*Pioneer the possible*

*February 08, 2023*

Textile banners

Version A

Fashion. Forever.

Exhibition open daily 7-30 September 2022.

Version B

Fashion. Forever.

Exhibition – A future-friendly fashion industry in the making.

Version C

Fashion. Forever.

Exhibition: A more future-friendly fashion and textile industry in the making.

Open daily 5–13 October 2022

Opening hours: 10.00–20.30

Exhibition

Modul #1: page 1

Fashion. Forever.

Modul #1: page 2

A new fashion industry is emerging, one that’s user-oriented, technology-driven and more positive for the planet over time. Novel approaches and responsible solutions are being born and scaled up so fashion can continue to play an important role in people's lives. As always, human creativity is at the heart of progress in this industry. Take a front-row seat by the catwalk. Discover some of Sweden’s top fashion industry pioneers and get a glimpse of what's to come. Together let’s pioneer the possible.

Modul #1: page 3

4 must-haves for responsible fashion:

A focus on circularity.

The key imperative of sustainable progress in the fashion industry is circularity. There is a massive shift at hand from a linear economy – where resources are refined into products that are marketed, consumed and finally left as waste – to a profitable model of resource cycling. Circularity centres on taking what’s left of a product after consumers are done with it and looping it back into the supply chain. It requires resource efficiency and finding new, future-friendly ways to maximise value from products, residues, deadstock or textile waste. Get in the loop!

User-oriented approach.

Producers and merchants no longer solely dictate how we consume and enjoy fashion. Today, users are taking centre stage in the fashion ecosystem. Increasingly, their needs, their purchases, their styles, their consumption and their choices dictate priorities. As do their expectations of efficient (and, of course, sustainable) service that’s available 24 hours a day, 7 days a week and wherever they want it. Companies that aim to engage in these circular times need to know their own value chains better than ever before and gear up to meet, rather than make, the market’s needs.

Digital performance.

Code and pixels are the needle and thread of the new fashion industry. Digitalisation and artificial intelligence (AI) are forging new possibilities to create, produce and enjoy fashion. Sophisticated knowledge-driven data management enables the large-scale development of innovative ideas, automation and smarter decisions. But it’s also about creating digital items, commercialising agile and small-scale solutions, and addressing ‘broken’ parts of production chains. As a country known for its prominent tech scene, Sweden is especially advanced in capabilities for this space. It’s the home of startups and disruptors that have been at the digital forefront in sectors like music and communications (Spotify and Skype), payment services (iZettle and Klarna), and gaming (Candy Crush and Minecraft). From now on, ‘easy-to-wear’ is also ‘easy-to-use’.

Supporting industries.

Forests cover almost 70 per cent of Sweden’s land mass. So it makes sense to look there for new solutions. Textiles based on cellulose fibres, which are mainly derived from tree bark and wood, have an especially high potential. Almost 90 per cent of all textiles today are made from fossil-based raw materials or cotton, which has a heavy environmental impact. The Swedish pulp and paper industry dates back centuries and encompasses a solid industrial base of know-how in cellulose and fibre treatment. Add in a long tradition of R&D and innovation, and Sweden’s forestry product companies are well placed to drive a new bio-based textile industry. Planet-friendly fashion really does grow on trees.

Modul #2: page 1

Fashion moves faster than ever.

Speeding up the development of a new, circular fashion system requires robust frameworks and regulations to set the terms of growth and progress. The process is further accelerated through industrial and academic initiatives.   
  
Fashion’s transformation is happening now. Consumers want to make responsible choices. Leading brands, innovative startups and established players are committing to bold goals for renewable energy, circularity and resource conservation. Still, most of the industry needs to shift. Businesses must embrace policies that promote circularity, address obstructive terms and standards, and pave the way for new solutions. The urge to meet present and upcoming regulations and other sustainability requirements for textiles will spur the spirit of innovation and accelerate the shift throughout value chains. Sweden’s government has put textiles high on its agenda. Becoming a world leader in sustainable fashion production and consumption is a key part of the national drive to achieve the global sustainable development goals of Agenda 2030 and the Paris Agreement on climate change. The effort is supported and influenced by others as well. NGOs lobby for relevant changes to the system. Academic researchers generate science-based data and groundbreaking innovations. Other actors in the market are working on pilot programmes together with brands. All offer important input for potential scalable and transformative change in fashion.

Mission: pioneer methods for global sustainable fashion.

A national platform for sustainable fashion and textiles is creating forward momentum in Sweden. Textile & Fashion 2030 is a government-supported initiative led by the University of Borås in collaboration with organisations that include the Swedish School of Textiles, Smart Textiles, Science Park Borås, Research Institute of Sweden (RISE) and others. Textile & Fashion 2030 aims to test and study different techniques of sustainable fashion settings that are in close proximity to industry or consumers – or both. Its purpose is to figure out how lessons from small-scale sustainability advancements can be rolled out on the world stage.

To the left:

Craftmanship over commerce! Beatrice Stenmark at the Swedish School of Textiles uses a ’Slow Fashion’ attitude towards fashion, valuing ​​craftsmanship and creativity over consumption and commercial interests.

Photo: Daniela Ferro

Modul #2: page 2

Testing today for tomorrow’s solutions.

Researchers at the Swedish School of Textiles have a prestigious government mandate to put national goals into practice. So they organised Big Do, a design hackathon where designers challenge existing processes and embrace circularity. Mining a rich supply of tech know-how and insight, the designers create new solutions and products – and test them at a specially set up textile micro-factory. A diverse range of equipment and knowledge is available – everything from knitting and embroidery machines to printing and paint labs, and even a custom-built 3D printer. Big Do is part of Textile & Fashion 2030 and one of multiple different types of initiatives and projects taking place in collaboration with Science Park Borås and a range of other academic and research partners. Examples of the solutions developed through the Big Do include a plug-and-play business toolkit and a circular design tool.

Above:

Back to work for used uniforms! Thanks to Science Park Borås, undamaged work uniforms from the care sector that would have been incinerated due to a change of supplier were instead rescued and revamped. Fashion designer Stina Randestad, an alumnus of the Swedish School of Textiles, was commissioned to redesign the garments, which are now rented out and can be adapted to suit the occasion with interchangeable prints from the company Vividye.

Photo: Daniela Ferro

A national hotspot for circular progress.

New thinking and innovative efforts to boost circular business models for textiles are a key 2021-2030 regional development strategy in the Swedish county of Västra Götaland. Through initiatives like Circular Movement, the county administration is pushing the shift to sustainability, inventively using procurement requirements to promote sustainable standards and creating spaces to develop, test and demonstrate new business models. It aims to create strong conditions for encouraging local businesses to pursue sustainable ventures that contribute to resource-efficient competitiveness and higher regional employment.

Photo: Sofia Sabel/[imagebank.sweden.se](http://imagebank.sweden.se/)

Modul #2: page 3

Growth, it’s so last season!

What if we were to drop growth as our ultimate goal and focus on sustainability targets instead? The research programme Mistra Sustainable Consumption is exploring such a shift. Funded by the Swedish Foundation for Strategic Environmental Research, Mistra, the programme examines future scenarios to paint system change in a new light.

Above and to the right:

Secondhand first! Arkivet wants to make it easy for customers to consume fashion sustainably. The company runs several stores offering secondhand clothes.

Photo: Arkivet

Industry co-lab speeds the shift.

Addressing climate impact across the fashion value chain is a too big a mission for any one company. Measuring impact and achieving sector-wide transparency demands a shared approach. Enter the Swedish Textile Initiative for Climate Action (STICA) – a network of businesses that collaborate to reduce their climate footprint. The cross-industry forum knits together fashion and textile companies seeking to rapidly decrease their impact on the climate. Each member’s impact is measured, and then used to create custom-adapted action plans. The goal is to be climate-positive, in which they go beyond neutralising their own footprint and are removing greenhouse gases from the atmosphere, well before 2050. STICA was launched in 2018 by the fashion brands H&M, Kappahl and Peak Performance, in collaboration with Sustainable Fashion Academy. More than 40 other brands have since joined the network, including Acne, Cellbes, Didriksons, Eton, Filippa K, Fjällräven, Lindex, Lundhags, MQ, Nelly, Nudie, Volvo and Stadium. Sports and fashion chain Stadium partner with transport technology company Einride to electrify and automate warehouse transport. Starting in September 2022, all transport between Stadium’s three warehouses in the Norrköping area will be electric and digital.

Photo: Einride

Modul #2: page 3

Helping companies do the right chemical thing.

The Swedish Chemicals Group is a network that shares the latest knowledge in chemical and environmental issues among its more than 100 member companies in the textile and electronics industries. It compiles legal requirements and other information about chemicals in an easy-to-understand and actionable way. Mobilising collectively and cooperating across boundaries to tackle challenges is a great recipe for forward progress.

Photo: Unsplash/Pawel Czerwinski

Awarding the brains and the brave that are making change happen.

The Global Change Award, the world’s largest innovation challenge to transform the fashion industry, is looking for solutions that address one or more global challenges to create a planet-positive fashion future. The annual award, inaugurated in 2015, is co-sponsored by Accenture, Stockholm’s KTH Royal Institute of Technology, Mills Fabrica and H&M Foundation. Five winners with the most promising ideas share a grant of €1 million. Three of the winners in pictures: Fairbrics makes its pink T-shirt from greenhouse gas that it traps, activates and transforms into a sustainable polyester fabric that looks and feels like regular polyester. SaltyCo® makes the puffer jacket filled with BioPuff®, a plant-based fibre filler alternative to goose-down or synthetics. The filler’s naturally waxy fibres mimic the structure of down, creating the same warming, water-repellent and air-trapping qualities as their synthetic and animal-based counterparts. Italian company Orange Fiber makes a deluxe, silk-like cellulose fabric from citrus juice by-products – just look at this shawl.

Photo: H&M Foundation

~~Black Friday.~~ Circular Monday.

New routines start on Mondays, right? Circular Monday was founded by the Malmö-based circular clothing repair startup Repamera. Taking an inverse cue from Black Friday (the infamous start to the holiday shopping season in the United States), the movement promotes the first day of the same week in November as day of circular consumption. Organisers have compiled and upkeep a database of circular businesses, many of whom offer shopping discounts on Circular Monday. After spreading nationally, businesses and shoppers that participate in Circular Monday can now be found in the UK, Spain, Finland and Norway – among others.

Photo: Tina Axelsson/[imagebank.sweden.se](http://imagebank.sweden.se/)

Modul #3: page 1

Less water and energy. Fewer chemicals. More data!

New tech solutions are pioneering reductions in fashion’s environmental impact. Leaner, cleaner operations create gains all along the value chain. Add them up and the difference is huge.  
  
Globally, fashion companies produce 100 billion garments a year. As much as 80 per cent of their eco-impact occurs in production, where energy, chemical and water use is high. Thanks to new approaches, traditional resource-intensive processes such as fibre and garment dyeing, weaving, sewing and finishing are being reinvented. Overproduction and poor waste management are in the industry’s crosshairs. Artificial intelligence (AI) makes it possible to combine multiple digital data sources to manage volumes better, ensure more accurate production and increase customer satisfaction. Opportunities to contribute to a more future-friendly fashion industry are available and necessary for many actors. But the highest level of influence lies primarily in design decisions. The choice of fibre, colour and cut is a major factor. Change means designers must apply circular fashion design principles and decide to design for resource circulation. Happily, more and more of them do.

Traceable. Transparent. Trustworthy.

Achieving fully transparent and traceable production chains is a complex process that just got easier. Sweden’s TrustRace uses blockchain technology and AI to allow brands and sustainability leaders to map and understand their impact along their entire value chain. TrustRace’s platform automates the process of data collection, validation and assigning the right sustainability labels. More than 40 companies use the service, including sustainability leaders like Fjällräven, Filippa K and Adidas.

Photo: Trustrace

Modul #3: page 2

Embroidery tech.

Textile innovator Coloreel supplies embroidery technology that instantly colours polyester threads during production – with no wastewater and minimal use of chemicals. It greatly minimises thread waste, with less unused stock gathering dust in warehouses. And the recently added option of recycled polyester thread allows the process to be even more sustainable.

Photo: Coloreel

Full fashion, zero waste.

There are several ways to minimise textile waste. One is to eliminate fabric leftovers by using production methods that require minimal cloth cutting. Zero waste pattern cutting means eliminating leftover fabric scraps in the cutting and sewing process. This involves the designer creating a garment by using the full width – or almost – of the fabric. The method isn’t new but has been reinvented. Kimonos and sari are two traditional examples of zero-waste or near-zero-waste garments.

To the left: Birgitta Helmersson designs and develops sewing patterns and clothing exclusively using zero waste pattern cutting. Her self titled label includes small collections designed and made in-house, using natural and re-purposed fabrics.

Photo: Josefin Lindeberg

Modul #3: page 3

Sustainable man-made cellulose fibres join the show.

Swedish company Tree to Textile™ has developed a new technology for the production of man-made cellulose fibers with a low environmental footprint. The process regenerates cellulose from trees but requires less water and energy – and less chemicals – compared to existing methods. This showcase dress shows the different stages of the production process of textile fibers; from wood chip and pulp to the actual fabric. As it scales up in volume, Tree to Textile™ – which is owned by H&M Group, Inter IKEA Group, Stora Enso and LSCS Invest – aims to offer an attractive, sustainable complement to traditional bio-based fibers like viscose, lyocell and cotton.

Photo: TreeToTextile

Designed for 100 per cent circularity.

Parts of the Kids collection Minories from Kappahl is made from mono-material (organic cotton), including seams and care labels, to enable full circularity. The collection is also unisex to enable reuse between siblings and friends for generations. And once worn out, every fibre is recyclable.

Photo: Kappahl

Colour. Decolour. Recolour.

Tech startup Vividye offers a new way to colour, decolour, and recolour textiles. Again and again. The dyeing process is often one of fashion’s most environmentally impactful processes, consuming large volumes of water for colouring and rinsing. Swedish fashion label Gina Tricot collaborated with Vividye for one of its limited edition collections – and even invited consumers to take part in the dyeing and redyeing process.

Photo: Annie Hyrefeldt

Modul #3: page 4

AI matchmaking for clothes and customers.

AI can optimise production processes, matching supply and demand to reduce overproduction and waste. By combining multiple digital data sources, AI can project demand hotspots and adjust volumes and production flow accordingly, minimising overproduction and improving the customer experience. H&M Group uses Movebox, an AI tool whose algorithm enables companies to distribute products in locations where there is demand.

Photo: Margareta Bloom Sandebäck/[imagebank.sweden.se](http://imagebank.sweden.se/)

Low-impact pigmentation.

By melting colour pigments and recycled polyester mass together, the fashion tech company We aRe SpinDye creates homogeneously coloured yarns. The process makes it possible to reduce water use in the textile production chain by 75 per cent. Multiple fabrics can be made from a single yarn source, which also means resource efficiency and very little waste.

Photo: Futurniture

Digital dyeing.

The Imogo digital dyeing process dramatically reduces wastewater – as well as energy and chemical consumption. It also speeds up production and ensures consistent, predictable quality. Commission dyeing company 7H Färgeri in southern Sweden has used the digital technology to become a leader in sustainable fabric colouring. Imogo’s technology can reduce consumption of freshwater, wastewater, energy and chemicals by as much as 90 per cent compared to conventional jet dyeing systems.

Photo: Unsplash/Rumana S

Modul #4: page 1

Digitalisation to delight people and the planet.

New technologies offer ground-breaking opportunities to design and produce fashion in a more sustainable way – as well as reach and delight ever more demanding customers.   
  
The fashion industry’s future path hinges on where technology is taking it next, from augmented reality (AR) and virtual reality (VR) and virtual goods in the metaverse, to reinvented made-to-measure models. The way products are designed and produced is increasingly ending up in users’ hands. It’s all about personalisation and prediction based on consumer preference. This approach also helps brands produce more accurately and responsibly. Putting the user rather than merchants in charge of design promises higher customer satisfaction. As the media landscape gains more flexibility, new platforms are helping fashion industry players build and strengthen customer relations in new creative ways. The product and service palette is rapidly growing as consumers seamlessly navigate between the physical and virtual worlds. Fashion brands aiming to grow and have impact need to understand how to be relevant in both these domains. The consumer has the answer.

Dress up in NFTs.

Swedish fashion innovator Atacac, a purveyor of digital and made-to-order creations, has released a digital mini-collection for autumn 2022. The company has a proven track record for designing garments in 3D and then producing them physically. Now it’s taking the next step with 3D designs for digital-only release. But if you like a digital garment, you can request them to make you a physical version. The digital-only collection features two suits that are sold as NFTs on the Decentraland platform. Decentraland is the first decentralised metaverse that is built, governed and owned by its users. Inside the virtual reality platform, users can create, experience and monetise their content and applications.

Photo: Atacac

Modul #4: page 2

Cryptowear boosts equality.  
  
Rave Review is a Stockholm-based brand that works on upcycling or, as it calls it, ‘high-end remakes’ using existing stock, textile waste and secondhand cloth. The mission is to make digital fashion and non-fungible tokens (NFTs) more inclusive and gender-balanced. For that, Rave Review empowers its community by encouraging women to get involved in Web3 through its NFT designs and alternative ways to learn about the world of crypto. From scraps and deadstock from its studio, Rave Review crafted nine pantie designs and then modelled them in 3D. Different fabrics, trims and upcycled NFTs are then added to make each pantie beautiful and unique.

Photo: Rave Review

Making the impossible possible.

Plenty of innovations have the ability to speed change in the fashion industry. But where’s the cash? The Billion Dollar Collection is a virtual fashion collection by the H&M Foundation. Each garment represents a groundbreaking Global Change Award-winning innovation with true potential to shape the fashion industry of tomorrow and earn money, if scaled up today. Each garment’s price tag corresponds to the support that each startup thinks it needs to create large-scale impact by 2030. Want to wear garments that are biodegradable thanks to microscopic algae? How about owning an outfit created with renewable thread and dye?

Photo: H&M Foundation

Modul #4: page 3

“What happens in the digital world can not be separated from what happens in the real world. Fashion is not an exception to that.”

Kajsa Guterstam, Swedish Institute

Modul #4: page 4

Scan. Sew. Save.

Can made-to-order fashion help solve the problem of overstock? In a test project, the H&M Group and fashion brand Weekday used a body scanner to create made-to-measure jeans. Customers entered a stall styled as a traditional fitting room but which housed a 360° body scanner. After a three-second scan, they could then customise their jean details (waist, fit, wash and stitch colour) on an in-store touchscreen. Within a few weeks, customers were able to pick up a pair of jeans made, in Weekday’s words, ‘as if they were woven around the actual body’.

Photo: Viktor Holm/Johnér

Goodbye to S, M and L.

Could eliminating standard sizes decrease overproduction? Swedish fashion studio Atacac offers a small collection of timeless silhouettes, each varying according to a body’s length and weight. When customers place their orders, they add their exact measurements and watch the garment transform on-screen.

Photo: Atacac

Ordered online. Tailored locally.

The Swedish startup Tini Garments offers a new type of made-to-measure wear. Using modern technology for fitting and customisation, along with a web of contracted local tailors, they’re bridging the gap between tailors and users, as well as the digital and physical worlds. In the end, they offer unique clothes that are made to fit and produced in a locally-focused sustainable way.

Photo: Fredrik Nyman / Scandinav

Modul #5: page 1

Longer lives for existing garments.

Less will truly be more in tomorrow’s fashion. A step change is on the way. The old linear method of produce-sell-repeat is on the way out. Taking its place are new circular models of ‘resource cycling’ based on smarter use and extended garment life.  
  
Making existing products last longer – and enjoy second, third (and more) lives – will soon be the new normal. Less production; more value for the same threads. Capitalising several times over on each item – including leftover waste and deadstock – generates fresh business opportunities. It encourages agile new players attuned to users and their wardrobes. It’s also very much in vogue: the secondhand market is projected to grow 11 times faster than retail clothing sales in the next few years. These market actors address consumers where they hang out: physically or in the metaverse. They are surfing the trend towards smarter, more conscious production centred on user needs. Say ‘goodbye’ to one-size-fits-all, and ‘hello’ to creative reuse!

From warehouse to catwalk.

Fashion brand Rave Review reuses deadstock, redesigns old garments and incorporates pre-existing materials to add value and offer new, personalised styles to its fans. Since 2017, the brand has been proof that sustainability really can be fashionable.

Photo: Marc Asekhame @Bomba/Rave Review

Modul #5: page 2

Re-used is the new new.

The private buying and selling of clothing should be easy, profitable and safe. The Sellpy app makes that happen. The company sends you garment collection bags, arranges pick-up, registers your no-longer-favourite items, values them and resells them to others. You merely wait for payment. Alternatively, you can use Plick – an app that lets you buy and sell second-hand garments, for free. You create a personal profile, follow inspirational accounts, share your wardrobe, and use the built-in payment/credit system to buy and sell clothes.

Photo: Sellpy

Tinder for your wardrobe.

Popswap is an app that helps users match their wardrobes and exchange items. Swipe right on a piece of clothing if you like it, swipe left if you don’t. Users get constantly updated wardrobes with minimal impact on the environment and their wallets, while keeping digital control over their wardrobe and what they own, use and enjoy.

Photo: Swedish Institute

Modul #5: page 3

Collections for all seasons.

Non-seasonal fashion you can mend on the go, that’s constantly peer-reviewed and lasts forever. Sounds too good to be true, right? Think again. Swedish fashion brand Asket’s classic collection is designed to stand the test of time. The range improves in tune with customer reviews and garments are professionally mended when they tear or wear. And even when you’re done with an item, it doesn’t mean the item is done for. Send the garment back and Asket makes sure it’s repaired, renewed, resold or recycled. Better in use than in a landfill!

Photo: Denisse Perez

Buy better, shop less.

Is there a healthier and more responsible approach to consumerism where everyone wins? Singular Society is a first try to help us buy quality items as a way to consume less. The membership-based brand offers selected premium products priced at what they actually cost to make, entirely without markups.

Photo: Singular Society

Saved by e-repair.

Repairing and modifying clothes should be easier than buying new ones. Startup Repamera offers e-repairs: customers send in their clothes and get them back repaired. The service is available nationwide in Sweden and the company uses both in-house tailors and self-employed workers.

Photo: Houdini

Modul #5: page 4

Hire the gear, escape the past.

The clothes you need, only when you need them – for as long as you need them. Owning and storing expensive clothes that you only use once a year is so last decade. Outdoor clothing brand Houdini started its rental service in 2012. It cleans and repairs the rental clothes between use to keep them in the system for as long as possible.

Photo: Lars Thulin / Johnér Bildbyrå

Photo: Houdini

Own your style. Rent your clothes.

Clothing rental schemes are multiplying fast, organised by both retail giants and smaller niche players. H&M rents out handpicked clothes and accessories from special collections and the archives of its male and female lines. Meanwhile, Gemme Collective features a rental platform where anyone can offer clothes and closet accessories for others to rent, with part of the fee going to Gemme Collection. No matter the programme, the bigger winners are the wearer and the planet.

Photo: David Thunander H&M Group

Pre-loved fashion.

Plug in to secondhand and vintage offerings from your favourite brands at ReRobe, a digital platform that allows fashion lovers to reach a wider audience. For buyers, it’s a way to add some premium fashion to their normal wardrobe. For sellers, it’s a way to find homes for the high-end items they don’t use anymore – and get paid. ReRobe curates every garment, applying regular retail standards to each second-hand piece. It’s a win-win for all involved.

Photo: Unsplash / Alexandra Gorn

Modul #6: page 1

Smart tools and inspiration boost better choices.

The more we know about fashion, the smarter we become at making the right consumer choices. User-friendly database tools and visualisations of never-before-seen solutions raise awareness and give practical advice that helps us as consumers navigate better.

Working out what’s sustainable and what isn’t – and then trying to do the right thing has long been challenging. So guiding consumers with better information is a sure step forward. Technology opens up opportunities for the fashion industry to track and show progress, spur community engagement, and exert influence on social media. By adding the wow factor when providing information and developing smart tools, consumers are inspired to cross the barrier and apply a more responsible way of living.

Call to action from fashion fans.

The F/Act Movement uses savvy engagement via social media to encourage others to make smart, responsible choices yet still be fashionable. The initiative started when a dozen or so F/Activists from Gothenburg and Science Park Borås decided to advocate more sustainable textile consumption with a self-imposed ban on buying newly produced clothes for six months. After sharing their experiences on social media, F/Activism became a movement – now co-funded by the Swedish Environmental Protection Agency and Västra Götaland County.

To the left: Donated garments become fashion! Fashion brand Remake Sthlm is run as a social enterprise that promotes supported employment. Production and design take place in the company’s own studio, and the materials come from donations to Stockholms Stadsmission, a charity that works for social care, supported employment and educated. Each garment is unique and created according to material supply.

Photo: Andreas Kock

Modul #6: page 2

An eye-opening recycling process in the store.

For many people, recycling can be hard to visualise. But the Swedish retail giant H&M lets its customers see behind the scenes of the process for recycling clothes. Its Looop machine is the world’s first in-store recycling system, turning old garments into new ones. In eight steps, Looop shreds your old item and knits a new one from the old fibres – right before your eyes.

Photo: H&M Group

Tracking carbon footprint.

How about tracking not only your shopping spend but also the carbon footprint of everything you buy – all while on the go? The popular Klarna payment app does just that in collaboration with online tool Doconomy. Buy a new garment and its CO2 impact will show up immediately. It’s a cool feature that lets all consumers see in real time how their shopping habits affect the planet.

Photo: Klarna

Modul #6: page 3

A dress to love and let go.

Are we willing to watch our garments change over time, and then become something completely new? The Paper Dress is an experimental research project that challenges norms by exploring the relationship between a garment’s look, use, and end-of-life. Because the dress can’t be washed, it is gradually transformed by wear and tear or dyeing until one day being ready for recycling. Since the dress is made of only cellulose, the whole dress is recyclable. The Paper Dress is a collaboration between Science Park Borås and fashion designer Stina Randestad.

Photo: Jacobo Campos. Illustration: Stina Randestad.

Modul #6: page 4

Repair. Recycle. Reuse.

Denim brand Nudie has been a sustainability pioneer for years, encouraging customers to invest in high-quality garments and then wear them till they wear out. Every pair of Nudie jeans comes with a promise of free repairs at a local store or repair partner. The brand actively encourages people to drop off their jeans when ready for repair and get 20 per cent off a new pair of jeans. The old jeans are repaired and sold again, they are used for patching material or Nudie professionals use the fabric to make new products. In 2021, the company repaired 42,500 pairs of Nudie jeans. The result? Customers who happily stay in the Nudie orbit for as long as possible.

Photo: Nudie Jeans

From used to new in one wash.

Biorestore is a home laundry ‘retergent’ that renews, revives and restores old, worn clothing to new. The circular fashion innovation company Biorestore has created a simple, effective and sustainable way to prolong the life of cotton and cotton-blend garments. Active enzymes in the detergent work deep inside the fabric to remove pilling, refresh colour, revive surface and renew print. Sounds like magic? It’s bioscience and a true innovation. Biostore, which is patent pending and a Global Change Award 2022 innovation winner, may have a valuable role to play in the shift to secondhand.

Photo: Biorestore

Zircular zolutions for the next generation

Nearly two thirds of Generation Z members and Millennials say they will look for a secondhand item first before purchasing a new one. These young generations are expected to spur rapid growth in secondhand as new ways to consume evolve. Spherio Solutions aims to make circular consumption easier by bridging the worlds of tech, logistics and e-commerce. Spherio operates resale marketplaces and its SaaS platform enables brands and companies to manage their sales of overstock, samples and secondhand. It’s a novel way to shop, and a new method for companies to implement a circular business model and monetise on previous customer purchases and past collections.

Photo: Spherio Solutions

Modul #7: page 1

Making every fibre count.

High production volumes – and heavy use – of virgin fibre makes alternative textile sources something of a holy grail. Sure enough, new solutions to meet the fashion industry’s fibre needs are entering the scene.

The global output of cotton, wool and synthetic fibres like polyester, nylon and acrylic has doubled in the last two decades. Because most come from virgin material, attention is shifting to regenerating fibre from textile waste. Today, the longstanding model of take- make-and-waste ensures that only a small fraction of manufactured textiles is recycled. But change and circularity are on the horizon – with new technical solutions rapidly advancing onto the markets. Textile waste collection infrastructure is being developed. Global standards for textile waste management are harmonising. Textile recycling technologies are coming to the forefront. The EU’s waste framework directive means Sweden and other EU members must have national textile waste collection systems in place by 2025. Investments are right now being made to take small and big steps in this complex field.

Big scale textile recycling, made possible.

Automated sorting is a critical but elusive link in the textile recycling chain, a hard-to-design bridge between collection and reprocessing. So by all means spread the word about the world’s first industrial-scale automated sorting plant for post-consumer textiles. Textiles are sorted by colour and fibre composition using near-infrared light. This technology makes it possible to handle large flows and produce textile fractions adapted to different recycling processes. It started out as a challenge-driven innovation program funded by the government. Today, it operates at full scale at the Sysav regional waste management facility in Malmö, Sweden, contributing to increased circularity in textile value chains.

Photo: Sysav

Modul #7: page 2

Growing taste for waste.

Worn-out jeans and production offcuts as a new, biodegradable raw material? Renewcell’s recycling technology and its branded Circulose® dissolving pulp are showing that textile recycling is possible – and on a global scale. Textile producers use the pulp to make viscose and lyocell textile fibre and market interest is constantly growing. Swedish fashion designer Jade Cropper used Circulose® for her latest and highly acclaimed collection.

Photo: Tonya Matyu

Modul #7: page 3

Waste + wood = wow!

Say hello to OnceMore®, the world's first process for industrial-scale recycling of textile waste from fibre blends. Devised by Swedish forestry products company Södra, OnceMore® combines wood cellulose with textile waste to create a high-quality dissolving pulp that can be used to make new textile fibre. The process makes it possible to recycle blends of cotton and polyester. Until now, these have been impossible to reuse efficiently. Circular progress at work!

Photo: Fotograf Studio NY

From rugs to riches.

When Swedish accessory designer Susan Szatmáry discovered flooring company Bolon's products, a collaboration was born. Together, they set out to create a more sustainable bag collection by combining saved pieces of woven vinyl waste with leather and high-quality craftsmanship. The result: a unique and eye-catching bag ensemble.

Photo: Susan Szatmáry x Bolon

Modul #7: page 4

Designed to die.

Streamateria creates compostable fashion garments with a short lifespan: a semi-virtual clothing solution purpose-designed to die an early death. The fashion company uses a 100 per cent circular and print-on-demand material made from cellulose and food waste – and with limited life expectancy. Production uses a 3D printed, mass customised technique. Once worn and torn, the material is mixed with food waste and biodegrades naturally. Sports brand Puma is one of many labels that have collaborated with Streamateria.

Photo: Erik Lindvall

Valuable wool to market.

Every year the meat industry discards approximately 1,000 tonnes of wool as a by-product. The Swedish Wool Initiative is a cross-sector collaboration where market actors from the entire value chain work together to scale up the use of Swedish wool and contribute to the transition to a sustainable and circular industry for fashion, outdoor and home furnishings.

Photo: Niklas Almesjö/Scandinav