
STIMULATING TEXTILE TO TEXTILE RECYCLING

Project for the Nordic Council of Ministers/Danish EPA

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David Watson, PlanMiljø

PlanMiljø



PlanMiljø

WELL DRESSED IN A CLEAN ENVIRONMENT

Nordic action plan for sustainable fashion and textiles



One of the Action Plan's objectives:

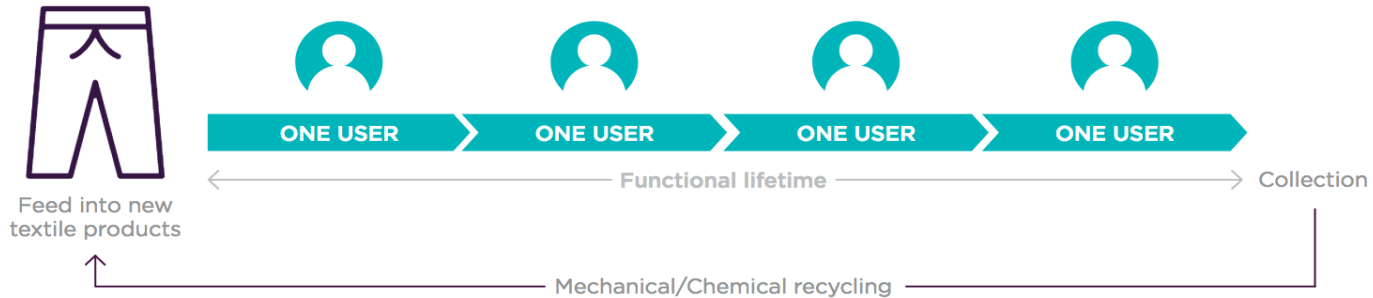
'promote business models that stimulate recycling of fibres into new textile products'.

Background

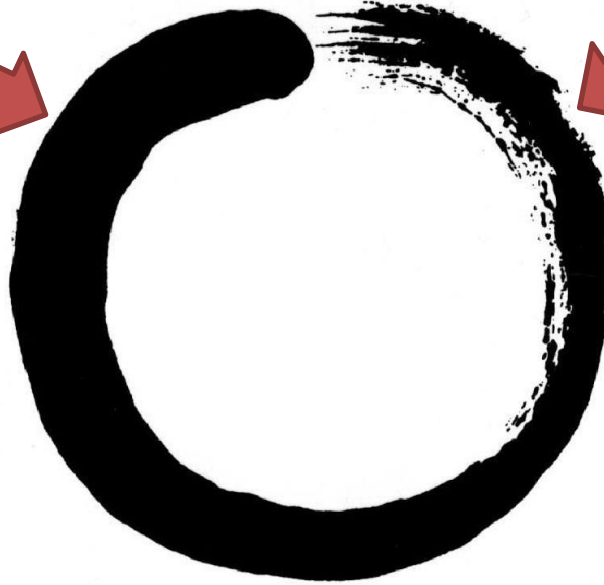
Where we are now



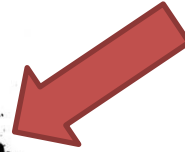
Where we need to get to



Greater **demand** for
Recycled materials



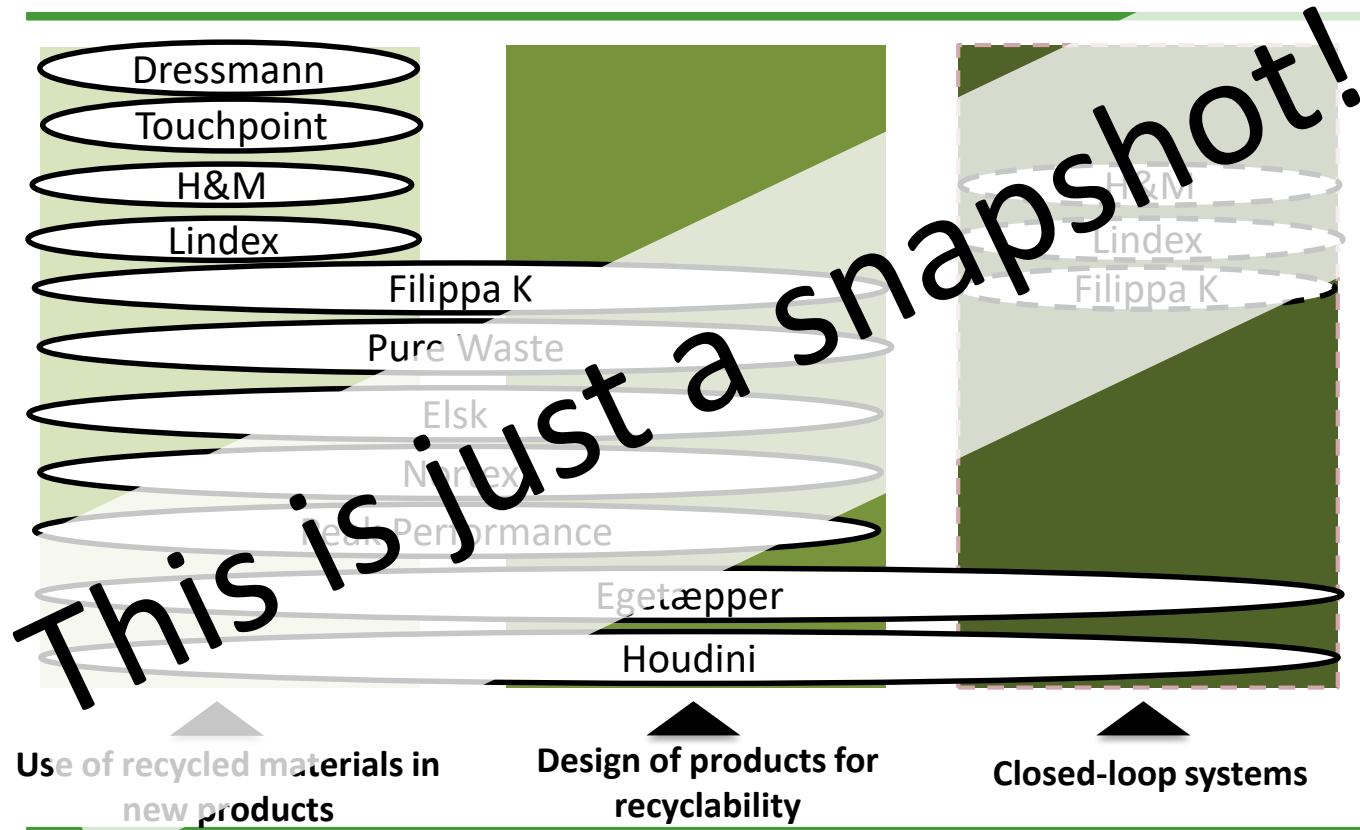
Greater **supply** of
recyclable textiles



Design for ease
of recycling



Collection,
sorting and
processing
systems





TEXTILE-TO-TEXTILE RECYCLING

Ten Nordic brands
that are leading the way



STIMULATING TEXTILE-TO-TEXTILE RECYCLING



Case wallet

TOUCHPOINT

– turning surplus and used fabrics into new work clothes

Touchpoint works from a principle that to increase the use of recycled textiles, the industry needs to investigate new options and be visible with solutions. Companies need to speak loudly and openly about their successes to raise awareness.

Touchpoint's clients can become frontrunners in recycling

A focus on sustainability and resource efficiency has been part of Finnish workwear brand, Touchpoint's, business plan since its foundation in 2008. The founders believe that businesses have responsibility for more than just raising profits and it offers its client companies concrete solutions on how to execute this wider responsibility. Touchpoint's story as a frontrunner in recycling can also become the story of its clients.

No compromise on quality

Touchpoint's business is based on production of sustainable uniforms and work clothing for large and small companies. It also offers sustainable

reuse/recycling options for the work clothing that is being replaced. Clients include, for example, airlines, cruise lines and restaurant chains.

The company's focus was initially on the use of surplus fabrics and organic cotton, but they have since expanded into using recycled fibres. So far it has used approximately 370 000 recycled PET bottles for production of shirts, trousers, aprons and accessories such as bags.

Touchpoint works closely with its customers in developing new work clothing. Work clothes have to be resilient to hard working conditions as well as be comfortable and look good. The quality has to be at least as good as work clothes from virgin



LESSONS LEARNT

- New clients may be initially doubtful that clothing from recycled materials can feel and look as good as new clothing. A smart design and visual appeal is an important part of the process of winning them over.
- Don't be afraid to investigate new options and be visible with solutions in order to increase the use of, and the demand for, recycled textiles.



Sometimes you have to take some risks in development of products using recycled materials, because it can be time-consuming and needs user trials. This can pay off though by creating more value for the client.

materials. Quality testing includes laboratory tests for strength and durability, and user trials for comfort and utility.

Touchpoint has worked closely with supplier Dutch Awareness (DA) on the design of clothing, such as chef's jackets with stretch, to ensure full recyclability and high quality. Touchpoint has relied heavily on DA's knowledge in the area of circularity. DA has taken a similar capacity building role with many other brands.

Short rollout times can be a challenge

Work clothes are a large investment for a client company and usually the rollout schedule is tight. This can challenge production using recycled and surplus fabrics, since production rates can be slower and delivery times longer.

It has also been challenging to find recycling solutions for the old work clothes that Touchpoint's products replace, especially clothing that has been treated with functional finishes such as fire retardants. It is important to avoid cross-contamination of these substances into products that will be used by sensitive groups such as children.

The future

The company's long-term plan is to move more deeply into the circular economy, adopt a cradle-to-cradle approach, and to have a product portfolio by 2020 that only contains organic, recycled and recyclable materials. Touchpoint is also working on more efficient and cost-effective take-back systems.

PARTNERSHIP WITH DUTCH aWEARness

Touchpoint has strong partnerships with suppliers of used materials and fabrics with recycled content. One of these is Dutch aWEARness (DA). DA offers fully circular models for textiles including textiles from thermally recycled PET. The process of re-melting and spinning of PET material can be carried out around eight times for use in consecutive garments, before impurities require other recycling processes. DA's Circular Content Management System allows brands to fully trace the material's origin and how many times it's been recycled.

use of
recycled
materials

design for
recycling

closed
loop

Case wallet

PURE WASTE

– Turning Factory Waste into New T-shirts

Pure Waste's owners couldn't find reliable supplies of recycled content yarns. They now have direct control of production facilities in India spinning pre-consumer factory waste into new yarns for their T-shirts, hoodies and sweatpants. By 2020 these facilities will be collected together with their garment production under one roof

Inspired by a lack of supply

Finnish brand, Pure Waste emerged from the experiences of clothing brand, Costo. In recognition of the huge demands a growing global population will place on cotton and other raw materials, Costo's owners wished to buy yarns produced from pre-consumer waste for use in its collections. However, the company was unable to find a sufficient supply to meet their needs. The natural solution was to develop their own yarns and fabrics.

After mapping out the availability of factory waste with an Indian partner, the decision was made to establish their own spinning facilities for pre-consumer waste close to the source of 'raw materials'; the textile production region around Coimbatore and Tirupur in southern India. The

Pure Waste textile company was founded in 2011 following the successful development of a yarn produced entirely from factory waste.

Avoiding the use of dyes

Pure Waste Textiles produces clothing using its own yarns made from 100 % recycled materials. The main focus is on pre-consumer textile waste such as waste yarn (mostly cotton) from textile mills, coloured off-cuts from textile factories and PET fibres recycled from used plastic bottles.

Fabric and fibre waste is sorted by colour prior to being re-spun. This avoids the need for dyeing, so saving large quantities of wastewater and chemicals. The brand produces several grades of yarns and more are being developed all the time. These yarns are used for both knitting and weaving. Knitwear



”

Re-spinning of factory waste is common practice in India, but factories keep this a secret because they think their European buyers will complain. This highlights a lack of communication between brands and suppliers.

dominates, but the collection includes some thicker woven fabrics. The company produces t-shirts, hoodies, tank tops, sweaters and sweat pants.

Design for recycling

The recyclability of Pure Waste clothing is also important. Pure Waste designers approach this by replacing hang labels with water-based transfer prints, and by using as few zippers, fasteners and other accessories as possible. Resource efficiency is increased by minimising cutting waste and packaging materials.

Factories already use waste fibres – in secret

By establishing Pure Waste the owners secured its own supply of yarns, but it can still be a challenge to source a stable supply of quality factory waste to feed their yarn production. This is partly

because many textile factories use their own waste in re-spinning processes to reduce costs. Paradoxically, factories hide this practice from their buyers believing that they would not look kindly on this practice. This demonstrates the need for stronger communication on sustainability issues across the value chain.

Ensuring product safety

Pure Waste Textiles would like to move into post-consumer textile waste with a number of promising technologies on the horizon. However, the transfer will require establishing systems to prevent cross-contamination of new products with unsafe chemicals. Pure Waste is also currently working on gathering all their production facilities in a single factory where textile waste will enter at one end and fully finished garments will exit from the other.

use of
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LESSONS LEARNT

- It is crucial for a brand to have a presence in textiles regions of Asia to gain a detailed picture of the whole production chain and what is possible
- Consumers are willing to buy recycled garments when they are given the necessary knowledge and opportunity.
- Lack of knowledge may hinder the spread of design for recyclability; in fact recyclable garments are no more expensive than non-recyclable.

PARTNERSHIPS IN ASIA

Local partners in China and India played a key role during the research and development stages. The Indian partner had connections to an engineering company that provided and developed spinning and other equipment. Development of yarns was based on a combination of Pure Waste's own knowhow, the expertise of the co-operating partners and a process of trial and error. Pure Waste's ownership of the factory enabled full process control and establishment and adaptation of equipment. Factories in India providing the waste material are additional key local partners as are local research institutes.

Motivation?

” Companies have to take responsibility for their use of natural resources and move towards recycled materials”

” We need to make the change to circular models if we want to be successful in 2030. We are using a step by step method to achieve this.”

” Using recycled materials in our products is a positive story we can tell our clients, and has been good for our profile. It helps us differentiate ourselves from our competitors”

A photograph of two men in blue work clothes working with a large pile of red fabric scraps. The man on the left is leaning over the pile, and the man on the right is standing and looking down at the fabric. The background shows a factory setting with metal structures and other materials.

Challenges

to the use of recycled materials in new products

Challenges using recycled fibers

*"We cannot lower our quality requirements.
This means that it is not always possible to
replace virgin fabrics with recycled ones"*

Low availability of
recycled materials of
certain fibre types

Hard to find quality
recycled content
yarns/fabrics

Lack of mature
chemical recycling
processes

*" Mechanical recycling can only be done so
many times. The fibres get shorter and
therefore weaker each time; and we have to
blend them with virgin fibres."*

Challenges using recycled fibers

**Many used
garments not
recyclable**

**Low availability of
recycled materials of
certain fibre types**

**Hard to find quality
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**Lack of automated
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Engaging in
recycled content
can be expensive

“ Everything that is done outside the regular supply chain is challenging. It requires extra work and new routines for the whole organisation.”

automated
technology

Challenges using recycled fibers

**Suppliers have
minimum orders
(SME challenge)**

**Communication gap
between actors in
value chain**

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**Lack of transparency
and traceability in
supply chain**

Lack of automated
sorting technology

A photograph of two skiers ascending a snow-covered mountain. The skier on the left is wearing a bright yellow suit and a white helmet, while the skier on the right is in a dark blue suit and a black helmet. Both are carrying skis and using poles to climb. The word "Solutions" is overlaid in the center in a dark blue font.

Solutions

Practiced solutions

Suppliers have
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(SME challenge)

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Strategy 1: Take internal strategic decisions

"Adoption of goals at leadership level is key since using these materials will impact margins during the transition period"

Practiced solutions

Suppliers have
minimum orders
(SME challenge)

Communication gap
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Many used
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Strategy 2: Work with the materials you've got

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recycled materials of
certain fibre types

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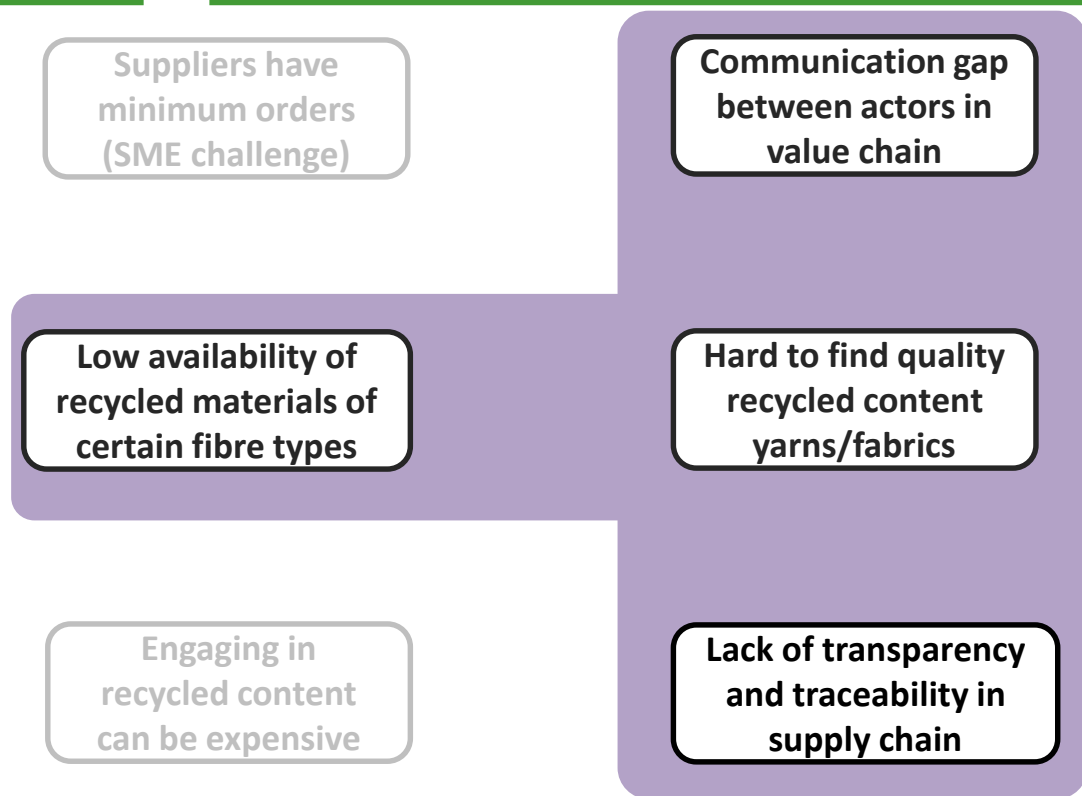
Strategy 3: Create your own supply chains

Engaging in
recycled content
can be expensive

Lack of transparency
and traceability in
supply chain

Lack of automated
sorting technology

Practiced solutions



Strategy 4: Work closely with your suppliers

“It is important for us that our suppliers share our vision, so we were in it together and can inspire each other. This also means that we seldom change or find new fabric suppliers – long relationships are important.”

Practiced solutions

Suppliers have
minimum orders
(SME challenge)

Communication gap
between actors in
value chain

Many used
garments not
recyclable

Low availal
recycled ma
certain fibr

Strategy 5: Use transparency/traceability standards

" We require all recycled materials we use to be certified, and we request this documentation prior to placing orders."

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Practiced solutions

Suppliers have minimum orders (SME challenge)

Communication gap between actors in value chain

Manv used

Low availability of recycled materials of certain fibre types

Hard to find quality recycled content yarns/fabrics

Engaging in recycled content can be expensive

Lack of transparency and traceability in supply chain

Strategy 6: Engaging the consumer

"We communicate to our consumers that recycled content is a quality characteristic that is just as valuable as the feel of material and style of garment."

Sustainability is a story that needs to be told."

Future collective solutions

Suppliers have minimum orders (SME challenge)

- Cooperation between SMEs in ordering from suppliers

Many used garments not recyclable

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Engaging in recycled content can be expensive

- Widespread design for recycling
- Increased collection and sorting for reuse/recycling

Many used garments not recyclable

Lack of mature chemical recycling processes

Lack of automated sorting technology

A person is shown from the waist up, wearing a dark blue, textured knit sweater and light blue denim jeans. Their hands are in their pockets. A semi-transparent rectangular box is centered over the sweater, containing the title text. A small white label with the word 'ELSK' is visible on the lower right side of the sweater.

Challenges and solutions

to designing for recycling

Challenges

“Design for recycling must not compromise durability”

Conflict between
product
characteristics

Lack of knowledge
amongst designers

Lack of inspiring
examples

Challenges

Conflict between
product
characteristics

Lack of knowledge
amongst designers

Lack of inspiring
examples

*“Designers might not be equipped
for designing for recycling. It
requires thinking a step further
from what they are normally
concerned with*

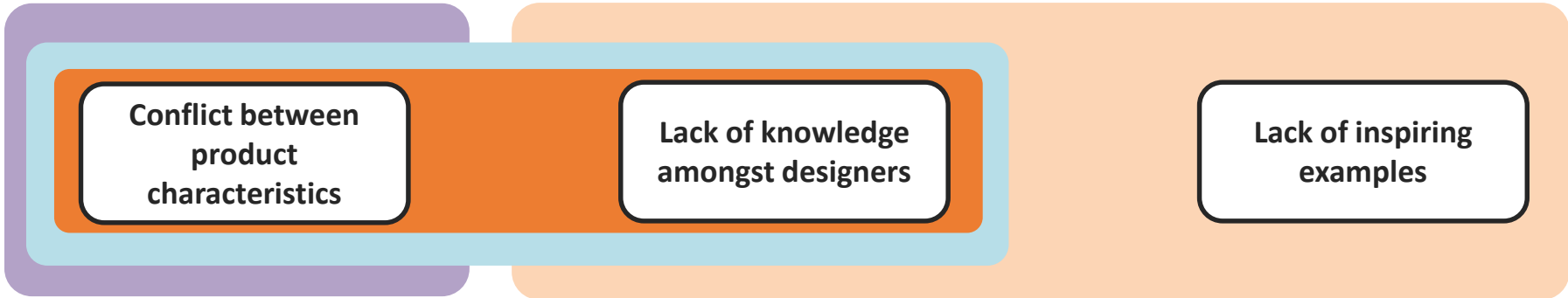
Challenges

Conflict between
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Solutions



Conflict between
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examples

Strategies:



1. Education
for designers



2. Top-level
strategic decisions



3. Establishing
material libraries



4. Participating
in networks

Closed loop and take-back systems

- Regulations can be a problem
- Collective solutions can reduce costs and potentially retain traceability

ECO CIRCLE™ Closed-



Performance baselayers,
manufactured by
Patagonia

Sales

MEMBER



ASS
THE SMART CHOICE
IN CREATING FASHION

PlanMiljø

Thanks for listening!

David Watson: dw@planmiljoe.dk