TRANSPARENT

THE FASHION INDUSTRY ON ITS WAY TOWARDS SUSTAINABILITY

EDITORIAL

"Sustainability is no longer a fringe issue within fashion but the most defining challenge — and opportunity — of our time."

Sophie Benson, AnOther Magazine 2019

Over the last two years, more and more customers have started questioning how their garments are made. They want to know what brands are doing to mitigate social and environmental harm. Following the recent white paper of the not-for-profit social enterprise Fashion Revolution, customer expectations are clearly starting to shift quite considerably.

That does not come as a surprise. Globally we are witnessing increased attention to questions of sustainability, in particular the climate crisis. To meet that change in perception, fashion companies should, in their own interest, think about how they can help customers make better informed purchasing decisions. Consumers have not only become more active in scrutinizing the brands they buy from, but also willing to pay more for sustainably produced goods.

Among the many approaches for more sustainability, transparency has emerged as a key guiding principle. It sheds light on the social and economic impact of our clothing and even tells us the story of how it got produced. It enables a different communication between operators in supply chains as much as it causes firms to change the way they communicate with consumers. Transparency puts pressure on firms to be accountable.

Fashion producers and retailers are now rising to the challenge. Many of them now understand that knowing and monitoring their supply chains is vital to making progress on a range of issues including sustainably sourced materials, workers' rights, and waste management – and meeting a growing demand from consumers for more information on the products they're buying. Digital innovations offer powerful new tools for building greater transparency, be it tracing organic cotton from the field to store, allowing workers to report anonymously on exploitation and abuses, or much more.

It has been two years since we at betterplace lab first looked at this nascent field. In our report *Transparent* we asked how brands, start-ups and industry initiatives were pushing transparency forward. In the meantime a lot has happened. Pilots have been run to test and verify initial approaches, business models have been refined and partnerships have been cemented. In this series of articles, enabled by Zalando, we will pick up the story from where *Transparent* left off, and look at how this space is continuing to evolve and mature, what new approaches are emerging, and what the next few years might hold.

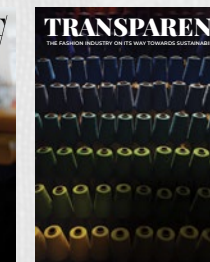### This a six-part series on sustainability in the fashion industry:

1 Introduction 2 Technology 3 Partnerships 4 Financing 5 Data 6 Community
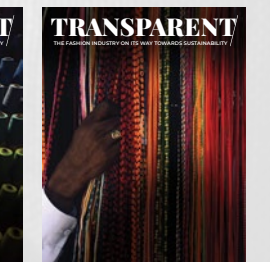
TRANSPARENT

THE FASHION INDUSTRY ON ITS WAY TOWARDS SUSTAINABILITY

This article is #1 of a six-part series on sustainability in the fashion industry

The fashion industry is changing.
The search for sustainable production and consumption models has gained momentum in recent years. The reasons for this range from a shift in public discourse, for example on climate change, to certain events that have changed the way people view and evaluate the fashion industry.

The deaths of over a thousand people in the 2013 Rana Plaza factory collapse highlighted the fact that many brands knew little about how their garments were produced. The accident led to increased awareness of the social injustices that are often prevalent within the industry's production process. Brands were forced to act – and many of them did. By joining forces with engaged start-ups and social initiatives they helped to create a nascent ecosystem of transparency innovations.

Although for now this remains something of a niche, these innovators are experimenting with alternatives to the industry standards, with potentially far-reaching ramifications. There are many standards and processes involved – no wonder, since the fashion industry is the world's third largest manufacturing

industry. It provides an estimated 60 million people worldwide with work and generates approximately 2 trillion Euros annually. While the size alone is challenging, the industry is also highly fragmented. It has very complex global production networks and its supply chains extend from one end of the world to the other. The way cotton is produced in one country may look completely different in another. The same holds true for spinning, dying and processing garments within one of thousands factories around the world.

That is why it is critical to gain an understanding of what key innovations on the way towards sustainability are. We asked Emily Franklin, Innovation Associate at industry initiative Fashion for Good, how they are keeping up with all the aspects of the change within the industry:

Emily Franklin
Innovation Associate at industry initiative Fashion for Good

"We try to look at the disruptive and emerging innovations out there. Each supply chain step is completely different in its form, so we divide our landscaping efforts into supply chain steps, for instance raw materials at the beginning of the supply chain, dyeing and finishing, manufacturing and retail through to end of use.

Transparency and traceability falls into the overarching category, i.e. those technologies that straddle the whole supply chain. Structuring our work as such allows us to capture the nuances in technologies in each supply chain step."

TRANSPARENCY IN NUMBERS

Key findings of the Fashion Transparency Index 2020

"Transparency is visibility. We want to see the fashion industry respect its producers and understand its processes. We want a clear, uninterrupted vision from origin to disposal to foster dignity, empowerment and justice for the people who make our clothes and to protect the environment we all share."

– Orsola de Castro, Co-Founder of Fashion Revolution

	2018		2020
Percentage of the biggest brands disclosed no information	**8%**	→	**4%**
Percentage of brands publish supplier lists covering tier 1 manufacturers	**37%**	→	**40%**
Percentage of brands publish their processing facilities, where clothes are dyed, printed and finished	**18%**	→	**24%**
Brand(s) publishes its suppliers of raw materials	**1**	→	**18**
Brands scored higher than 50% on the Fashion Transparency Index	**10**	→	**20**

Fashion Revolution is a global non-profit movement that campaigns to reform the fashion industry. It focuses on the need for greater transparency in the fashion supply chain and is represented by The Fashion Revolution Foundation and Fashion Revolution CIC.

Source: Fashion Transparency Index 2020 by Fashion Revolution

"Our biggest problem with regards to transparency is the fragmented and complex nature of supply chains, which is quite different to the automotive and energy industries for instance where you have vertically integrated supply chains and therefore a high visibility over processes. This is not the case in the fashion industry, where it is common for brands to have no visibility beyond their tier two suppliers. This means it is impossible to collect data on environmental and social hotspots within the supply chain. That is a huge problem."

Transparency has become a key principle for brands to understand and evaluate their value chains. As an innovation sphere, it spans multiple stages of the supply chain and integrates different approaches. Increasing transparency helps to understand the industry's negative impact and opens up new opportunities. Pushing efforts into that direction is key for a sustainable future, as Emily says. Because today, brands still know very little about how their garments are produced.

As we laid out in our report *Transparent* two years ago, transparency promises various important effects on the way to a sustainable fashion industry.

For one thing, it empowers consumers to make informed choices about their clothing.

Market research data shows that conscious consumerism is set to boom in the coming years. Millennials in particular consider companies' work to improve the environment "extremely" or "very important". This generation is about to become the largest consumer group: A Nielsen Report expects them to spend $150bn on sustainable goods in 2021.
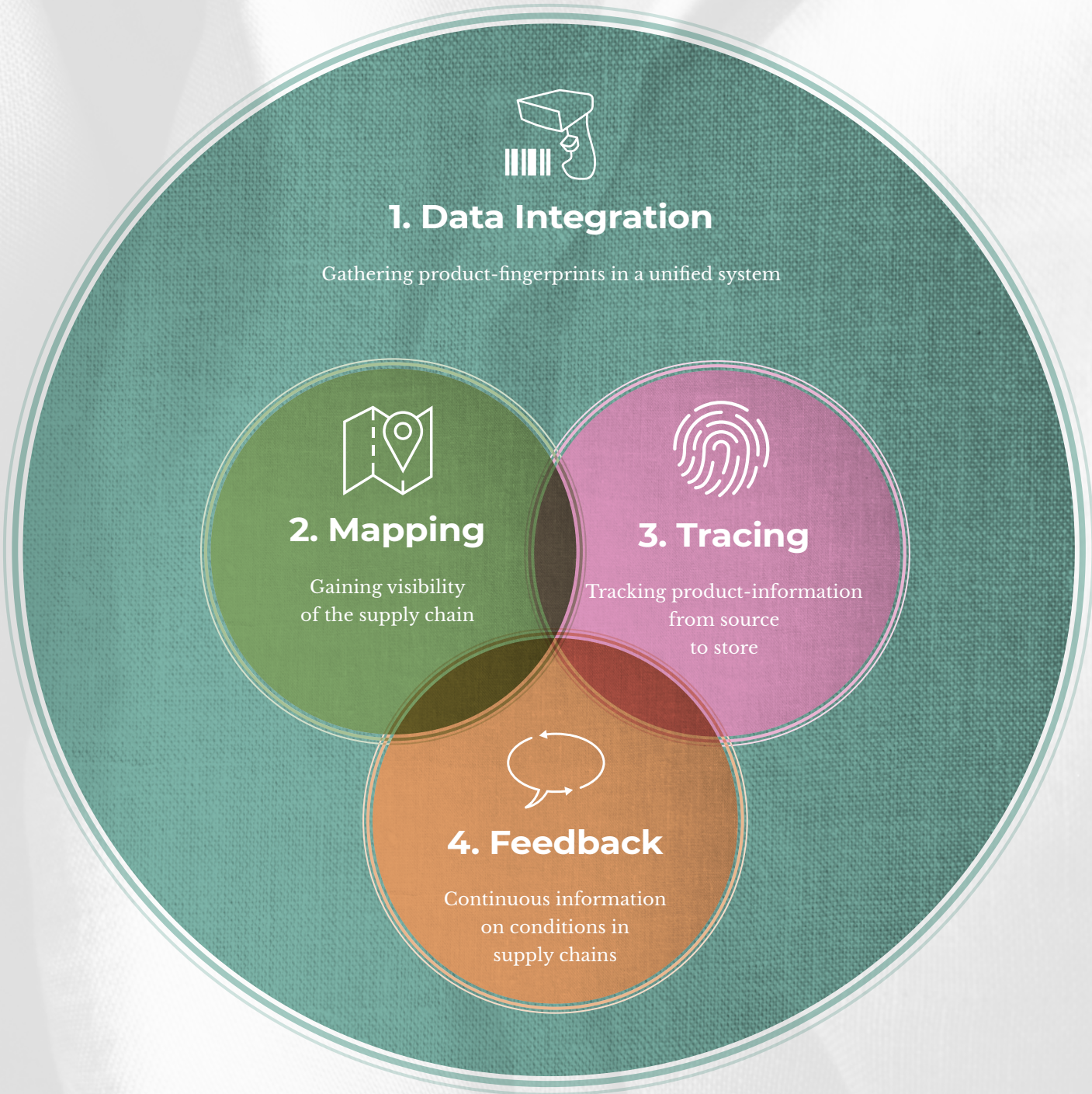
Furthermore, greater transparency could potentially offer a massive economic opportunity. Mapping supply chains brings to light hidden costs and indicates room to improve safety, productivity and satisfaction in the workplace. This allows brands – by taking preventative action – to lower the risk of operational disruptions and reputational damage.

But the opportunity here goes beyond merely optimizing a problematic status quo. Research highlights serious economic advantages in adopting circular economy principles. Using resources more responsibly, generating less waste and producing longer lasting clothes potentially affects every step from how clothes are designed and produced to how they are sold and disposed. This opens up the chance to implement completely new business models that generate new sources of revenue.

Finally, transparency provides civil society, governments, investors and consumers with reliable information on the impact of the industry. Having that information laid out for all to see increases the pressure to change to more sustainable practices, and the reward for doing so. Companies learn about areas for possible improvement and innovative new approaches to get them there; NGOs are able to accurately reflect progress and flag where action is still needed; and investors as well as consumers can more consciously decide on their actions, ultimately controlling which companies generate positive cash flows and which do not.

So how will this change take place? What are the next steps and developments about to happen? Currently there are many different approaches, initiatives and ventures working towards transparent fashion. To get a clearer picture of how transparency efforts will shape the industry, we have developed an innovation landscape to systematically understand where the field is heading.

WAYS OF INNOVATION

1. Data Integration

Gathering product-fingerprints in a unified system

2. Mapping

Gaining visibility of the supply chain

3. Tracing

Tracking product-information from source to store

4. Feedback

Continuous information on conditions in supply chains

START-UPS IN THE FIELD OF TRANSPARENCY

circular.fashion
● Category: Data Integration

Less than one percent of non-wearable textiles are currently converted back into new ones.

Circular Fashion's software creates unique digital tag IDs to promote closed loop recycling. The system connects brands, recyclers and customers to collaboratively build a circular economy for textiles.

www.circular.fashion

Haelixa
● Category: Tracing

Credible sustainability and transparency in the textile industry begins with traceability. For exact identification Haelixa uses an invisible DNA marker which can easily be applied to different materials at any point of the supply chain and get decoded by the recipient. Haelixa was founded in 2012 at ETH Zurich.

www.haelixa.com

Bext360
● ● Category: Data Integration & Tracing

The great advantage of blockchain is the possibility to archive information in a completely reliable and trusted way. Bext360 provides blockchain traceability and quantifiable measurements for sustainability from producer to consumer. A guiding principle of Bext360 is to build a community, by enabling buyers and companies to improve the quality of both the product and the communities of producers.

www.bext360.com

Ulula
● Category: Feedback

Due to the complex structures of global supply chains, it's a challenge to monitor working conditions at every level. Ulula developed a comprehensive technology solution to integrate worker's voice into supplier decisions. Partnerships with hundreds of mobile operators enable data collection from employees' mobile phones in over 100 countries.

www.ulula.com

TrusTrace
● ● Category: Mapping & Tracing

Data on the origin of fashion goods is rare, vendors use different standards, metrics and processes. Blockchain startup TrusTrace creates dashboard visualisations of supply chains mapped with verified supplier data to identify the weakest links in supply chains. TrusTrace is part of the Fashion For Good - Plug and Play Accelerator programme.

www.trustrace.com

Sustainabill
● Category: Mapping

Supply chains are usually complex in terms of their structure, the number of components and upstream suppliers. Sustainabill offers supply chain mapping, data collection, audit management and sustainability risk screening within their platform. The goal is to integrate sustainability into the complete supply chain of companies in alignment with the SDGs.

www.sustainabill.de/

Open Apparel Registry
● Category: Mapping

Apparel factories located all over the world are difficult to monitor. The free Open Apparel Registry (OAR) grants an overview by identifying apparel factories and their affiliations, collating them in one central, open-source map with unique IDs. OAR is a non-profit representing civil society, the open data sector, factory groups, industry MSIs and brands.

www.openapparel.org
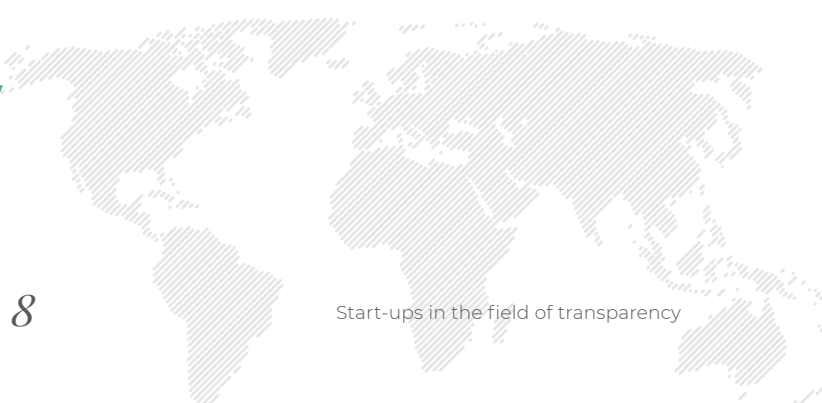
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THE FASHION INDUSTRY ON ITS WAY TOWARDS SUSTAINABILITY

There is no silver bullet.
Increasing supply chain transparency is complex and multifaceted. It means judiciously deciding which technologies to deploy where.

The sustainability challenges facing the fashion industry can be roughly divided into two categories. Firstly, there is environmental damage connected to production, be it through intensive farming methods, release of toxic chemicals, or use of polluting fuels. Secondly, there are the human costs through people working for exploitative wages and in hazardous environments – practices often obscured by suppliers subcontracting work.

Tackling any of these issues needs to start from having a clear and detailed overview of production and supply chains. We need to know where our garments come from, starting from the farm and through each stage of their manufacture. This data needs to be collected and integrated into a system that makes it usable.

In technological terms, this means solving two problems simultaneously. Firstly, there needs to be some means of tracing and tracking materials as they are made into clothes – and several variants have now been developed. Secondly, there needs to be a completely reliable and trusted way of collecting and archiving this information – a task perfectly suited to a distributed electronic ledger system, more commonly referred to as blockchain.

DATA INTEGRATION AND TRACING

Tech in Action - Organic Cotton Traceability Pilot

"The Organic Cotton Traceability Pilot is a big step in the direction of a more transparent supply chain that offers valuable and sufficient insights for the whole industry. We are very happy to have been able to support this project financially but more importantly with our knowledge and expertise and are looking forward to leveraging this information in the future."

– Salah Said, Corporate Responsibility & Sustainability Manager, Zalando

The growing interest today in sustainability is helping to develop innovations that are radically new. But at the same time, some of the most effective approaches out there have been around for decades. For example, the practices of organic agriculture – that is, growing crops without the use of synthetic fertilizers, insecticides, or genetic modification – were developed in the twentieth century in reaction to industrialized farming techniques, and they have been shown to have major benefits to the health of soil, ecosystems and farmers.

But despite such demonstrable benefits, organic farming has so far seen limited uptake in the textile industry. Cotton is the most widely used of the natural fibres, but the proportion of cotton grown organically amounts to a lowly 3%. Viewed another way, this also shows massive growth potential: if we can increase this share, that would translate into very significant sustainability improvements.

This can only be achieved with robust traceability structures in place, so that the origin and therefore the organic status of finished cotton can be verified. That's why, starting in 2018, a broad alliance of brands, manufacturers, retailers, philanthropists and technologists joined forces to pilot a combination of innovative responses to the traceability challenge.

This pilot is ground-breaking not only for its cross-sector and multi-stakeholder approach, but also in technological terms. In the words of Jeffrey Hogue of the C&A Foundation: "The Organic Cotton Traceability Pilot is the first time that tracer technology has been coupled with blockchain to trace organic cotton from the farm to retail, demonstrating the viability of the technology to be developed into an approach that can support consumer confidence in sustainability claims."

An initial testing phase showed the viability of four different tracing techniques: markers based on DNA (as used by Haelixa), markers based on fluorescent viscose fibres (as used by Tailorlux), markers based on NFC smart tags and optical fingerprints (as used by IN-Code), and origin identification based on naturally occurring microbiomes (as used by CoreBiome).

Then in a secondary phase, these various approaches were used to track 75 tonnes of cotton from farms in India right along the supply and production chain to retail in Europe, using the blockchain technology of Bext360.

The pilot's success could signal a bright future for organic farming of cotton and other natural fibres.

Haelixa

We spoke to Gediminas Mikutis, co-founder and CTO of Haelixa:

What are your most important learnings from the Organic Cotton Pilot?

The Organic Cotton Traceability Pilot has proven that traceability across the complete supply chain from farm to retail is possible, and that it can be scaled with not that much effort and controlled costs. The right combination of physical and digital tools does not only contribute to the company's CSR performance, but also enables brands to make data-backed claims about individual garments.

What's next for Haelixa?

Our next steps include showcasing the value of traceability with the current supply chain partners (e.g. Traceable Treeshirt: traceabletreeshirt.com/) and building new partnerships with larger manufacturers and brands.

What are the challenges in scaling the approach demonstrated in the pilot? What needs to happen?

Manufacturers are in general open to innovation related to supply chain transparency, but they often expect some commitment from brands and retailers. Brands are also realising that there is a business case in offering more transparency to the end consumers, but there is still quite some confusion about the different aspects of supply chain transparency and how to achieve it. We therefore need to guide various supply chain stakeholders through these aspects and explain how traceability can ultimately add value.

http://haelixa.com

MAPPING AND FEEDBACK

Tracing the journey of fibres from farm to factory to fitting room is vital, but shining a light on fashion supply chains doesn't end there. There are two further categories of innovations which together comprise a truly comprehensive picture. Mapping projects gather information from every facility in the supply chain, allowing for example brand managers to track operations and see connections between companies. Feedback projects allow workers to give anonymised reports about factory conditions.

Sustainabill

There are various motivations for fashion brands to carefully map their supply chain. Some are carrots (such as the sustainability impact described above), while some are sticks: such as the risk of reputational damage, or falling short on some issue of compliance. Sustainabill is well aware of both sides of this incentive coin when it offers a solution through an interactive mapping platform.

It has the functionality to collate data from every facility of a supply chain, and visualise this information in novel ways as an aid to decision-making. The platform can help with the notoriously difficult task of keeping track of not just suppliers but also sub-suppliers, ensuring no blind spots in terms of ethical and sustainable production.
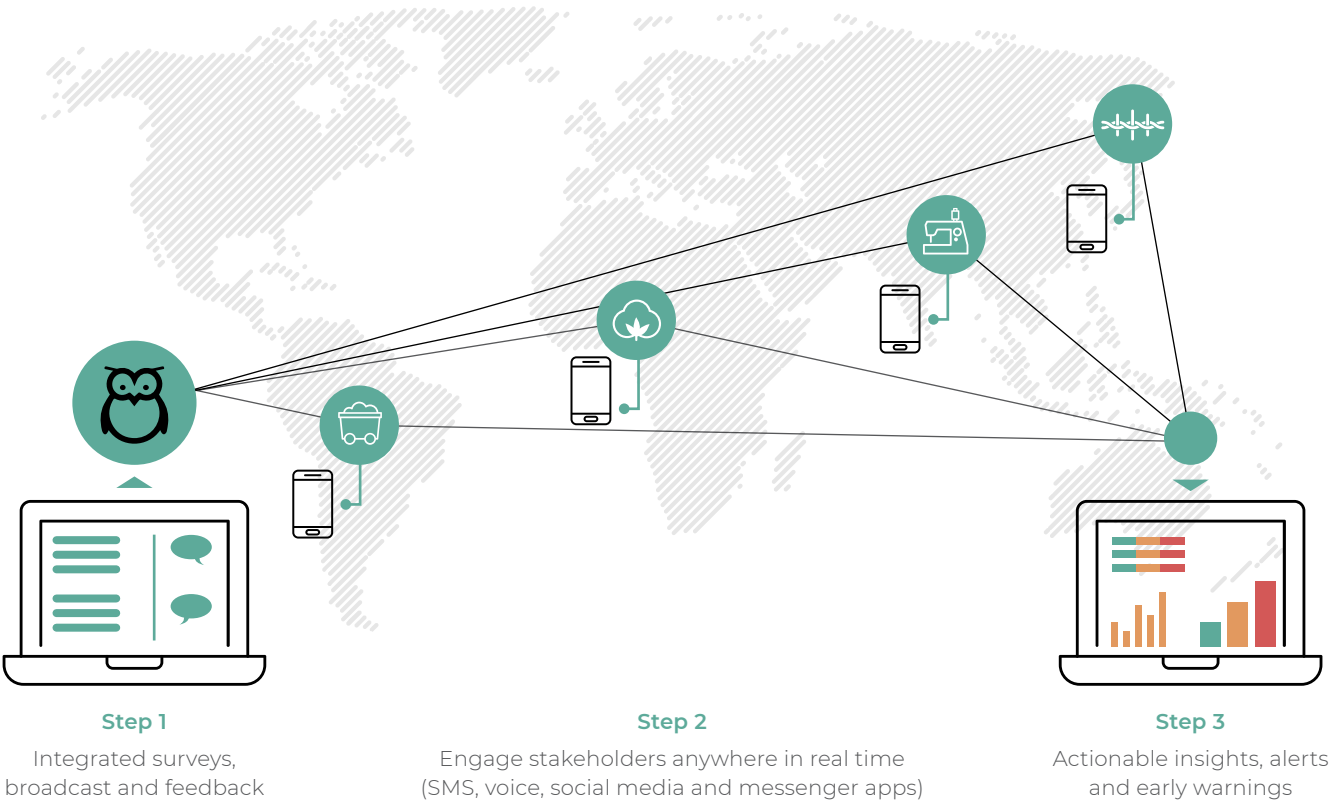
www.sustainabill.de

Ulula

Building a feedback mechanism whereby workers in garment factories can report on conditions and flag cases of exploitation requires two things. It needs to be mandated from above – that is, it is unlikely to be implemented voluntarily in those places where it is most needed, so brands and buyers need to make it a condition of working with a supplier. And it needs trust from below – that is, workers must feel able to answer honestly without fear of losing their livelihood.

Ulula (the name means "reveal" in the Chichewa language) has built a sophisticated platform to do all of this, ensuring protection of workers giving feedback through various channels which is anonymised, providing tools for brands and other stakeholders to analyse the collected data – all integrated with the means of paying workers using mobile money.

www.ulula.com

Step 1
Integrated surveys, broadcast and feedback

Step 2
Engage stakeholders anywhere in real time (SMS, voice, social media and messenger apps)

Step 3
Actionable insights, alerts and early warnings

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THE FASHION INDUSTRY ON ITS WAY TOWARDS SUSTAINABILITY

This article is #3 of a six-part series on sustainability in the fashion industry

The whole needs to be more than the sum of its parts.
Real transformation of the fashion industry towards greater transparency can only be achieved if very different stakeholders learn to work together.

Complex challenges require collaborative responses.

To know what a solution looks like, you first need to understand the nature of the problem. Some problems are simple, and may be solved by a single organisation making different decisions and starting to do things in a new way.

However, the challenges of building a fashion industry that is more sustainable is at the opposite end of the spectrum. We are talking about highly complex and systemic changes. The current environmental and human costs are not the result of conscious choices – rather they emerged over time due to structural and often accidental factors.

And just as they didn't originate with a single person or organisation, creating a more sustainable future also cannot be achieved by any organisation working alone. It requires collective action. A concerted shift across the whole of the fashion industry and beyond. This means brands and retailers working together not only with suppliers and farmers, but also governments and institutions, NGOs and activists, technologists and innovators.

Uniting such a diverse coalition of actors behind a set of shared goals is not always easy.

It requires openness to collaborating with others who might have different values, or use different terminology to talk about the same thing. But they may also have a different piece of the puzzle.

Unfortunately, the fashion industry in its current form is poorly suited to this kind of transformation. In the words of Rogier Van Mazijk, Investment Director at Fashion For Good: "The fashion industry is not an industry that has any incentive to innovate, things have been done the same way for centuries."
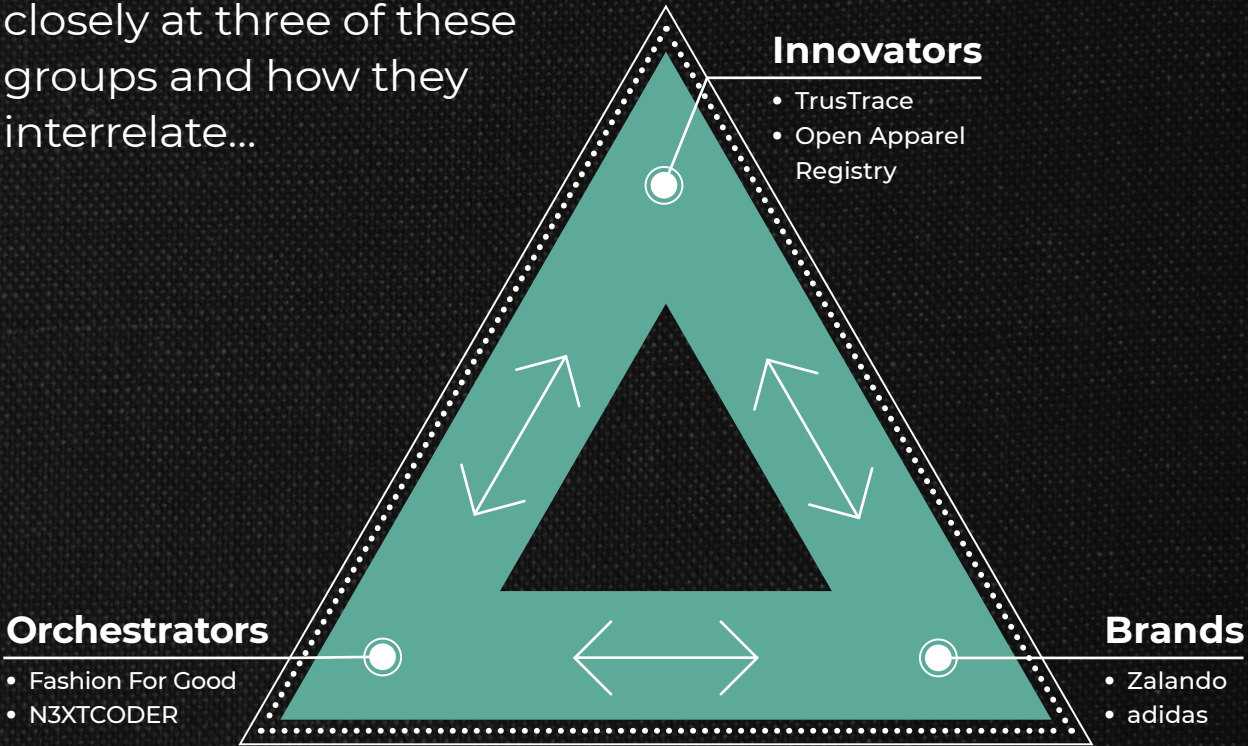
This makes it all the more important to look further afield and draw inspiration from other sectors where collective efforts towards greater sustainability are already well established. The energy industry is a good example. Driven by the imperative to reduce carbon emissions, public and private sector bodies as well as philanthropists have worked together to create new forms of innovation investment and funding, to develop and implement new solutions.

On the following pages we sketch what that level of cross-sector collaboration would mean in the context of fashion.

A study by BCG and Fashion for Good outlined the six groups of stakeholders that "must step up individually and collaboratively to bring disruptive sustainable solutions to scale."

1 Orchestrators
Targeted consortiums and a structured innovation process

2 Brands
Stronger advocacy and hands-on support for promising technologies

3 Supply chain partners
Increased engagement and ownership of disruptive technologies

4 Innovators
Focused use cases and practical implementation plans

5 Investors and funders
Mobilizing more investment and new types of capital

6 Public sector
Stronger policy frameworks and mechanisms to catalyze private investment

Let's zoom in to look more closely at three of these groups and how they interrelate…

Innovators
• TrusTrace
• Open Apparel Registry

Orchestrators
• Fashion For Good
• N3XTCODER

Brands
• Zalando
• adidas

POTENTIAL BENEFITS OF COLLABORATION

Brands ⟷ Innovators

Brands get direct and indirect benefits from working with Innovators. The direct benefits are the increases to their supply chain transparency, and all the advantages that entails. The indirect benefits include being able to position themselves at the cutting edge of innovation.

For Innovators during the development and testing phase, access to Brands' expertise and reach is invaluable. Establishing a partnership with a brand might lead to a small-scale pilot to test a beta-version product, and provide credibility to potential investors. And of course, later on, achieving success and impact at scale depends on uptake on the part of Brands.

Innovators ⟷ Orchestrators

Orchestrators have access to resources and networks beyond the reach of many start-ups. This means they can offer various kinds of support to Innovators, for instance in terms of advocacy, access to funding or Brand partners, or strategy development. Orchestrators are also able to establish shared practices, for instance around measurement, which ultimately benefits all Innovators in the space.

Innovators, when they achieve success, are the lifeblood of Orchestrators, since they create the evidence base for the impact which is possible, and their stories can be used to appeal to a broader audience of stakeholders.

Orchestrators ⟷ Brands

Orchestrators are able to operate with an ecosystem-level perspective – not to mention a different kind of neutrality and credibility – than any given Brand could have on their own. By creating a context, such as a hackathon or an incubator programme, Orchestrators can draw interest and talent from beyond the boundaries of major Brands, and can also point Brands towards new solutions and emerging trends.

In return, Brands offer an interface to on-the-ground realities. With their expertise, they can help to guide the Orchestrators' work to areas of particular impact, and may also offer financial support.

⚠ Challenges

However enticing these synergies may be, there is no shortage of potential pitfalls while navigating such partnerships.

The Brands (typically large and established companies) and Innovators (typically early-stage startups) can be very far apart from each other in terms of organisational structure, working modus and culture. This can make effective communication difficult – not least working out who should be talking to whom.

Some Innovators have found partnerships with Brands shift from helpful to constraining as they try to grow, since partnership agreements can include exclusivity clauses which end up hindering scaling and commercialisation.

With regard to Orchestrators, both Brands and Innovators may perceive a tension between the payoffs of working with a broader consortium and their competitive interests.

WE SPOKE TO TWO INNOVATORS ABOUT THEIR EXPERIENCES WITH PARTNERSHIPS AND COLLABORATION.

TrusTrace

TrusTrace is a blockchain powered digital solution that provides traceability, and transparency solutions to industries such as fashion and food. The solution provides the digital technology backbone to measure, monitor, validate and communicate the various activities in the supply chain right from the origin of the raw material, facilities used for production processes, environmental and social conditions at the production facilities. By enabling brands, retailers, manufacturers and consumers to uniquely identify finished goods and raw materials, it brings in full visibility in the value chains, enabling the stakeholders to collaborate in an effective manner.

www.TrusTrace.com
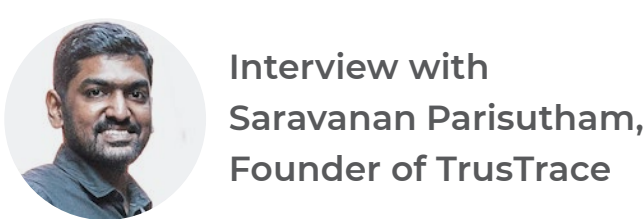
Interview with Saravanan Parisutham, Founder of TrusTrace

The ecosystem for sustainable fashion is growing day by day, as more and more brands, industry initiatives and startups engage in the field. What does collaboration mean for TrusTrace?

Our collaborations are based on the basic foundation of the vision we share in making the fashion and food industries sustainable, traceable and transparent.

When presented with challenging problems, collaborations help us share industry knowledge and expertise and enables us to work towards arriving at a solution to those problems.

We work closely with two partners - circular.fashion and Open Apparel Registry (OAR). OAR solves one of the key issues around data sharing and collaboration between various tools by establishing a unique identity for various suppliers and their facilities. For example, if Brand A has some information from a physical visit or audit of a certain supplier, we are able to store that information on our systems using the OAR ID, and then enable Brand B to access the same information. However, this is based on the confirmation from Brand A and Brand B to collaborate amongst each other to share data.

Similarly, circular.fashion and the circularity.ID, which is an open source data model, allows all stakeholders to record product data in a way that is easily understandable by other systems.

What impact do industry initiatives like Fashion For Good or Zalando's zImpact have for your success?

We were a part of Fashion for Good's 4th accelerator program. This put a spotlight on us and gave us a lot of visibility among the industry icons. This led to brands wanting us to help them establish traceability and transparency in their supply chains. This was a major contribution that enabled us to reach the heights we have reached now.

What about hackathons?

Hackathons present us with complex problems and help us improvise on our horizon of problem solving capabilities. Events like these are always an opportunity to learn, improve and improvise.

Open Apparel Registry

The Open Apparel Registry (OAR) is a free, neutral and open source tool to identify apparel facilities worldwide. A sophisticated algorithm standardizes data from contributors across the sector to create a common registry of names and addresses, each assigned a unique OAR ID number. It eliminates confusion and facilitates collaboration, whether you're a brand, a non-profit, trade union or industry initiative.

info.openapparel.org
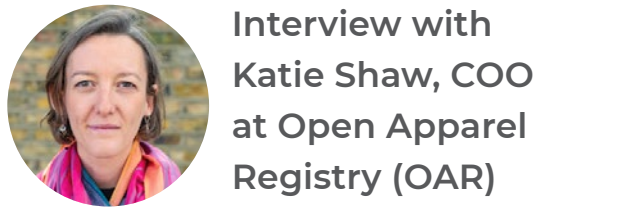
Interview with Katie Shaw, COO at Open Apparel Registry (OAR)

Do you think that your work and the platform provides a basis for further partnerships and collaborations within the ecosystem to emerge? If so, how?

Absolutely - and we've already seen multiple examples of how organisations are coming together to collaborate through using OAR data. For example, Fashion Revolution, Clean Clothes Campaign, Know the Chain and Wikirate are using OAR data in a collaborative project on living wages for garment workers. The Connect Fashion initiative, meanwhile, is including the OAR ID as a component of its product digital ID for fashion. Finally, two trade union groups, IndustriALL and FEMNET, are discussing whether to include the OAR in their worker trainings and how they could deliver this work together.

What motivates you to engage in the field? What was different in the beginning from how it is now?

By understanding the different organisations connected to global apparel facilities, there are numerous opportunities to use data in clever ways to improve the lives of some of the most vulnerable garment workers in supply chains and this was a key driver for creating the OAR. There are so many other benefits to using the OAR, including helping multi stakeholder initiatives prioritize where to invest funds for projects in facilities, or for brands to access better quality data on their supply chains. We'd always known when we set out to build the OAR that these benefits were possible, but we're excited by some potential ways the data could be used to generate environmental benefits in supply chains, too.

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This article is #4 of a six-part series on sustainability in the fashion industry

Transitioning to greater sustainability promises handsome returns – for people and planet, but also financial gain for the companies and innovators that lead the way. To get there requires investment, including fundamentally rethinking financing structures and business models.
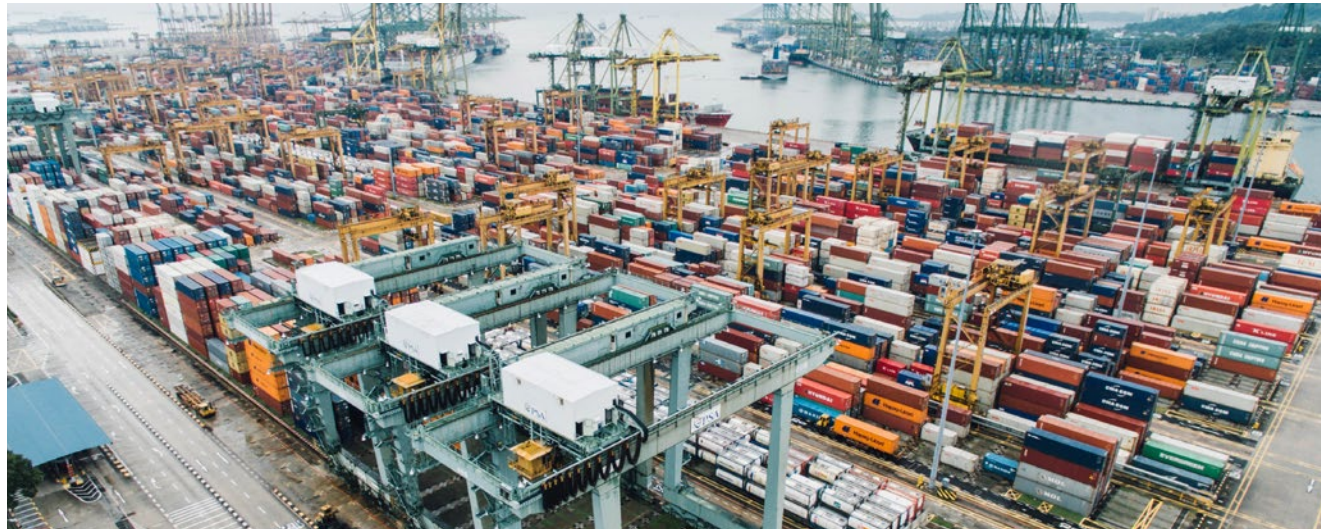
We are witnessing a tectonic shift across the entire global economy.

The climate crisis and other environmental concerns, along with the increased focus on human wellbeing and justice encapsulated in the Sustainable Development Goals, combine to exert a massive pressure to change. In every industry, the imperative is to switch from polluting, exploitative and unsustainable twentieth-century practices to new models which respect planetary boundaries and human dignity.

Since the fashion industry is such an important part of the global economy – with a market size of 2 trillion USD, it constitutes over 2 percent of global GDP – it has a correspondingly vital role in this macro-transformation.

Other industries, where the shift towards greater sustainability has taken firmer root, can serve as guide and inspiration. In the transportation and mobility sector, for instance, we see a fascinating phenomenon. The development of electric cars and bikes has changed more than just how we move from A to B, but has also gone hand-in-hand with a shift from consumer ownership to membership schemes for sharing and renting. In other words,

not only has the product changed, but so have the fundamental structures of ownership and relationship to customers. And the companies which anticipated and led this shift have done extraordinarily well.

Could the fashion industry experience a similar kind of structural transformation?

This kind of retooling and reorganising can ultimately be expected to deliver huge financial returns. But getting there will first require major investment. Developing, scaling up, and commercialising the new and disruptive solutions which consumer preferences and new regulation call for will need an estimated annual investment of between 20 and 30 billion USD between now and 2030.

But where should these resources be directed to see the greatest impact on sustainability? Analysis by BCG and Fashion For Good concludes that the greatest leverage points are at the beginning and end of the garment life-cycle – that is, at the raw materials stage and at the end of use, in new approaches to reuse and recycling.

In the following pages we explore the new approaches to funding and business models which are sowing the first seeds of what ultimately needs to become a much larger movement.

Bjoern Struewer is the founder and CEO of Roots of Impact, a specialised advisory firm dedicated to making finance work for positive impact on people and the planet. They collaborate closely with public funders and impact investors across the globe to scale high-performing enterprises and innovations with strong potential for impact.

What makes mobilising capital for sustainable development different from traditional investment approaches?

If a company is committed to innovate and develop solutions for vulnerable groups – let's say in response to Covid 19, or significantly contributing to reduction of textile waste in the fashion industry – why would they be funded using the same investment terms that were used to fund Facebook or Google?

Impact enterprises are able to deliver social and environmental returns far beyond their own profits. Some of them have the potential to become "impact unicorns" – if they get appropriate support at the right time. They might be able to generate considerable financial returns – but what makes them unique is their ability to find innovative ways for creating value for society.

We need to redefine the terms of investments to better fit the unique attributes of these impact enterprises — whether it be more patience, unconventional repayment options, or rewards for impact.

What can the fashion industry learn from other industries in terms of financing innovation? And what aspects are specific to fashion, requiring unique approaches?

It's all about alignment of interest. We know that the market does not properly "price" negative effects created by companies for our environment, for factory workers or for society as a whole.

We have seen that creating sustainability labels and standards, e.g. in the fishing industry, can lead to

premium pricing. It is a business case now to offer "sustainably catched fish". Unfortunately, it is not enough to leave it entirely to the market as this approach is limited to a rather elite market segment of responsible consumers that can afford this.

Policy makers and others need to push harder to mainstream these approaches and introduce higher minimum standards as well as clear benefits for sustainability leaders across the supply chain. Standards are being introduced in the fashion industry but apparently it is not enough. It is still possible to sell a t-shirt in Western Europe for a retail price below three Euros and generate a profit margin.

What solutions do you see to address this problem?

We should start discussing about tax reliefs or other financial incentives for companies that are able to improve sustainability practices.

This would have massive positive effects at large scale. But for a good reason policy makers do not entirely trust the colorful bouquet of standards and labels. Many of them are made for "ticking the box" even though technology would enable us to learn much more about the origin of garments, the supply chain, involved workers or whether an item is recyclable.

There are exciting examples of companies that are able to transparently capture and track all this information. These companies are ahead of the curve - shaping the industry of the future.

IN FINANCING TERMS, NOT ALL TECH IS EQUAL

So we've established that investment is needed, and specifically we argue that investment in technological innovation in traceability and transparency will be key to seeing impact at scale.

Just lumping all "technology" together into a single category is not especially helpful. Which technology, exactly? What is being financed at the moment, and how should we decide what should be financed in future?

One determining factor is which technology is – so to speak – fashionable. In the words of Rogier Van Mazijk, Investment Director at Fashion For Good, many transparency and traceability innovations "have a large software component and use 'hyped' types of innovation such as blockchain and AI and therefore attract a larger group of investors than a dyeing innovation would typically do".

Although this arguably leads to a positive end result, these criteria seem questionable. Let's explore whether we can find a more enlightening measure than "hype", by looking more closely at the term "technology" and two possible subcategories.

We can distinguish between physical technologies and social technologies. Physical technologies are the kind of things you can see and touch and assemble from component parts. Social technologies describe something invisible and intangible, namely the different ways in which humans have learned to work together – they are sets of behaviours and norms.

As economist Eric Beinhocker describes, technological advances can be seen as the coevolution of physical and social technologies. Any new physical technology – in the context of sustainability in fashion, an example of an innovative physical technology might be new dyeing machinery – is likely to create new behaviours and kinds of collaboration, and this creates the conditions for new physical technologies, and so on.

What does all this have to do with financing transparency innovations? Well, the way innovations combine physical and social technologies strongly influence the kind of investment that's necessary and the kind of scaling and timelines that are possible.

Innovations in technology and traceability tend to be light on physical technology (at most some innovative kinds of tags and tracers) and heavy on social technology (new modes of exchanging information, for instance enabled by an online platform).

The good news is that social technologies tend to be far less capital-intensive than physical technologies – the latter have very long R&D cycles and take a long time to develop to commercial readiness. Social technologies emerge through a more dynamic and organic process. Also, being intangible, social technologies can be scaled much more readily and cheaply once they exist.

This is encouraging – but there is a flip-side. As any management consultant can tell you, just coming up with a new set of processes will be completely ineffectual if they are not embedded in much deeper changes in mindset, culture and values. In this sense, "rolling out" a new social technology can be much trickier and slower than launching a new physical product. In the words of author Thomas Friedman:

"physical technologies evolve at the pace of science – fast and getting exponentially faster – while social technologies evolve at the pace at which humans can change – much slower."

The take-away for those who want to step up and invest in the sustainability transformation of the fashion industry is that the physical technology is only part of the picture. Although it is invisible, and therefore often overlooked, developing new social technologies is key. You can expect rapid development and strong scaling potential, but perhaps ultimately longer timeframes and a reluctant uptake. Part of what's needed is a long-term perspective: so-called "patient capital".

The Good Fashion Fund

The Good Fashion Fund is a first-of-its-kind initiative to create systemic change in the textile & apparel industry by financing the implementation of highly impactful and disruptive production technologies in Asia. Initiated by Fashion For Good, the fund targets long term USD debt investments in textile and apparel manufacturers in India, Vietnam & Bangladesh.

https://fashionforgood.com/good-fashion-fund

CIRCULAR.FASHION – TRANSPARENCY FOR CIRCULAR BUSINESS MODELS

In fashion, a circular economy requires the combination of new garment design strategies, sustainable materials, advanced recycling technologies, alongside new service-oriented business models, to create desirable, low-impact & long-lasting garments.

The startup circular.fashion works along all these aspects. With its digital platform it matches transparency technology with circular design principles, opening up the room for business models that make garments ending up in landfills a thing from the past.

We have talked to co-founder Ina Budde.

Ina, what is circular.fashion all about?

circular.fashion is a sustainable change agency creating product and system innovation for a circular economy in fashion and textiles. circular.fashion develops services and software for circular design and closed loop recycling that enable a transparent flow of information between material suppliers, fashion brands, consumers and recyclers. We support fashion brands on their journey towards circularity by sourcing sustainable and circular materials, consulting in their design process and providing a partner network for recycling.

We do this through our digital platform for circular design and closed loop recycling. The software has a material library, design guidelines and equips garments with a digital tag, a circularity.ID. The circularity.ID is scannable by both customers and sorters to prolong the lifespan of a garment and ensure that each garment is returned back to the right recycler.

We also run workshops on circular product development in which we encourage and enable fashion brands to incorporate circularity into the core of their business.

How do you finance your work? What's your business model?

circular.fashion was founded on the mission to make circular design easy and accessible for brands and designers and increase the share of garments currently being recycled through efficient infrastructures for high quality recycling.

To enable change and accelerate transformation towards a circular economy for fashion and textiles, leveraging technology and data plays a key role. This is central to circular.fashion's business model. By designing garments for circularity from the very beginning and providing stakeholders with essential information at each consecutive stage of the product's lifecycle, enormous environmental, financial and creative value can be captured and re-released to the greater benefit of people and planet.

Collaboration across the value chain is essential, and in a holistic way circular.fashion connects the many different stakeholders and creates value for each stakeholder group while ensuring that a garment is handled in the most sustainable way for a circular economy.

Circular business models

Rental
One-off garment rental for a short term period, with no option for purchase.

Subscription
Monthly fee paid for access to garments that can be exchanged by the consumer, at any time, with an option to purchase at a reduced price.

Recommerce
The recovery and resale of garments previously sold by original retailer.

Does circular.fashion enable the emergence of other (circular) business models? Could you elaborate on that?

In the workshops we conduct with fashion brands, circular business models are a crucial part to inspire brands and think beyond the product creation, to the whole life of a garment and how it is used, re-used, repaired and recycled – and what business models can enable that.

Circular design can play a central role in making circular business models more successful. Garments intended to circulate among many users through recommerce or rental models would greatly benefit by being designed for that purpose, so that the pieces last as long as possible. This can be done through increasing the garment's functional durability by e.g strengthening the stress point, making the size adjustable to fit many consumers etc.

circular.fashion's digital tag, the circularity.ID, opens up incredible opportunities for circular business models, transparency and traceability of the supply chain, increased consumer engagement, prolonged use period of garment and to finally ensure reuse and recycling.

In addition, circular.fashion is, alongside other innovators and brands, part of the Switching Gear Enabling Network by Circle Economy with the mission to drive circular retail models in the fashion industry.

TRANSPARENT

THE FASHION INDUSTRY ON ITS WAY TOWARDS SUSTAINABILITY

If the goal is to map a supply chain, creating the right digital infrastructure is a big step forward, but there is still a lot of work left to do to actually fill it with data.

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The messy realities of data collection

There is a saying in the world of tech start-ups: "Build it and they will come." The idea is that if you can only build a great digital product which meets a need and is good to use, then users will find it and start using it of their own accord. It's a catchy phrase and an attractive idea – and it's absolutely wrong.

In truth, even in the world of commercial tech where the idea originated, it's a myth. In the world of social tech, which aims at impact above profit, this is doubly so. Our research at betterplace lab over the years has shown time and again that simply having a good product is only the first step. That's when the work begins of getting it out into the world, convincing people to use it, and adapting when reality inevitably proves messier than the assumptions that the designers had been working with.

In the field of fashion supplier mapping, one innovative venture we have already looked at is sustainabill, a digital platform built to visualise and analyse even the most complex of supply chains. They too realised that many of their main challenges were likely had nothing to do with the code, but creating the right mechanisms and structures within stakeholder organisations so that the right data gets collected and correctly entered into the platform.

To gain a clearer sense of these challenges, sustainabill conducted a study in 2019, combining a review of relevant literature, surveys of both suppliers and brands, and also running a pilot by mapping five shirts using their software.

The picture that emerges is of structures in the industry which are sprawling and heterogenous and, all too often, misaligned with the objectives of transparency and sustainability. To put it another way, it doesn't need "bad actors" for there to be a lack of transparency – it can just as easily result from factors of communication, culture and organisation.

Let's take a look at some of the findings of sustainabill's research, and what they imply for efforts to increase transparency across the whole fashion industry.

Culture

For present purposes, we have focussed mainly on clothing which ultimately retails in Europe, having been produced in foreign countries – typically developing economies in South Asia. As such, several of the hurdles sustainabill identified are inherent to any such globalised supply chain. There is a large distance between the links of the chain – not only geographically, but also in language and the subtle cultural norms around communication and coordination. It's perhaps no surprise that culture was felt to be the most significant barrier to data collection among the surveyed brands (see fig. 3 below).

But there are encouraging signs that some of these gaps are getting smaller over time. As many people working in international development have pointed out, uptake of digital technology is very high in many developing countries – in some cases even "leapfrogging" more developed economies, e.g. in use of mobile payments. sustainabill's research found something similar: although some of the more dated literature pointed to low digital literacy as a barrier for data collection, sustainabill encountered no such problems.

Speaking the same language

Reading through sustainabill's findings, there is a clear sense that the challenge of data collection isn't just about making contact with the right supplier through the right channels. Even when that happens, researchers found that the suppliers they contacted were not used to collecting data about sustainability, and were unsure about why it was necessary or valuable.

This points to a more subtle level of cultural difference. Although sustainability – and therefore also transparency – has gradually emerged as a priority for both consumers and brands in Europe (see fig. 1), these are values and definitions which may not be shared to the same extent where the supplier is based. Discussions or enquiries about sustainability may be met with bemusement. And while brands typically have one or more staff explicitly responsible for such topics, this is unlikely to be true for suppliers, so CSR managers may struggle to know who best to talk to.

For this reason, sustainabill repeatedly emphasises the importance, when requesting information from suppliers, of also explaining the value of the exercise and giving a clear narrative about why it is important for the business relationship.
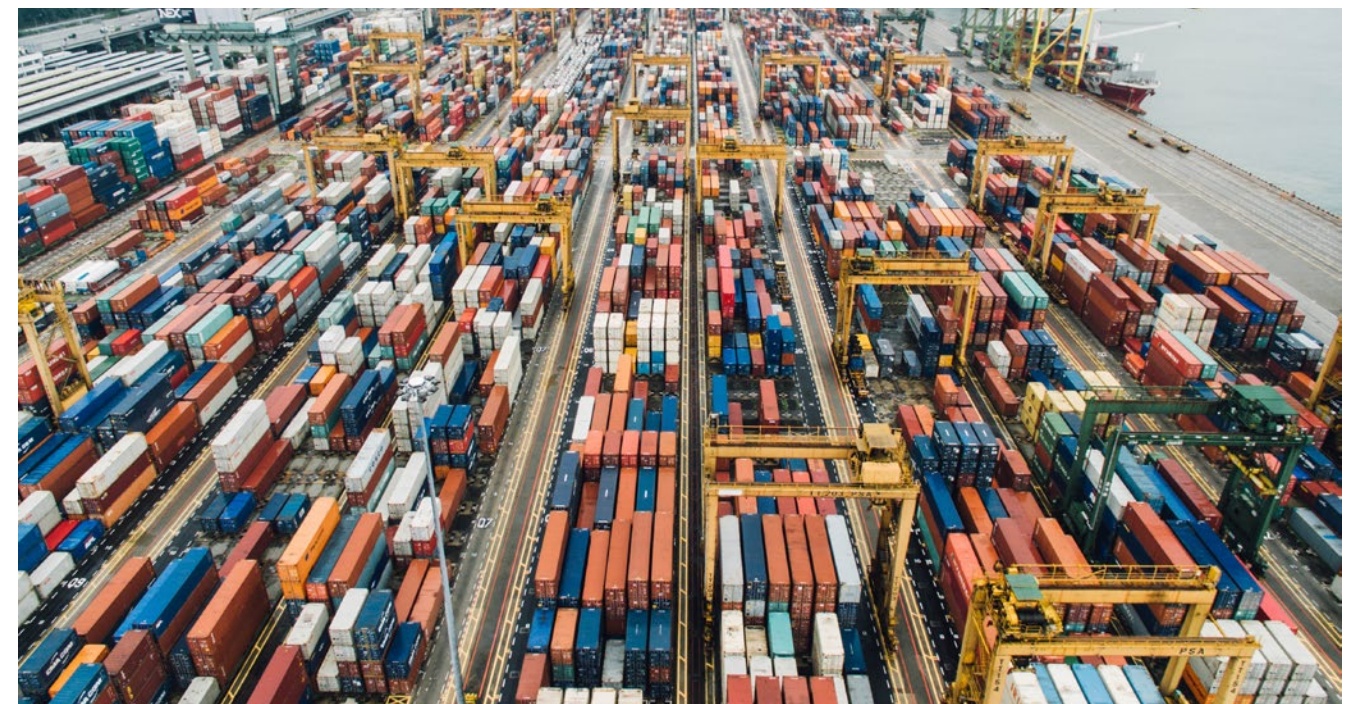
Getting a response

One part of sustainabill's research was a survey sent to fashion suppliers about what they saw as the barriers to data collection. This survey inadvertently became a microcosm of the very issue it was trying to illuminate – because the researchers had a very tough time getting responses back, with a response rate of just 7.5%. In other words, this was not the fault of the research methods, but rather a sign that trying to get any kind of reliable data in this sector is a challenge.

By the same token, this experience helped the researchers to understand some of the sticking points in communication. For example, when contacting suppliers, it is important to identify the right contact person within the supplier organisation and make clear who you are, why you are asking for this information, and how much time commitment this will require.

Along the chain

It also seems that supply chain transparency works in both directions. As we have seen, brands and consumers are often unaware of where their garments come from because of the many-tiered supply chain of contractors and subcontractors. And equally, suppliers can be oblivious about who their goods are ultimately supplied to, and so may be confused or suspicious if they are approached directly by a brand they may never have heard of.

Hence, sustainabill recommends that brands don't attempt this kind of direct communication with all tiers of the supply chain themselves, but rather ask their direct suppliers to contact their sub-suppliers and so on down the chain. That way, the information request and explanations about why it is important, is transmitted between people who already have a working relationship.

SELECTED RESPONSES FROM THE SURVEY

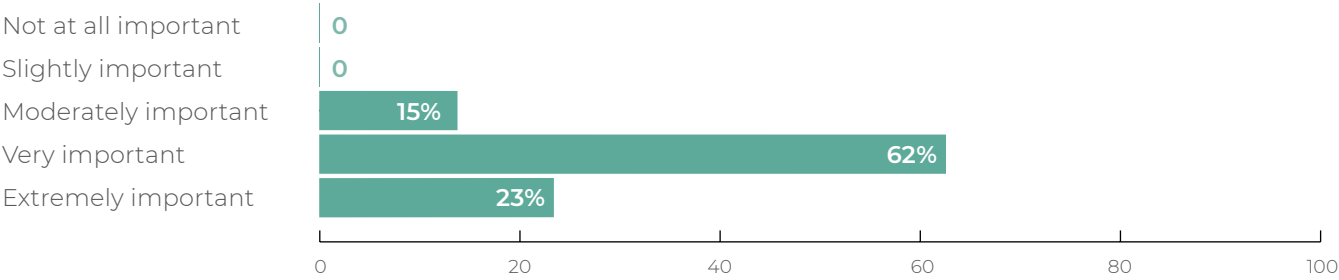## Fig.1: How important transparency is to brands

Not at all important	0
Slightly important	0
Moderately important	15%
Very important	62%
Extremely important	23%

Fig.2: Reasons why brands participate in supply chain transparency

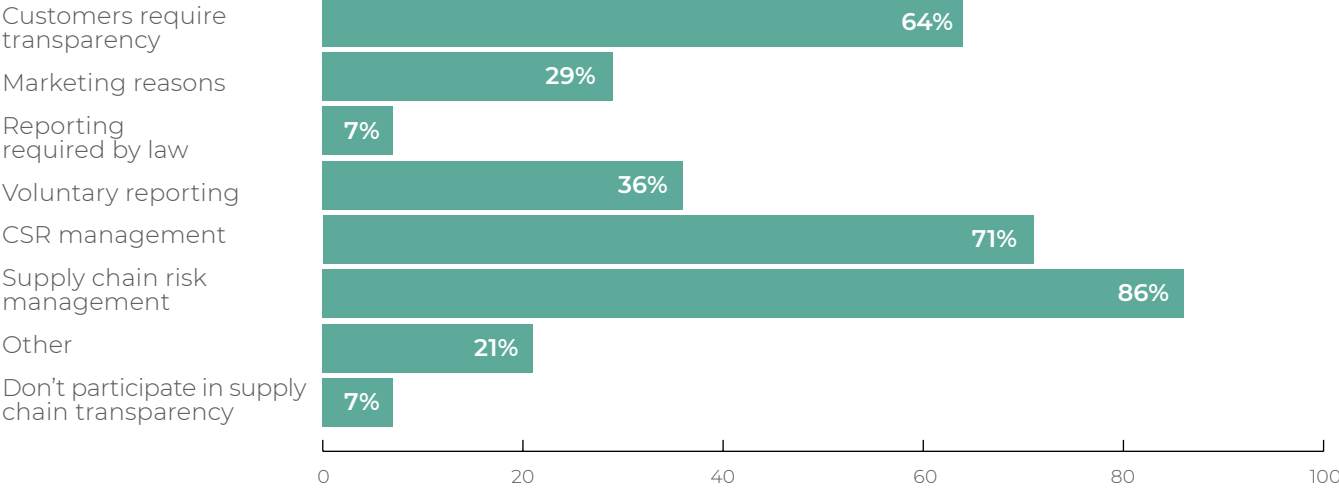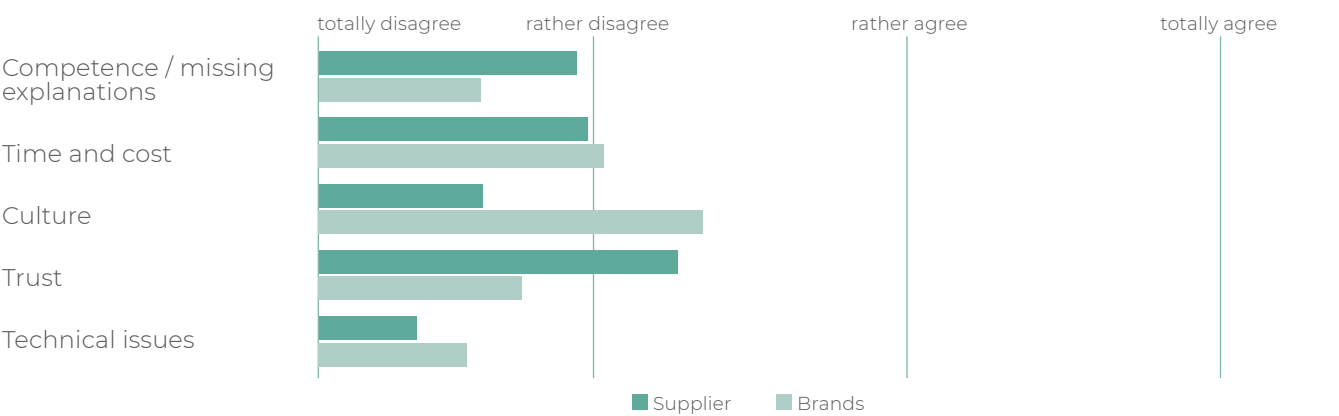|	
Customers require transparency	64%
Marketing reasons	29%
Reporting required by law	7%
Voluntary reporting	36%
CSR management	71%
Supply chain risk management	86%
Other	21%
Don't participate in supply chain transparency	7%

Fig.3: How brands and suppliers responded when asked whether they perceived the following things as barriers to transparency

totally disagree · rather disagree · rather agree · totally agree

Competence / missing explanations
Time and cost
Culture
Trust
Technical issues

■ Supplier ■ Brands

Klaus Wiesen, CEO of sustainabill says:

"Our motivation in conducting this research was to better understand the supplier perspective in supply chain mapping: How can we help suppliers to decrease their workload and provide benefits?

We could identify many barriers suppliers currently see when they are asked to share their data. We have used these insights to develop our own cloud platform accordingly. To take one example, we recognised that there is a strong hierarchy in South-East-Asia. When a supplier receives a sharing request he often forwards this request to be processed by another employee, but he still wants to be the primary contact person for future requests.

Hence, we implemented a feature allowing flexibility in forwarding requests within the same company during the onboarding process."

TRANSPARENT

THE FASHION INDUSTRY ON ITS WAY TOWARDS SUSTAINABILITY

"Remembering that humans sit at the heart of the community – tech or otherwise – is key to nurturing a healthy dynamic and strong team spirit."

Katie Shaw, Open Apparel Registry

Trees and forests

In 2015, a German forester called Peter Wohlleben wrote a book about trees which became a surprise international bestseller. In The Hidden Life of Trees, he describes how, although we might think of forests in terms of the towering tree trunks, the branches and leaves, in fact a lot of the real action is hidden from view. The sprawling underground network of roots and fungi account for much of the power of a forest. These create connections between trees as they share information and nutrients – the forest starts to take on a unity and a life of its own, and the trees in it are stronger and live longer than trees standing on their own.

In this series, we have been looking ahead to the transparent and sustainable future which is possible for the fashion industry. In this last article of the series, we also want to look back. We at betterplace lab first began engaging with transparency in fashion in 2018 with the publication of the *Transparent* magazine. A lot has happened in two years, and the change we have seen is like the difference between a tree and a forest.

Two years ago, we could see some really exciting ventures starting to populate this space, finding novel ways to deploy technology to the challenge of supply chain transparency. We profiled several of them in the magazine, and developed a categorisation to help analyse emerging trends. We can think of these initial pioneers as the first sapling trees, growing on a previously empty landscape. Yes, several of these have grown and matured, and many new ventures have also sprouted. But perhaps the most significant shift over this time has been in the connections between actors. Where before there were pioneers, now we see a community. Where before there were scattered trees, now there is a forest.

The Berlin effect

This community of changemakers is international – as is appropriate for a movement trying to transform a globalized industry. There has been a dynamic cluster of activity in Berlin, where we are based.

The German capital offers fertile ground for social innovation of many different types. The city combines a strong youth-led culture of engagement and activism, with the presence of a thriving tech scene and a significant hub of industry and commerce. And maybe the countercultural history of the city leaves a legacy of enjoying being provocative and disruptive.

In the following pages, we will look at the emergence of this community and coalition of actors uniting behind the cause of transparency in fashion, with a particular focus on the scene and events in Berlin which helped feed this growth.

HACKATHONS

"Transparency is an important way to drive change, enabling companies and consumers to turn data into informed choices and in turn creating a better fashion industry for all. The hackathon series was a key element in our program and has brought us to the next level."

Salah Said, Strategic Projects Manager, Sustainability at Zalando

In 2018, Zalando launched zImpact, an accelerator program to scale innovative digital solutions to increase supply chain transparency. As a part of this, Zalando reached out to N3XTCODER, an impact accelerator based in Berlin, with the idea of holding a hackathon for transparency in fashion.

Hackathons have been widely used in the "tech for good" scene as a way of bringing together people with complementary perspectives and skill-sets, not just for the purpose of talking but to get straight into making and building. In working with startups such as the above, Zalando is a facilitator and enabler in a vibrant and ever-increasing socially conscious tech landscape. With initiatives like the zImpact and the hHackathons, Zalando can map the state of the industry, and build its capacity by investing in and accelerating the best solutions.

As the plans developed, more partners got on board – namely adidas, Volkswagen and Deutsche Bahn – and it was decided to organise a series of three events.

All partners of the hackathon series have in-house labs with specialists based in Berlin, and so they were also able to draw on this pool of expertise and know-how. The hackathons also drew in a colourful crowd of social entrepreneurs, techies, product and UX designers, and many more – who formed interdisciplinary teams and got down to forging new ideas.

The initial series was such a success that it was reprised with three more hackathons in 2019, with the existing corporate partners being joined by Deutsche Bahn.

The zImpact accelerator is now being phased out, but Zalando will continue to support innovative ventures through our partnership with Fashion For Good and focus more on the implementation of these solutions into our business..

N3XTCODER

Their mission is to help impact-driven projects to succeed through technology. N3XTCODER aims to identify and work with the best technology solutions and digital products that have the great potential to tackle the most pressing problems we face today.

The work of N3XTCODER is guided by the Sustainable Development Goals (SDGs) that were launched by the United Nations in 2015. A 17-point plan to end poverty, halt climate change and fight injustice and inequality, and agreed by 193 governments, the SDGs are the biggest attempt in the history of the human race to make the world a better place.

To that end, N3XTCODER aims to plug in the power of digital technology, by incubating high-impact ventures, and by bringing together technologists and social entrepreneurs for hackathons

To that end, N3XTCODER aims to plug in the power of digital technology, by incubating high-impact ventures, and by bringing together technologists and social entrepreneurs for hackathons.

TIMELINE

■ Event ■ Hackathon

2018

Februar
Kick-Off Zalando zImpact Program

Program to scout tech innovations in the field of supply chain transparency and traceability

April 05th
Event: Creating an Era of Transparency in Fashion
@Zalando

Zalando and the Embassy of Sweden invite the public to get to know 7 innovators that use tech to drive transparency

Prior to the event Zalando has hosted a workshop with startups, brands and non-profit organizations to drive collaboration in transparency in the fashion industry.

July 10th
@MHP labs

August 29th
Event: TRANSPARENT Sustainable Fashion in the Digital Era – @Zalando

Betterplace Lab, Fashion For Good and Zalando invite the public present the launch of the TRANSPARENT MAGAZINE and present solutions of innovators on stage

Prior to the evening event Fashion For Good and Zalando have run an industry workshop around collective impact across supply chain transparency

August 30th
@Zalando

November 7th
@Zalando

November 9th
The winners of 2018's Hackathon Series present their innovative solutions at the Global Social Business Summit
@Volkswagen in Wolfsburg

2019

June 18th
@Zalando

September 6th
@DRIVE Volkswagen Group Forum

November 26th
Driving Transparency Event – By Fashion For Good, adidas and Zalando – @Zalando

The partners of the event have run an all day workshop to connect brands with innovators in the field of supply chain transparency

During the evening event they have presented the results of the Organic Cotton Traceability Pilot presented by Fashion For Good

November 27th
@Deutsche Bahn

HACKATHON TAKEAWAYS

A benefit of the hackathon format is that different participants can derive a different value from it, meaning it can cater to a broader range of stakeholders and motivations.

A helping hand

Early-stage ventures in particular are often working with small teams and limited resources. Hence it can be extremely helpful to get outside input and advice about the current technical challenges they're grappling with. Other participants at the hackathon may have specialised expertise on precisely the relevant topic.

"As a small team, it was a great opportunity for us to tap into some extra resource for a day, test ideas and understand how the OAR is understood by a completely new audience."

Katie Shaw (Open Apparel Registry)

Contributing skills to a good cause

On the other side of this interaction are those with specialized expertise who are highly motivated to deploy it for a cause they feel passionately about. This is true of individual professionals, but there is also a rationale from the perspective of the companies that employ them. Large companies in the fashion industry have scores of highly talented developers, product designers, etc. who are glad of the opportunity for such social engagement. Indeed, it is now widely considered a good HR strategies for companies to offer this kind of "corporate volunteering" to their staff, since it attracts talented and value-driven people to work for them.

"Our IT experts were also highly motivated to participate in order to apply their knowledge creatively and subsequently apply their experiences at the hackathon back at adidas."

Philipp Meister (adidas)

Not just what you know, but who you know

Since they bring together a cross-section of people from across the fashion and technology industries, hackathons allow the people and organisations in attendance broaden their network with new – sometimes unexpected – contacts, and exchange ideas, experiences and perspectives. Chance encounters can also lead to future collaborations and partnerships.

"What we need is collaboration and identification of symmetries, not the doubling of efforts. That's why it's great to have meet-ups where like-minded people can come together and share challenges they are facing, or tips and tricks to support each other."

Ina Budde (circular.fashion)

Solidarity and Inspiration

For those working in the impact space, it's easy to get lost in the stresses of everyday work and lose sight of the bigger picture and purpose. A remedy for this is getting together with a group of people working towards the same vision for change, and fizzing with new ideas. In such an environment, strong relationships are forged quickly.

"Trusting relationships, structured processes and open communication are crucial for cooperation. It also requires strong will, let's call it passion, to do something together to create a valuable impact.

Mi-Ra Tai (Deutsche Bahn)