RE

USE

# FAST FASHION IS EATING ITSELF, WITH LIFECYCLE EXTENSION AS THE WAY OUT.

Three years of Living Lab research reveal how fashion brands can lower the environmental impact of the fashion industry by focusing on lifespan extension.

made.

IN

STYLE



RE

USE

# EXECUTIVE SUMMARY

The 'fast fashion' model delivered decades of aggressive growth for the fashion industry, but its economic foundations are eroding. Tightening EU regulations, rising operational costs, and shifting consumer loyalty are rendering the linear "take-make-waste" model increasingly risky. The industry is ripe for reinvention, but the path forward has lacked data.

That’s why, over the last three years, Made has orchestrated a 'ReUse In Style' Living Lab to move beyond theory and execute a rigorous stress test of circular business models in the real world. In collaboration with retail partners like Decathlon and JBC, and supported by the University of Antwerp, we tested what actually drives consumers to maintain, repair, and resell footwear and clothing.

Our findings reveal that "lifecycle extension" is not just an environmental love story. It is a value capture opportunity for many of the fashion brands out there. In the process, we have identified three commercial levers: Quality Perception, Repair Accessibility, and Emotional Attachment.

Brands that activate these levers can stop value from leaking to landfills. They can instead redirect it into new revenue streams and secure a competitive advantage for the decades ahead.

made.

IN

STYLE

# WHY THE LINEAR MODEL IS OBSOLETE

Let’s kick off this report with a number that should keep fashion executives awake at night: according to the Ellen MacArthur Foundation, a truckload of textiles is dumped in landfills or incinerated every single second.

Not every day. Every second.

Meanwhile, the United Nations Environment Program (UNEP) reports that consumers are buying 60% more clothing than they did two decades ago and wearing each item for half as long.

This, in a nutshell, is the legacy of fast fashion: a business model built on rapid production cycles, rock-bottom prices, and often disposable quality, designed to move high volumes of trend-driven clothing from factory to consumer at high speed. For decades, the model worked brilliantly and built billion-dollar empires. Yes, it democratized fashion. Yes, it made style accessible. But is it infinite? Is it sustainable? No, it is not.

**THE QUESTION FOR INDUSTRY LEADERS IS NO LONGER WHETHER TO TRANSFORM THIS BUSINESS MODEL, IT'S WHO TRANSFORMS FIRST TO LEAD, NOT LAG, THE INDUSTRY IN THE NEXT DECADES.**

Hence, industry leaders should no longer question whether to transform their business towards a more circular model. The question is who will transform first to lead the industry in the decades ahead.

At Made, we've spent the last three years embedded in this challenge through the 'ReUse In Style' Living Lab. What we discovered is a blueprint for competitive advantage in circular fashion.



# INSIDE THE REUSE IN STYLE LIVING LAB

In 2022, Made joined forces with University of Antwerp's REuse Lab to lead a VLAIO-funded Living Lab with a premise to stop thinking about lifecycle extension and start testing it.

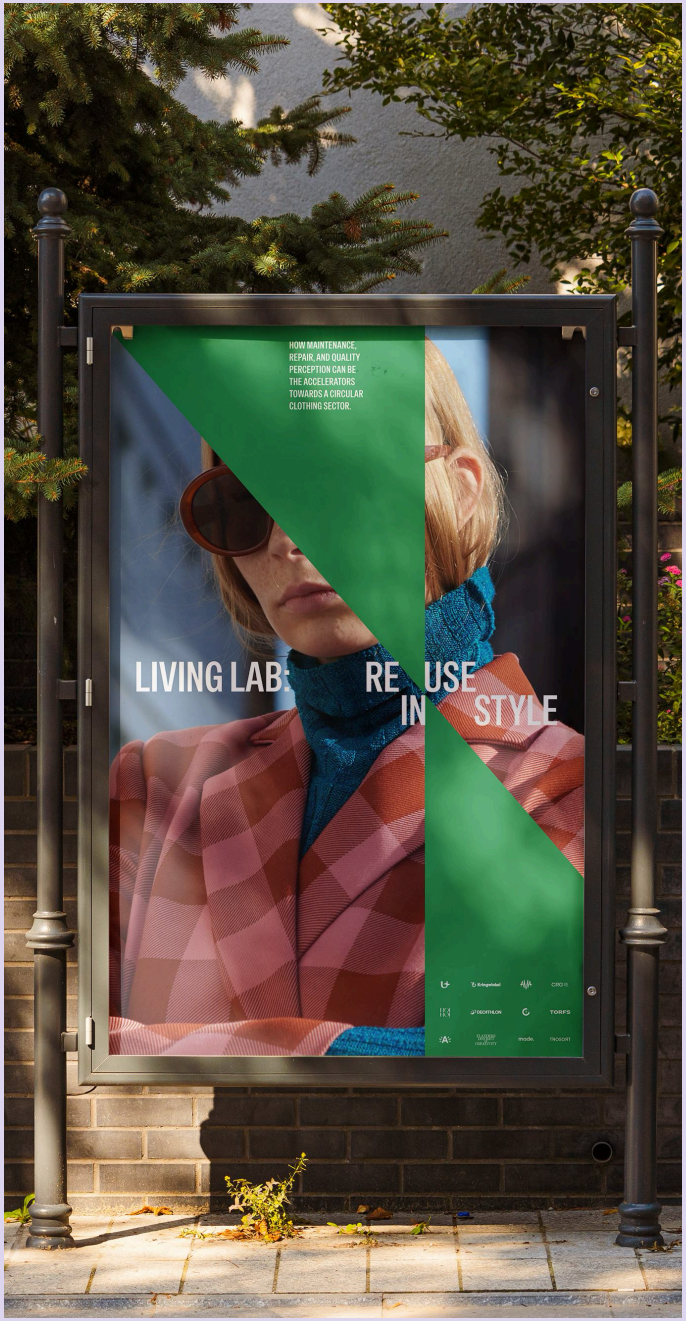
As the project's orchestrator, we succeeded in bringing together partners who had real stakes in the outcome. Think French sporting goods retailer Decathlon. Think Belgian footwear retailer Torfs. Think fashion retailer JBC, and many others.

Real stores. Real customers. Real pressure coming from both commercial companies and non-profit organizations.

The core reasoning behind the project challenges conventional sustainability thinking: durable clothing isn't just a question of how clothing is made, but primarily of how users value, use, maintain, and repair it. Three years of research made one thing clear: lifecycle extension is not a technical optimization that can simply be bolted onto existing business models. It is fundamentally a behavioral and systemic challenge.

**THE LIVING LAB BROUGHT TOGETHER BUSINESSES, RESEARCHERS, DESIGNERS, SOCIAL ECONOMY ACTORS, GOVERNMENT, AND CONSUMERS TO RUN EXPERIMENTAL INTERVENTIONS AND FIELD EXPERIMENTS TESTING WHICH DESIGN CHOICES, SERVICES, AND COMMUNICATION FORMS ACTUALLY LEAD TO LONGER CLOTHING USE.**

The project architecture was built around 4 interconnected pillars, resulting in 5 different projects and 21 experiments. Each of them generated insights that translate directly into circular business model opportunities.



# RE USE IN STYLE

Kringwinkel · AMA · DECATHLON · TORFS · CRG · TROSORT · FLANDERS DISTRICT OF CREATIVITY · made.

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# SUMMARY

# SUMMARY

ReUse in Style is a VLAIO Living Lab supervised by the University of Antwerp, Made, and Flanders DC, in collaboration with Torfs, HoiHoi, Decathlon, CRG, Studio AMA, Trosort, Kringwinkel, Cilab, the City of Antwerp, and the Province of Antwerp. This Living Lab provides insights that the fashion sector can use to evolve from a linear fast-fashion model to a circular future in which clothing lasts longer, is reused more often, and where quality sits at the core. The project deliberately starts from the use phase, because that is where the greatest environmental and value gains can be achieved.

The core hypothesis: objective and subjective quality determine whether clothing lasts longer. Only when consumers recognize, appreciate, and trust quality will they choose to reuse, maintain, and repair clothing and/or footwear. That is why the Living Lab is investigating how design, service, communication, and shopping experience can lead to behavioral change among users and new circular business models for companies.

Within ReUse in Style, partners collaborated on five practical projects:

## SECOND STYLE

— about quality perception, shopping experience, presentation, and communication for secondhand clothing.

## REBRANDING THE CRAFTSMAN

— on strengthening and professionalizing the repair culture and the role of repair professionals.

## KOESTERKLEREN (KEEP CLOTHING)

— about emotional value, meaning, and the development of a cherishing mindset among consumers.

## AI SORT SUPPLY

— about digitization and AI-driven sorting processes to make secondhand flows more efficient, valuable, and scalable.

## SHOE REPAIR LAB

— about how retailers can integrate repair, customers' willingness to pay, and the technical feasibility of shoe repair.

Through co-creation, field experiments, and academic research, the Living Lab develops insights into four thematic building blocks:

**(1)** quality recognition and perception,
**(2)** emotional value and meaning,
**(3)** quality assurance through maintenance, and
**(4)** quality assurance through repair.

These insights are translated into design principles, communication strategies, and future-proof service models.

ReUse in Style, thus, provides new knowledge, tools, and business opportunities that prepare the fashion and textile sector for the upcoming European Ecodesign legislation. In the long term, the lab aims to contribute to a sector in which clothing lasts longer, is used more intensively, and retains more value, with a positive impact on the environment, the economy, and consumer behavior.

REFUSE

RETHINK

REDUCE

REUSE REFURBISH

REPAIR REPURPOSE

REMAN. RECYCLE

RECOVERANCE

WASTE

## CLOSING THE LOOP: A PATH TO CIRCULAR FASHION

This visual shows how the Living Lab ReUse in Style turns the linear take–make–waste fashion chain into a more circular system. Each of the five projects intervenes at a different point in the chain and together they strengthen reuse, repair, and value retention.

Second Style improves the quality perception of second-hand clothing. Koester Kleren strengthens the emotional bond with garments. Rebranding the Craftsman revalues repair and craftsmanship. Shoe Repair Lab explores how retailers can offer repair structurally. AI Sort Supply digitizes and optimizes return flows so more items can be reused.

Together, these interventions enable the shift from a linear to a circular fashion system.



### KOESTER KLEREN

Research question: How do you make the value of clothing visible?

Study: intangible attachment

### REBRANDING THE CRAFTSMAN

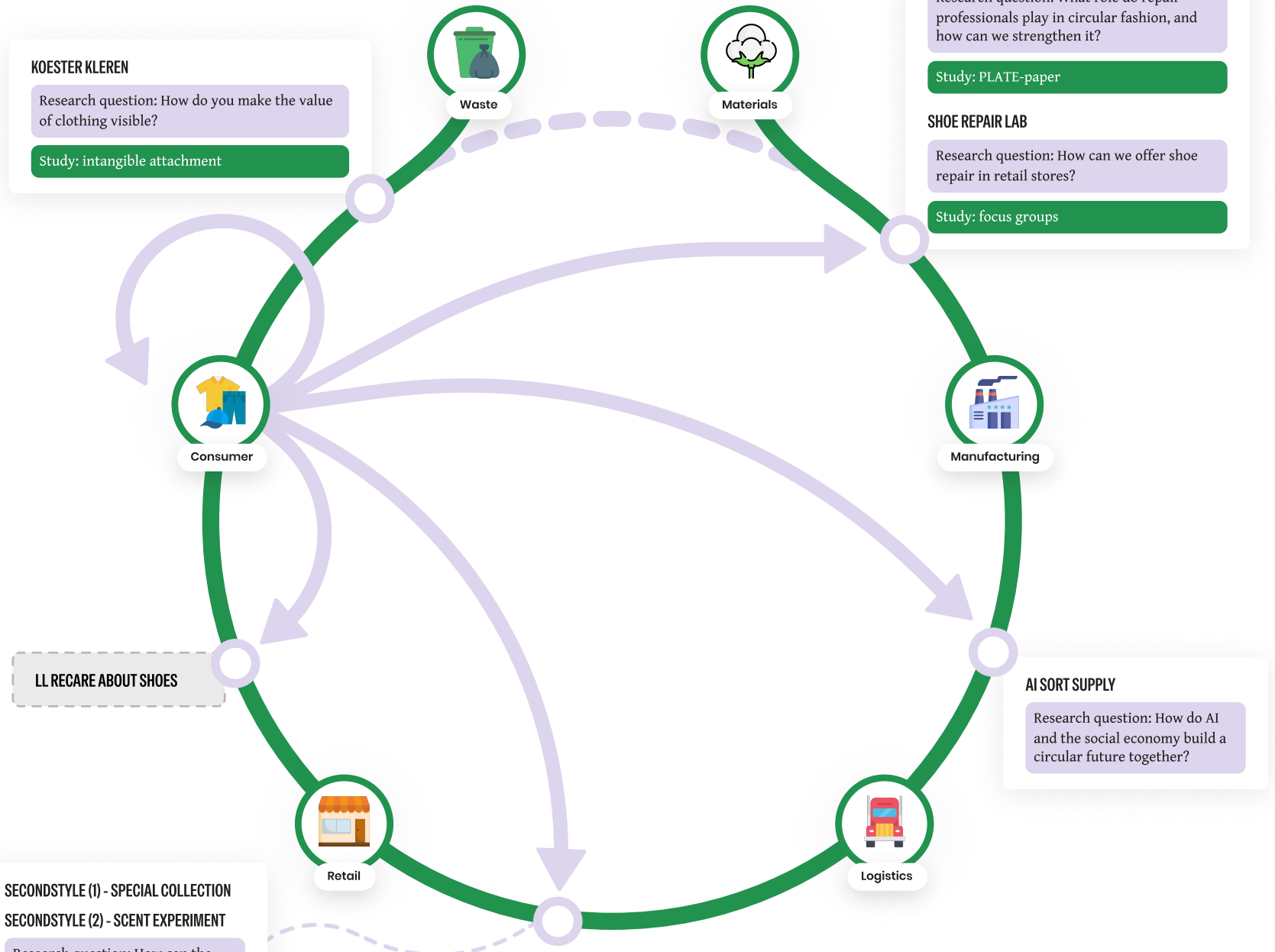
Research question: What role do repair professionals play in circular fashion, and how can we strengthen it?

Study: PLATE-paper

### SHOE REPAIR LAB

Research question: How can we offer shoe repair in retail stores?

Study: focus groups




LL RECARE ABOUT SHOES

### AI SORT SUPPLY

Research question: How do AI and the social economy build a circular future together?

### SECONDSTYLE (1) - SPECIAL COLLECTION

### SECONDSTYLE (2) - SCENT EXPERIMENT

Research question: How can the sale of second-hand clothing be stimulated?

Study: enablers and barriers

REUSE
REPAIR
SECONDHAND
SHARING
RESALE



## THE CARING OWNER

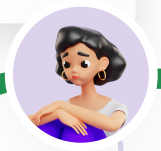
A person who wants to extend the life of clothes but needs reassurance about trust, cost, quality, and effort. They value their items, either emotionally or functionally, and look for clear, reliable repair options.

LOW WILLINGNESS — HIGH WILLINGNESS

LOW EXPERIENCE — HIGH EXPERIENCE

IP1 — Deliberation
**Is it worth repairing?**

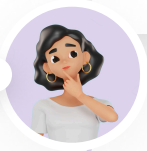
### Repair decision
Emma discovers the zipper of her favourite jacket is broken.



- Is this item worth repairing?
- What was its value before it broke?
- Do I care about it sentimentally?
- Does repairing fit my sustainability mindset?

Replace

Repair



### Choice of repair service
She searches for repair options and chooses a place she feels she can trust with her jacket.

IP2 — Trust Expectations
**Do I trust this repair option enough to commit?**

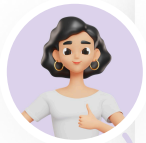
- Do I have the skills or tools to repair this myself?
- How much time and effort will DIY take me?
- Will the result be good enough or durable?
- Is paying for expertise worth it?

- Can I actually fix this properly?
- Will the repair be durable?
- What if the result doesn't meet expectations?

DIY



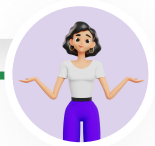
### I can do it myself
Emma thinks she can fix the zipper herself.



### Continued use — How long will it last?
Emma happily wears her jacket again and realises that one repair kept a favourite item in circulation, delaying disposal and reducing her footprint.

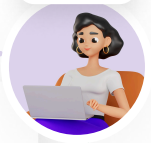
- Will this repair hold over time?
- Has my item gained or lost value?
- Will I repair again next time?

### Repair process — Trial & error
Emma isn't a professional and struggles a bit. Eventually she is satisfied with her result, it's not perfect but she's happy she saved money.



- Which repair services do I know about?
- Do I trust their skills and experience?
- What do reviews or others say?
- How accessible or convenient are they?

Professional



### Item handover to a professional
Emma doesn't have any handy friends/family and is willing to pay for quality so she researches who can fix it for her. She can send it to the brand for fixing but decides to go to a nearby tailor.

IP3 — Trust Reinforcement
**Do the service and communication reassure me to continue?**

- Is this fix strong and reliable?
- Should I try again or give up?

- Does it function properly again?
- Does i* look good?
- Was this .orth the money?





### Pick-up — Did it meet expectations?
She picks up the jacket, tests the smooth new zipper, and feels proud that her choice avoided waste and preserved something meaningful.

IP5 — Evaluation & Reflection
**Am I satisfied enough to use it again and choose repair next time?**

### Repair process — Waiting, trust, updates.
While she waits, Emma receives updates about the repair, which reinforces her trust and helps her feel involved in keeping her item in circulation.

- Can I trust the repairer to do a good job?
- Are they transparent about what will happen?
- How long will this take?

IP4 — Time Efficiency
**Is this worth my time? Do I commit to picking it up?**



# PROJECT GOAL & SCOPE

# GOAL

The Living Lab ReUse in Style aims to contribute to the transformation of the fashion sector by structurally extending the lifespan of clothing, with a focus on the use phase. This objective is in line with international studies that show that even a limited extension of lifespan has a disproportionately large environmental impact. According to WRAP's Extending Clothing Life report, extending the lifespan by an average of nine months leads to a 20–30% reduction in CO2 emissions, water consumption, and waste per garment[1].

At the same time, research by the Ellen MacArthur Foundation shows that today's fashion industry largely operates within a linear system dominated by rapid replacement, low intensity of use, and limited care for products[2]. ReUse in Style therefore does not start from product optimization or material substitution, but from the question of how use, care, appreciation, and meaning can be enhanced in order to delay replacement and significantly reduce the environmental impact per garment.

# SETUP

To achieve this objective, the Living Lab was set up as a collaborative design and experimentation platform, in which industry, the social economy, design practitioners, and knowledge institutions work together on concrete, testable solutions. This approach is in line with the living lab methodology as applied within European innovation programs (including Horizon Europe), which focus on real-life testing, active user involvement, and iterative development[3].

Instead of developing theoretical scenarios or simulations, ReUse in Style conducted pilots and experiments in operational contexts such as shops, sorting centers, and repair environments. This allowed the lab to investigate how perception, communication, service design, digitization, and organizational models contribute to extending product life, and under which conditions these solutions are economically feasible, organizationally feasible, and socially scalable within the existing fashion sector.



(1) WRAP (2021). Extending Clothing Life: How extending the active use of clothing reduces the impacts of fast fashion. (2) WRAP UK. (3) Ellen MacArthur Foundation (2017). A New Textiles Economy: Redesigning fashion's future.

# SCOPE

The scope of the Living Lab is deliberately and explicitly limited to the use phase of clothing, i.e. the phase after purchase and before disposal. The lab focuses on themes such as appreciation, intensity of use, maintenance, repair, resale, and reuse, because it is precisely in this phase that the greatest behavioral and systemic levers lie. Studies by the European Commission's Joint Research Centre (JRC) show that parameters such as lifespan, reparability, and duration of use are crucial for reducing the environmental impact of textiles.

These insights also form a core part of the upcoming Ecodesign for Sustainable Products Regulation (ESPR), in which textiles are explicitly named as a priority product group. Material innovation, fiber development, and production processes are deliberately excluded from the scope of this Living Lab. This demarcation allows us to work in depth on behavior, services, retail practices, and support systems, and makes the Living Lab complementary to other programs that focus primarily on material and production innovation.



(4) European Commission (2020). Living Labs for User-driven Innovation – Policy Brief. Horizon Europe framework. (5) European Commission – Joint Research Centre (JRC) (2023). Environmental Footprint Category Rules (EFCR) for Apparel and Footwear – Technical background studies.



# APPROACH

# APPROACH

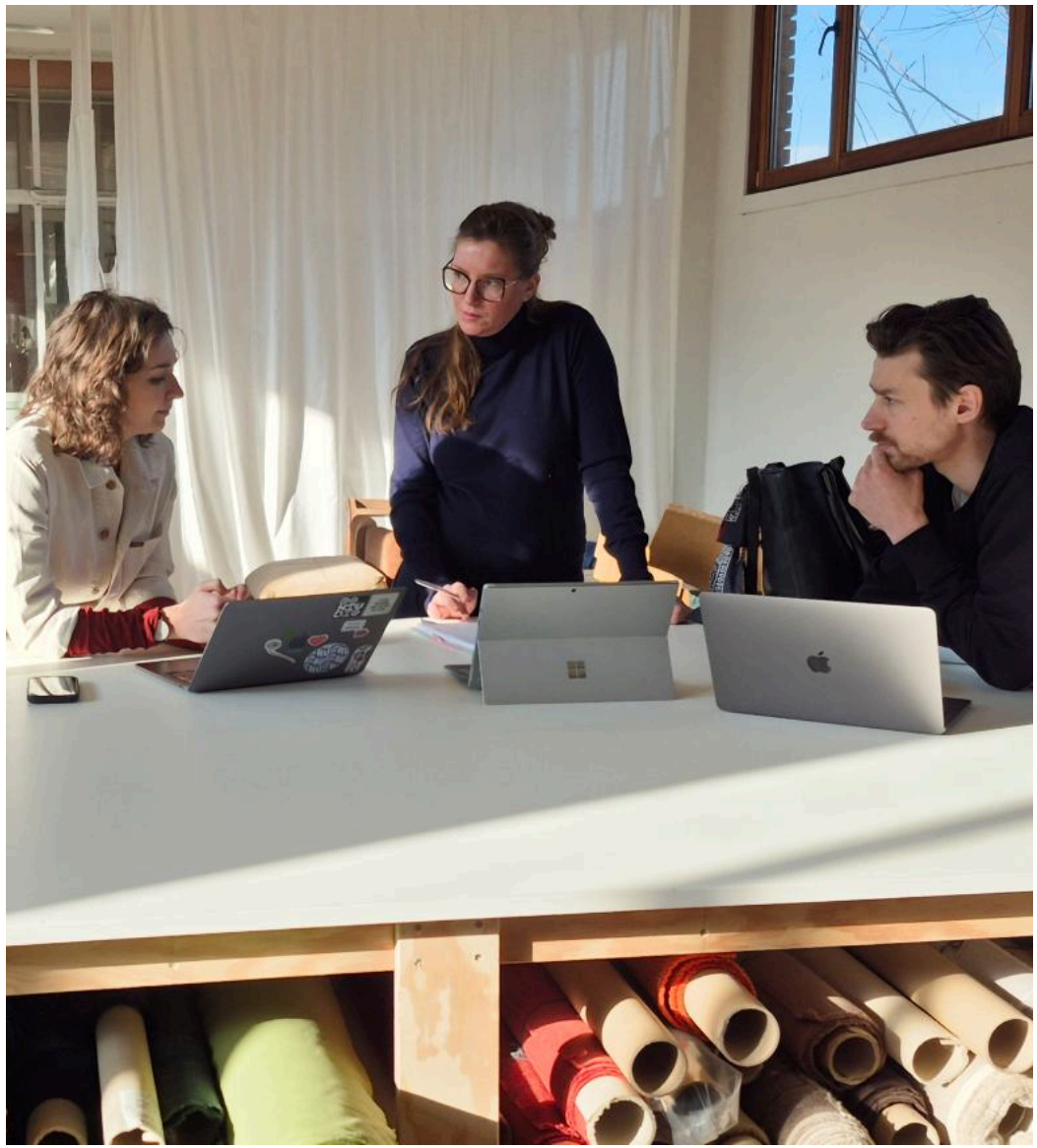
Over a period of three years, a structured design thinking methodology was applied within the Living Lab ReUse in Style, under the guidance of innovation studio Made. This approach provided a suitable framework for working with twelve partners on the complex challenge of extending the lifespan of clothing, in which behavioral, organizational, and economic factors are closely intertwined.

Design thinking was deliberately used as an intensive and collaborative process, in which partners were actively involved in formulating problems, sharing insights, and jointly developing solutions. This ensured a shared understanding of the challenges across organizations and links in the chain.

In the first phase, the individual challenges of the partners were identified, including quality perception, consumer confidence, repairability, sorting processes, and integration within existing business models. The next step was to identify overlaps and complementarities between these challenges, with the aim of uncovering common levers in the chain.

This analysis formed the basis for clustering issues into five collaborative projects, each focused on a specific lever for extending service life within the use phase. Based on this project structure, the findings were translated into twenty-one experiments and pilots, which were tested in real-life contexts such as shops, sorting centers, and repair environments.

Within each experiment, the University of Antwerp investigated the extent to which it could academically substantiate and validate hypotheses. In doing so, it actively sought to link up with Marie Das' ongoing doctoral research, so that practice-oriented innovation and academic research mutually reinforced each other and resulted in substantiated, scalable insights for the fashion sector.





# PARTNERS

# ANTWERP UNIVERSITY

The University of Antwerp acted as an academic knowledge partner and provided scientific substantiation and validation for the experiments conducted within the Living Lab. By linking behavioral and perception research to real-life pilots, hypotheses concerning quality perception, sensory stimuli, and value attachment could be systematically investigated. The university provided methodological support for experimental design, data collection, and analysis, translating practical insights into robust research results. An important aspect of the collaboration was the explicit link with Marie Das' ongoing doctoral research, which allowed the Living Lab to function as a living research environment. This interaction between practice and academia resulted in mutual reinforcement: experiments gained more depth, while academic research remained firmly anchored in the reality of the fashion sector.

## ROLE IN PROJECTS

* Second Style
* Koesterkleren

# MADE

Made acted as the strategic and substantive driver of the Living Lab ReUse in Style, in close collaboration with the University of Antwerp. As a global innovation studio with years of experience in system design, Made guided the entire process: from focusing ambition and research questions to setting up, coordinating, and translating insights into concrete experiments. Made facilitated the intensive design thinking process with the partners, identified overlaps and complementarities, and ensured coherence between the five collaborative projects. By combining design methodology, system thinking, and academic substantiation, Made helped translate complex issues surrounding life extension into testable solutions with relevance for the sector, policy, and education.

## ROLE IN PROJECTS

* Second Style
* Koesterkleren
* Rebranding the Craftsman
* Shoe Repair Lab
* AI Sort Supply

# FLANDERS DC

Flanders DC was involved as a strategic partner and knowledge enhancer, with a focus on innovation, entrepreneurship, and system change within the creative sector. Drawing on its expertise in the circular economy and fashion, Flanders DC supported the Living Lab in positioning the projects within broader sector and policy developments. The organization played an important role in connecting lab results with other living labs and in disseminating insights to their professional network. In this way, Flanders DC contributed to raising awareness of the insights gained by ReUse in Style, including through their Fashion Talks and Studio Circulair initiatives.

## ROLE IN PROJECTS

* Fashion Talks
* Studio Circulair
* Close The Loop

# KRINGWINKEL ANTWERPEN

Kringwinkel Antwerpen was a key partner in the Living Lab ReUse in Style and contributed in-depth expertise in social economy, sorting, and second-hand sales. Their daily operations made it clear that quality perception and trust are crucial barriers to the further growth of second-hand clothing. Within the Living Lab, Kringwinkel Antwerpen served as a testing ground for experiments in curation, presentation, transparency, and digital sorting. The collaboration provided insight into how visible care, clear selection criteria, and a professional shopping experience strengthen consumer confidence. At the same time, Kringwinkel Antwerpen provided valuable practical insights into labor intensity, scalability, and the tensions between efficiency and quality within second-hand chains. Their involvement ensured that experiments did not remain purely conceptual, but were always tested against operational reality and social objectives.

### ROLE IN PROJECTS

* Second Style
* AI Sort Supply
* Rebranding the Craftsman

# STUDIO AMA

Studio AMA took on a distinctly artistic and investigative role within the Living Lab ReUse in Style, focusing on emotional value, meaning, and the relationship between wearer and clothing. Based on the conviction that extending the lifespan of clothing is not merely a technical or economic challenge, Studio AMA investigated how attention, reflection, and imagination can contribute to more careful use of clothing. Through the KoesterKleren project, the studio developed participatory formats, installations, and conversations that invited consumers to reflect on what they wear and why. These interventions made it clear that behavioral change occurs when people are addressed as active wearers, not passive consumers. Studio AMA thus brought a cultural and narrative perspective to the Living Lab and demonstrated that emotional sustainability is an essential lever for extending the life of clothing.

### ROLE IN PROJECTS

* Koesterkleren



# CILAB

CiLAB brought in-depth expertise in repair, eco-design, and circular business models for textiles and shoes to the Living Lab. Drawing on their experience with both traditional repair practices and industrial contexts, CiLAB investigated how repair can be structurally embedded in business processes and value chains. The collaboration revealed that repair is currently under economic and organizational pressure, but at the same time is becoming inevitable due to upcoming regulations and changing consumer expectations. CiLAB played a key role in translating repair activities into scalable models and in identifying the preconditions for profitable repair services, such as volume, logistics, and knowledge sharing. Their contribution made it clear that repair cannot be viewed separately from design choices, service design, and chain collaboration.

### ROLE IN PROJECTS

* Rebranding the Craftsman
* Shoe Repair Lab

# HOIHOI

HOIHOI participated as an executive repair professional and practical partner within the Living Lab. Based on their daily repair practice, they provided insights into repair quality, service expectations, and consumer confidence. Within the experiments, HOIHOI, together with other partners, tested how repairs could be made more accessible and attractive to a wider audience, both organizationally and communicatively. Their experience confirmed that consumers are willing to pay for repairs, provided that the service is reliable, transparent, and professionally organized. HOIHOI acted as a link between concept and implementation and provided realistic insights into lead times, cost structures, and quality expectations. In this way, they contributed to the professionalization of repair as a fully-fledged service within a circular fashion sector.

### ROLE IN PROJECTS

* Rebranding the Craftsman
* Shoe Repair Lab

# CLAES RETAIL GROUP (JBC)

Claes Retail Group participated in the Living Lab with the ambition of integrating second-hand clothing on a larger scale into existing retail models. Within the AI Sort Supply projects, JBC served as a test environment for AI-driven sorting, itemization, and valuation of clothing. The collaboration provided insights into how digital processes and data-driven pricing contribute to profitable second-hand sales, particularly through online channels. JBC brought a distinct commercial perspective to the Living Lab and highlighted the preconditions necessary for circular models to align with retail logic, margins, and customer expectations. Their involvement was crucial in testing the economic feasibility of reuse and resale models.

### ROLE IN PROJECTS

* AI Sort Supply (clothing)

# SCHOENEN TORFS

Schoenen ('Shoes') Torfs participated in the Living Lab as a retail partner focusing on shoes, refurbishment, and second-hand sales. In collaboration with Kringwinkel Antwerpen and Trosort, research was conducted into how collected shoes can be digitally sorted, valorized, and assigned to suitable sales channels. The experiments showed that refurbished shoes follow a different market logic than clothing and that positioning and channel selection are crucial. At the same time, Torfs gained insight into how item-level data and digital sorting can support decisions about sales, refurbishment, or alternative valorization routes. The collaboration provided Torfs with a test environment to explore circular ambitions within a competitive retail context.

### ROLE IN PROJECTS

* AI Sort Supply (shoes)

# TROSORT

Trosort acted as a technology partner and introduced AI vision technology for the digital recognition, sorting, and valuation of second-hand textile and shoe flows. Within the Living Lab, Trosort investigated how their technology can function in collaboration with the social economy and retail, and which process steps are decisive for scalability and economic feasibility. The experiments made it clear that AI can contribute to consistency, transparency, and efficiency in sorting processes, but that the entire chain, from photography to data integration, remains decisive for success. Trosort, thus, provided a technological perspective that was essential for professionalizing second-hand chains.

## ROLE IN PROJECTS

* AI Sort Supply

# DECATHLON

Decathlon participated in the Living Lab to investigate how shoe and textile repair can be integrated into a large-scale retail model. Consumer research and proof-of-concept repair services were used to test the extent to which customers are willing to choose repair over replacement. The collaboration yielded concrete insights into price barriers, trust, communication, and service expectations. Decathlon brought a scale- and service-oriented perspective to the Living Lab and highlighted the organizational and commercial adjustments needed to make repair function as a fully-fledged retail service. The results showed that repair has potential, provided it is visible, reliable, and easy to access.

## ROLE IN PROJECTS

* Shoe Repair Lab



# CITY OF ANTWERP

The City of Antwerp participated in the Living Lab ReUse in Style as a public partner with a focus on urban sustainability, circular economy, and social anchoring. In its role as a policy and network actor, the city supported experiments in an urban context and established links with existing initiatives related to reuse, repair, and social economy. The involvement of the City of Antwerp made it possible to test insights from the Living Lab against broader policy objectives and to explore how circular practices around clothing can be scaled up within an urban ecosystem. This bridged the gap between practical experiments and urban impact.

## ROLE IN PROJECTS

* Rebranding the Craftsman
* Supporting urban repair initiatives

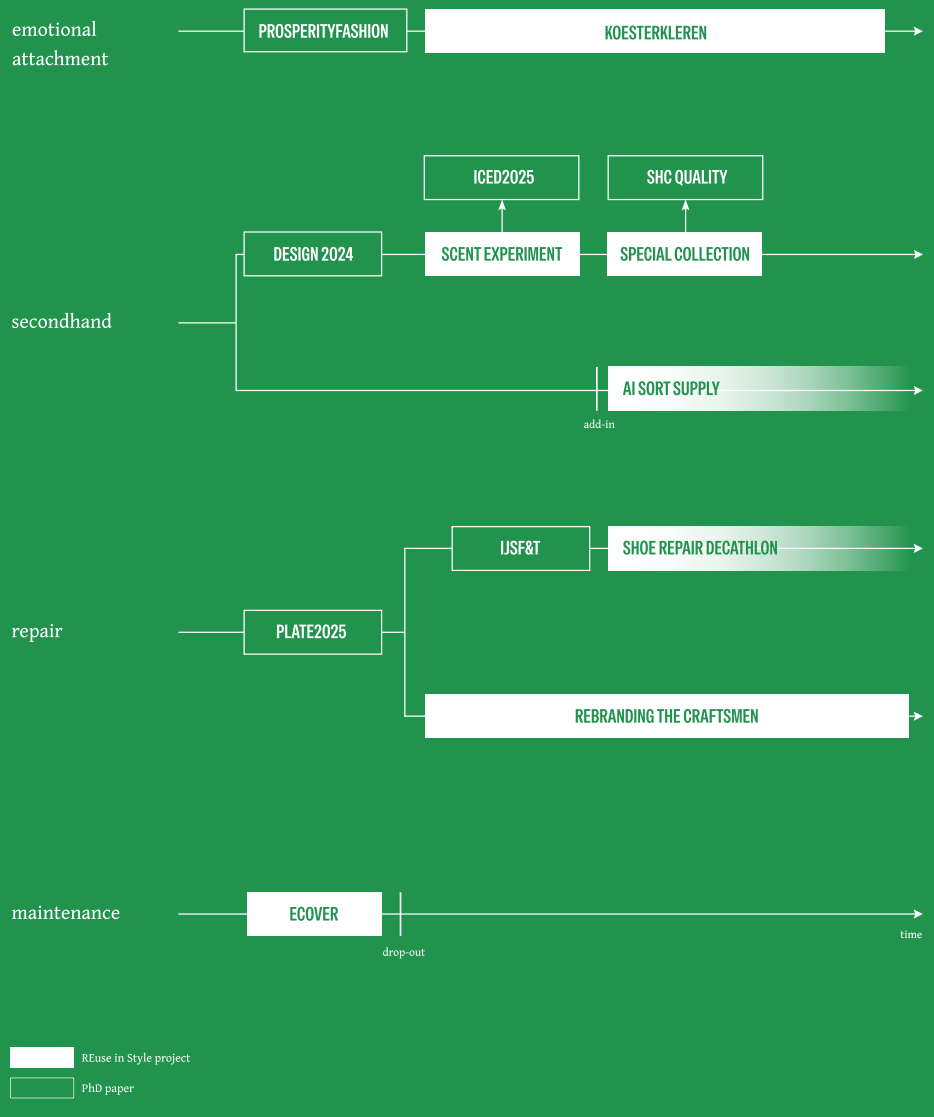

RE
USE
RESEARCH UA
15
IN
STYLE

# CONSUMER BEHAVIOR & QUALITY

Within REuse in Style, Marie Das' doctoral research closely aligns with the ambition to keep clothing in use for longer. Her research focuses on how consumers perceive, interpret, and translate quality into sustainable behavior: from buying second-hand clothing to repair and maintenance.

By understanding how quality perception arises and how it differs from industry standards of quality, the research aims to understand the role quality plays in trust and use, and what practical tools brands, policymakers, and other stakeholders can use to make sustainable choices more attractive and accessible.





# EMOTIONAL BONDING & LIFESPAN EXTENSION 01

A first line of research within the PhD explores how emotional attachment to clothing can contribute to extending its lifespan. When consumers are attached to a garment, they appear willing to keep it longer, repair it, or treat it with greater care. This study investigated which forms of attachment actually exist, how strong that bond is, and how it influences the intention to maintain or reuse clothing.

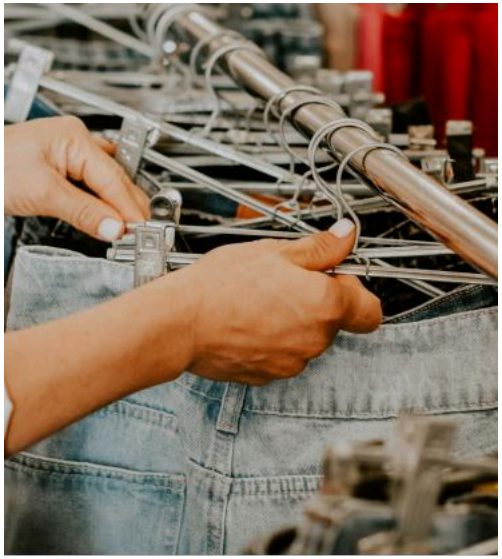
In addition, it examined how individual factors, such as environmental attitude, strengthen or weaken these relationships. These insights formed a valuable basis for the Koester Kleren ('Keep Clothing') project.



# SECOND-HAND EXPERIENCE & QUALITY PERCEPTION 02

The doctoral research also makes important contributions to the second-hand section of REuse in Style. The consumer research within the Second Style track began with a broad exploration of barriers, motivations, and emotions that play a role in the purchasing process of second-hand clothing. Sixteen in-depth interviews revealed the barriers consumers experience, their expectations, and the design interventions that can improve their confidence and purchasing behavior.

The results, published in the proceedings of the Design Society (Das et al., 2024), formed the basis for two experiments: a scent experiment that investigated how scents influence perceptions of quality and hygiene, and the Special Collection experiment, which used visual merchandising to improve quality recognition in stores.





## RECOVERY & REPAIR CULTURE 03

The PhD also looked closely at how consumers feel about clothing and shoe repair, what barriers they face, and how communication affects their willingness to repair stuff. The study highlighted the importance of craftsmanship and expertise, which give consumers confidence in the quality of a repair. After that, two master's students in Multilingual Communication, supervised by the PhD, performed a quantitative study on the impact of different communication styles on the acceptance of repair. The combined insights from both works were published as a paper for the Product Lifetimes and the Environment (PLATE) conference (Das, Ahsan, et al., 2025) and formed input for the Rebranding the Craftsman and Shoe Repair Lab projects.

## THIRD PARTY RECOVERY 04

Finally, we took a closer look at the experience of consumers when a third party, such as a brand, local repair service, repair café, or friends/family, repairs their clothing. Through focus groups with participants, with varying levels of experience and willingness to repair, we investigated how they experience the process, what their expectations are, and how the service can be improved.

These insights reveal which factors convince consumers to effectively choose repair and which adjustments within service provision can increase trust and usage. The results of this study are currently under review at the International Journal of Sustainable Fashion & Textiles.

## SYNTHESIS & IMPLICATIONS FOR THE SECTOR

Together, these different lines of research form an integrated whole that provides insight into how consumers recognize quality, what role this plays in their behavior, and how this perception can be used to encourage reuse, repair, and longer life cycles for clothing.

For industry stakeholders, the findings offer concrete guidance for designing attractive second-hand concepts, clear communication about repair, quality-focused shopping environments, and services that effectively support consumers in becoming more sustainable.

Das, M., Ahsan, N., Rooy, D. V., Du Bois, E., & Moons, I. (2025). Unveiling the Power of Repair Services in Enhancing Consumer Repair Behaviour in the Fashion Industry: A Crucial Step Towards a Circular Economy. 6. https://doi.org/10.54337/plate2025-10262

Das, M., Moons, I., & Du Bois, E. (2024). Design strategies to facilitate second-hand clothing acquisition. Proceedings of the Design Society, 4, 935–944. https://doi.org/10.1017/pds.2024.96

Das, M., Moons, I., Du Bois, E., & Van Rooy, D. (2025). Exploring the sensory impact in second-hand clothing shopping through visceral, behavioural, and reflective design. Proceedings of the Design Society, 5, 1763–1772. https://doi.org/10.1017/pds.2025.10190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# PROJECTS

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RE

USE

made.

# KOESTERKLEREN



IN

STYLE

# KOESTERKLEREN

Koester Kleren is an artistic research project and intervention by Studio AMA that revives the relationship between people and their clothing, with the aim of stimulating value appreciation. The project develops a cherishing mindset: looking more slowly, appreciating more consciously, wearing with pleasure. This mindset is built up through the 'Cherishing' of 'Koester' Process'; a five-step method (Prime — Learn — Experience — Reflect — Adopt) that helps people to (re)discover value in their clothing. This process is the common thread running through the Koester installation and the Koester episodes, as well as in conversations with the Koester telephone, in which questions and stories encourage both wearers and makers to reflect.

In this way, consumers are invited to reflect on what they cherish, while makers are encouraged to think about their role in shaping that valuable bond between people and clothing. In addition, KoesterKleren explores how this cherishing mindset can continue to grow and broaden its impact.

## RESEARCH QUESTION

## HOW DO YOU REDISCOVER THE VALUE OF CLOTHES?

## CHALLENGE

Every year, we produce enough unused clothing worldwide to clothe six generations*. The real crisis is not a shortage of clothing, but our urge to keep producing more and more.

Koester Kleren investigates how we can produce less clothing by rediscovering the value of existing clothing. What role do designers, brands, consumers, and society play in this?

* https://time.com/7307662/ghana-africa-fast-fashion-waste-pollution




## SUB-QUESTIONS

**(1)** How can we strengthen or cultivate the relationship between wearer and clothing?

**(2)** What role do designers and fashion brands play in giving new value to existing consumer clothing?

**(3)** How can we spread the 'nurturing mindset'?

## STUDY

Abstract attachment

## LINK CLOSE-THE-LOOP

Design

# KOESTER PROCESS 01

## METHODOLOGY, NO EXPERIMENT

The ‘Koester’ Process is a five-step process that works towards a cherishing mindset: a way of dealing with clothing in which the value of garments becomes visible and a conscious, emotional bond is created between the wearer and the clothing. The process was tested through experiments and forms the basis for the further dissemination of the cherishing ‘Koester’ mindset to a wider audience.




**Prime** – choosing an item of clothing: what item of clothing are we talking about today, and what does it evoke?

**Learn** – a conversation that delves deeper into the motivation: why exactly did you choose this particular item of clothing?

**Experience** – an intervention on the garment, inspired by the insights gained from the conversation.

**Reflect** – a moment of confrontation with oneself and with the altered garment.

**Adopt** – sharing and passing on the insights gained, so that the ‘Koester’ mindset is further disseminated.

# KOESTER EPISODES 02

The ‘Koester’ Episodes formed a series of intimate video interviews in which people were asked to talk about a particular piece of clothing that had special meaning for them.

Through subtle interventions and a moment of reflection in front of the mirror, the stories, memories, and emotions behind the garment were made tangible, and the experiment explored how existing clothing can regain meaning and value in the wearer's experience.

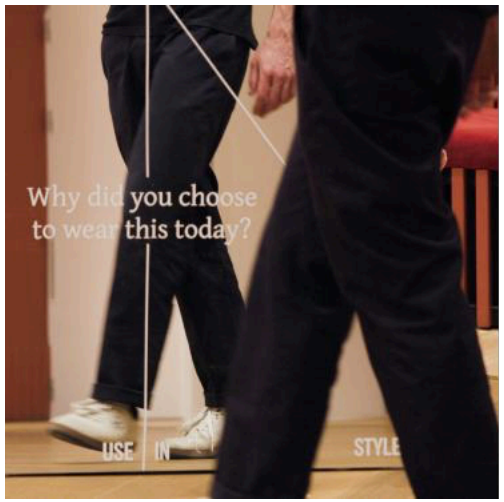
Based on the five-step Koester process, this experiment explored how the Koester mindset can take shape in the relationship between the wearer and the garment.





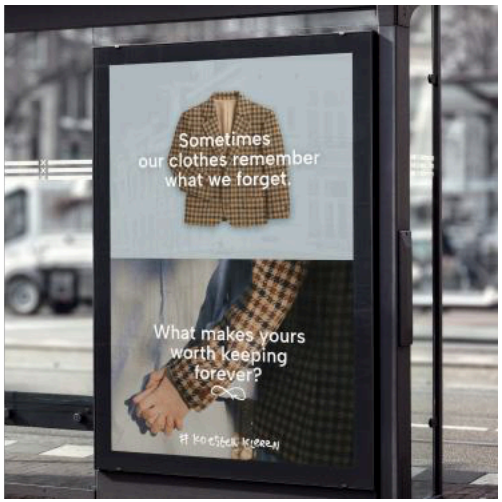
# KOESTER INSTALLATION 03

The ‘Koester’ Installation is a mirror setup that invites visitors to have a personal encounter with their clothes. In front of the mirror, there's a moment of pause and reflection, where questions about quality, care, and meaning encourage them to reevaluate what they're wearing.
(The conversations conducted in the booth formed the basis for the development of personas of “Koester designers,” who explore the role of designers in strengthening the bond between wearer and clothing.)




# KOESTER THE MOVEMENT 04

Koester The Movement explores how the cherishing mindset can grow into a broader movement. In this phase, we explored how communication strategies, formats, and campaign scenarios can spread the message about care, meaning, and appreciation for clothing on a larger scale.




# KOESTER PHONE 05

The ‘Koester’ Phone is an interactive conversation installation that invites visitors to engage in a personal conversation about their relationship with clothing. Through a series of questions, driven by artificial intelligence, it creates a moment of reflection on value, care, and meaning.

The telephone complements the mirror installation, but can also function on its own as an accessible way for visitors to reflect on their relationship with clothing.



# NEXT STEPS

→ Develop and test communication strategies to further spread the Koester Mindset.

→ Development of the Koester video format for national television, its positioning and sales.

→ Set up new initiatives to apply the nurturing process in new contexts (telephone, mirrors, platform, social media, FT video).

# PROJECT FINDINGS

* **ACTIVATING VALUE AWARENESS**
Consumers only truly develop an understanding of the value of their clothing when they are actively encouraged to consider it. This awareness can be supported by designers, companies, and broader social initiatives, such as public campaigns, to reinforce that awareness on a larger scale.

* **ATTENTION AS LEVERAGE**
Behavioral change starts with attention. Asking people for their opinions creates engagement and makes room for reflection, which in turn creates value and connection.

* **ESTABLISH AUTONOMY**
Consumers are not passive, but are at the same time not sufficiently addressed. In a culture of convenience, their autonomy has been weakened. By actively involving them in care and recovery, their ownership, identity, and capacity to act are strengthened.

# INDUSTRY INSIGHTS

Consumers determine, for themselves, what value they attach to their clothing. The task of designers and companies is to facilitate that valuation process, not to control it top-down, so that they can better respond to diverse maintenance and repair needs. By recognizing these needs in different repair and maintenance personas, companies can respond to them in a more targeted way, which can ultimately lead to stronger customer loyalty.

**Suggestions for capturing needs:**

* **DESIGN FOR ATTENTION**
invites consumers to consider the value and story behind their clothing.

* **SLOW DOWN THE CUSTOMER JOURNEY**
moments of reflection in the customer journey.

* **RESTORE WEARER AUTONOMY**
give consumers an active role in value assessment, maintenance, and repair.

Kringwinkel made.

# SECOND STYLE

# SECOND STYLE

Second Style investigates how consumers can be encouraged to buy second-hand clothing. This project specifically looked at how the perception of quality in second-hand clothing can be improved, as this is a major barrier to purchasing second-hand clothing.

Research was conducted in two areas.

First, the scent experiment examined how sensory stimuli, such as scents and presentation methods, influence the experience of second-hand stores.

Next, the Special Collection experiment tested different forms of communication to investigate how messages about various quality aspects influence the perception and sale of second-hand clothing.




Kringwinkel made.

### SUB-QUESTIONS

**(1)** Can we improve the quality perception of second-hand clothing?

**(2)** What is the impact of sensory input when shopping secondhand?

### PHD RESEARCH

Drivers & barriers

### LINK CLOSE-THE-LOOP

Sales

### RESEARCH QUESTION

## HOW CAN THE SALE OF SECOND-HAND CLOTHING BE STIMULATED?

# SPECIAL COLLECTION 01

The experiment was conducted in three Kringwinkel stores in Antwerp and ran for six months to test the effect of visual communication on quality perception and purchasing behavior. The Special Collection served as a case study and received additional visual merchandising such as banners, posters, demonstration pieces, and QR codes in the intervention condition, while the control condition retained the original presentation.

Within the intervention, three sub-conditions were tested (functional, emotional, financial), each lasting four weeks per store, according to a stepped-wedge design to minimize location and time effects. Data was collected through surveys, sales figures, and short interviews, measuring variables such as quality perception, trust, purchase intention, willingness to pay, and shopping experience. The order of subconditions was randomly determined, and the manipulation remained unnoticed by customers to avoid bias.

## PROJECT FINDINGS

* **ASSOCIATIONS WITH THE SPECIAL COLLECTION**
  Customers mainly associate the collection with financial and functional value (brand, price, well-made clothing), while emotional value is hardly mentioned.

* **VISIBILITY OF THE RACK**
  Visual merchandising slightly increased visibility, especially in the functional and financial conditions, but not significantly in the emotional condition.

* **QUALITY PERCEPTION**
  Respondents primarily assess quality based on brand, price, comfort, and material; technical characteristics such as construction and wear resistance play a limited role.

* **IMPACT OF COMMUNICATION**
  Additional visual communication had no significant effect on quality perception or trust, presumably due to already high baseline perceptions and limited attention to the information.

* **STORE EXPERIENCE**
  The shopping experience was rated positively, with a slight improvement in emotional and financial conditions compared to functional conditions, but no difference compared to the control condition.

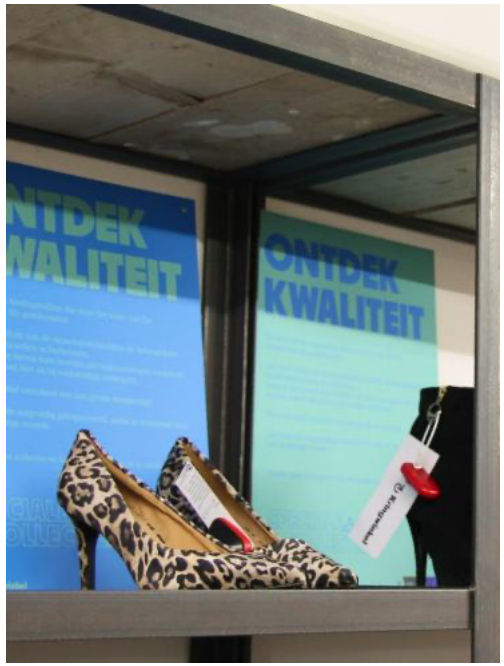
* **BUY INTENT**
  Respondents indicated a high purchase intention, but there was no significant difference between conditions; regular and new customers also scored similarly.

* **WILLINGNESS TO PAY**
  On average, customers were only willing to pay €3.30 more for a T-shirt from the Special Collection; there was considerable variation among respondents.

* **SALES FIGURES**
  No significant differences between conditions in terms of turnover, number of items sold, or number of customers.

* **DOUBTS ABOUT SELECTION CRITERIA**
  A lack of transparency about how clothing is selected led to questions and sometimes mistrust among customers and staff.

* **CUSTOMER PROFILES**
  Some customers appreciate the convenience of curation, while others miss the fun of “treasure hunting,” which calls for a differentiated approach.



# SPECIAL COLLECTION 01

## NEXT STEPS

→ **Identification of the Special Collection:** Kringwinkel Antwerpen is gradually introducing the special collection via signs on the shelves. This makes it more clear to customers which shelves belong to this collection and what they can expect to find there.

→ **Objectification of the sorting categories:** In the longer term, Kringwinkel Antwerpen wants to make quality control of textiles more objective by using technology during the sorting process. Digital support can help employees to better recognize quality and make consistent decisions about which items are suitable for reuse.

→ **Communicating more transparently about the sorting process:** In addition, Kringwinkel Antwerpen wants to communicate more clearly to customers about how clothing is sorted. By providing insight into the careful inspection that each garment undergoes, customers' perception of quality can be improved, or at least confirmed.



## INDUSTRY INSIGHTS

* Selection and positioning are crucial: a clear and uniform selection process enhances credibility.
* Communication outside the store (online, newsletter) can help to anchor the story behind quality more broadly.
* Price justification is essential: explain why certain items are more expensive in order to maintain a perception of fairness.
* Segmentation pays off: tailor communication to different customer types (e.g., bargain hunters vs. quality seekers).
* Making quality tangible through examples or facts can help to concretize objective criteria.
* Limit text, make communication visual: use short, eye-catching messages and avoid information overload.

# SCENT EXPERIMENT 02

Second Style investigates how consumers can be encouraged to buy second-hand clothing. This project specifically looked at how the perception of quality in second-hand clothing can be improved, as this is a major barrier to purchasing second-hand clothing.

Research was conducted in two areas.

First, the scent experiment investigated how sensory stimuli, such as scents and presentation methods, influence the experience of second-hand stores.

Next, the Special Collection experiment tested different forms of communication to investigate how messages about various quality aspects influence the perception and sale of second-hand clothing.

## PROJECT FINDINGS

* **VISUAL PRESENTATION INFLUENCES PERCEPTION**
  Clothing displayed on mannequins received the most positive ratings in terms of quality, hygiene, and purchase intent, followed by racks; bins scored the lowest.

* **WILLINGNESS TO PAY (WTP)**
  Respondents were willing to pay more for clothing that was attractively presented, especially on mannequins.

* **HYGIENE AND QUALITY**
  A fresh scent increased the perception of hygiene, while a floral scent primarily stimulated the intention to buy.

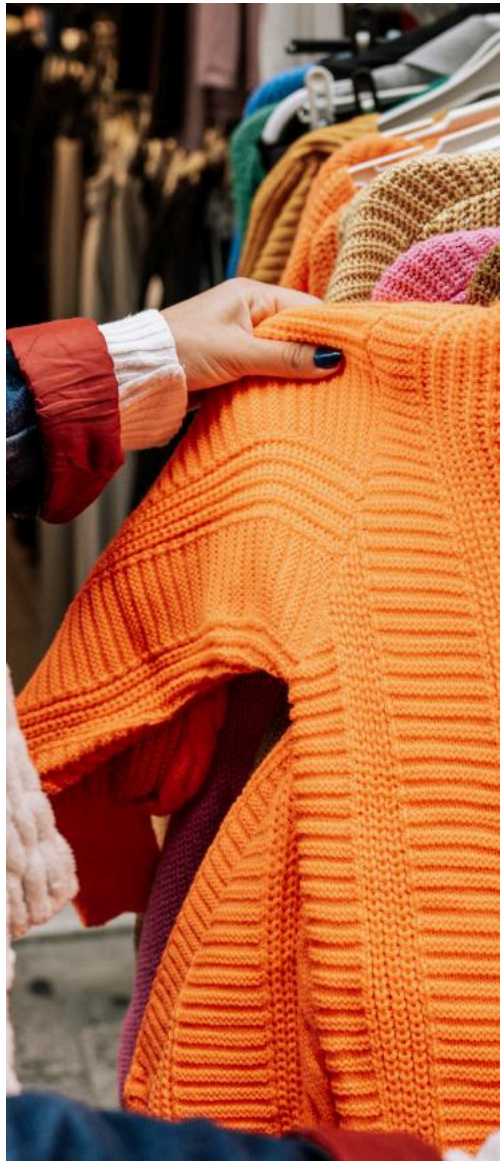
* **SCENT EFFECT**
  Adding scent had no significant effect on the perceived quality of clothing items, but it did affect the perceived hygiene of the store environment.

* **STORE LAYOUT**
  Spacious, well-lit, and clean stores reduce hygiene concerns and improve the shopping experience.

* **CATEGORIZATION**
  Customers prefer sorting by type and size over the traditional classification by gender and style.

* **AUDIO**
  Music and acoustics had no significant influence on hygiene perception or purchase intention.

* **PRE-SELECTION OF QUALITY**
  Respondents indicated that pre-selected high-quality items increase their intention to buy.



# SCENT EXPERIMENT





## INDUSTRY INSIGHTS

To encourage the adoption of secondhand clothing, the industry can respond to different levels of Norman's Emotional Design. Each level offers specific strategies to remove barriers such as negative perceptions of quality and hygiene and to create a more appealing shopping experience. Recommendations for each level are summarized below.

### VISCERAL LEVEL (SENSORY IMPRESSIONS)

* Ensure attractive presentation of clothing, preferably on mannequins or neatly on racks, to enhance the perception of quality and hygiene.
* Introduce fresh scents in the store to reduce hygiene concerns and create a positive first impression.
* Avoid messy displays and unpleasant odors that evoke negative associations.

### BEHAVIORAL LEVEL (FUNCTIONALITY AND EASE OF USE)

* Organize the store in a clear and spacious manner, with clear categorization by type and size to facilitate the search process.
* Provide visual cues and labels that give info on materials, maintenance, and origin.
* Preselect high-quality items and communicate this clearly to strengthen trust and purchase intent.

### REFLECTIVE LEVEL (MEANING AND VALUES)

* Emphasize the sustainability and uniqueness of secondhand clothing to evoke emotional value and pride in customers.
* Communicate transparently about selection criteria and quality control to build long-term trust.
* Use storytelling and visual cues to make customers aware of the positive impact their purchase has on the environment and the circular economy.

RE

USE

# REBRANDING THE CRAFTSMAN

IN

STYLE

# REBRANDING THE CRAFTSMAN

Rebranding the Craftsman explores how clothing repair and the craft of tailoring can be revalued in both consumer-oriented and business contexts. In collaboration with CiLab, Hoihoi, the University of Antwerp, and the city and province of Antwerp, it explores how education, collaboration, and new business models can contribute to a positive image for repair professionals, a culture of care and repair, and the embedding of repair within business processes.

### RESEARCH QUESTION

## WHAT ROLE DOES THE REPAIR PROFESSIONAL PLAY IN THE TRANSITION TO A CIRCULAR FASHION INDUSTRY, BOTH FOR CONSUMERS AND BUSINESSES, AND HOW CAN THIS ROLE BE STRENGTHENED?



### SUB-QUESTIONS

**(1)** How do consumers perceive the profession of repair professional and what factors influence this image?

**(2)** What role can repair workshops play in training designers to become circular professionals?

**(3)** How do consumers experience clothing repair and to what extent are they open to repair activities?

**(4)** How can recovery be structurally integrated and professionalized within business processes?

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### PHD RESEARCH

PLATE-paper

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### LINK CLOSE-THE-LOOP

Usage

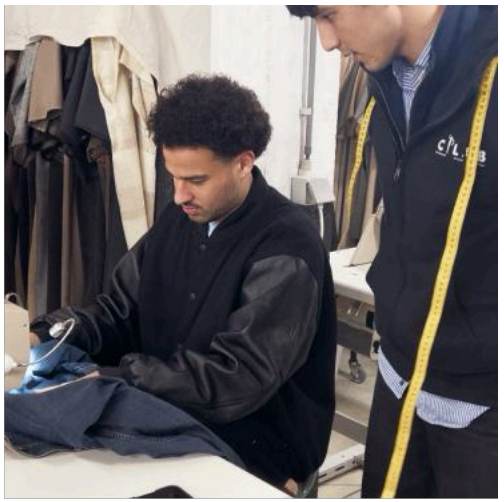
## REPAIR DAYS IN KRINGWINKEL 01

Public repair days were organized in three different Kringwinkel stores (Locations: Antwerp, Brasschaat, and Merksem), where visitors could actively participate in repair activities.



## SKILLSLAB 02

During a Skillslab workshop, participants explored how repair skills can be incorporated into design courses. In collaboration with the University of Antwerp and Hoihoi, Product Development students learned techniques for repairing clothing and extending its lifespan, and investigated the role such workshops can play in their training as circular designers.



## CLOTHING REPAIR UNIT 03

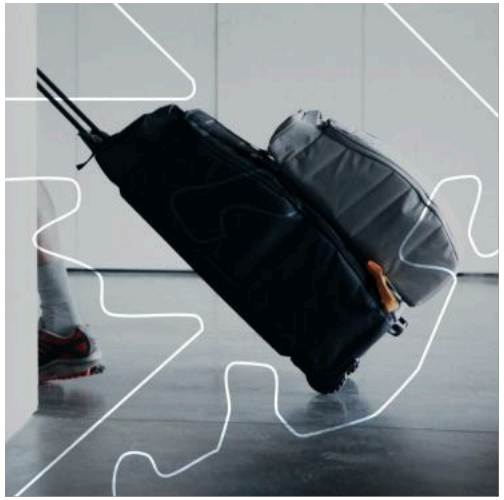
In collaboration with Kringwinkel Antwerpen, a clothing repair unit was launched at Circuit (Antwerp). Within this initiative, both the profile of a traditional seamstress and that of a tailor with upcycling expertise were tested.

When consumers were given the choice between a repair professional and a designer for their repair service, they opted for the designer profile significantly more often in the experiment.



## PILOT WITH BLECKMANN & DB JOURNEY 04

In collaboration with logistics player Bleckmann, a pilot project was set up for DB Journey, aimed at expanding repair activities. The repair service was successfully launched in August 2025.



## REBRANDING WILLEMEN 05

This project investigated how Willemen's workwear could be given a second life through rebranding. Prototypes of rebranded company clothing were developed and tested, exploring the reworking of workwear with higher specifications as a new area of application for CiLab.




## DESIGN GUIDE 06

Cilab wrote The Design Guide – ReUse in Style in collaboration with HoiHoi. It is an exploratory tool for anyone who develops fashion products within a circular context. It explains why quality and user experience are essential for reuse, how to design clothing that lasts a long time and is easy to maintain and repair,

and how existing circular design frameworks align with upcoming European regulations. The guide helps designers understand what they need to focus on today and which aspects will soon become important as Europe moves toward mandatory circularity in the fashion sector.



# PROJECT FINDINGS

* Price remains the decisive factor when choosing to have clothing repaired.
* There is no such thing as an “average consumer”: attitudes toward repair vary greatly by segment.
* A growing group of consumers consciously opt for repair, even when it is more expensive.
* Many consumers are unaware that clothing comes with a standard two-year warranty, indicating a need for clear communication and awareness-raising.
* Education and experience have proven to be effective tools for promoting a culture of care and recovery, both among consumers and designers in training.
* Local initiatives such as repair days strengthen citizens' awareness and involvement in repair.
* Repair not only affects operational processes, but also leads to design modifications towards Design for Repairability.
* The importance of flexible, hybrid collaboration models.
* The current social and legal framework hinders the scaling up of circular repair models; policy support is needed to strengthen pioneers.
* Recovery activities require a high degree of expertise, service, and process optimization to become profitable and scalable.





# INDUSTRY INSIGHTS

* Many consumers are unaware of existing warranties, indicating a need for clear communication and awareness-raising in this area.
* Repair has a difficult ROI
* Repair will become an essential business model, driven by legislation
* For companies, repair involves a learning curve to achieve a profitable (and reliable) repair process.
* Repair not only affects operational processes, but also leads to design modifications towards Design for Repairability.
* Once launched, various repair initiatives can increase the appeal of repair for consumers.
* There is great potential in collaboration and networking between existing repair professionals to optimize processes (and share materials/expertise).
* Bottom-up drives recovery: it is people (individuals), not companies, who drive recovery
* When consumers were given the choice between a repair professional and a designer for their repair service, they opted for the designer profile significantly more often in the experiment; indicating that designers, in addition to performing repairs, can also play an important role in activating value awareness among consumers.
* Achieving greater repair volumes and scaling the logistics chain are the biggest barriers to integrating repair into the circular fashion industry.

RE

USE

DECATHLON HOI HOI

# SHOE REPAIR LAB



IN

STYLE

# SHOE REPAIR LAB

Shoe Repair Lab investigated how sustainable repair services for shoes and textiles can be embedded within Decathlon's business model.

In collaboration with HoiHoi and CiLab, the project explores how repairs can be made profitable and accessible, both organizationally and technically.

The partners developed a proof of concept for shoe repair, improved the existing textile repair service, and trained employees to structurally integrate repair into daily operations.




### SUB-QUESTIONS

**(1)** Which payment models make repair services attractive to consumers, and what is their willingness to pay?

**(2)** How repairable is Decathlon's current shoe range and what are the repair options for each shoe type?

**(3)** Is there interest from (Decathlon) customers for repairs and for which type of shoes (from the Decathlon range)?

---

### PHD RESEARCH

Focus groups

### RESEARCH QUESTION

## HOW CAN WE OFFER SHOE REPAIR AT RETAILERS?

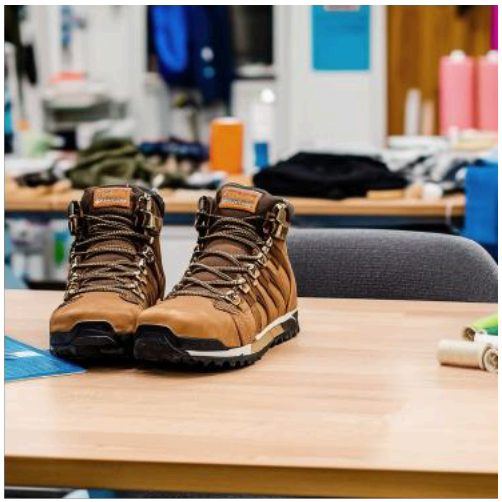
## CONSUMER RESEARCH 01

A master's student in commercial engineering at the University of Antwerp (Mila) investigated which payment models increase willingness to pay for repair services by conducting a survey among Decathlon customers.



## POC SHOE REPAIR SERVICE 02

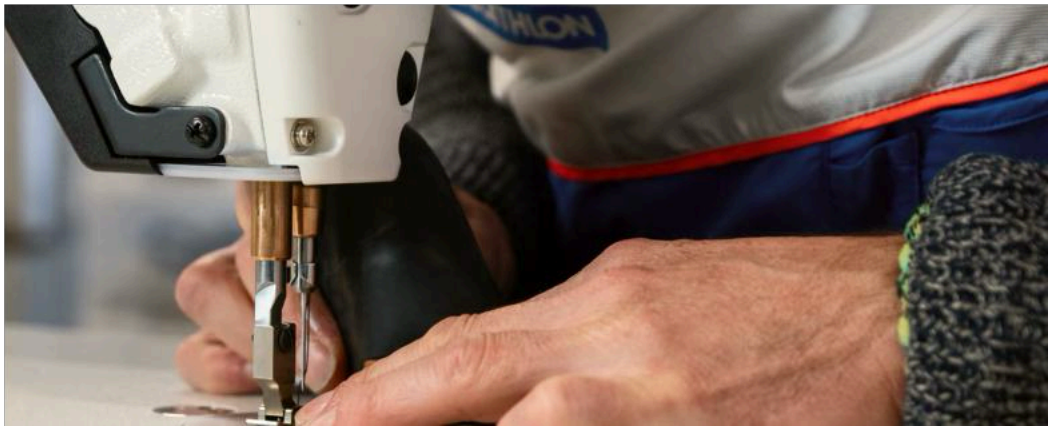
Within the project, a proof of concept (poc) was set up for a new shoe repair service at Decathlon. In collaboration with HoiHoi, the repairability of the entire shoe range was analyzed and the necessary materials, techniques, and pricing models were identified. The test phase, in which customers can have their shoes repaired free of charge and are asked about their experiences, will continue until early 2026.



## OPTIMIZATION OF TEXTILE REPAIR SERVICE 03

The project investigated how Decathlon's existing textile repair service could be made profitable; it examined how internal employees could be trained to take over repairs from CiLab, and how the business model could be optimized based on data from repairs carried out (supply, price, process).





# NEXT STEPS

The different types of shoe repairs for Decathlon have now been categorized and form the basis for the next phase.

→ **Conduct customer survey:** A survey is sent out to customers. The 200 most loyal customers are offered a free repair as an incentive to participate.

→ **Analyzing repair needs:** The survey assesses which repairs are most frequently requested, which types of shoes are most common, and to what extent customers are willing to pay for them, including an indication of what price they consider realistic.

→ **Determining the service portfolio:** Based on these insights, Decathlon decides which repairs will be rolled out on a larger scale.

→ **Evolution towards paid services:** The ultimate goal is to develop a structural offering of paid shoe repairs in addition to free test repairs.

# PROJECT FINDINGS

* The biggest obstacles to recovery at Decathlon: lack of awareness of after-sales service and confidence in the quality of repairs.



# INDUSTRY INSIGHTS

Customers are willing to pay for repairs rather than purchasing new products. However, the repair cost must be less than 30% of the new value of an identical/ equivalent product.

RE

USE

TORFS CRG Glass Retail Group TROSORT Kringwinkel made.

# AI SORT SUPPLY



IN

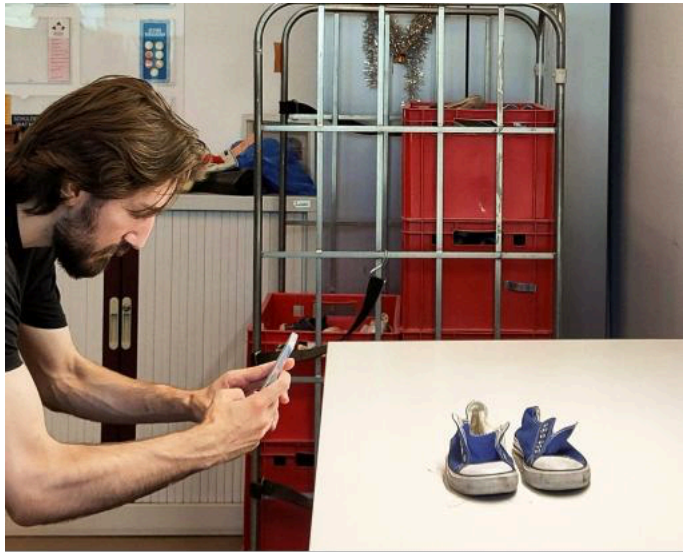
STYLE

# AI SORT SUPPLY

TORFS CRG Claes Retail Group TROSORT Kringwinkel

AI Sort Supply investigated how AI and the social economy can work together to professionalize circular textile flows and make them scalable.

Within the project, Claes Retail Group (JBC), Kringwinkel Antwerpen, Torfs, and Trosort collaborate on an AI-driven sorting system that digitally recognizes, sorts, and values second-hand goods.





## SUB-QUESTIONS

**(1)** To what extent is selling secondhand shoes and clothing through both online and offline channels possible based on the data and images that Trosort provides?

**(2)** How can Trosort technology help better determine the economic value of second-hand flows? More specifically: what costs and revenues arise from sorting to sale, and how do these vary by sales channel?

**(3)** How can secondhand items be better matched with the most suitable sales channel? (e.g., physical store, pop-up, online marketplace, wholesale, etc.)

## RESEARCH QUESTION

## HOW CAN AI AND THE SOCIAL ECONOMY BUILD A CIRCULAR FUTURE TOGETHER?

# PILOT TORFS X TROSORT X KWA

01

(A pilot project tested the digitization of the sorting and pricing process for second-hand shoes. Pairs collected from 75 Torfs stores were sorted, photographed, and labeled with a QR code at Kringwinkel Antwerpen, after which algorithms in the Trosort app automatically determined sales prices based on market data.)

In the pilot with Torfs, both Kringwinkel Antwerpen and Trosort sort and digitize collected second-hand shoes to gain insight into their condition, quality, and expected selling price. The shoes are then tested for offline sales in Kringwinkel and Torfs outlet and online sales platforms.

Manual sorting of 10,500 kg of shoes into four categories:

- Resell
- Refurbish
- Recycle
- Waste

1,500 pairs of these shoes were photographed and digitized in the Trosort application. The experiment tested whether the digitized shoes:

- Were **correctly classified** according to condition, reusability, or recyclability.
- Provided **reliable price** estimates for sale.
- Could be **efficiently labeled** for tracking and feedback loops.
- Enabled **better business cases** (refurbish, resale, recycle).

## PROJECT FINDINGS

* Residual flows converted into commercial flows: 5% of collected volume sent to refurbishment channel (Saved).
* Feedback loop: Kringwinkel store gains insight into supply, sales, and sell-through rate.
* Outlet shoe sale saved: Torfs Refurbished sneakers sale at outlet was not successful, too competitive with other offers.
* Scaling up the sorting process and itemization to other Flemish Kringwinkel centers is possible provided that clear guidelines are in place. Technology is accessible to employees.
* KWA employees develop new skills.
* Recycling: currently not profitable, LT ERP can change this.
* Hybrid sorting: both manual and automatic.

## INDUSTRY INSIGHTS

* Offering second-hand items online helps to improve their reach compared to physical points of sale.
* Margin vs. volume is decisive for the profitability of second-hand retail items. The sector therefore works best either on margin optimization per item or on volume scaling.
* The economic feasibility of (online) second-hand sales is strongly linked to labor-intensive processes such as sorting, quality control (and pack shots).
* A broader (online) range, including brands other than its own label, could increase its appeal to consumers.
* Automating the sorting process allows (Kringwinkel) to track second-hand items per item and validate their sales channels. Centralization of residual flows makes optimal recycling feasible, industry collaboration is recommended for this.
* Standardization of the sorting process is necessary when digital sorting processes are scaled up

# PILOT CRG X TROSORT X KWA

02

This pilot project tested the digitization and inventorying of second-hand clothing.

A total of 2,000 selected items from various JBC stores was processed at Kringwinkel Antwerpen using the Trosort installation (Sortmate).

During this process, the garments were photographed and automatically provided with product data and pack shots. At the same time, research was conducted into how this data could be technically linked to the JBC webshop as an online sales channel.

## PROJECT FINDINGS

* **PRICING AND QUALITY CONTROL**
  These aspects could no longer be tested within the project because they were already embedded in the existing JBC system. This implies that these processes are sufficiently stable and operationally reliable.

* **ONLINE SALES CHANNEL**
  An integration study is currently underway concerning the data/ outputs of Trosort (machine) with the JBC e-commerce webshop.

* **PACKSHOT QUALITY**
  The evolution in the quality of our pack shots is clearly visible.



## INDUSTRY INSIGHTS

* Offering second-hand goods online helps improve reach compared to physical points of sale.

* To what extent can standardization in a bring-back system hinder profitability compared to AI-driven pricing?

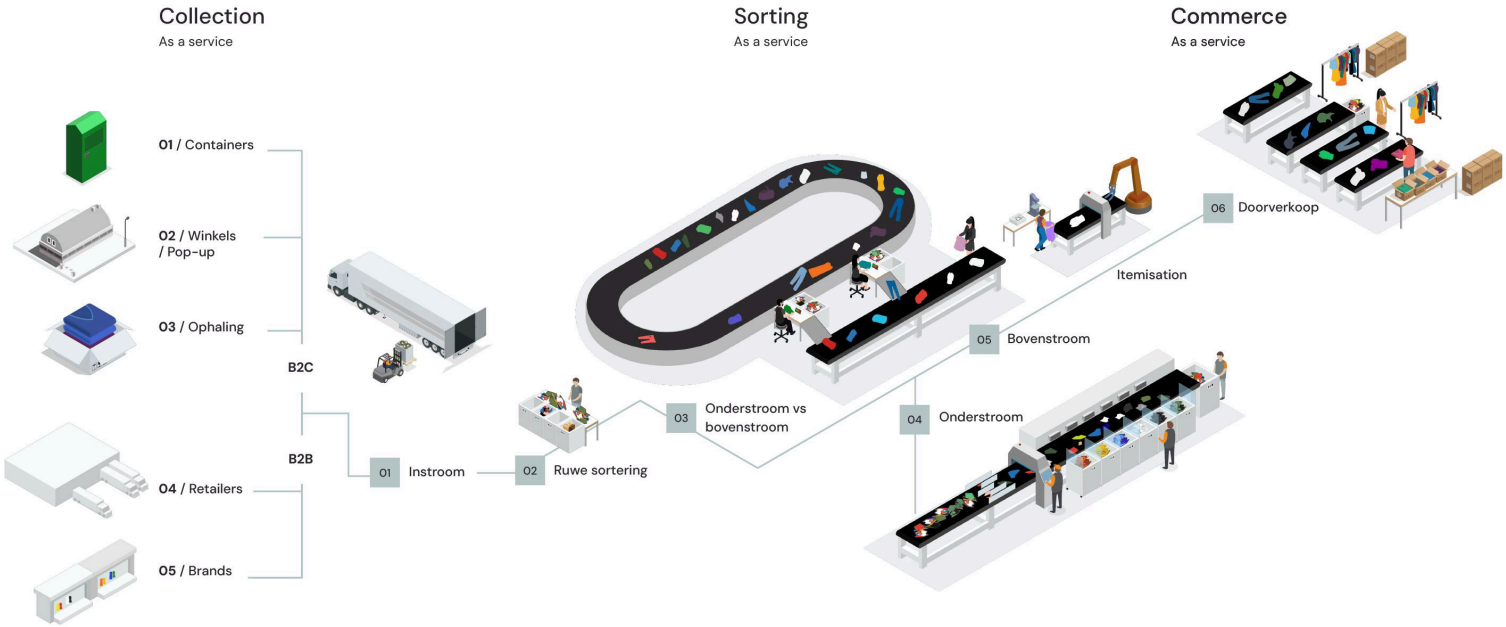
* Margin vs. volume is decisive for profitability: The sector therefore works either on margin optimization per unit or on volume scaling.

* The economic viability of (online) second-hand sales is strongly linked to labor-intensive processes such as sorting, quality control (and pack shots).

* The range of products on offer can become more diverse for consumers if you also offer brands other than your own label.

# NEXT STEPS

- Investigate whether second-hand online sales would be effective in relation to the existing pop-ups.
- Data valorization of fundraising campaigns: Okret QR pre-registration by donor vs. collection box in Torfs store.
- Developing a business case after online sales.
- Automation via Trosort machine Bottleneck: the cost of manual photography is too high, look into the option of automatically photographing shoes.



# CONCLUSION

# THE STRATEGIC TAKEAWAYS FOR FASHION BRANDS

Three years of Living Lab research taught us that the transition from linear to circular fashion isn't primarily a supply chain problem or a materials problem. It's a perception problem, a behavioral problem, and ultimately a relationship problem between brands and the people who wear their products.

A crucial insight that emerged across our research is that loyalty in a circular context fundamentally shifts. It's no longer about repeat purchases.

It's about continuing to care, repair, and return. Loyalty becomes relational rather than transactional. And not all customers attach value to clothing in the same way: some value it functionally, others economically, others emotionally, and others as an expression of identity. Companies that recognize and acknowledge these differences can tailor their offerings accordingly, through repair, care, resale, or guidance on use and maintenance.

**THOSE WHO BEST UNDERSTAND HOW THEIR CUSTOMERS VALUE CLOTHING ARE ALSO BEST POSITIONED TO CAPTURE THE BENEFITS OF A CIRCULAR VALUE CHAIN: STRONGER CUSTOMER RELATIONSHIPS, NEW SERVICE CATEGORIES, AND RECURRING REVENUE STREAMS.**

The brands that will lead this transition understand that product quality and perceived quality are two different things, and that both must be addressed simultaneously.

**THEY RECOGNISE THAT CONSUMERS AREN'T PASSIVE RECIPIENTS OF SUSTAINABILITY MESSAGING BUT ACTIVE PARTICIPANTS WHO WANT TO BE INVOLVED IN CARING FOR THEIR CLOTHING, IF ONLY BRANDS WOULD INVITE THEM.**

They see repair not as an afterthought or a cost centre but as a service category that demands the same professionalization as sales, with clear price thresholds (below 30% of replacement cost), accessible touchpoints, and credible expertise. They know that secondhand isn't a discount bin but a storytelling opportunity, where provenance and presentation can transform used goods into coveted items.

And they accept that none of this works in isolation: circularity requires unprecedented collaboration across the value chain, from designers to social economy partners to repair professionals.

The sector must evolve from fast fashion to value-based fashion. This means moving from selling items to stewarding wardrobes, from driving consumption to enabling longevity.

# THE PATH FORWARD

Before we dive into the project details, it's important to frame the Living Lab's ambition correctly.

The Living Lab did not set out to make the entire fashion value chain circular in the wink of an eye. That ambition is too complex for any single initiative.

**WHAT WE DID WAS BREAK THE TRANSITION INTO WORKABLE LEVERS WITHIN THE USAGE PHASE: TRUST IN SECONDHAND, EMOTIONAL VALUE AND MEANING, THE ROLE AND POSITIONING OF REPAIR, AND SCALABILITY THROUGH DATA AND TECHNOLOGY. TOGETHER, THESE ELEMENTS LOWER BARRIERS, REDUCE RISK, AND REMOVE UNCERTAINTY, WITHOUT PRETENDING TO SOLVE THE ENTIRE SYSTEM.**

For the industry, this means that circular transition isn't an all-or-nothing proposition. It's a sequence of targeted choices that together create impact.

For policymakers, our research demonstrates the importance of creating space for experimentation. Many of the solutions we tested exist in a tension between societal value and economic viability. Policy frameworks that recognize and support this middle ground make it possible for innovation to mature before it is scaled or regulated.

Our research now serves as a proven foundation, tested in real stores with real consumers, that offers concrete guidelines for any business willing to reshape its linear model into a circular one.

The interventions have been designed, tested, and measured. The consumer barriers have been mapped. The business model alternatives have been explored.

What the Living Lab ultimately leaves behind is a shift in perspective. Circular fashion doesn't begin with the product. It begins with the relationship between person and clothing. Lifespan is not a property of an object but the result of care, recognition, and context. When industry and policymakers take up that responsibility together, space emerges for a fashion sector that is not only more efficient, but also more caring and more resilient.



# CLOSING STATEMENT

# CLOSING STATEMENT

## LIFESPAN EXTENSION AS A STRATEGIC LEVER

The Living Lab Reuse in Style wasn't a traditional research project, nor was it an attempt to make the fashion sector as a whole circular. It was a design and learning environment based on a single, clear ambition: to investigate how the lifespan of clothing can be structurally extended by intervening during its use.

In a sector historically organized around renewal and replacement, this meant consciously slowing down, observing, and experimenting in real-life contexts, together with partners from retail, the social economy, design, technology, and research.

## WHAT THE LIVING LAB UNCOVERED

* The past three years have made it clear that lifespan extension isn't a technical optimization that can simply be added to existing models. It's essentially a behavioral and systems issue.

* Projects such as Second Style and AI Sort Supply showed that trust in second-hand goods does not arise automatically, but must be actively built through transparency, selection criteria, presentation and digitalization.

* KoesterKleren demonstrated that emotional value and meaning play a crucial role in how long people keep, wear and care for clothing.

* Rebranding the Craftsman and Shoe Repair Lab revealed that repair is not an incidental service, but a complex service that only works when expertise, logistics, volumes, and communication are aligned.

Together, these projects demonstrate that quality, trust, care and experience are at least as important for extending the lifespan as materials or construction.

## LOYALTY REQUIRES RECOGNITION

A key insight that emerged throughout the projects is that loyalty fundamentally shifts in a circular context. Not all customers value their clothing in the same way: some value it functionally or economically, others emotionally or for their identity.

Companies that successfully recognize and acknowledge these differences can tailor their offerings accordingly through repair, care, resale, or guidance on use and maintenance.

In projects like KoesterKleren and Shoe Repair Lab, it became clear that loyalty is no longer about repeat purchases, but about continued care, repair, and return.

Companies that can best respond to the extent to which their customers value their clothing are also best positioned to capture the benefits of a circular value chain: stronger customer relationships, new services, and recurring revenue streams.

Loyalty thus becomes relational rather than transactional.

# CLOSING STATEMENT

## CONTRIBUTING TO A CIRCULAR TRANSITION

It's important to properly contextualize ReUse in Style's ambition. The Living Lab didn't aim to make the entire fashion chain circular. That ambition is too large and complex to achieve within a single project.

What the Living Lab did do was break down the transition into actionable levers within the use phase of footwear and clothing.

Each of the five collaborative projects focused on a specific bottleneck that currently hinders circular models:

* Confidence in Secondhand (Second Style)
* Emotional value and meaning (KoesterKleren/Keep Clothes)
* The role and positioning of repair (Rebranding the Craftsman)
* Repair as a retail service (Shoe Repair Lab)
* Scalability through data and technology (AI Sort Supply)

Together, these projects simplify the transition by lowering barriers, mitigating risks, and removing uncertainty without pretending to fix the entire system.

## IMPLICATIONS FOR SECTOR AND POLICY

For the sector, this means that the circular transition isn't an all-or-nothing proposition, but a sequence of targeted choices that together create impact.

For policy, ReUse in Style demonstrates the importance of room for experimentation. Many of the tested solutions operate within a tension between social added value and economic feasibility.

Policy frameworks that recognize and support this gap enable innovation to grow before it is scaled up or standardized.

## NOT AN END POINT, BUT A REFERENCE

This closing remark doesn't mark an end, but rather a point of contention. Questions remain regarding scaling up, international chains, and the role of emotional value within design and policy frameworks.

ReUse in Style doesn't offer definitive answers, but it does provide a framework, a shared language, and concrete practical insights to further explore these questions.

What the Living Lab primarily achieved is a shift in perspective. Circular fashion doesn't begin with the product itself, but with the relationship between people and clothing.

Lifespan isn't a characteristic of an object, but the result of care, recognition, and context. When the sector and policymakers jointly take on this responsibility, space is created for a fashion sector that is not only more efficient, but also more caring and resilient.