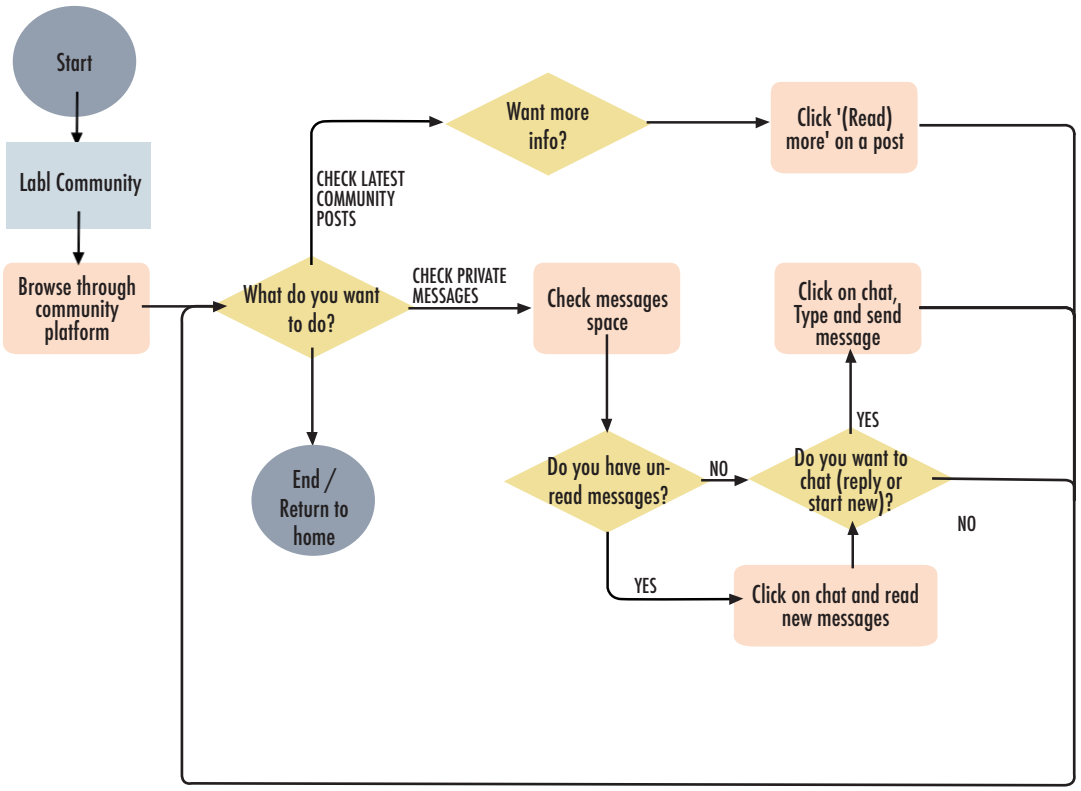


Figure 5.20. UTF; Exploring the Labl Community page from the fundi perspective.

5.3.4 Guidelines

Digital Platform

One channel for communication

Communication is most effective when it is limited to one channel. Additional use of other (social) media like email or phonecalls might lead to miscommunication.

User Levels

Division of tasks and responsibilities are by default as described in table 5.2. However, rights can be adjusted for example for training purposes. Meaning, a fundi could be awarded rights to chat with brands to develop communication skills.

Production

- Feedback may be given on execution of the garments, when it is not done according to the techpack.
- If the brand wants to change design specifications after receiving a sample, the techpack needs to be alternated. The brand will need to consult Labl's office in the Netherlands, because the factory can not implement design changes.
- The channel for feedback is separated from the social platform. Do not use the feedback channel for smalltalk or the other way around.

Social activity

- Labl office is monitoring the digital platform and inappropriate language or behavior will be reported and/or deleted. It is not allowed to ask brands for community or personal money.
- Social activity over the platform is encouraged, but must not be at the expense of work.

Introduction of cultural differences

- It is advised to give team leaders, fundis and brands some information about how to deal with cultural differences and potential issues that could occur.

Some examples;

- For brands: "Fundis are communal and are not used to strict division of work and private life, which means they could ask personal questions. It is common in Kenya to ask someone whether if he/she is married or has children. For fundis, asking these kind of questions shows they care."
- For fundis: "Dutch people are very to the point and do not sugarcoat their opinion. They communicate in a direct way; what they say is what they mean. For them, it is a sign of being honest and sincere. The fact that you mainly get negative feedback does not mean you did a terrible job, it just means there is some room for improvement."

Labl's Guiding Principles

The final design proposal has been presented and by design a lot of problems in communication can be solved. However, because we are dealing with people, their contribution to the platform is crucial. In order to make it work in the context and help facilitate fruitful communication between brand and factory, users need to behave in a certain way. The guidelines to help steer this behavior are called 'Labl's Guiding Principles', which are basic values which form Labl's new organizational culture. One must be careful with calling these guidelines explicit or strict rules, as we know now that in Kenyan culture, rules are easily disregarded. Ideally a poster with the guiding principles will be hung up in Labl's factory to remind users on how to ensure smooth collaboration. Additionally, brands should also be presented the principles during first contact with Labl.

We are all Labl.
At Labl we all work together as a team, regardless whether you're a fundi, brand, or factory manager. We value personal relationships and take time for getting to know each other. We believe that if we work together, it can benefit us all.

We are honest and open in communication.
Because collaboration within Labl crosses borders and cultures, it is important to keep communicating well. By notifying each other of issues that (may) occur, we can solve them earlier on in the process. So always give honest feedback, and be open when discussing expectations. It is better to be complete then to leave things open for interpretation. Listen to each other and when in doubt, ask.

We are future minded.
At Labl we are future minded. Which entails your personal future, of the community and even the planet. Think about it, what might be the consequences of your actions now?

We work hard & play hard.
We believe in a healthy fun/duty balance. We expect you to be your best at work, but also celebrate victories whenever we can.





Labl (office)	Team Leader	Quality Control	Fundi	Brand
Responsibilities • Uploading the digital twin (made in co-creation with brand) and corresponding techpack. • Updating community platform • Communication with factory manager. • Monitoring of platform.	**Responsibilities** • Task division, instructing and guidance of fundi team. • Communication with brands. • Keeping track of order progress. • Tracking garment quality	**Responsibilities** • Recording data on order progress and garment quality • Giving updates to team leaders and factory management	**Responsibilities** • Production of quality garments. • Communication with fellow fundis and team leader • Reading instructions and feedback. • Self Development	**(Core) Responsibilities** • Co-creating digital twin. • Communication with Team leader • Providing feedback on produced garments. • Provide Brand information
Input • Digital twin/tech pack • Labl news & Community posts	**Input** • Task division/ planning • Chat with brands • Feedback on fundi performance • Labl Community (private chat) • Profile picture	**Input** • Labl Community (private chat) • Updating production roadmap • Recording quality data • Profile picture	**Input** • Labl Community (private chat) • Profile picture	**Input** • Digital Twin / Techpack • Sample review • Questions and comments in chat • Brand info page Labl Community (private chat) • Profile picture
Output • Access to all content	**Output** • Labl Community platform • Profile (personal and of team members) • Production page (only own orders) •Techpack • Brand Chat • Sample Review page	**Output** • Review Checklist • Labl Community Platform • Production (only own orders), including tech pack and sample review • Personal profile	**Output** • Labl Community Platform • Production (only own orders), including techpack and sample review • Personal profile	**Output** • Labl Community Platform • Production & Brand info (only own orders) • Techpack • Chatroom • Sample Review page

Table 5.2. Various stakeholders have access to the digital platform, but everyone has different needs and responsibilities. Therefore, the interface will show different content to different users. Employees from Labl office, Labl's factory and the client brands will have a personal account from which they can log on. The final design concept contains five user levels: Labl (office), team leader, quality control, fundi and brand. For each user role it is described what the core responsibilities are, what their input is to the platform and to what output they have access. The factory management is not in the table, but has access to all content except for other's private messages.

5.4 Conclusion

The project explored communication between brand and factory in the fashion supply chain. Research revealed that the relationship between brands and production facility is often poor, which results in equally poor garment quality. The cause is multifaceted as it concerns different types of issues: in communication, motivation and trust. Bad quality due to poor skill and materials were left out of scope during this project. Bad quality due to poor decisions can be solved through communication and where therefore considered in scope.

Design Challenge

To help improve the current situation, the following design goal was set up:

"To **facilitate communication** between Dutch brands and fundis in Labl's production facility in Kenya, in a way that will improve **mutual understanding** and deliver **better quality fashion** over time."

In order the to achieve this goal, the following factors are of importance.

1. Creating more transparency in the supply chain
2. Building trustworthy relationships between factory and brand
3. Enable communication of clear instructions and feedback.

5.4.1 The Solution: Labl's Digital Platform

From early on in the ideation phase it became clear that to achieve the design goal, the solution would have to consist of multiple partial solutions. A concept of a digital platform was developed accompanied by a data collection method through labels with QR-codes.

What solutions were aimed at achieving the design goal?

Enable communication of clear instructions and feedback

- Use of one communication channel: Labl's digital platform.
- Use of fixed steps to process an order: by making a digital sample, translation into a techpack with complete production information. Feedback is provided via the sample review function.
- For additional questions, the brand/factory could be consulted via chat.
- Providing information that leaves little room for interpretation by offering a combination of graphical content, text, photos and tables.
- Respecting the Kenyan cultural preference for hierarchy in communication. Fundis should get instructed by superiors, and also be given feedback from higher up. The role of the team leader is therefore of great importance.

Creating more transparency in the supply chain

- Labl has to ensure an open and honest atmosphere where fundis feel free to report issues without fearing loss of face.
- Production data is transparent and accessible for all stakeholders. This concerns planning, progress, task division, instructions and feedback
- Ownership labels enable garment quality to be traced back to the fundi team that made it. Quality control will scan each garment individually and evaluate according to a quality checklist that is agreed upon by the brand. Ensuring brand feedback gets implemented is done by adding feedback as notes to the quality control checklist.

Building trustworthy relationships between factory and brand

- Stimulation of learning about and respecting

cultural differences among stakeholders.
- Definition of Labl's organizational cultural values, introduced by Labl's Guiding Principles which should be made familiar to all stakeholders.
- Sharing of brand information and stories, to help fundis with gaining awareness of where the garments are going. Introduction videos may be used to send a personal message.
- Increasing visibility of the brands and fundis that need to collaborate, through online team forming per order. The presentation of the team on the homepage will help raise this visibility.
- Encouragement of personal (social) contact via Labl's community platform.

Part of the cause for the lack of trust was that brands felt like the fundis responsible for production did not seem to care to try their best. Disciplining staff was also a major issue for factory owners. Additional solutions were presented to trigger motivation among fundis to improve implementation of instructions and feedback.
- Stimulation of fundis in becoming more future minded, by adding team a calendar function and personal development plan. Use of a personal to-do lists helps fundis in knowing what to do and working efficiently.
- Use achievement and personal development as a driver. Which includes offering courses and presentation of past achievements.
- Ensure a suitable fun/duty balance, via a friendly tone of voice in the interface, use of gamification elements and playful animations.

5.4.2 Evaluation

User tests were performed to evaluate the usability, experience and effect of the design intervention. Overall, was the feedback gained from the user tests rather positive. Participants confirmed the desirability and need for such a platform. Also did fundis confirm the necessity of knowing who they are producing for. Because a lot of data traffic is automated via the platform, human shortcomings in transparency are bypassed. This also caused an increase in trust from the brand perspective.

The experience of the first concept was as intended. In comparison to the first concept, was the final concept tweaked to strengthen the feeling of togetherness and better assure implementation of feedback. Whether these adjustments are effective is yet to be evaluated.

The successrate of execution of the tasks during the user tests was high; fundis could manage to find garment information, brand information and feedback. It was confirmed to be clear, because during the participants could read out loud what was expected of them.
Multiple users made comments during the user test that they felt encouraged and motivated to start producing according to the instructions. In terms of usability, was the interaction simplified to be understood by fundis in the industry.

All in all, have the tools for facilitating communication been created. Mutual understanding in terms of instructions and feedback has been improved compared to the current situation (as explained in the problem statement). Transparency was increased by making production data accessible to all stakeholders. The interaction between stakeholders was designed to become more personal, with the intention to build strong relationships over time.
First guidelines for ensuring right implementation of the tools have been set up as well, to hopefully result in better quality fashion.

Limitations

The design was built upon fitting solutions to tackle the design challenge. However, the evaluation method of the intervention had its limitations. The stream of information that was mimicked in the prototype was only one-sided: From brand to fundi. This was partly caused by limited prototyping skill. Ideally the chat function would have been developed to function in two ways. Nonetheless, did instructions and feedback appear to have come across clearly.
However, the effectiveness of the design intervention was hard to evaluate. There was no proof of the design intervention leading to production of better quality fashion, because no actual pilot of the complete order process had been performed.
Implementing a platform like this requires investing time and effort. Whether the design intervention is successful and leads to correct implementation of the feedback and eventually in production of better quality fashion is yet to be confirmed.

5.4.3 Recommendations

There are issues which were not treated in the course of this project but are necessary/recommended for further development. The effect of these recommendations still needs to be tested to see if they have the desired outcomes.

User testing with brands

Currently, the digital platform interface has only been tested by fundis and laymen and did not include two-way communication (with question and answer from both brand and factory.) It is advised to develop a prototype for brands as well to gain insight in their perspective.
Ideally a trial would be performed where brand and factory would only communicate over the platform. No additional phone calls or emails allowed. It would be most interesting to see what issues would come up.

Addition of language options.

In this case, brand and team leader need to speak the same language to communicate. However, as was experienced during user tests, did some fundis have difficulty with understanding the platform due to a language barrier. Because of it, there might be a risk that feedback would get lost in translation. I therefore advise to further explore the options of making garment information also accessible in Swahili. Possibly could implementation of an automatic translating feature in the platform serve as an outcome for those users.

Development of the Quality Control QR-scan interaction.

This project focused on communication about quality, rather than the actual performance of quality control. Therefore the whole concept of QR-scanning garments to record data was developed to a minimum.
Ideally, a QR reader would be implemented in the smartphone app of the digital platform. Quality control would then over the same app record data while evaluating the garment, which would then be visible for Labl, brand and other factory employees as well.

Further development of the ownership labels.

The ownership labels also need further development in order to be viable. It should be further investigated what kind of information will be presented after scanning the Labl and how this interaction is experienced.

Development of 'Labl's Guiding Principles' poster

Throughout the organization, Labls underlying values must be made clear from the start. Development of a poster where Labl's Guiding Principles are explained will help in activating behavioral change of Labl employees and brands.

Recommendations for implementation

The final result of this project is a first concept of a digital platform for Labl. The prototype design has been evaluated by stakeholders, which confirmed the need for such a product. It has been tested on experience, usability and effect and has gotten positive responses.

However, if Labl wants to implement such a platform in its daily workflow there are still many steps ahead. The platform design is complicated and uses a wide variety of data types. The different user levels make it more complex. Nevertheless it is feasible, because it uses (and combines) technologies that are already being used in other contexts. It will be a large and time consuming project, which will require financial resources that are not available yet because all funds are currently going towards the realization of the factory (source: James Timmermans, Labl, via personal communication on March 2nd).
First things first, the factory still needs to be built to generate income. When the factory is up and running and first orders (processed the oldfashioned way via email) the development of the platform could become priority. And it should, as digitalization of the fashion supply chain has been Labl's mission from the start. So in time, this is the direction which Labl needs to follow. I advice Labl to use this project as a guideline for the future development of the platform. Learn from the insights that were gathered through context research and user tests.

The next step could be development of a minimum viable product; a platform which presents and records garment data and makes it insightful for all stakeholders, or at least those responsible for communicating garment instructions and feedback (chatroom, roadmap, techpack and sample review page). When the minimum viable product has proven its added value, additional features may be added.

Budget must be allocated to the hiring of a front and back end developer, who will work on the platform for months. Afterwards, must the platform be professionally tested before it can be implemented.

5.5 Personal learning reflection

Looking back on the project, I am thankful for being part of the adventure called Labl. Before I spoke with Mart I never thought I would be able to experience such an undertaking from up close (as I thought I would never dare to deal with the uncertainty of starting a new company myself). So this was an opportunity I would gladly take. I thought I was prepared for it, but still ended up underestimating the insecurity and chaos that comes with a startup. Up until the very end of the project I spent a lot of time and effort reducing the fuzziness.

The topic started with artisanally produced items under the company name Able Craft, then focused on leather and textile, and near the end solely on textile. At the same time, Labl shifted from collaborating with different production facilities, to building their own factory in Kenya. As Labl's plans got more concrete, the aim of my project became clearer as well. Nevertheless, at times it felt like I could start the whole process all over again.
Having only had prior experience with fictional clients during the course of my studies, made this a very interesting experience, which has shaped and matured me as a person and designer.

Last August, I flew to a country I barely knew anyone or anything about by myself. And even though it was very short, it was a rich experience. I deeply enjoyed talking to Kenyan fundis and entrepreneurs, with whom I shared the same passion; making beautiful products. I had the opportunity to watch them make sandals, bags and different types of clothing, which made me want to step next to them in the workshop and start producing along with them.
Back in the Netherlands, it was difficult not having to be able to ask the target user group in Kenya some questions or comments. If it would have been possible, I would have liked to spend more time in Kenya to hear personal experiences and gain more indepth insights.
I regret spending a lot of time on literature that in the end, did not contribute much because the scope of the project got adjusted quite a lot in the early stages.

In hindsight, talking to brands and fundis about their experiences gave a lot more useful insights. If I could have done it over again, I would have started talking to users from earlier on, even though I might not exactly know what I would want to ask about.

I consider myself a team player, who finds joy and motivation in discussing issues and ideas with other creatives. Doing a solo project for such a long period as I have, demanded a lot of dedication and perseverence. Which was hard to find at times where I had already spent the majority of the week working alone in the library.
An upside to doing this project alone was that I could truly make it my own. During the complete course of my bachelor I had wanted to put my visualisation skills to use and tell a visual story. Experimenting with new styles and methods made it fun and less of a challenge to carry on. During this project I were able to develop and finetune my personal visual language.

Another skill I wanted to develop was project management. I managed to make and keep planning quite okay. Halfway during the course of this project I decided to revise the planning, in order to make it easier to combine with playing professional field hockey. This decision allowed me to stay focused and motivated to keep doing both they way I wanted to and reduce the pressure as much as possible.

The complexity of this project was far greater than any project I had done before. Ironically, it was a pitfall for me to effectively communicate all the information, that seemed clear, logical and complete in my mind to others.

People that know me well will probably find it no surprise I struggled with creating structure and bringing information back to the core. I tend to get lost in all the details of a project and end up wanting to implement everything I know into it. Which made it hard to keep track of what was really important and reporting this in a concrete, structured way. Visual thinking functioned as a useful tool for structuring my thoughts, grab the essence of issues and questions and communicate them to others.

All in all, I am pleased with the end result. I am proud that I were able to create a prototype which could mimic the interaction in a realistic way and that I was able to arrange Kenyan fundis to test and evaluate it. Sadly, because the factory still needs to be built, drawing conclusions on the effect of the design was nearly impossible.
It is a shame that there are still so many steps ahead for this concept to be implemented in the real world, but I've grown attached to the company and will keep tracking their course.

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OFFICES TO LET 0742418336
PALOUR
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