

# Upcycling service for clothing under the concept of sustainability

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### **Abstract**

Fashion is notorious for its environmentally harmful wasteful practices. Fashion production releases 10% of the world's carbon emissions, more than the sum of international flights and maritime transportation. The fashion industry accounts for 20% of all water pollution in the world. If the fashion industry continues to maintain its current development momentum, its carbon footprint will account for 26% of the world's carbon footprint by 2050. Real case: On April 24, 2013, the Rana Plaza tragedy killed more than 1,100 garment workers in Bangladesh and injured more than 2,200 others. We have to reflect on how documentaries such as "true cost" reveal how the fast fashion industry consumes the earth's resources and uses slave labor to pass "cheap" costs to the final consumer. For this reason, in the 2017 Montreal Design Manifesto<sup>1</sup>, a group of professionals from all over the world emerged, representing designers, architects, urban planners and landscape designers. The declaration established a common position around the use of design to solve and overcome huge economic, social, environmental and social challenges in order to achieve more sustainable development. Obviously, some steps need to be taken to correct this situation and disrupt the entire industry. Among them, the recycling and reuse of second-hand clothing have become a development trend that encourages consumers to purchase new clothing in a more environmentally friendly way. The purpose of this thesis is to design an effective service to help solve this situation. Combining contemporary fashion concepts, providing online services and offline experience places are combined into one service form, thinking about their needs from the perspective of customers. On the one hand, online services provide customers with secondhand products they want to achieve their goals. Old clothes look for new owners to avoid the fate of making them landfilled, thereby reducing the impact on the environment. On the other hand, it will also provide offline venues, teach some simple and innovative methods, and provide some basic facilities and materials, so that customers can experience it by themselves, and transform the "useless" clothing in their hands into more suitable current designs. Thus breaking the traditional buying method. Reduce clothing waste and promote the emergence of a new virtuous circle of fashion.

### Thesis structure

The structure of this report reflects the current state of the fashion industry, its problems, and the application of the sustainability in industry. **The second chapter** will then explore the secondary market classification and analysis, leading to a detailed investigation of online services and workshop experiences that will help us in **the third chapter**.

In Chapter 4, we will research the secondary market based on the Chinese market. This will help us to realize the part of **chapter 5**, which is to design a new experiential shopping website. We want to see a thriving fashion industry in China that provides decent jobs, stimulates creativity and contributes to the economic success of China. The current business model of the fashion industry is unsustainable, especially as the global population grows and consumption levels increase. Consumption levels are increasing across the globe. Over-consumption and climate change are driving widespread environmental damage. Exploitative and linear business models must change. All parts of the fashion industry must unite and develop their blueprints to achieve a net-zero emissions world. Given scientists' stark warnings about climate change and biodiversity, reducing clothing waste through practical action promotes the emergence of a new fashion virtuous cycle. Thus, we need to fix fashion.

The Montreal Design Declaration of 2017. (November 9th 2017—October 24th 2017). The role played by design in driving a more sustainable future. https://www.icod.org/database/files/library/MDD2017\_PR.pdf

# Thesis perspectives

The repurposing of used clothing is now a very hot topic. More and more brands are seeing this relatively low-cost sustainable way of doing things. It offers designers the opportunity to protect people and the planet, as well as provide solutions to the fashion industry's challenges. Today, there are very many brands and studios etc. in various countries that do a good job of reusing second-hand clothing, but it is a pity that many good products do not get discovered by people. Therefore, starting from second-hand clothing, try to take advantage of different websites and service platforms and design an effective service to help solve this problem. More research and analysis should be done on clothing recycling, upgrading, giving away, selling, etc., from different perspectives to explore the design and ways that have given clothes a second life. Breaking the tradition, reducing clothing waste and promoting a new virtuous cycle of fashion.

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Introduction: fashion & sustainability

# 1.1. The fashion industry.



#### 1.1.1. Fashion's environmental impact

The fashion industry has a catastrophic impact on the environment. In fact, it is the second-largest source of pollution in the world after the petroleum industry. With the development of the industry, the damage to the environment is also increasing.<sup>1</sup>







1. Untreated toxic waste water from textile mills is directly discharged into rivers. Wastewater contains toxic substances such as lead, mercury and arsenic, and pollutants also reach the ocean, causing pollution.



COTTON

2. Another major source of water pollution is the use of chemical fertilizers in cotton production, which seriously pollutes runoff and evaporated water.



#### WATER CONSUMPTION



1. A lot of freshwaters is used in the dyeing and finishing process of all our clothes. As a reference, each ton of dyed fabric needs to consume as much as 200 tons

of freshwater.

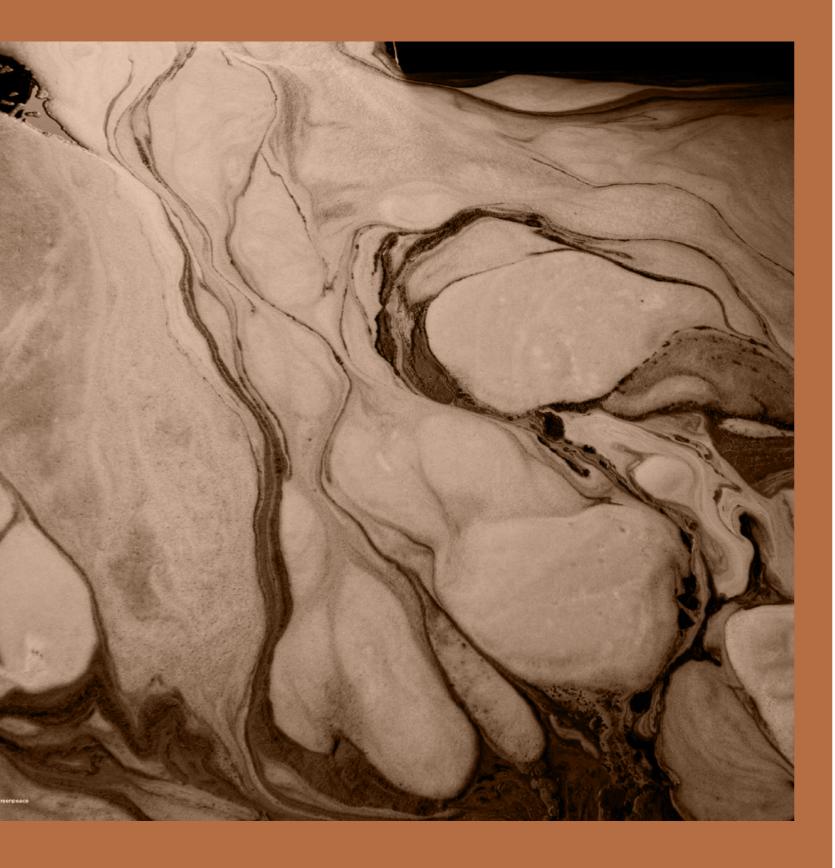


2. Cotton needs a lot of water to grow (and heat), but cotton is usually grown in warm and dry areas. To produce only 1 kg of cotton, as much as 20,000 liters of water are required. This puts tremendous pressure on precious resources that are already scarce and has serious ecological consequenc-

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<sup>&</sup>lt;sup>1</sup> Mathilde Charpail. (2017). The fashion industry is the second largest polluter in the world. https://zh.sustain-yourstyle.org/old-environmental-impacts

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Every time we wash man-made clothing (polyester fiber, nylon, etc.), about 1,900 microfibers are released into the water and the ocean. Scientists have discovered that small aquatic organisms ingest these microfibers. Then they are eaten by small fish and later by big fish, thus introducing plastic into our food chain.





SOILS DEGRADATION AND DESERTIFICATION



The large-scale degradation of global soil is one of the main environmental problems currently facing our planet. The fashion industry plays an important role in degrading soil in different ways: 1. Overgrazing goats on pastures that drive goats away. 2. Soil degradation due to the use of large amounts of chemical substances to grow cotton; and manmade fibers, such as man-made fibers. deforestation







The loss of forests is threatening ecosystems and indigenous communities. For example, in Indonesia, tropical rain forests have been deforested on a large scale in the past decade. Every year, thousands of hectares of endangered ancient forests are cut down and replaced by plantations used to make wood fabrics such as man-made fibers, viscose fibers, and modal fibers.







# WASTES ACCUMULATION





The use of clothes has decreased, leading to more and more textile waste. A family in the Western world throws away an average of 30 kilograms of clothing every year. Only 15% is recycled or donated, and the rest goes directly to landfills or incinerated.



# CHEMICALS ADDICTION





1. Chemical substances are one of the main ingredients in our clothes. In fiber production, dyeing, bleaching and wet processing, chemicals are required.

2. The extensive use of chemicals in cotton cultivation is causing diseases and premature deaths of cotton growers, as well as large amounts of freshwater and seawater pollution and soil degradation.

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# GREENHOUSE GASES EMISSIONS



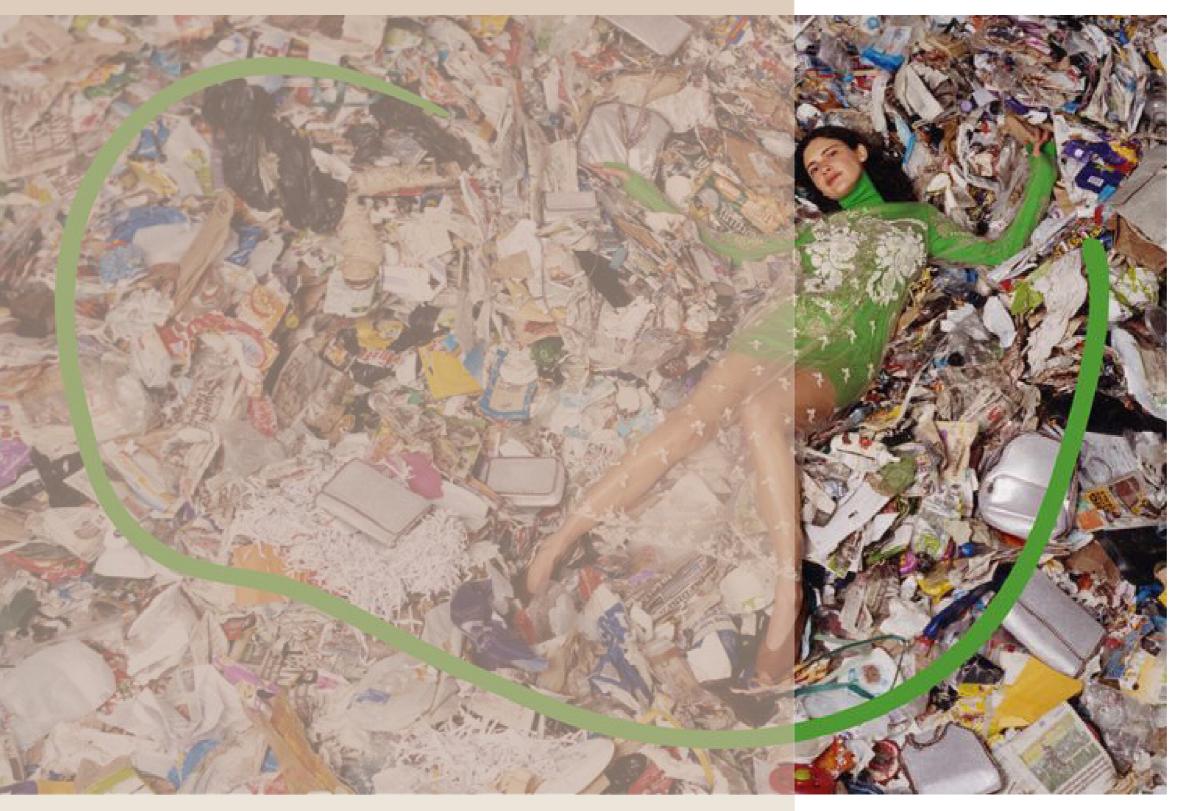
1. The clothing industry accounts for 10% of global carbon emissions. Due to the energy used in the production, manufacturing and transportation of thousands of garments produced every year; the global fashion industry is generating a large amount of greenhouse gases.



2. Most of the synthetic fibers (polyester fiber, acrylic fiber, nylon fiber, etc.) used in clothes are made of fossil fuels. Compared with natural fibers, the energy required for production is much larger.



3. Most of the clothes are produced in China, Bangladesh or India, these countries are mainly driven by coal. In terms of carbon emissions, this is the dirtiest type of energy.



# 1.2. The problem in the fashion industry.

#### 1.2.1. Overproduction and waste<sup>1</sup>

Decades ago, countless wars exhausted the world and made it difficult to maintain a livelihood. At the time, access to most goods was a luxury, not to mention the opportunity to choose among several options. Fast forward to 2020, more and more people are joining the waste war, consumerism and overproduction are becoming more and more serious, and the United Nations has issued a "no return" warning on climate change. According to data², about 30% of the world's clothing has never been sold, and the IHL Group estimates that the loss of this inventory distortion is US\$210 billion.

Alfonso Segura. (April 20th, 2020). Tackling Fashion Industry's Waste Problem, trend Forecasting and Demand Planning. https://fashionretail.blog/2020/04/20/tackling-fashion-industrys-waste-problem/

<sup>&</sup>lt;sup>2</sup> The Australian Circular Textile Association (ACTA). The Australian circular fashion conference. (March 21st 2018). https://acta.global/

#### 1.2.2. What it means?

Overproduction refers to oversupply. Simply put, this means that people can buy more things. In the fashion industry, unpurchased items end up in landfills or incinerators (they are incinerated). For example, in 2018, Burberry revealed a disturbing truth: it burned \$37 million worth of unsold clothing and cosmetics. It is conceivable that all the materials, labor, cost and pollution waste in the production of these items.



#### 1.2.3. Facts and numbers

Here are the key facts about production and use

- \$1.7 trillion!: It is the value of the apparel and footwear market. This is roughly the same as Canada's GDP.
- 150 billion pieces of clothing per year<sup>2</sup>: It is produced in the global fashion industry, which means about 20 items per person.
- 30% of the clothes have never been sold<sup>3</sup>: The other third is only discounted to stores.
- \$210 billion<sup>4</sup>: Make up for the inventory distortion in the global fashion industry. This is the disconnect between what the consumer wants and what the retailer has in the store.
- \$460 billion<sup>5</sup>: The time the global economy misses every year because people throw away clothes that they can continue to wear.

Emily Farra. (19th April, 2016). Takeaways from Future of Fashion Sustainability Panel. https://www.vogue.com/article/fast-fashion-environmental-impact-sustainability-parsons-zady

<sup>&</sup>lt;sup>3</sup> Hasmik Matevosyan. (23rd May, 2016). Overproduction: Taboo in Fashion. https://www.linkedin.com/pulse/overproduction-taboo-fashion-hasmik-matevosyan/

E Marketer. https://www.emarketer.com/articles/txopics/retail-ecommerce

Ellen MacArthur Foundation. (1th December, 2017). A new textiles economy: Redesigning fashion's future. https://www.ellenmacarthurfoundation.org/assets/downloads/publications/A-New-Textiles-Economy\_Full-Report\_Updated\_1-12-17.pdf

#### -Too much to wear:

The 2018 apparel:overproduction summary.<sup>1</sup>



#### 1.2.4. Why does this happen?

Fashion is the result of mass-market retailers increasing the production of cheap fashion product lines to meet the needs of rapidly changing trends

- 1. People's demand for new clothes is increasing, and low-priced and inferior clothes are of low value, so they can be used at once.
- 2. The unit cost is also the reason for the production of large quantities of products. "The larger the order, the lower the unit price of each item." Especially, it is very important for brands represented by fast fashion. The industry usually orders large quantities in advance, and prediction errors may also lead to overproduction.

Olena Rudenko. (10th December, 2018). The 2018 Apparel Industry Overproduction Report and Infographic. https://sharecloth.com/blog/reports/apparel-overproduction



#### 1.2.5. How to solve this situation.

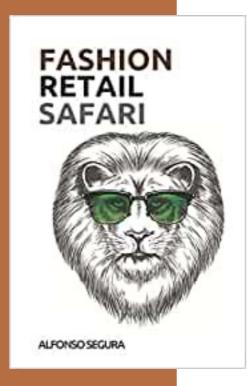
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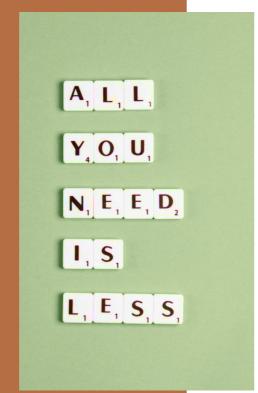
1.New Retail<sup>1</sup> is about new processes, new analysis functions, innovation, technology, new store formats...

They can respond to digital generation trends, such as offline experience venues, sustainable recycling methods. We live in a rapidly changing era-extreme weather, political turmoil (e.g., Brexit) and public health threats (e.g., COVID-19)-nowadays more than ever, companies should adopt a business model based on digitalization and flexibility.



2. Slow fashion (also known as sustainable fashion) Slow fashion is a concept and method that has become an eco-friendly and sociologically safe alternative to fast fashion. The article "Environmental Price of Fast Fashion" pointed out that in order for the fashion industry to survive and reduce environmental prices, it is necessary to completely abandon the fast fashion model, which is related to the reduction of overproduction and overconsumption, as well as the reduction of corresponding materials."







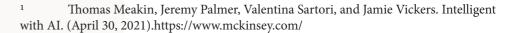
3. Trend forecast and demand planning

The product's prediction of fashion trends is very important. It is possible to further avoid false trend predictions and product classification plans by using social media to drive trend signals. According to McKinsey's 2017 study¹, it is estimated that AI can reduce forecast errors by as much as 50% and reduce total inventory by 20-50%. Neurotech is a personalized market intelligence platform that can help you make accurate trend forecasts and sales forecasts to achieve inventory planning. Its AI digs into Instagram to find emerging trends in the target audience. This data is correlated with the brand's past sales to optimize production and demand planning. If products are "pulled" into the market based on actual demand, the result will be less inventory and greater operational flexibility.





4. Mini Factory Concept Microfactory is a new business model that enables brands to develop quickly, flexibly and sustainably in their manufacturing process. In 2017, Adidas opened a pop-up store in Berlin, and in just a few hours provided a customized sweater that suits individual size and taste. To achieve this result, the human body scanner has been connected with augmented reality pattern creation software and a knitting machine. Small designers can also share such facilities in order to produce clothing locally at a minimum.



Alfonso Segura. Fashion Retail Safari: Retail Trends and Best Practices from the Fashion Industry Paperback. (November 25th. 2019).

# 1.3. Sustainability of fashion industry

More sustainable fashion can be defined as clothing, shoes and accessories, which are manufactured, sold and used in the most sustainable way possible while considering environmental and socio-economic factors. In practice, this means continuous work to improve all stages of the product life cycle, from design, raw material production, manufacturing, transportation, storage, marketing and final sales to the product and its product use, reuse, repair, and refurbishment and recycling, components. <sup>1</sup>

#### 1.3.1. What is sustainability of fashion industry?

Sustainable fashion is defined as clothing, shoes and accessories that are made, sold and used most sustainably, taking into account environmental and socio-economic aspects. This means continuous improvement in all phases of the product life cycle, from design, raw material production, manufacturing, transportation, storage, marketing and final sale, to the use, reuse, repair, transformation and recycling of the product and its products, components. From an environmental perspective, the goal should be to minimize any adverse environmental impact of the product life cycle by:

Ensuring efficient and careful use of natural resources (water, energy, land, soil, animals, plants, biodiversity, ecosystems, etc.).

Selecting renewable energy sources (wind, solar, etc.) at each stage.

Maximize the restoration, adaptation, reuse and recycling of products and their components.

From a social-economic perspective, all stakeholders should strive to improve the current working conditions of workers in the field, factories, transport chains and stores by following good ethics, best practices and international codes of conduct. In addition, fashion companies should contribute to encouraging more sustainable consumption patterns, care and washing habits, and an overall attitude towards fashion.¹

Sustainable fashion is thus about meeting the needs of people today while ensuring that the way we meet those needs also meets the needs of the future. Sustainable fashion is also about protecting the entire fashion supply chain. Sustainable fashion is partly about producing clothes, shoes and accessories in an environmentally and socio-economically sustainable way, but it is also about more sustainable patterns of consumption and use, which require changes in individual attitudes and behaviors. However, there are many ways for fashion companies to provide more sustainable fashion and for consumers to consume it in a more sustainable way. The Green Strategy identifies seven more sustainable forms of fashion from the perspective of both producers and consumers.

Anna Brisma. Today's environmental problems require major mindshifts. (March 26th, 2018). https://www.greenstrategy.se/en/author/180aeb/

Dr. Brismar, Green Strategies. https://www.greenstrategy.se/about-us/anna-brismar/

#### 1.3.2. The sustainability challenges

#### 1. Climate:

Every year, the fashion industry is responsible for about 1.715 billion tons1 of CO2 emissions worldwide, which is expected to increase by 63% by 2030.

In 2018, people in the fashion industry formulated the "Fashion Industry Climate Action Charter" under the United Nations climate change framework. Companies such as Burberry, Hugo Boss and Guess have pledged to implement or support the principles and goals of the charter, including in 2030 The previous reduction of greenhouse gas emissions by 30%.







#### 2. Waste/Circulation:

In the UK alone, more than | POSSIBLE #UseTheExisting. 300,000 tons<sup>2</sup> of garments are sent to landfills each year, which increases the labeling pressure required to implement the solution.

In Zegna<sup>3</sup>, MAKING THE DREAM OF ZERO WASTE

Zegna's spirit of sustainable development applies to everything we do. This includes not only the fibers, threads and fabrics recycled during the production process, but also recycled plastics and other materials.







#### 3. Biodiversity:

The industry's greatest impact on biodiversity is the loss of habitat caused by clothing production.

1. Inditex, the owner of Zara, announced a series of new sustainable development plans, including 100% cotton, linen and polyester fibers to achieve sustainable development goals by 2025. 2. H&M is committed to sustainable development through its Conscious Collection, which aims to promote the use of recycled materials. The company is committed to ensuring that all cotton used in the collection comes from sustainable sources and hopes to make all its garments sustainable by 2030.







#### 1.3.3. Commitments on sustainability

1. According to "Sustainable Brands", more than 110 fashion brands have pledged to participate in their newly released 2020 "Circular Fashion Promise".

- "Recognizing that fashion is an important factor leading to climate change, toxic waterways and marine pollutants, land use, etc... The culture of low-cost, durable clothing is causing a lot of waste throughout the supply chain and customer closets." "Change this situation."
- The commitment requires brands to achieve one of the following three goals before the end of 2020-recycling or reselling, increasing recycled content or design durability.
- "By the end of 2020, initiate at least one method or partnership to enable your customers to send back or resell their used items." "Provide the option of reselling,

- upgrading, repairing, donating or recycling items to make them Get a new look and stay away from landfills."
- Among the 117 brands, 62% promised to realize recycling/ resale, 60% promised to increase recycling content, and 50% promised durability. Approximately half of the countries have committed at least two pledges to increase the use of non-mixed materials and/or modularity and repairability in the first five sales hours of the brand. Designing items so that they can be repaired, upgraded or recycled can ensure that these items and materials remain in circulation.
- 2. The 2017 Copenhagen Fashion Summit, the "Global Fashion Agenda" called on the fashion industry to sign the 2020 "Circular Fashion System" Commitment" (hereinafter referred to as the 2020 Commitment) to take action to address circular issues, which is to turn words into actions and Specific ways to accelerate the industry's transition to circular fashion systems. In order to determine the direction of the transition, the Global Fashion Agenda outlines four points for immediate action:
- Implement a recyclable design strategy
- Increase the recycling volume of second-hand clothing and footwear
- Increase the number of resales of second-hand clothing and footwear
- Increase the share of clothing and footwear made from recycled postconsumer textile fibers

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Liam Goldsworthy. (19th October, 2020). Making luxury goods sustainable. https://www.csrwire. com/press\_releases/707326-making-luxury-goods-sustainable-3-challenges-and-3-leaders

Liam Goldsworthy. (19th October, 2020). Making luxury goods sustainable. https://www.csrwire. com/press\_releases/707326-making-luxury-goods-sustainable-3-challenges-and-3-leaders

Zegna. Making the dream of zero waste possible. https://www.zegna.com/ww-en/usetheexisting-manifesto/



Filthy Fashion Climate Scorecard, Stand.Earth STAND.EARTH

#### 1.3.4. Reducing environmental impact

1. Recycling and utilization of second-hand clothes. Help you reorganize your wardrobe and at the same time, have a new kind of

sex appeal.

2. Repair before replacement.
Learn how to change, repair, upgrade and rearrange clothes at the Rediscovery Center.

ing as required.
Tailor-made clothing, rather than mass production, saves natural resources, raw materials, and supports ethical and sustainable fashion.

8. Rent clothes.

3. Customize cloth-

5. Buy less and wear more. Reinvest in the clothes you wear and treat them as investments.

4. Donate unneces-

sary clothes.

6. Read the label. In addition to releasing microplastics, oil-based synthetic materials will not decompose. Choosing natural, biodegradable fabrics is the most sustainable choice. High-quality materials include organic cotton, Tencel, linen, recycled polyester and recycled nylon. Avoid using polyester, nylon,

spandex and acrylic.

7. Money laundering accounts for 60% to 80% of the total environmental impact of clothing. It is recommended to lower the washing temperature, wash at full load, avoid

tumble drying and

purchase environ-

mentally friendly

fibers.

Fashion rental not only has activity wear, but also daily wear. In the past where people only rented formal wear for special occasions, companies are now renting everyday clothes, handbags, shoes and accessories for a one-time fee or order through low prices.

9. Unsubscribe and read fast and stylish emails that you don't need. It will help you avoid careless scrolling and excessive consumption.

#### 1.3.5. The state of sustainability<sup>1</sup>

Whether it's our work environment or our personal space, we're all moving towards a more conscious future! Given the rapidly changing environment, the fashion industry simply needs to evolve itself and commit to a more sustainable process to minimize waste.

SAND, as a conscious brand, takes a holistic approach to this commitment. We use organic plant-based fabrics such as linen, cotton, aloe, rose, eucalyptus and soy protein, and are Fair Trade certified for ecological plant fibers. Even our packaging is made from recycled paper certified by ECOenergy and EMAS. "Fashion brands must not only practice, but educate consumers about their practices and their impact as end-users," says Shirin Mann, founder of Needledust."

A study by The Shelton Group proves the point: Millennials want to shop from sustainable companies. And because of the basic principles of supply and demand, luxury fashion companies are taking action to move toward a greener future. From the major sustainability and corporate social responsibility initiatives, Gucci has

gradually developed over the past few years, to the fur-free ethical and sustainable trends seen in a plethora of luxury brand announcements.

Also, the unexpected: "Pandemics have changed the way we look at the craftsmanship. We've realized how careful and necessary it is to design sharp and focused collections, to reduce waste by designing less, and to make sure every sample, every stitch and every piece of fabric counts. Our planet and nature need nurturing, as do our creative souls, and there will be no peace if one is sacrificed at the expense of the other. Fabric is our immediate environment. Humanity has its environment in nature, but the immediate environment of the body is the clothes we wear. From stage to concept to execution, sustainability is a concept that all designers must embrace, that even small individual contributions make a difference, and that we are doing so by reducing waste, using recycled materials, producing wisely and making every item worth buying with some conscience.



Pubeet Kapani. (25th March, 2021). Is Sustainability the Future Of Modern Fashion Industry? https://www.entrepreneur.com/article/367916

#### 1.3.6. Effect of coronavirus

The Global Fashion Agenda mentions that fashion companies are not currently implementing sustainable solutions fast enough to offset the negative environmental and social impacts of the fast-growing fashion industry. Now, the global coronavirus pandemic is acting as a catalyst for sustainable development. It has brought to light how vulnerable we are as human beings and how important it is to be able to live hey a healthy environment in the future. When we over-damage the environment, it punishes us accordingly, and the coronavirus is a very good example of this. A sick planet causes people to get sick, and the fashion industry cannot make that planet worse. Quite the contrary, it can make the planet healthier by accelerating the achievement of the UN Sustainable Development Goals. Although in the research it was found that many companies have lower sales due to the new coronavirus, potentially hindering sustainable development. This view is borne out by Sarah Willersdorf<sup>1</sup>, partner and global head of luxury at BCG, who says that the fashion and luxury sectors are currently the most negatively impacted in the consumer goods sector. Global sales are expected to fall by 30 to 40 percent. Most companies are simply trying to survive by focusing on protecting their employees as well as their cash and liquidity. Of the more than 500 manufacturers surveyed, 86 percent are severely impacted by order cancellations or suspensions, and 40 percent are struggling to pay their employees and their suppliers.

As a result, sustainability has taken a back seat, but for now, the industry needs to pick up the pace. Sustainability is important to everyone. Because the future of driving fashion sustainability is largely consumer-led, Willersdorf also sees it as a growing concern for fashion company employees. "It's the consumer on the one hand and the employees on the other. When employees support sustainability, it has a positive and self-reinforcing impact on the company culture. And fashion companies all depend on the talent they can attract, and the fashion talent of the future will want to work for fashion companies that put sustainability and social responsibility first. In the foreseeable future, it is easy to see that consumers will have less budget at their disposal. This will drive consumers to be more selective about quality, value and sustainability. Care about whether products are ethically made and environmentally friendly, etc. By looking for brands they can trust and focusing on "collective interests, especially in product categories that are perceived as close to the body, such as fashion and beauty. The resulting fashion winners, according to Willersdorf, are those who have "integrated sustainability into actual business practices. This will drive an advantage.

By meeting the sustainability challenge and responding to it at a faster pace than the slow, methodical pace of the past, fashion companies will hone an innovative skillset within their ranks that innovation experts assert is a mindset that can be learned.

Sarah Willersdorf.(3rd February, 2020). The Future of Success in Fashion Lies in Sustainability | BCG. https://www.youtube.com/watch?v=ulY6zFI\_5T4

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#### 1.3.7. The future of sustainability



The future of sustainable fashion depends heavily on consumers, tending towards ethical consumption.

There are many ways to be an ethical consumer when it comes to fashion. Moderate shopping, clothing swaps, clothing rentals, repurposing second-hand clothing, and buying only from sustainable and ethical clothing companies are just a few. But there is an exciting movement emerging that aims to change the way we think about fashion. Slow fashion, as opposed to the concept of fast fashion. It's a more ethical approach to style that shifts the focus from ongoing consumption to consistently thoughtful purchases. Brands that embrace slow fashion release fewer collections throughout the year and use quality, sustainable materials to create their garments. Ultimately, a good place to start is in your closet. As consumers, we must become sustainable fashionistas, making ourselves and the planet look great! Thanks to the boundless creativity of countless people around the world, a sustainable future is possible for the fashion industry.

02

Secondhand clothing

### 2.1. What is second-hand clothing?

Clothing is obtained through the secondary market. Recycling goods in the secondary market reduces the resources used to manufacture new goods and reduces the amount of waste that must be disposed of, both of which have significant environmental benefits. Scientific studies have shown that purchasing used goods can significantly reduce carbon footprints and CO2 emissions compared to the entire product life cycle because there is less production, raw material procurement, and logistics.



In developed countries, unwanted second-hand clothes are often donated to charities that sort and sell them. Some of these distribute some clothing to low-income people for free or at very low prices. Others sell all collected clothing in bulk to commercially used clothing redistributors and then use the funds raised to fund their activities. In the United States, nearly a billion of clothing are donated to charity stores each year. Only about 10% can be resold by charity stores. About a third of donated clothing is purchased by commercial dealers and fabric recyclers, often in bulk and at a significant discount, and then exported to other countries. Some used clothing is also smuggled into Mexico.

Used clothing that is not suitable for sale in affluent markets may still find a buyer or end-user in another market, such as the student market or less affluent areas of the developing world. In developing countries, such as Zambia, used clothes are sorted, recycled, and sometimes redistributed to other countries. Some of the waste is retained and used to create unique fashions that allow locals to construct an identity. Trade is not only an important source of employment for men and women, but also supports other aspects of the economy: merchants buy wood and other materials for their stalls, metal hangers to display clothing, and food and beverage customers. Carriers can also find work in transporting garments from factories to different locations. The trade-in used clothing is vital to the lives of many citizens living in these countries.

## 2.2. Why should we buy used clothing?

#### 1. Budget

• Shopping for ethical fashion brands can be more expensive than what you're used to because of our spending habits. Ethical fashion is the investment in our closet. This means that these are the core styles we buy to wear for years to come. In contrast, used clothing allows you to purchase cheaper or better styles or styles that are more colorful and unique than your investment styles.

#### 2. Preventing Waste

• Without the option of secondhand clothing, most of the clothing you see at consignment, thrift or vintage sales will not escape ending up in your home or a landfill. So no matter which fast-fashion brand created the garment in the first place, buying secondhand gives it a new lease on life, Alden Wicker¹ says: "Twenty percent of the world's textiles are recycled, which means the other 80 percent end up in landfills or incinerators."

#### 3. A simple way to repurpose items for a new life

• Recycling used clothing is the equivalent of giving it a new lease on life. Wearing secondhand clothes is essentially a good thing, and it's finally making a comeback in full swing. When we take care to choose the old over the new, we can, when possible, create new habits and small ripples in an overproduced industry. In the long run, repurposing these items will help us slowly reduce the waste in our lives.

#### 4. Redesign clothing in your own way

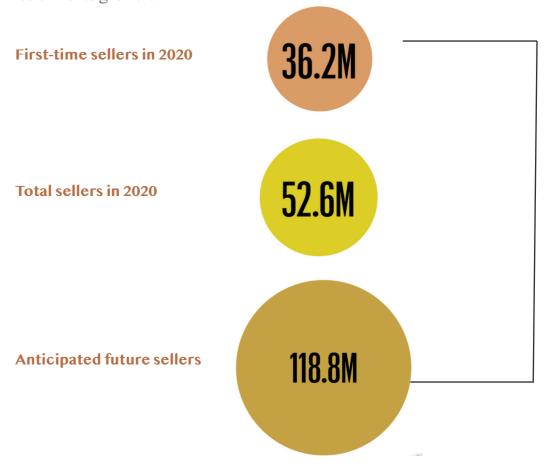
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• Clothing that bears the imprint of history is designed or utilized again to bring out its value while allowing people to experience fashion from a different period. By getting into the habit of reusing, rewearing and recycling clothes from now on, this change will be slowly documented. Buying second-hand goods can also be used to convey the message in their style that consumers are concerned about the production quality of the clothes they make, respect the fruits of the labor of the clothes makers, and care about the ecology of the earth.

### 2.3. ThredUp's report analysis

#### 2.3.1. The power of second-hand clothing

Second-hand sales are the new retail. According to ThredUp's 2019 sales report¹, the used apparel market is growing 21 times faster than the primary market, making it an interesting investment for brand investors. However, it's easy to see that the resale boom is here to disrupt the future of fashion, according to the results of thredUP's 2021 Resale Report², which was released in partnership with third-party retail analytics firm GlobalData. Resale is set to become one of the popular habits, and Generation Z will be at the helm to drive its growth.



Globaldata 2021 resale consumer survey (M: million)

Alden Wicker.(23rd April, 2018). Fashion Revolution. https://www.wearefuterra.com/2018/04/futerra-fashion-revolutionaries-alden-wicker-of-ecocult/

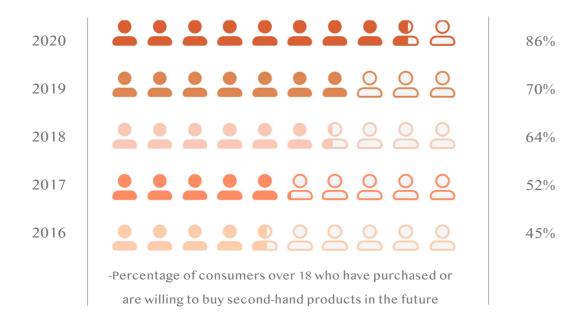
James Reinhart. (March 2019). 2019 Resale report.https://www.thredup.com/resale/2019?tswc\_redir=true

<sup>&</sup>lt;sup>2</sup> James Reinhart. (June 2021). 2021 Resale report.https://www.thredup.com/resale/#methodology-and-sources

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The report provides a broad view of the global secondhand market, its consumers, and potential growth over the next decade. Notably, it is in thredUP's financial interest to provide findings on the secondary market that will help it thrive, but the general lack of data on the global secondary market makes the report worth examining.

The report states that more than 33 million¹ people purchased used goods for the first time during the pandemic; 76 percent of shoppers plan to increase their resale and thrift spending over the next five years. In addition, within five years, the secondhand market will be worth \$77 billion, up from \$36 billion today, according to thredUP. Demand for used is just beginning, with 223 million² consumers saying they have or are willing to buy used products in 2020.

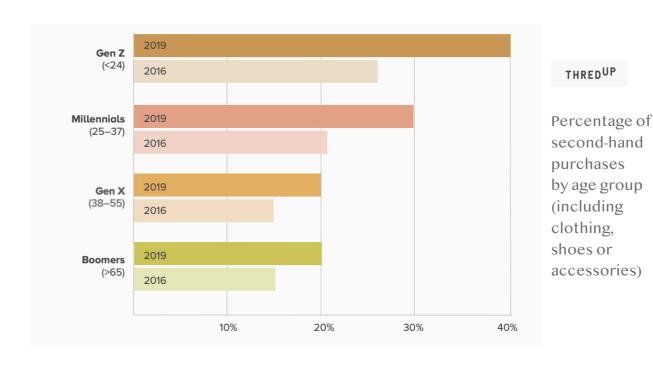


#### 2.3.2. Consumers

The retail industry turned to resale during Covid to meet the changing needs of consumers

The future of the retail industry is for consumers to pursue value, do more at home, and embrace greater sustainability. Especially millennials.



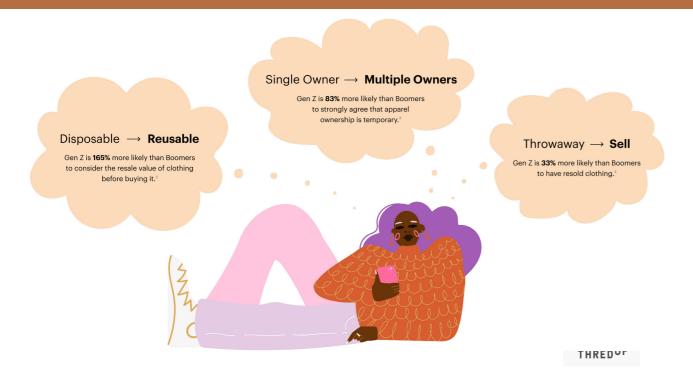


Sola santiago. (23rd June, 2021). Resale got a pandemic boost. https://www.refinery29.com/en-us/2021/06/10543115/thredup-2021-resale-report

GlobalData.(March and April, 2021). Survey data from prior years only sampled U.S. women. https://www.verdict.co.uk/author/globaldata-consumer/

Karen Clark, vice president of marketing communications at thredUP, says value is the number one consumer preference as we enter the recovery. The disdain for waste is manifesting itself after a year of doing more with less. Wasting money is no longer something most consumers are willing to do.

Consumers, especially Generation Z, prefer secondhand and fast fashion because of the thrill of being able to shop consistently at an affordable price. generation Z promotes resale and thrifting to prioritize variety, sustainability and more conscientious shopping. And one of the most important reasons they choose to shop secondhand is from the psychology of protecting the environment. In the U.S., 34 billion pieces of clothing are discarded each year. According to thredUP, 95 percent of those items can be recycled or reused. ¹This has influenced Gen Z to spend more on the second-hand market. According to thredUP, they are 33 percent more likely than baby boomers to sell their clothes rather than throw them away. They are also 165% more likely than baby boomers to consider the resale value of their purchases.



 $<sup>^1 \</sup>qquad \hbox{Ellen MacArthur Foundation. (2017~). A new textiles economy.https://www.ellenmacarthurfoundation.org/assets/downloads/publications/A-New-Textiles-Economy_Full-Report.pdf}$ 

#### 2.3.3. The future of second-hand clothing

Used clothing is going to play a huge role in the future of the fashion landscape. Because it is very important to live on a planet where it is important to protect the environment, and second-hand clothing goes some way to alleviating the waste and pollution problems of the fashion industry. Sustainable clothing and sustainable behaviors are going to accelerate in the future.

The big craze right now is not luxury stores all over the world, but shabby vintage clothing. Fashion chains are driving a rapid turnover of goods, with something different every year. Thousands of people are throwing bags of clothes out of their closets that may be a little worn but are no longer fashionable. In addition to this, the global problem is called fast fashion, which is very unecological and even unethical. As a result, the turnover of clothes today is so high that many of them end up in landfills, where materials such as synthetic fibers do not decompose. Fortunately, a significant portion of these discarded clothes is recycled through collection containers and sorting facilities. This is what we call used clothing today.

Another phenomenon is the greater understanding by consumers of the asset value of the products they buy and the residual value of those products. There is the potential for a dramatic shift in the future. A shift from the "normal" trillion-dollar apparel retail market to a \$300 billion luxury market. The growth of the luxury market will accelerate as people realize that buying durable and well-crafted products will result in higher residual values, and they will be able to resell those products.

# 2.4. Working principle of clothing recycling

#### 2.4.1. What is clothing recycling?

Clothing recycling is the process of recycling used clothing and other textiles for reuse or material recovery. as the foundation of the clothing recycling industry. In the United States, this group is represented by SMART, the Society of the Swabbing Materials, Used Apparel and Fiber Industry. The necessary steps in the clothing recycling process include the donation, collection, sorting and processing of textiles, followed by the delivery of used clothing, rags or other recycled materials to the end-user. The foundation of the growing clothing recycling industry is, of course, the clothing industry itself. The clothing industry has grown into a nearly \$1 trillion¹ global industry that includes apparel, furniture and mattress materials, linens, draperies, cleaning materials, leisure equipment and many other items.

Grand View Research. (29th December 2020). Textile Market Size, Share & Trends Analysis Report by Raw Material (Wool, Chemical, Silk, Cotton), by Product (Natural Fibers, Polyester, Nylon), by Application, by Region, and Segment Forecasts, 2020 - 2027. https://www.grandviewresearch.com/industry-analysis/textile-market#:~:text=The%20global%20textile%20market%20size%20was%20estimated%20at%20USD%20961.52,USD%201%2C000.30%20billion%20in%202020.

#### 2.4.2. Where to go for second-hand clothing?

Every year, new and more frightening statistics emerge about how much textile waste is generated. This includes car interiors, home furnishings, and of course, clothing. As fast fashion continues to ugly heads, thrift stores are overwhelmed and clothes donated with the best of intentions often end up in landfills. 16.9 million tons of textiles were generated in 2017, with only an estimated 13.6 percent being recycled. Landfills receive more than 10 million tons of textile waste each year because there is insufficient demand for the endless supply of donated clothing. This results in a large number of secondhand items being dumped around the world, as well as secondhand items sold by suppliers, hindering the business of local designers and manufacturers.

#### 2.4.3. Clothing collection

The first step in any textile recycling process is collection. The way materials are sorted and recycled depends on whether they are post-consumer or pre-consumer.

Postconsumer recycling. Post-consumer textiles are textiles that have been donated by individuals (i.e. second-hand garments). Most post-consumer garments are collected through public donation bins, clothing drives or independent company programs. These bins from companies such as Green Tree Recycling and USAgain and various Secondary Materials and Recycled Textiles (SMART) members are strategically placed in densely populated areas for public donations. Other companies use donation bins or mailing services so that individual consumers can have their gently used clothing delivered to processing facilities.

A handful of other brands also use recycling programs to upcycle, recycle or resell customers' clothing, such as Eileen Fisher, The North Face and Patagonia. each of these efforts is exciting, but pales in comparison to the larger issues at hand - which include campaigns claiming to address post-consumer textile recycling on a massive scale when, in fact, the brands are bleaching green.

Pre-consumer recycling.

Preconsumer recycling.

Many apparel brands have an overproduction problem and do not offer a program to reuse the large amounts of textiles they receive during the collection process. While many recycling programs and store recycling have donated quality guidelines, some of them do not include items with stains or rips. Almost all textile recycling programs reject wet clothing due to the inevitable build-up of mold and mildew. If a garment gets wet during shipping or sorting, it still doesn't escape going to the landfill. Some companies have decided to avoid screening dyed T-shirts altogether, focusing instead on pre-consumer textile recycling. Preconsumer collection includes everything from fabric waste from apparel manufacturers to post-industrial waste textiles from entities such as hotels and healthcare facilities. Companies such as I: CO, The Renewal Workshop, and Evrnu work with brand partners to create unsold stock and unused textile circular solutions. For The Renewal Workshop, this means absorbing backlogged stock from brand partners and upgrading or repairing parts for their online stores, while Evrnu focuses on developing technologies to create new fibers from old garments, and I: CO falls somewhere in between.

The Environmental Protection Agency. (2018). Facts and figures about materials, waste and recycling. https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/textiles-material-specific-data

#### 2.4.4. Benefits of clothing recycling

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#### 1. Reduce greenhouse gases

Clothes made from organic materials (cotton, linen) are biodegradable. However, when people throw away clothes and they end up in landfills, these clothes lack the oxygen needed for organic materials to decompose. The lack of oxygen leads to anaerobic digestion and decomposition, which means that microorganisms break down the organic material, producing byproducts such as methane. Methane is produced continuously and uncontrollably and can escape into the atmosphere, harming our air quality and our planet.



#### 2. Save landfill space

When we don't throw our clothes in the trash and they don't end up in the landfill, we save a lot of space. Landfills are harmful in many ways and can affect not only our environment, but also municipal budgets and the health of entire communities. As the statistics show, 11,150 tons of textiles went into landfills in 2017. This ton of space could have been used for something more beneficial to the environment. When we recycle clothes and other items, we play a role in reducing the city's landfill costs, which increases the budget for other important city needs.



#### 3. Helping people in need

Probably the main reason people choose to recycle their clothes is that it helps the less fortunate. Recycled clothing is often sold at resale stores and thrift stores for far less than the original price. This gives people who need clothing a chance to wear something exciting, fun or fashionable at a low price. Another way is to donate used clothes to people in need in developing countries. Your clothes can help people who are struggling to make a living and make a better life for those with poor economic prospects. Your used clothes can be worn or resold by people in developing countries, improving lives and stimulating economies around the world. When you recycle your clothes, your assistance is extensive.

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#### 4. Reduces costly consumerism

By people cleaning out their closets and shopping less, a minimalist lifestyle keeps us from engaging in costly consumerism or, more importantly, costly waste. When we buy recycled clothing, recycle our own clothing and simply buy less, we are having a personal impact on the waste and cost of the textile industry.



#### 5. It saves vital energy

The process of producing clothing consumes a lot of energy. Every piece of clothing you wear goes through a complex manufacturing process that consumes a lot of electricity, water and other energy. Recycled clothing saves energy by reducing or eliminating the need to make materials from scratch. Likewise, when you buy recycled clothes, you are reducing the amount of "fast fashion" you consume.

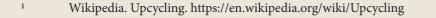
Upcycling

### 2.5. Recycling classification

#### 2.5.1. Upcycling<sup>1</sup>:

Upcycling means converting unwanted products and textile waste into new, higher-value products.







Upcycling example:
-Zero waste daniel
Zero Waste Daniel was
founded by a respected
New York designer Daniel
Silverstein, completely
using the remaining waste
to make clothing. The
result is a truly unique and
imaginative collection
of high-end clothing
with a unique patchwork
aesthetic.



Zero waste daniel



#### Recycling

#### 2.5.2. Recycling<sup>1</sup>:

# Recycling converts the material to approximately the same value as the original value.

• To be precise, recycling converts waste into roughly the same value. Pure cotton, polyester, nylon and wool can be transformed into new cotton, polyester, nylon and wool textiles. Discarded water bottles can also be recycled into polyester fibers. For example, Stella McCartney and Adidas' recent sportswear series use chemically recycled nylon and polyester. The chemical recycling of natural fibers is still under development and testing, so you may not have the opportunity to buy chemically recycled cotton shirts for another five or ten years.

#### Recycling example:

#### -Ecoalf

Ecoalf is a clothing brand that can recycle more jackets, shirts, pullovers, shoes, etc. than expected. So far, it has collected more than 500 tons of garbage from the Mediterranean. The brand then recycles these plastics and fishing nets into nylon.

- 1. Recycled nylon is incredibly sustainable. Compared with new chemicals, it only requires half of the manufacturing steps. It reduces energy, water consumption and pollution. In addition, it can greatly reduce waste in landfills and the ocean.
- 2. Recycling cotton saves thousands of liters of water, reduces environmental damage, and creates round products.
- 3. The awesome thing about Ecoalf is that they not only do ordinary recycling, but are also working hard to research and develop new options that lead the industry.



Mairi Hare. Recycling textiles. Texcycle #11. https://texpertisenetwork.messefrankfurt.com/frankfurt/en/list/apparel-fabrics-fashion/texcycle-11-recycling-textiles.html



Downcycling

#### 2.5.3. Downcycling<sup>1</sup>:

# Downcycling converts the material into a product with a smaller value than the original value

• Downcycling will recycle materials into lower quality substances, which are then used to produce lower-grade products. This is usually because the nature of the material prevents it from maintaining its previous durability after reprocessing. Therefore, the downcycling do not reinsert the material into its original cycle. The result of the downcycling is that, for example, in TransAmerica's factories, about 50% of the incoming plants are damaged or soiled, and are recycled for use in wipes, carpet liners, and sound insulation materials in other industries. This will keep the textiles away from the landfill for a while, but eventually, these materials will accumulate there.

### 2.5.4. Rent<sup>2</sup>:

#### Frugal and second-hand clothes rental, sharing economy in the closet.

- There are two types of site users, lenders and tenants. The lender uploads photos of the clothes they wish to rent. The lender's price is usually 10-15% of the suggested retail price of the goods, so they can approve the lease request-that is, they can choose who they want to lend the clothes to-they can agree on a pick-up location with the tenant, or send it out Post to them.
- The future of shared clothing is as natural as Ubering or Airbnb!

  As many people as possible rent clothes on a monthly basis and make second-hand shopping the new normal. For example, people can also make short-term leases, for which they pay the price of clothing and buy, wear, wash and recover up to 70% of the money.

  In addition, if you can buy 3 to 6 items at a time, and exchange them as often as you want, you can even keep them as long as you want. If they really like what they borrowed, they can buy it and enjoy a 20% discount.

#### Rent example:

#### -Resuit

Resuit is a fitness-based peer-to-peer clothing sharing application that allows you to rent or sell to communities of like-minded individuals.



Jennifer Nelen. renting or buying second-hand clothing as a sustainable option. https://www.pwc.nl/en/insights-and-publications/services-and-industries/retail-and-consumer-goods/renting-or-buying-second-hand-clothing-as-a-sustainable-option.html

Meilani. (March 7th, 2019). Upcycling, recycling, and downcycling – What's the difference. https://community.materialtrader.com/upcycling-recycling-and-downcycling-whats-the-difference/



#### 2.5.5. Swap<sup>1</sup>:

#### An act of swapping one thing for another.

- Nowadays, clothing swaps are becoming more and more popular, and the growth of clothing swaps and their positive impact on reducing carbon footprint. Emphasizes the role of clothing interchange in enhancing sustainability and promoting eco-friendliness among clothing users. For example, exchange meetings, parties, online exchanges and exchange boutiques. It recognizes the role of clothing exchange activities in providing fashionable clothing for all, in which individuals exchange their clothing in an eco-friendly and sustainable manner.
- There are many reasons for this. First of all, exchange things that could have been thrown away in the local thrift store and get a profit. Fundamentally speaking, changing clothes helps to save the world, because it is an opportunity to make all these clothes at least live again. Charity is done in itself. However, if you think about it further, changing clothes is also an opportunity for human rights defenders to spread some important information. Many of the people you invite to the clothing exchange may buy new sweaters or scarves in it-it's great in itself, but please consider how much help you can do with your next clothing exchange! In addition, everyone can get some great new things from it and become a meaningful activity that allows people to understand the true cost of their clothing. By disseminating information, you can take your love for fashion to another level-breaking the barriers on the surface, making your life more conscious and truly playing a meaningful role in disseminating information.



#### 2.5.6. Charity related:

A charitable clothing donation activity refers to the donation of clothing by community members or individuals to benefit nonprofit organizations or disadvantaged groups.

Organizing used clothing drives has many benefits. Waste clothing provides an alternative way for people to dispose of unwanted, torn or soiled items, thereby diverting garbage from landfills. The first method is that the second-hand clothing movement requires fundraising activities of organizations or groups, such as schools, religious organizations, clubs, sports teams and associations, neighborhoods and communities. Donated items can be provided free of charge to those in need. The second method is group fundraising activities. Through the clothing website or part of the company's profit, donate money to people in need. Many resources on the Internet can help groups and clubs organize second-hand clothing promotion activities. These resources provide technical tools and ideas to generate interest and participation to ensure success.

R. Surjit & T. Karthik. clothing Swap, Gateway to Sustainable Eco-friendly Fashion, handbook of ecomaterials pp 1599-162. (February 14th, 2019). https://link.springer.com/referenceworkentry/10.1007%2F978-3-319-68255-6\_63

# 2.6.Analysis second-hand clothing websites

#### **Upcycling:**

1. Worn Wear Patagonia

2. We Are Cow 3. Vino Kilo

5. Materialworld

4. The Vintage Twin

6. Re-See

7. Verasvintage

8. Desertfoxcollective

#### Recycling:

1. Tradesy 2. Beyond Retro

3. Asos Marketplace 4. One Scoop Store

5. Refashioner

6. Na Nin

7. Haute Vintage 8. Luxurygaragesale

9. Vestiaire collective

10. Leprix

11. Hardlyeverwornit

12. Thredup

13. Vinted

14. Poshmark 15. Stillwhite

16. Buildabundle

17. Vintage-rags

#### Downcycling:

1. Remitex 2. Wear2

3. Blocktexx

#### Rent:

1.Sharealook.com

3. Hurrcollective.com

4. Mywardrobehq.com

#### Swap:

1.Rehashclothes.com

2. The fashion pass.com

3. Swopped.co.uk

2. Clothingswap.com

4. Marksandspencer.com

#### Charity related:

1. Oxfam onlineshop 2. Salvosstores

3. Re-fashion

4. Fashionforchange

#### 2.6.1. Upcycling sites:

An analysis second-hand clothing websites revealed that the most effective services include in the upcycling section. The following is a detailed analysis.

Numbers	Brands	Services	Special products	Special features
1	Worn Wear Patagonia	Sale; Trade-in; Repair	Original brand; repaired product;	Extreme sports; news on current affairs; documentaries or movies; activities; topics; books
2	We Are Cow	Sale; Rework	Rework collection; maintain the Denim's	Vintage; 100% unique product; specializes in sustainable vintage denim
3	Vino Kilo	Sale; handmade	Vintage Denim jackets; tie-dye t- shirts	The best event: old-fashioned kilogram sales
4	The Vintage Twin	Sale; handmade	Tie dye tee; vintage belts; silk shirts	Classification features: random graphics; crazy soft; color blocks; tiedye, etc.
5	Materialworld	Sale; private customized service	Personalized product push	Receive your style alert; respond with BUY or PASS; receive your item
6	Re-see	Magazine; repair	Special works; luggage maintenance	Magazine style website; editor's Pick; themes; inspirations; stories
7	Verasvintage	Sale; handmade	Vintage collection; v-cycle bags; v- accessories; v-cycle totes	Magazines; v-cycle products
8	Desertfoxcollective	Sale; handmade	Desert Fox collection;	Own style of layout; donate money to charity; "British Dark Life Problem" Foundation

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#### 2.6.2. Recycling and second-hand sites:

Numbers	Brands	Categories	Service Scope	Special Division
1	Tradesy	Boutiques	America	Luxury goods; discounts; smart pickup systems; smart pricing support; free returns; wedding-related products
2	Beyond Retro	Vintage Lovers	European Union	Student discounts; Converse collaborative collections; Hawaiian shirts; vintage denim; gift cards
3	Asos Marketplace	Vintage Lovers	Worldwide	Independent brands; twenty-something customer demographic; multi-currency support
4	One Scoop Store	Vintage Lovers	Worldwide	Selfridges Associates
5	Refashioner	Public Welfare	Worldwide	Exclusive clothing stories; regular people designers; chronological categories
6	Na Nin	Vintage Lovers	Worldwide	Seasonal assortment; baby clothes; perfume; uniform layouts; unique styles; installments.
7	Haute Vintage	Vintage Lovers	European Union	Discount; vintage denim; candles
8	Luxurygaragesale	Boutiques	USA; Canada; Australia; New Zealand	Discounts; luxury; in-house specialists; gift cards.
9	Vestiairecollective	Boutiques	Worldwide	Bargains; installments; furniture; books and magazines; sports products; high- tech products; pet products
10	Leprix	Boutiques	Worldwide	Antiques; discounts; 600+ boutiques; free shipping; wholesale prices
11	Hardlyeverwornit	Boutiques	Worldwide	VIP services; Vogue, Vanity Fair, ELLE partnerships; charity; discounts
12	Thredup	Affordability	Worldwide	Discounts; size memory function; color assortment; material assortment; wear status; children's products; custom box service; gift cards
13	Vinted	Affordability	European Union and UK	Kids products; user search; forums; articles
14	Poshmark	Community	America	Furniture; beauty and health products; pet products; party supplies; wholesale; specialty showrooms; global traditional clothing.
15	Stillwihite	Specialized wedding dresses	UK	Real-time sales statistics; price range; paying users
16	Buildabundle	Specialized wedding dresses	Worldwide	Maternity clothing; children's clothing
17	Vintage-rags	Customer Interactions	Worldwide	Home products; white t-shirts; bottles; botanicals
	Farfetch Second Life	Boutiques	Worldwide	Luxury goods; discounts; student beans; free returns; classic collection; fashion collection
66 <sup>19</sup>	Nordstrom Sustainable Style	Community	Worldwide	Discounts; professional virtual stylist services; Nordstrom Trunk club; Nordstrom restaurants; alterations; spa Nordstrom; anniversary sales

#### 2.6.3. Downcycling: sites

Numbers	Brands	Categories	Service Scope	Service introduction
1	Remitex	Textile downcycling	Germany and France	Textiles are classified into about 200 different classes according to their quality and use. The classified textiles range from clothing and shoes to bedding, duvets and other types of bulky textiles.
2	Wear2	Textile separation, disassembly and processing	Netherlands	By applying the patented Wear2 ® Thread sewing thread in combination with innovative microwave technology, clothing can be completely disassembled at the end of its service life. Different types of textiles and accessories such as logos and tags, labels, zippers, buttons, visible tapes and other accessories are separated within 60 seconds without damage.
3	Blocktexx	Recovery of polyester and cellulose in textiles and apparel	Australia	BlockTexx has proprietary technology to separate polyester and cotton materials such as clothing, sheets and towels of any color or condition back into their high-value PET and cellulose raw materials for reuse as new products in all industries.  Recycled PET is polymerized to produce virgin quality SOFT brand rPET plastic pellets and polyester fibers for textiles, packaging, and construction products.  Recycled cellulose is processed into SOFT-branded cellulose powder for use in many industries, including textiles, pharmaceuticals and food.

#### 2.6.4. **Rent sites**:

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Numbers	Websites	Categories	Population served	Service introduction
1	Sharealook.com	Designer dresses, wedding dresses, party wear, business wear, bags, shoes and accessories	Renter and lender	Membership: CHF 80/month for 5 dresses exchangeable at any time; CHF 120/year for 50% discount on rentals.
2	Thefashionpass.com	Clothing type classification and occasions	Renter and lender	Membership, \$49/month, unlimited rent, two outfits and one accessory; \$79/month, unlimited rent, three outfits and two accessories; \$109/month, unlimited rent, four outfits and three accessories. This includes shipping and dry cleaning. Garments can be used for no more than two months. A 30% discount is available if you purchase rental clothing
3	Hurrcollective.com	Designers, apparel, bags, shoes and accessories	Renter and lender	Includes story panels, editorial, threads, charities, and gift cards, and even offers dry cleaning services, and community.
4	Mywardobehq.com	Designers, adult and children's clothing, bags, shoes and accessories, bridal wear, HQ editorial	Renter	500+ designers; Enjoy wearable experiences from as little as 4 days to as long as 14 days; Fully managed service; Rental insurance for minor wear and tear; Free dry cleaning; Full refund for any unworn items

#### 2.6.5. Swap sites:

Numbers	Websites	Categories	Services	Service introduction
1	Rehashclothes.com	Accessories, bags, band t- shirts, cosmetics, clothing, handicrafts, jewelry, pet supplies, plus size	Swap free	The exchange platform is provided to users for free. Find clothes, shoes, accessories, jewelry and cosmetics that you no longer need and list them. You will soon receive offers from other members. Rehash is free to use from the moment you exchange your clothes to the moment you receive your items. There are no listing fees or transaction fees; just pay your own shipping and transaction fees.
2	<u>clothingswap.com</u>	Clothes, shoes and accessories	Entertainment, fashion and charities	Face-to-face exchange options. They've been around for 15 years and their events can combine cocktails and mini spa experiences, but they're more common in cities like San Francisco. At the end of their events, all unclaimed items are donated to local nonprofit shelters and charities to help those in need.
3	Swopped.co.uk	Clothes, shoes, accessories, beauty and body, jewelry, life and gifts	Online Customer Service	Swopped takes all the difficulty out of exchanging clothes with other people. Simply pack your items and send them to their headquarters. They will notify you when they receive it. Once they receive your item, they will credit your account ready to spend it in their beautiful store.
4	marksandspencer.co m	Cosmetics and beauty products	Swaps and reviews	The idea of the swap page is to swap all those makeup and beauty products you buy that you barely use, and the decision to swap lip gloss with a complete stranger is ultimately up to you (in the FAQ, they do recommend replacing only unused mascara.)

#### 2.6.6. Charity related sites:

Numbers	Websites	Categories	Birthplace	Service introduction
1	Oxfam onlineshop	Garments, books, sourced by Oxfam, unwrapped, entertainment	UK	100% of Oxfam's profits go to our work around the world to help lift more people out of poverty. This can be done through donations of gently used women's clothing, gently used men's clothing and a range of one-off collectibles. Not to mention our used home furnishings, vintage wedding dresses, vinyl records, music, books, fair trade Christmas cards and other seasonal collectibles, and more for charity. Another way is to donate money directly.
2	Salvosstores	Garments, antiques, health and beauty, books, furniture and decoration, entertainment products, outdoor products, toys	Australia	How to donate: Drop off at the store nearest you. 100% of our profits go to The Salvation Army programs.
3	Re-fashion	Garments, shoes, accessories, some even have labels for new products	UK	Re-Fashion is a website that believes in a circular fashion future and wants to eliminate clothing waste. Support donating clothes. Every purchase raises money for charity.
4	Fashionforchange	Garments, celebrity boutiques, charity stores, clothing donations	UK	Fashion for Change is the smartest way to increase the fundraising potential of luxury clothing and accessories donated to you by members of the public or celebrity supporters.

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03

**Upcycling** 

# 3.1. Upcycling market analysis in China

#### 3.1.1. Second-hand clothing analysis in China

According to the "Apparel Retail Information Industry Market Competition and Investment Strategy Planning Analysis Report" released by China Foresight Industry Research Institute, the sales scale of China's apparel market was 2,410.1 billion yuan in 2018, and it is expected that the sales scale of China's apparel market will maintain a growth rate of 4.77% in the future, reaching 2,517.8 billion yuan by 2019. Such a huge number makes us sigh with admiration at the rapid development of the apparel industry, but also worry about the environmental costs that will follow. More and more fashionistas are becoming aware of the conflict between buying and the environment, and are trying to reduce the damage to the environment by trading or reusing unused clothing.

Among them, Li Yinping's master's thesis "Research on Sustainable Fashion Design Based on Upcycling Method" <sup>2</sup>of Beijing Institute of Fashion focuses on the technical research of upcycling design method, summarizes the upcycling technology, and then carries out design practice, which is meant to achieve sustainable fashion design by upcycling pre-consumer textile waste.

China business report. (2018). Apparel retail information industry market competition and investment strategy planning analysis report. https://wenku.baidu.com/view/6497d1be710abb68a98271fe910ef12d2af9a989.html

<sup>&</sup>lt;sup>2</sup> Li Yinping. Research on sustainable fashion design based on upcycling method.

#### 3.1.2. The current status of second-hand clothing in China











**Events:** Sharing events such as "clothing recycling" and "goodies sharing" are becoming popular in China, with some organizations and institutions calling for more environmentally and fashion-conscious people to get involved by organizing swaps with different themes. For example, Beijing's "Simple Life" program holds item swaps during the change of seasons, attracting more and more "regulars" who bring clothes or other items to swap. For example, emerging second-hand clothing platforms such as "Transfer" and "Closet Blast" allow users to exchange old clothes for their favorite clothes without leaving home by building clothing exchange rules and using the convenience of mobile also networking, and also using the exchange of clothes as a medium to

meet like-minded friends.

**Platform**: to "idle fish", "only two" and other second-hand trading platform is committed to the secondary sale of unused clothing, through the resale of bettercolored unused clothing to cash or buy cheaper second-hand clothing to save costs. Of course, if the user wants to buy an orphaned or limited edition, you can also publish a request for information through the platform, good luck, you can buy the ideal price of discontinued clothing.

Offline stores: Upgraded clothing brick-and-mortar stores are also developing quietly with the support of online platforms. In Shanghai, a store called "Pawnstar" is at the forefront of the upcycled clothing recycling and consignment business. It is an online and offline consignment store for unused designer brands, focusing on recycling and consignment models but also willing to work with new designers to support recycled design projects. The store not only carries seasonal clothing from major brands, but also Vintage items and recycled design hair accessories.

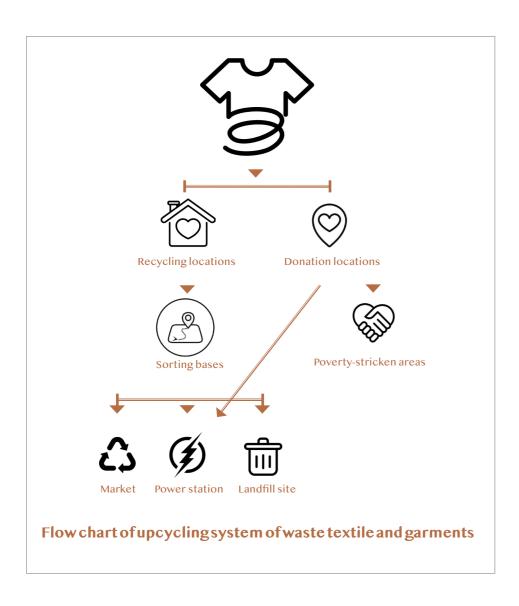
#### 3.1.3. Chinese citizens dealing with second-hand clothing

Donation behavior	Re-selling
Represented by the government, organizations donate the recycled clothes to the act owf donation. However, because of the high cost of disposing used clothes, many donation organizations only accept new or nearly new clothes. This greatly reduces the motivation of some people to donate clothes.	The sale of used clothing is an easily accepted method of disposal because the financial benefits of doing so will encourage residents to choose this method of disposal. However, re-selling brings not only economic benefits, but also reduces the demand for new clothing, thus reducing the environmental pollution caused by clothing waste According to the study, almost half of Chinese households have more than 30 pieces of clothing, and on average they buy more than 10 new pieces of clothing each year. More than 90 percent of respondents said new clothes are left unused at home after one year, and only 25 percent said a garment will last more than three years. However, in China, only a small percentage of clothing is recycled. Many Chinese people rarely buy second-hand clothes for health reasons and so-called face-saving issues, which has created a barrier to re-selling second-hand clothes in China and poses a problem for the disposal of the huge hoard of second-hand clothes.

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#### 3.1.4. China upcycling environmental analysis

Currently existing second-hand clothing disposal processes in China



With the implementation of green concept, more and more designers and enterprises in China have started to "redesign" second-hand clothes. This has, to a certain extent, alleviated the environmental pollution problem of the fashion industry and prolonged the life of fabrics. Two case studies.

Chinese designers, represented by Momo Wang, are starting to make their mark. Her clothing line Third Hand Up-Cycle Collection is a collection of second-hand clothes from the market in her hometown of Jinzhou, and then she uses her creativity to redesign these second-hand clothes, giving them a new life.

Designer Zhang Na organized a "Recycled Clothes Bank" in Shanghai. She collaborates with many environmental organizations to recycle the collected clothes and accumulate raw materials for the reorganization of second-hand clothes. People are willing to buy her clothes not only because of the redesigned titles of the second-hand clothes. More than that, she has solved many technical challenges. Her collection is "basically sustainable and zero-waste". On top of that, Jang Na also contributes 10% of the profits from the sale of recycled clothing to the "1% Earth Tax".

Although there is currently a growing awareness of green in China, but the start of the reuse of clothing is still relatively late, the development is not mature. This is mainly reflected in the fact that there are **no very mature upcycling-related websites and platforms** to be found.

### 3.1.5. Analysis of the reasons

Why has the development of upgrading stalled?

Challenges	Measures
1. Cost At this stage, there are still problems with the upgrading of used garments. Not all pre-consumer garment waste is good quality fabric, and the upgrading of waste garments requires consideration of the design of different waste materials, which will increase the cost of many issues.	Through in-depth cooperation between recycling institutions and garment production enterprises, related enterprises specialize and intensify their development to reduce production costs and make the upgraded products more competitive in the market.
2. Scale The upgrading of used garments in China is mainly concentrated in small and medium-sized enterprises or workshops, and is not promoted by large garment enterprises.	Develop leading enterprises to play a leading role.
3. Consumer psychology There is rejection psychology of second-hand clothing, even mixed with counterfeit and shoddy, and a social environment led by the government and accepted by the public has not yet been formed.	Strengthen publicity and guidance to raise people's awareness of environmental protection. The government formulates relevant policies, improves the recycling process of used clothing, and gives policy and financial support to enterprises that recycle and produce.

## 3.2. Analysis of mature upcycling sites



### **WORN WEAR PATAGONIA**

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https://wornwear.patagonia.com/

# WORN (Å) WE

patagonia



1% for the Planet

- Interested parties
- a) Patagonia b) wornwear
- Specials
- "Repair"
- Region
- US
- Upcycling website
- **Sust**

Sustainable Related Products

Service	Specials	Special Products	
Sale;Trade-in	Repair	Rework collection	

# Key Features

- 1. Extreme sports: It is divided into different themes according to different special environments. Under each theme you can find the community and related clothing. Like, Snow, surfing, mountain biking, trail running, fly fishing, kitesurfing; climbing.
- 2. News on current affairs: Based on current news, summarized articles can be read.
- 3. Documentaries or movies: The website provides access to documents and movies.
- 4. Activities: Documenting the reform movement. Connect with environmental groups and take action to protect people and the planet through Patagonia Action Works.

**Identity Card Studio** 

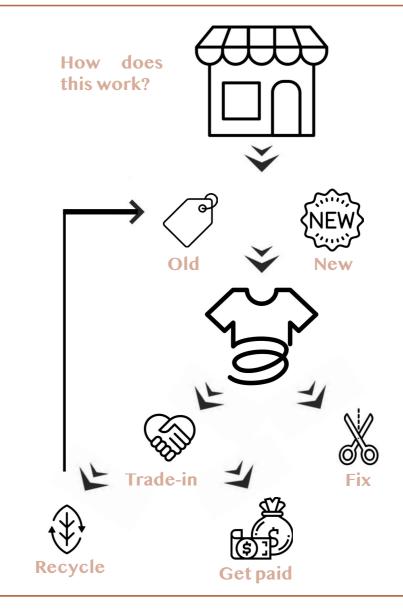
## **WORN WEAR PATAGONIA**



"Repair" service

1. This service can help customers to find some necessary parts to solve their repair difficulties and thus increase the life of the product.

2. Gift cards are obtained through the recycling service to support the exchange for other products. It can attract customers' interest and increase the recycling rate of the products.



# Business

This business model allows consumers to understand their marketing structure and, in the process, maximize the sustainability of the customer, a very sophisticated reference structure.

3.2.1. Online services

Features

Key

### **WEARE COW**

https://wearecow.com/



We Are Vintage. We Are Sustainable.

 Interested parties

We are cow

Specials

"Regeneration"

• Region

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London

Upcycling website

Sustainable Related Products

Targets	Specials	Special Products
Vintage lovers	Rework	Rework collection

1. Cow Vintage is your best bet for finding big designer brands, one-of-a-kind vintage and hand-remodeled clothing in a sustainable way. WE ARE COW comes from a British online retailer dedicated to finding the best selection of 70s, 80s, 90s and 00s, sustainable fashion.

2. About Reworked Clothing: Every piece of reworked clothing designed by Cow is 100% unique. The reworked collection is guaranteed to have the latest styles and sizes in ethically sourced materials. What makes Cow different? All garments are sustainably produced.

**Identity Card Studio** 

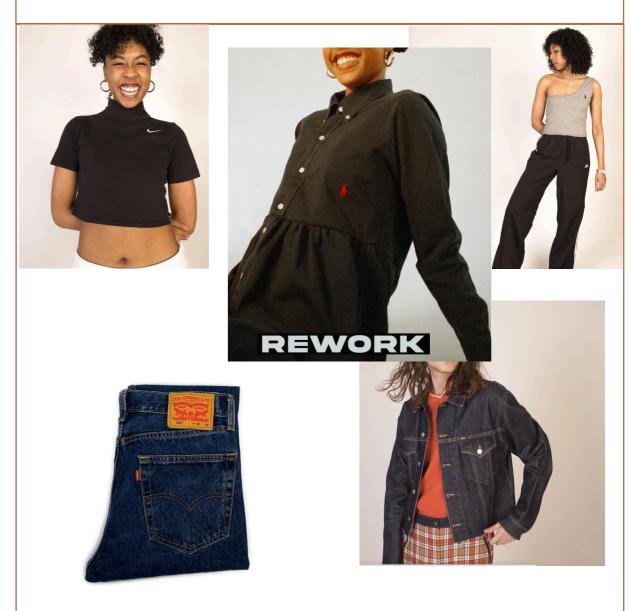
### **WEARE COW**



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"Regeneration" Service

We Are Cow with the "Reworked" label, which means the second creation of used clothing. It guarantees that each piece of clothing to be repaired is 100% unique so that the customer who buys it feels the unique value of its garment.



The special thing is to maintain denim clothing. Give fresh life to denim by recycling, reprocessing and refurbishing it. Research old-fashioned denim to the extreme and develop diverse types. From jackets to dresses, from jeans to skirts, from Levis to Carharts, from Dickies to Pepe, etc.



**Key Features** 

## Desert fox collective

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https://desertfoxcollective.com/



However small so thank you for shopping with us!

Interested parties

Desert fox collective

Specials "DIY"

• Region South of France

Upcycling website

Sustainable Related Products

Targets Specials Special Products

Handmade lovers DIY Desert Fox collection

1. Desert Fox is a vintage handmade brand. Since clothing sent to landfills and fast fashion is one of the biggest contributors to global warming and the destruction of the planet, the brand is working to change the way clothing is produced and retailed.

2. Lucie, who has a background in fashion, uses her creative skills to create the Desert Fox collection, which is handmade on a sewing machine in her studio in the south of France. Recycling and repurposing vintage fabrics she finds in her travels, the Desert Fox collection results in wearable and desirable pieces that are durable and sustainable.

3. Because most of the fabrics we find are vintage or stalled, many of the items in the Desert Fox collection are one-of-a-kind, meaning that while there is not much choice, as in fast fashion, each piece is special and made with love.

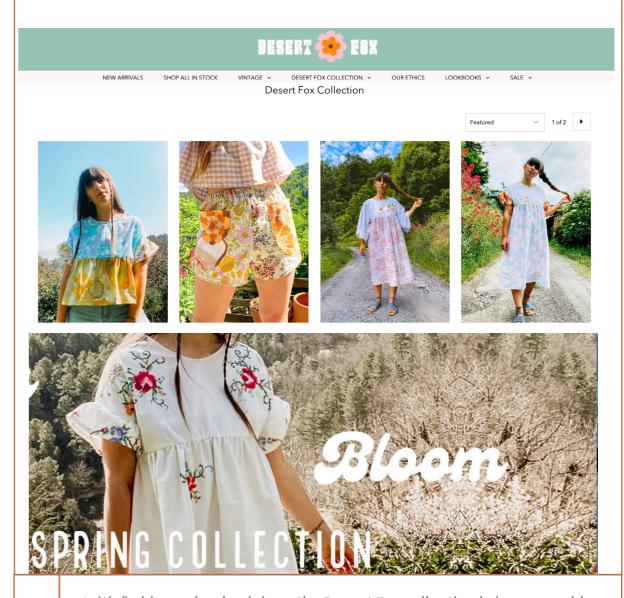
**Identity Card Studio** 

## Desert fox collective



DIY: "Handmade"

Designer Lucie, through handmade DIY, makes it a very own style website.



Business model With fashion as her backdrop, the Desert Fox collection brings wearable and desirable items that are not only handmade by sewing machines, but are durable and sustainable. By hand-selecting garments from flea markets, charity stores and local sellers, the carbon footprint is reduced and given back to the local community.



### **MATERIAL WORLD**

https://www.materialworld.co/



A personal stylist who finds pre-owned items you'll love

 Interested Material world parties

"Personalization" Specials

US Region

Upcycling website

Second-hand Related Products

Special Targets Specials Products Personalized Fashion lovers Personalization product push

1. While it may not be possible to completely eliminate waste, meaningful ways are being created to fight back against the bad by doing good. Hopefully helping people minimize their impact on the Key Features planet at the same time, not to mention looking super chic when customers wear them.

2. Invest in quality. Quality products, experience and relationships. Choose to work only with people who share a common vision. And certify and educate to combat counterfeit products and all products from counterfeit industries.

**Identity Card Studio** 

## **MATERIAL WORLD**



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- -"Personalization" Service process
- 1. Receive personalized style alert.
- 2. Respond with BUY or PASS.
- 3. Receive item













Convenience

Sec-

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high qual-

ity

Sustain-

able

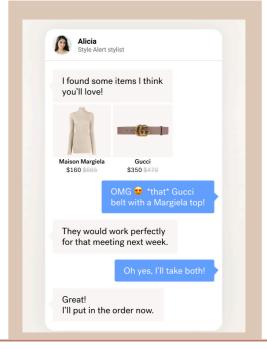






Sustainable





The special thing is to maintain denim clothing. Give fresh life to denim by recycling, reprocessing and refurbishing it. Research old-fashioned denim to the extreme and develop diverse types. From jackets to dresses, from jeans to skirts, from Levis to Carharts, from Dickies to Pepe, etc.

# Vino Kilo https://vinokilo.com/

#### Welcome to Vinokilo - your sustainable wardrobe

• Interested Vino Kilo parties

Handmade Specials

Germany Region

Upcycling website

Second-hand Related Products

**Targets** Specials

Special **Products** 

Handmade; old-fash-Vintage lovers ioned kilogram sales Tie-dye t-shirts

1. Using fashion as a medium to change the world. vinokilo offers the highest quality second hand clothes as an alternative to first hand fast fashion. Fashionable. Responsible. At the heart of the service is a presence for the people - the team and their families, communities and future generations, from the perspective of protecting the environment in the hope that everyone joins fashion sustainable.

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2. Vintage carries history. Each unique project tells a story. It is an endless, timeless story waiting for you to join. By owning them, people are encouraged to be creative with themselves.

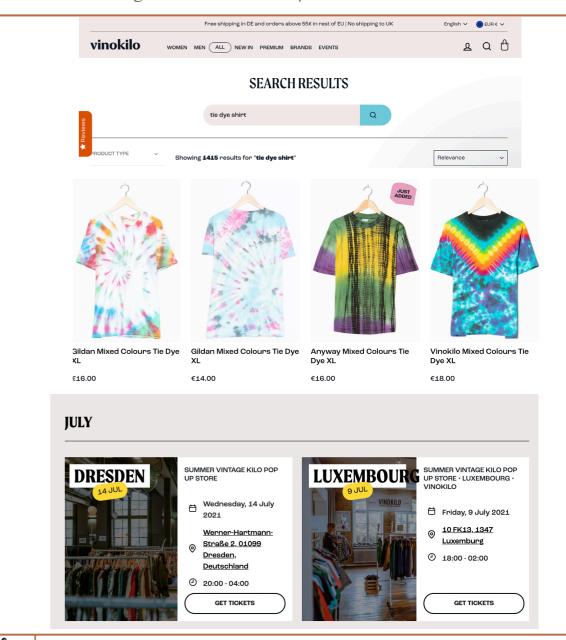
3. Priority is given to the safety of the team and their families. With the health and well-being of the team at the center, we believe in creating opportunities to provide safety for the team and their families. 4. Support employees and enhance their journey with us through internal workshops with guest speakers and external seminars and programs.

**Identity Card Studio** 

## Vino Kilo



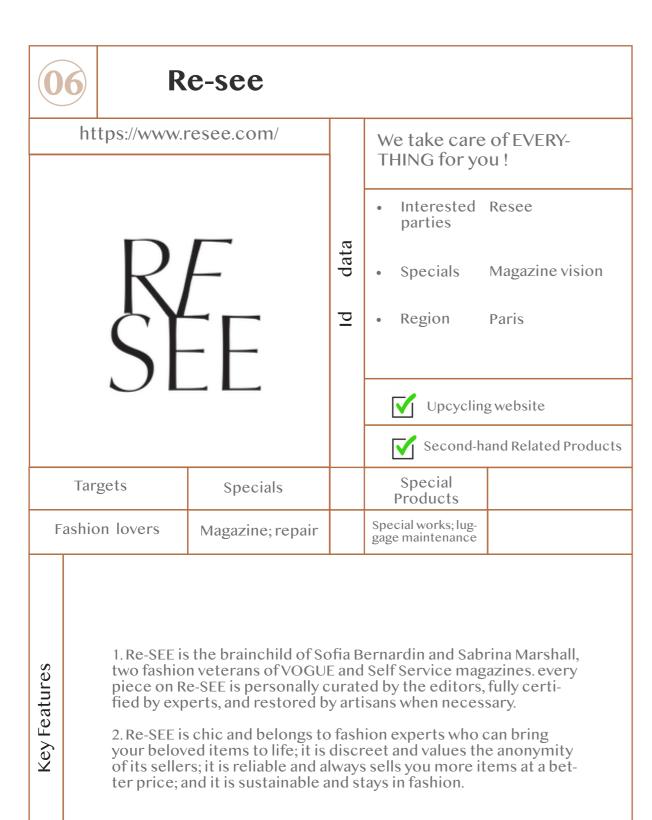
- -"Handmade" Service process
- 1 Unique tie-dye t-shirts.
- 2. VinoKilo offers a flash sale experience to discover unique and quality second-
- 3. The best vintage kilos for sale in Europe.

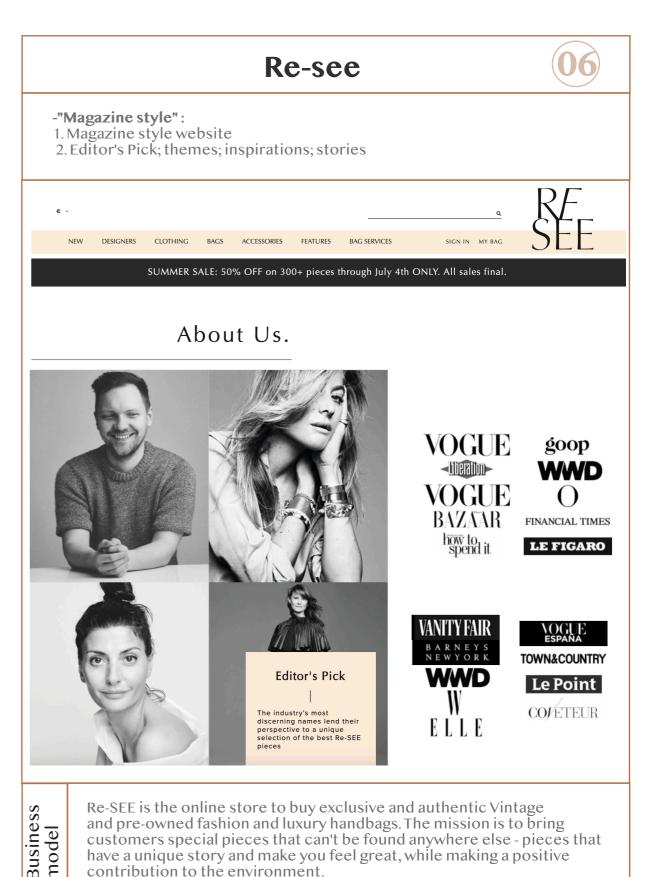


Business model

Everyone can be conscious of their fashion decisions, no matter the style. Inclusion of customers diverse, and unique. The company principle is that vintage carries history. Each unique project tells a story. It is an endless, timeless story.

Identity Card Studio





## Verasvintage

https://verasvintage.dk/om



Veras makes it easy to get better dressing habits

- Interested Resee parties
- Specials Handmade
- Region Denmark



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Upcycling website



Second-hand Related Products

Targets	Specials	Special Products	
Vintage lovers	Handmade	Vintage collection; v-cycle bags; v-acces- series; v-cycle totes	

Key Features

- 1. The website contains a lot of recycling guidelines and tips, as well as with styling, very practical tips.
- 2. Veras promotes recycling. By recycling bed sheets, masks, etc., to do a long-term struggle with clothing waste, and now also with textile waste.
- 3. Complete transparency and honesty are paramount when talking about sustainability in the website. It doesn't put any fingers in the middle. All information about production times, production locations and materials used can be found under each individual product.

Identity Card Studio

## Verasvintage



Søg efter varer, brands... Q

- -"Handmade":
- 1. Magazines
- 2. V-cycle products





#### Nej tak til plastik: Sådan laver vi poser af kasseret tøj Vi har haft vores tænker på og er nu klar til at lancere vores nye butiksposer. Og de er selvfølgelis





Det var for optur at se så mange lækr #verasdamer og mænd til loppefest søndag den 30. august! I så alle sammen alt for nic



About V-cycle Collection 2. "Used Dreams" is made from used bedding from their recycling community, sewn into romantic summer dresses, ruffled blouses and pants for local Danish women. Bespoke and unique.

## 3.2.2. Workshop experiences

#### a). What is experiential retail?



Modern technology has disrupted the old way of shopping. When consumers want to buy anything they want, no matter where they are, they are usually just a click away. The purpose of the retail store has also changed. While it once existed strictly as a place to deal with change, retail stores have begun to leverage the customer experience rather than the product.

As retail looks to reposition how physical stores fit into the customer journey, the experience has become a key marker. Stores want to offer customers something that can't be easily replicated online, and creating tactile, engaging experiences has become a priority.

#### b). How is experiential retail different from traditional retail?



- 1. Create immersive, shared experiences
- 2. Prioritize customer engagement over sales
- 3. Stimulates the customer's senses
- 4. Ignore customer expectations
- 5. Leveraging in-store activities and services
- 6. Store experience meets consumer needs

#### c). Features of customer immersion experience activities

#### 1.True Personalization

Consumers increasingly need personalized products and experiences, and face-to-face interaction to provide personalized and customized attention is particularly important. Compared with online stores, the immersive experience can provide consumers with a deeper level of personalization, thereby providing a truly unique and unique product experience.

Example: New Levi's Tailor Shop offers repair, customize

or make it.



#### 2.Trial product experience

Consumers need a compelling reason to shop in physical stores. An immersive experience can establish a connection with the product on a personal and emotional level, thereby increasing the influence of the brand and influencing purchases. Whether it's the actual touch, physical try-on, smell or taste... there is no feeling like directly experiencing the product.





#### Example: Nike SoHo Store in New York

Nike's store in Soho, New York, integrates various spaces and equipment so that consumers can try sports shoes under actual conditions to determine whether they meet consumer needs.

# 3.Provide opportunities for gathering, socializing and getting along with others.

In contrast to the general individual and passive online shopping experience, physical retail creates a space where people can interact and spend time together in a casual and immersive environment.

#### Example: Disney Vans at Fansi House in London

Vans House is a well-designed environment for people to wander around at will. It has multiple locations around the world, integrating art, music, street culture and fashion.



VANS

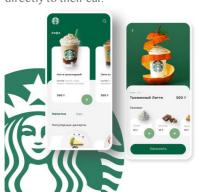


#### 4. More convenient

Some products have cumbersome installation procedures or require additional offline services to provide them with convenience. For example: online purchases, in-store pickup, installation and other formats, physical stores can also serve as fulfillment channels.

## Example 1 : Walmart roadside pickups

Wal-Mart has always been at the forefront of click-and-collect services. Consumers can place an order online and then drive to a nearby location to take the order directly to their car.



## Example2: Starbucks application driver

Convenience-led pickup format, especially in densely populated areas and cities.

#### d). The role of experiential selling

- 1. Experiential retailing is a great way to engage with your customers, it goes beyond simply selling them a product. It also provides an opportunity for brands to find complementary ways to support their customer community and make themselves more than just a product.
- 2. If the in-store experience resonates with and meets the needs of your customers, not only is it a unique selling proposition for your product, it's a powerful relationship builder. Customers will want to spend more money on a successful brand.
- 3. A good experience retains customers better. If customers can't enjoy a better shopping experience, then when they prefer to complete the shopping experience at home.
- 4. By using entertainment, social interaction, discovery, and convenience to clearly define the brand's positioning and consumer base. Build the experience by providing customers with something they can't get anywhere else.

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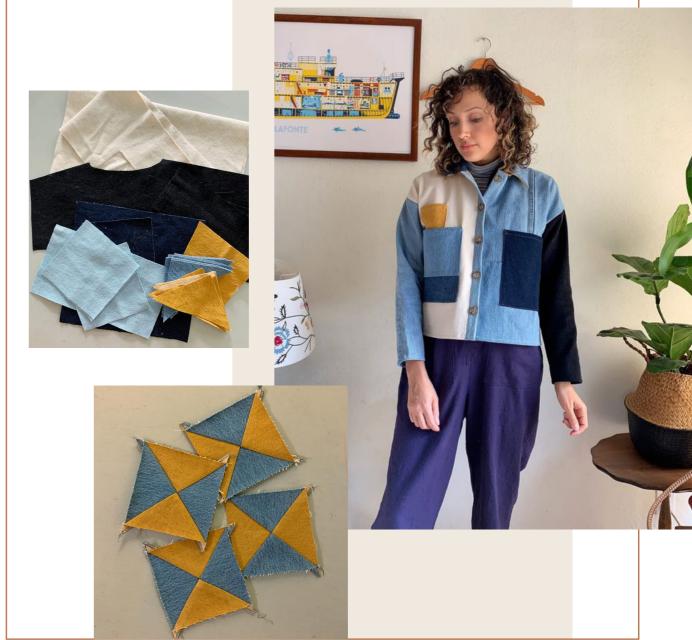
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#### e). Technical study of upcycling design methods

#### 1. Piecing

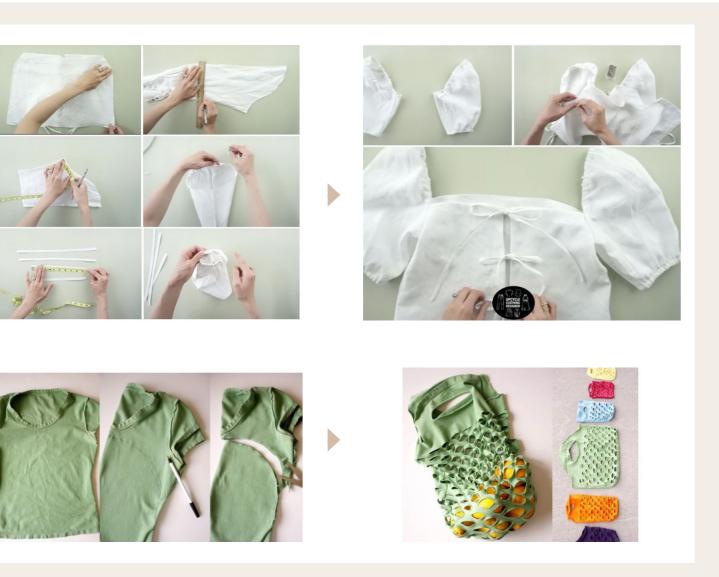
Piecing is a method of designing small pieces of fabric; these small pieces of fabric mainly come from textile swatches, trimmings and other small pieces of textile waste. Piecing is a technical method most used by designers. Processing methods:

(1) regular piecing; (2) irregular piecing; (3) pattern piecing; (4) color block piecing; (5) embedded puzzle to achieve upcycled designs for these materials.



#### 2. Deconstruction

The key to deconstruction in upcycling sustainable fashion design is the "destruction" and "reorganization" of structures. The cutting and crafting requirements are relatively low, and sometimes even simple breaking up, reorganization and simple sewing are all that is required to design a new fashion. Therefore, deconstruction is one of the most u.



#### 3.Embellishment

**Embellishment** is a method of redesigning small pieces of fabric that are discarded, such as reel tails, textile swatches, trimmings, etc. In embellishment design designers can upcycle textile scraps to become a decorative part of garments for important occasions such as high class ready-to-wear, custom-made garments, wedding dresses, etc. through: three-dimensional embroidery, printing, flocking, handpainting, hemming, and other design means.

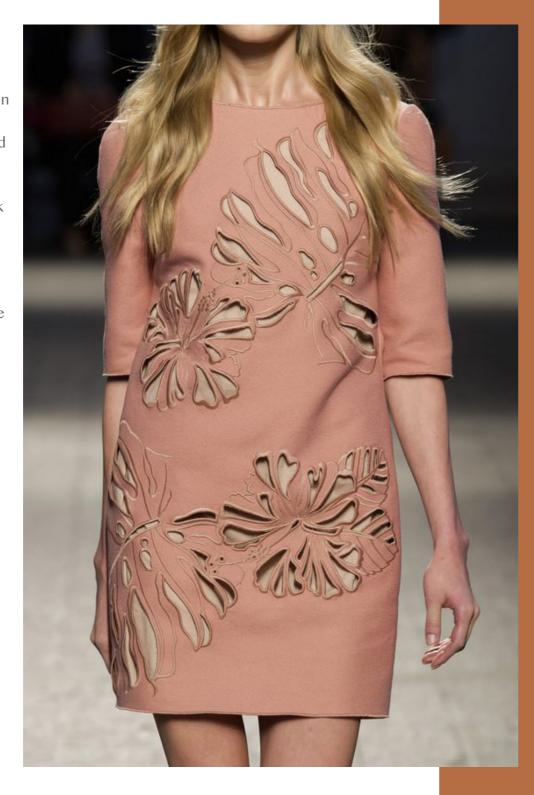


Applications of decoration in upcycling design include: partial damage location decoration; structural decoration (hemming, etc.); functional decoration (paneling, etc.); surface decoration of intact but defective fabrics (like handpainting, digital printing, etc.).

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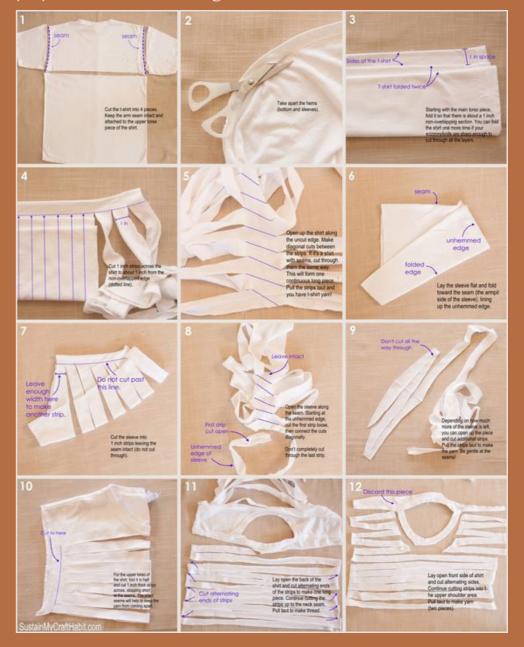
#### 4.Skeleton

The application of openwork in sustainable fashion design upcycling is mainly a method for defective and partially damaged fabrics. Openwork is a process of cutting, tearing, carving, burning, braiding, and drawing where the fabric defects are located. This is a kind of concave treatment design method. The techniques that can be operated are burnishing, hemming, hemming.



#### 5. Weaving

Weaving is a design technique to upgrade the use of knotting, twisting, interweaving, and so on, according to the characteristics of the material and the combination of fabric or fabric into strips according to certain weaving techniques. The weaving process is more complex and limited compared to splicing. When weaving with interlacing, there is a part of overlapping area, which wastes 0%-50% more fabric compared to piecing, which is not in line with the purpose of sustainable design.



#### f). Basic tools

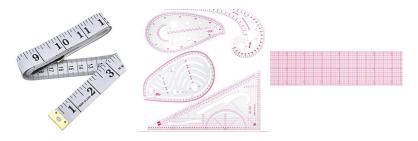
The workshop will also include basic tools. This workshop provides an introduction to basic sewing tools and how to use them for beginners.



#### **Sewing Ruler:**

When drawing sewing patterns, marking and cutting on fabrics, the right tools can be used to complete the work easily and quickly. In order to find the best sewing ruler, there are many types of sewing rulers that provide different characteristics.

Tape measure/transparent ruler/yard ruler/curved ruler/circle ruler/L ruler/french curve ruler set.





#### **Sewing Pins:**

The main job is to press down the fabric before or during sewing. The main feature of using sewing needles is to temporarily maintain the seams before sewing the layers together or braiding them together.

Straight needle/sewing needle/curved sewing safety pin/glass head needle/Ballpoint pins/Silk pins/Plastic headpins/Steel T-pins/





#### **Sewing Machine:**

Any beginner sewing machine is a practical everyday sewing tool that is easy to repair, alter and make clothes from scratch. It is a basic tool that you need to finish the raw edges individually and then sew the fabric together. serger or overlock machines are available with a range of stitches from rolled hems to blind hems. For example, you can use a standard sewing machine to create zippers, buttonholes, bind-offs, finishes, etc. It is not possible to perform these stitches using Serger alone.





#### **Thread For Sewing Machine:**

Ordinary threads are usually made of cotton, although some threads may also come from polyester fibers. A commonly used thread is a thread wrapped in polyester coating with cotton. The rule of thumb when sewing is that the best thread type for sewing is to match the type of fabric to be sewn. For example, if you want to sew polyester, consider using polyester thread.

Silk thread/Cotton thread/Polyester thread/Rayon thread/Nylon thread/All-purpose thread.



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**Brand's** value

Concept

Customer

Customer journey

Service design

Moodboard+ key words

Logo design

Project design

Offine experience design

## **4.1.1. Concept**

# The source of inspiration for the project comes from the pollution Value

problem in the fashion industry and the new dynamism of the second-hand clothing market. China has a scarcity of used clothing upcycling markets and relatively few services that can be utilized. The main focus is on secondhand recycling by the government. Designing effective used clothing upcycling services, and exploring designs and ways to give clothing a second life, is essential in China.

#### The project is divided into two main parts.

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One part is the online service. Through the vip customization service, customers are provided with the used products they want. Through online instructional videos, customers can experience upgrading their designs and repairing their clothing at home. The goal is to transform the "useless" clothes in their hands into a more suitable design for the present. Thus breaking the traditional way of buying. Reduce clothing waste and promote the emergence of a new virtuous cycle of fashion.

One part is to create an offline immersive experience place. Allowing customers to experience more of what is on offer while also forming a community of like-minded sustainable fashion enthusiasts.

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### 4.1.2. Customer

## **SARA**

Fashion Magazine Designer

#### About

32 years old

Milan

Married with 2 kids

#### Hobby

- -Obsessed with vintage
- -Buys most of her clothes online
- -Excellent hands-on skills

#### Beauty and health

- -Purchases bio-food for her family
- -Prefers sustainable fashion
- -Has a daily anti-aging skin routine

#### Her influences

Families

Friends Colleagues

Interests

**Style** Style





Workout

#### Worries about

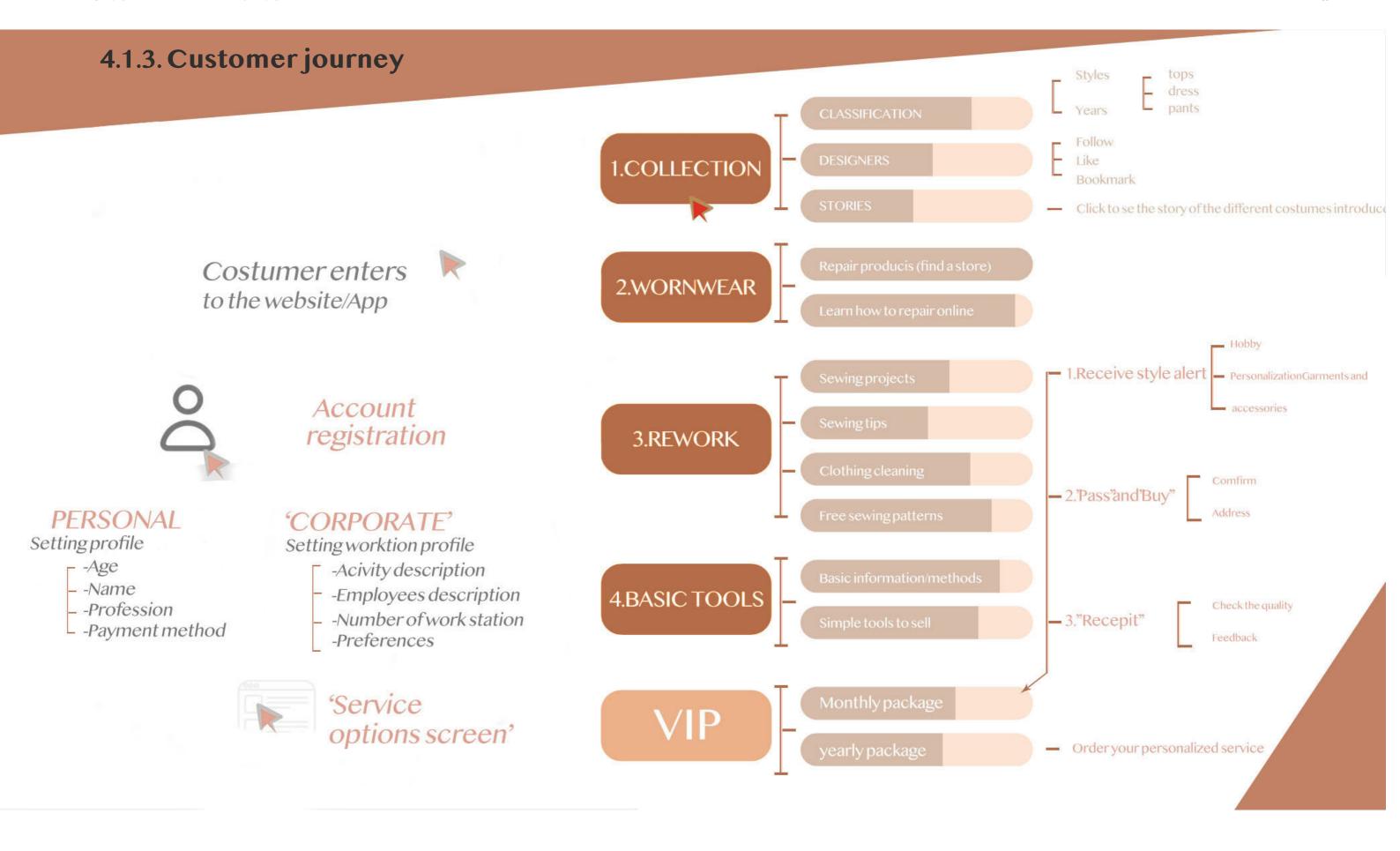
- -Concerned about the quality
- -Concerned about the hygiene
- -After-sales service
- -The future of our planet

Fashion

Lifestyle trends

## Daily routine





THONG JING

ZHONG

111

## WHAT WE DO?



Design garment



Offline experience space



Online webisite

4.2. Service design

JING

JING











## 4.2.1. Moodboard+ key words



## 4.2.2. Logo design



# 

## 重塑时尚 REWORKED FASHION

(备注:为设计需要 logo字体在原字体上略有改动)



## #AE8D3C

C: 40.18% R: 174

M: 46.91% G: 141

Y: 86.4% B: 60

**K**: 0%







THONG JING

JING

## 4.2.3. Project design

This project is designed to serve as an effective platform for second-hand clothing. On the one hand, the online service provides customers with second-hand products that they want to achieve their goals. Old clothes find new owners and avoid the fate of landfills, thus reducing the environmental impact. On the other hand, the platform teaches some simple and innovative ways for customers to repair and redesign their old clothes at home. Consumers can turn their "unwanted" clothes into something more appropriate and on-trend. Design. Thus breaking the traditional way of buying. Reduce clothing waste and promote the emergence of a new virtuous cycle of fashion. You can find the services below on our project.

- Home page
- Shop page
- Wornwear page
- Upcycling design page
- Basic tools page
- Designers page
- VIP page

## Home page

Home page: It contains the framework of the entire project.

Rotating images: Show the latest designs and events of the moment.

Product categories: You can find the most basic categories, such as: men's, women's, bags, shoes, etc.

Upcycling design: Here you can see our recommended reworked products.

Boutique series: Here you can see the latest products. We have gathered new collections from different designers to provide you with more style products.

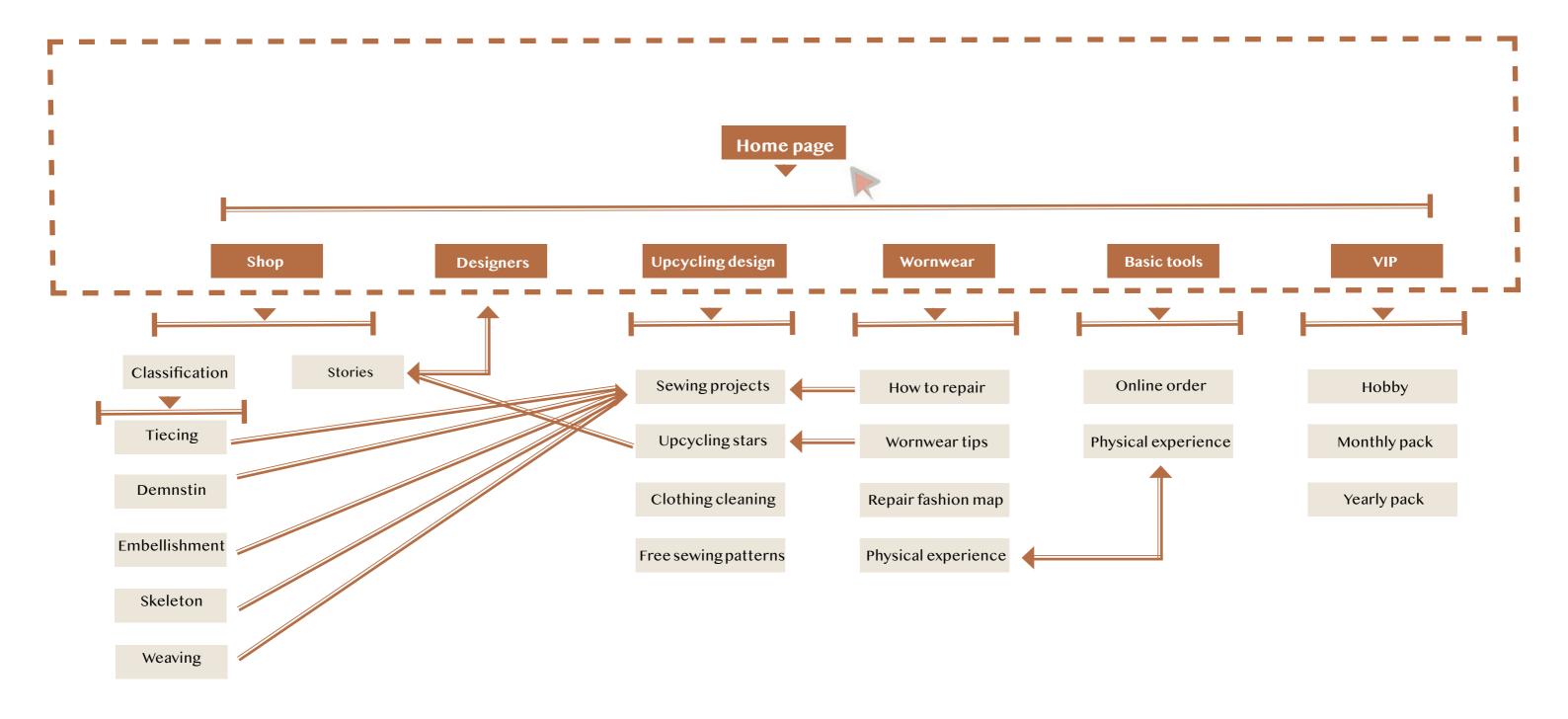
The latest story: Here you can find the latest information about clothing or sustainable design.

Wornwear: Serving a variety of people, we offer online learning on how to fix your own garment, and on the other hand, we offer a physical

**VIP:** Personalization service process. For a small monthly or yearly fee, you will have a professional stylist to help you with your outfit.

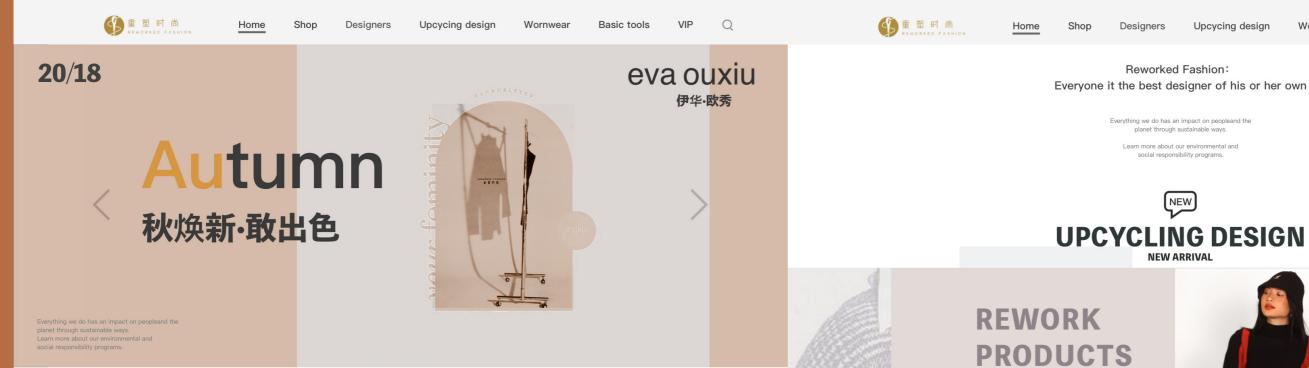
restoration site to help you with your fixing work.

THONG JING

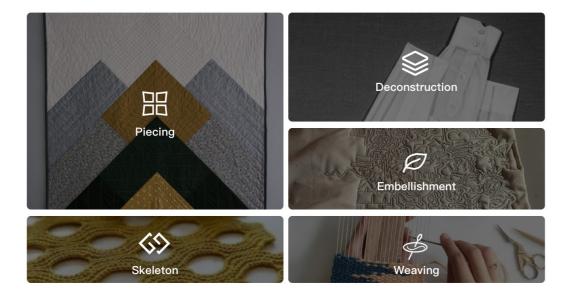


123

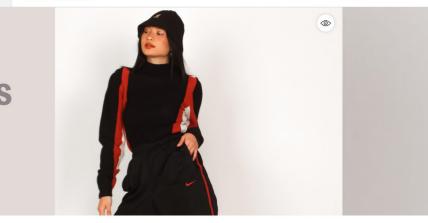
Basic tools VIP











Designers Upcycing design Wornwear

Reworked Fashion:

Everything we do has an impact on peopleand the planet through sustainable ways.



Upcycling



122











# NEW PRODUCTS

Collection



Ilana Kohn is a line of clothing and textiles designed and produced in New York City.

Established in 2012 after a successful career as an illustrgor, lana Kohn developed a brand that creates comfortable and easy to wear pieces with unique yet simple silhouettes.







Liana Kohn Mapes Jumpsuit



S297.00

127



Home

Shop

Designers Upcycing design Wornwear

Basic tools

重塑时尚

Home

Shop

Designers

Upcycing design Wornwear

Basic tools

VIP



## THE LATEST STORY





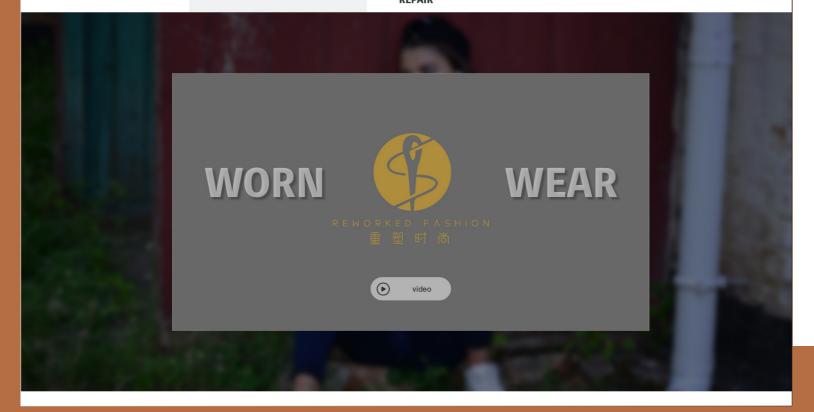


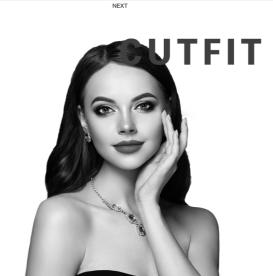
Shopper finds' cry fir help' label ...

Naoko YOSHIMOTO

Collage:Browyn Seier for Fashion...

**WORNWEAR** 





#### "Personalization" Service process

Receive personalized style alert
 The "Style alert" includes unlimited personalized styles of pre-owned designer items, including clothing, shoes, handbags and accessories.
 Respond with BUY or PASS

Stylists will be open Monday through Friday and will actively recommend products. Individual stylists will be notified via text message when they find a piece you like.
 3. Receive item

Order your VIP service

¥

We guarantee everything we make.

Because we know prioritizing durability results in consuming less energy, wasting less water and creating less trash.

Everything we make has an impact on people and the planet. Learn more about our environmental and social responsibility program.

Ø

Know how your clothes are made.

We give back for every sale.

售

We've pledged 1% of sales to the Order your personalized services preservation and restoration of the natural environment.

? Help

Shpping guidance

Membership level Frequently asked question

Brands list

Alipay Wechat pay PayPal

Pay

Shipping Free shipping policy Delivery time quarantee Signing and check goods After sales service

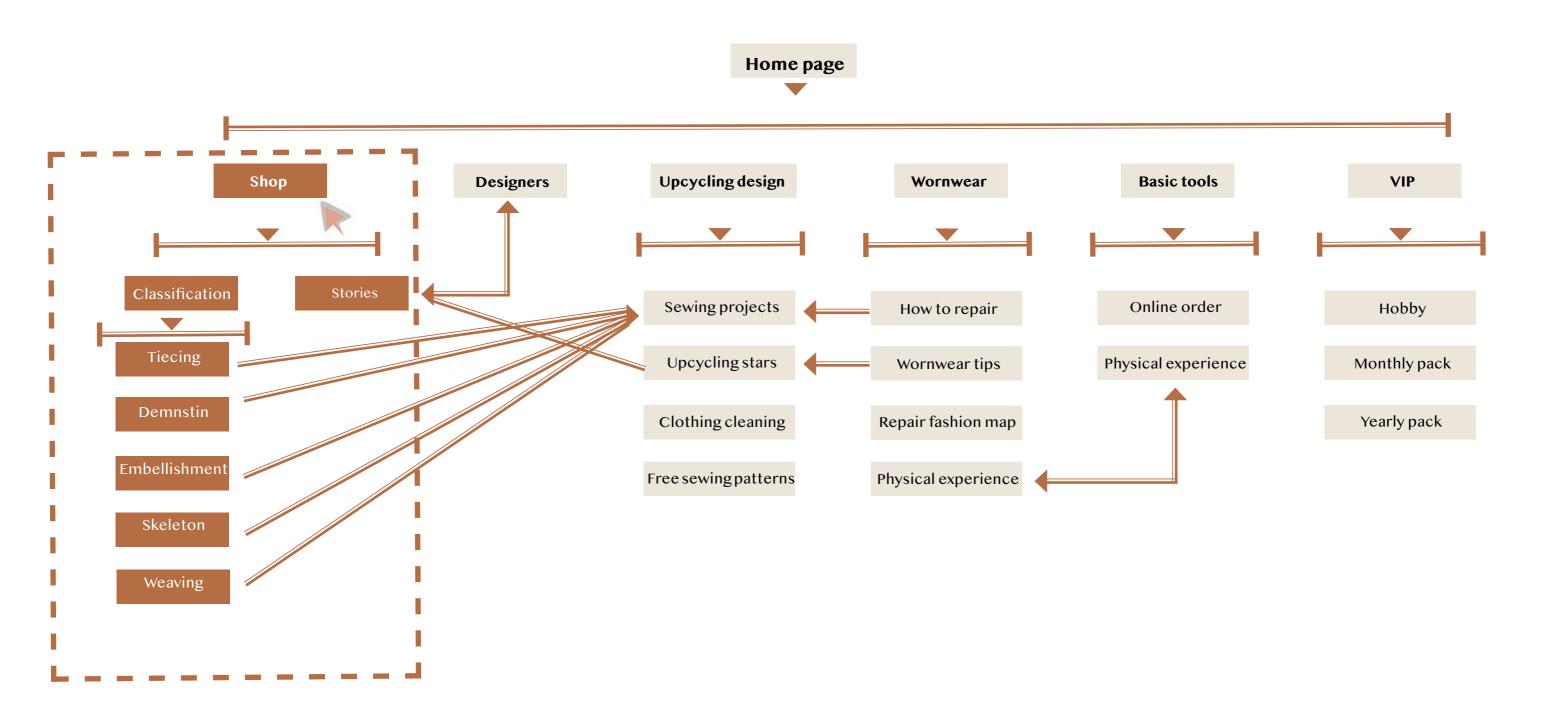
Return and exchange policy Return and exchange process Purchase Extended Warranty Service Refund instructions

Business services

100%bubtainably aourced Grade avintage clothing Handmade in house China and worldwide shipping

About us | Contact us | Contact customer service | Quality assurance | Risk monitoring | After-sales service | Logistics inquiries

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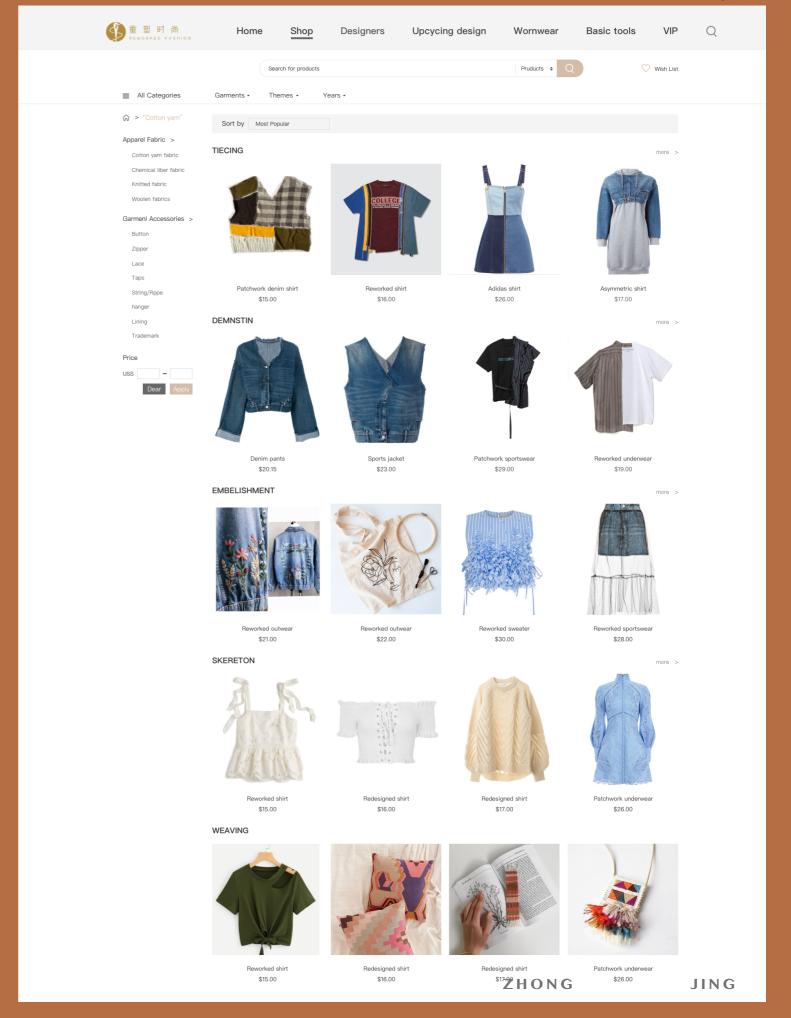


## Shop page



## The shop contains garments, themes, years and stories

Here you can find outfit categories, different themes, chronological divisions, and outfit stories. In the clothing story area, each piece of clothing has its own story and introduction. It helps you to understand our products better.



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Shop

Designers Upcycing design Wornwear

Basic tools VIP Q



Shop

Designers

Upcycing design

Wornwear

Basic tools

VIP



#### Alexandra Armata

36FR

#### ADD TO BAG

At this point in the project I wanted to experiment with shape and I arger volumes more. Unfrotunately when working with upcycled denim, you're limited to what is available, especially the widths of the used jeans.I thought a perfect circle would be a nice shape to wear and sew, and by cropping it I could ensure it would maintain the same diameter all the way around, including the opening for the waist.





#### Alexandra Armata

WAISTBANDS

36FR or 3 interest-free payment of \$298.00 with list

ADD TO BAG

♠ Looking for something specific?

For this pair, I hand stitched the leftover waistbands and created a pair of only waistband jeans. I left the original labels on the back as a recognition of the upcycling process and the capacity of second-hand jeans to create

#### RUA CARLOTA

#### PATCHWORK TANK Iconic 1949 Little Black Dress

\$185.00

Tax included. Shipping calculated at checkout

#### ADD TO BAG

C Add to wish list

♠ Looking for something specific?

#### CROPPED PATCHWORK TOP

Wool/Acrylic/Cotton/Polyester/Elastane

Size - XS / (UK 6-8) / (US 2-4)

Handmade by Charlotte, in her flat in London. 1of1. This will not be reproduced and is 100% unique – just like you. It's made entirely from pre-loved / Deadstock materials – let's celebrate them! Thank you for appreciating them in their new form, while saving them from landfill.



¥

We guarantee everything we make.

Because we know prioritizing durability results in consuming less energy, wasting less water and creating less trash.

Ø Know how your clothes are made.

Everything we make has an impact on people and the planet. Learn more about our environmental and social responsibility program.

We give back for every sale.

售

We've pledged 1% of sales to the Order your personalized services preservation and restoration of the natural environment.

? Help

Shpping guidance

Shopping demo Free registration Membership level Brands list

Pay Alipay Mastercard PayPal Shipping Free shipping policy Delivery time guarantee Signing and check goods goods Tracking

After sales service Return and exchange policy

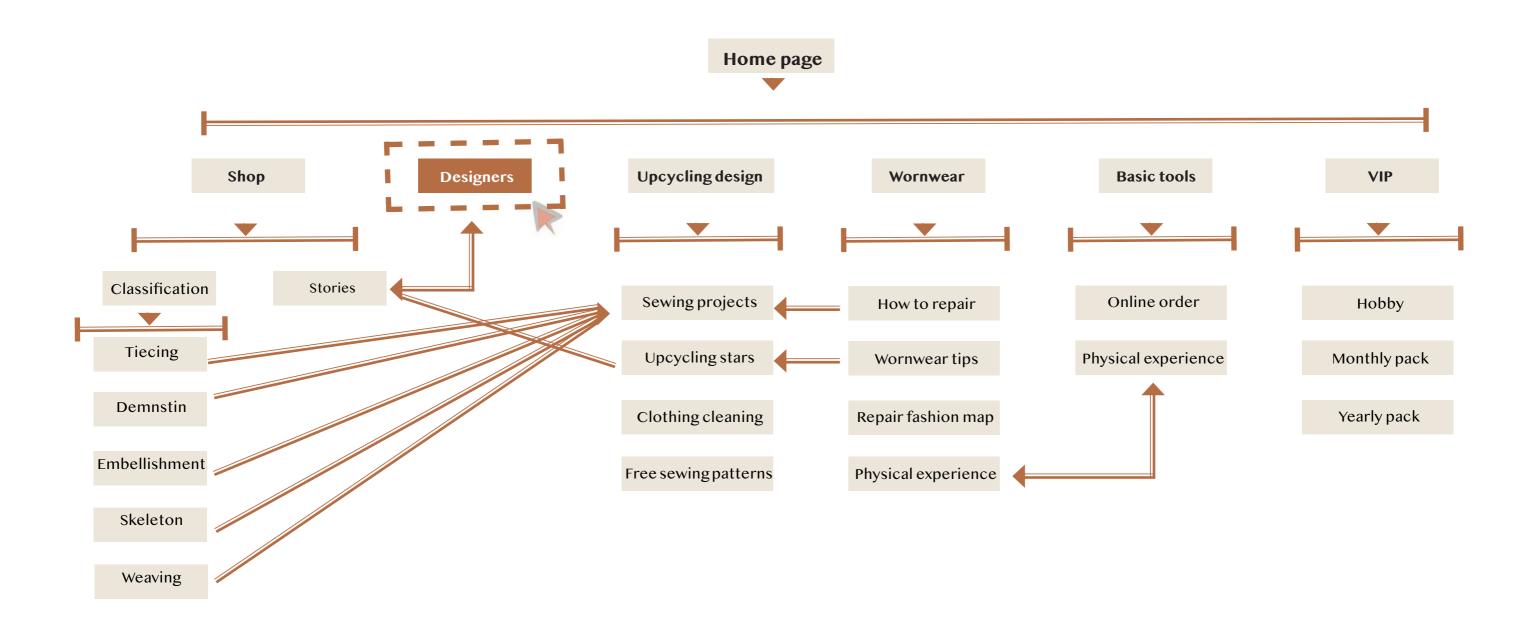
Business services

100%bubtainably aourced Handmade in house China and worldwide shipping

#### About us | Contact us | Contact customer service | Quality assurance | Risk monitoring | After-sales service | Logistics inquiries

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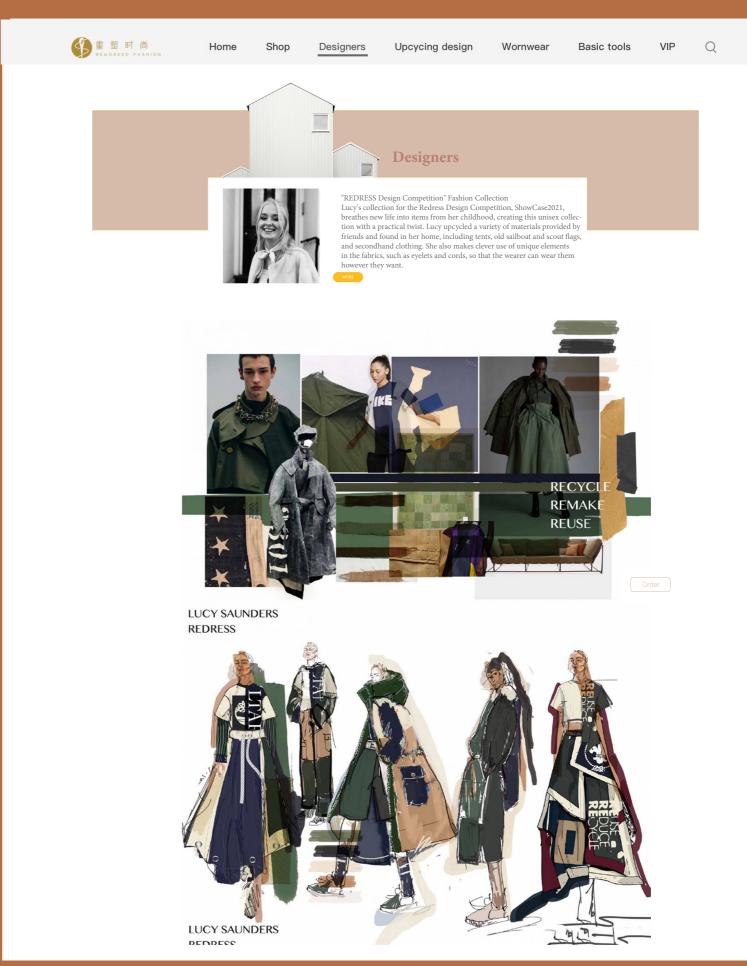
THONG JING

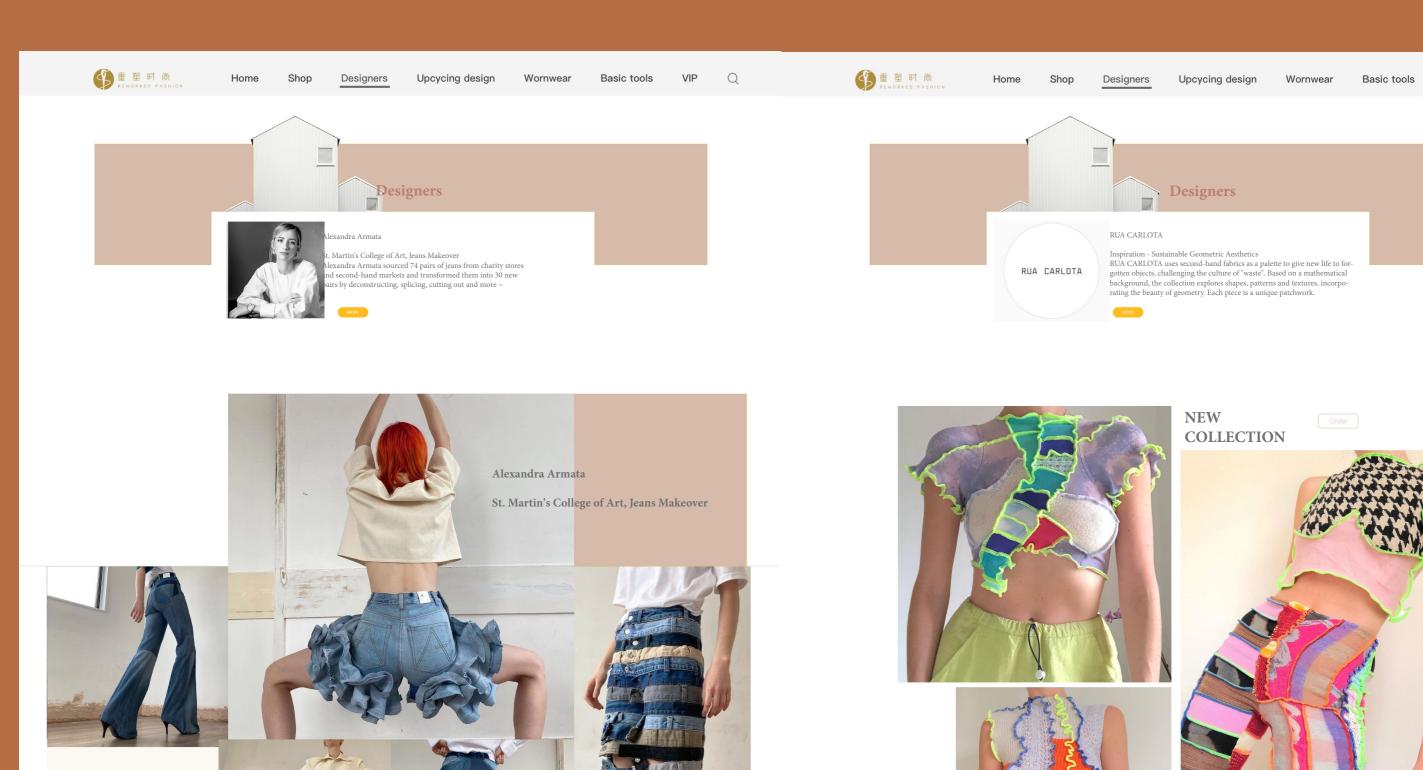
## Designers page



#### One of the featured services

Our website has selected the most representative designers. What they have in common is that they all use used or unused household products and transform them into fashionable designs for the moment. Bringing these products back to life with new vigor.





**NEW** 

138

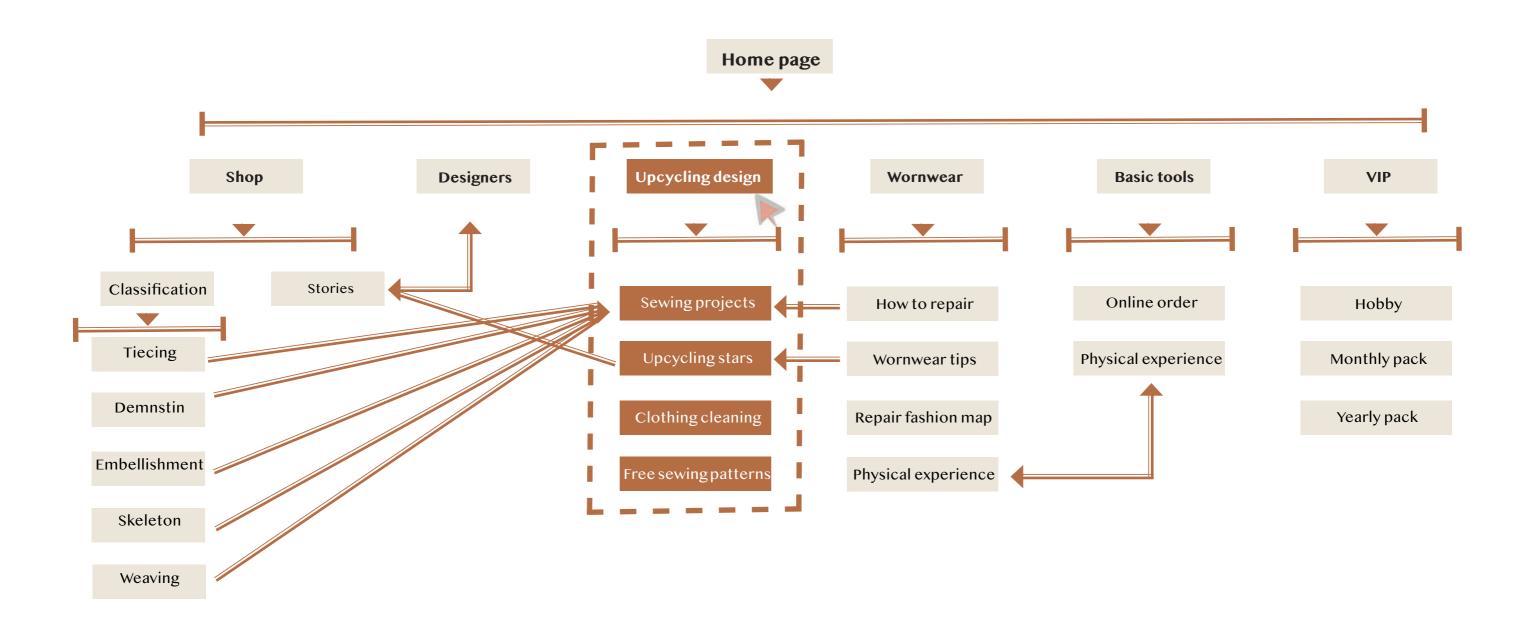
COLLECTION



ZHONG JING

VIP

Q



Designers

Upcycing design

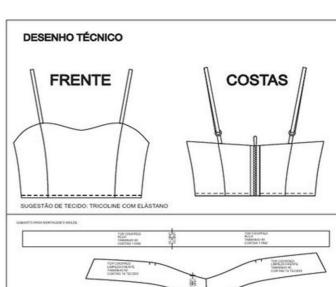
Wornwear

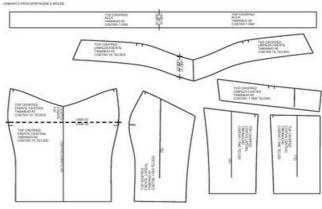
Basic tools





Sewing prijects





PREPARAÇÃO	MONTAGEM
REPARAR A COSTURA DAS ALÇAS VINCANDO S BORDAS (MAQUINA RETA)	
	FECHAR AS PEÇAS DA FRENTE (MÁQUINA RETA)
	FECHAR AS PEÇAS DA COSTAS (MÁQUINA RETA)
	UNIR AS LATERAIS FRENTE E COSTAS (MAQ.RETA)
	UNIR AS LATERAIS DA LIMPEZA FRENTE E COSTAS (MÁQ.RETA)
	ARREMATAR A UNIÃO DAS COSTURAS DA FRENTE , COSTAS .LATERAIS E DAS LIMPEZAS(MÁQ.OVERLOQUE)
	APLIACAR AS ALÇAS E MONTAR AS FIVELAS E ARGOLAS(MÁQ.RETA)
	UNIR A LIMPEZA NA BORDA DO DECOTE DAS PEÇAS COM UMA COSTURA (MAQ.RETA)
	MONTAR O ZÍPER DESTACÁVEL É FAZER A BAINHA DA BORDA INFERIOR (MÁQ.RETA)

## Upcycling design page



**Upcycling stars:** Every blogger has free teaching videos, photos, and evern pattern. Come and find your favorite reworked garments in here.

Clothing Cleaning: Clean Sneakers/Clean Smelly Shoes/Wash Acrylic Clothes/Wash Shoes By Hand/Wash Leggings/Wash A Velvet Dress/Clean Duck Boots/Wash Sequin Dress/Clean Leather Bag

Free sewing patterns: Basic Clothing Patterns





3



4 Cut out design and wear.



Home Shop Designers

Upcycing design

Wornwear

Basic tools VIP Q



Home Shop

Basic tools

VIP

Q



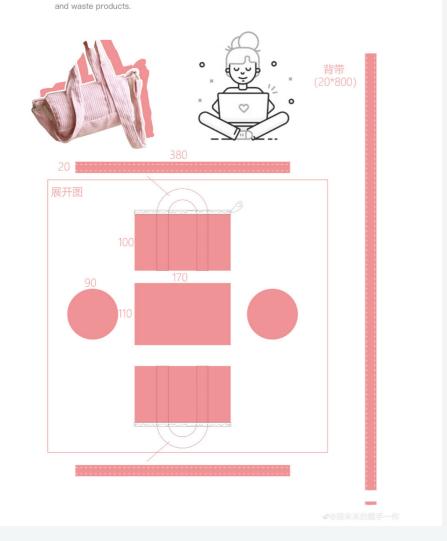
#### Upcycling stars

Every blogger has free teaching videos, photos, and even pattern. Come and find your favorite reworked



#### Upcycling stars

Humimi from China. She is an emerging Internet celebrity who is very active on Chinese social software. Have a lot of followers on a big platform. , Good at drawing, plate making, and design work. She transformed into very fashionable clothes, bags, rings, etc. by using some second-hand





Other works

Designers

Upcycing design

Wornwear



#### Internet celebrity in China

Humimi is an emerging Internet celebrity. She has a lot of followers on Weibo and Tiktok.

#### Strongest advantage

The advantage of Humimi is to use the combination of design drawings, videos and cardboard to allow learners to ...

#### High fashion taste

Humimi has fashion acumen. By using some second-hand clothing, she transformed into a very fashionable ...



#### Clothing Cleaning



# Free sewing patterns



Know how your

D

clothes are made.

We give back for

?

# Shpping guidance

We guarantee

everything we

¥

make.

Shopping demo Membership level Pay Alipay

Shipping

Free shipping policy Delivery time guarantee Signing and check goods goods Tracking

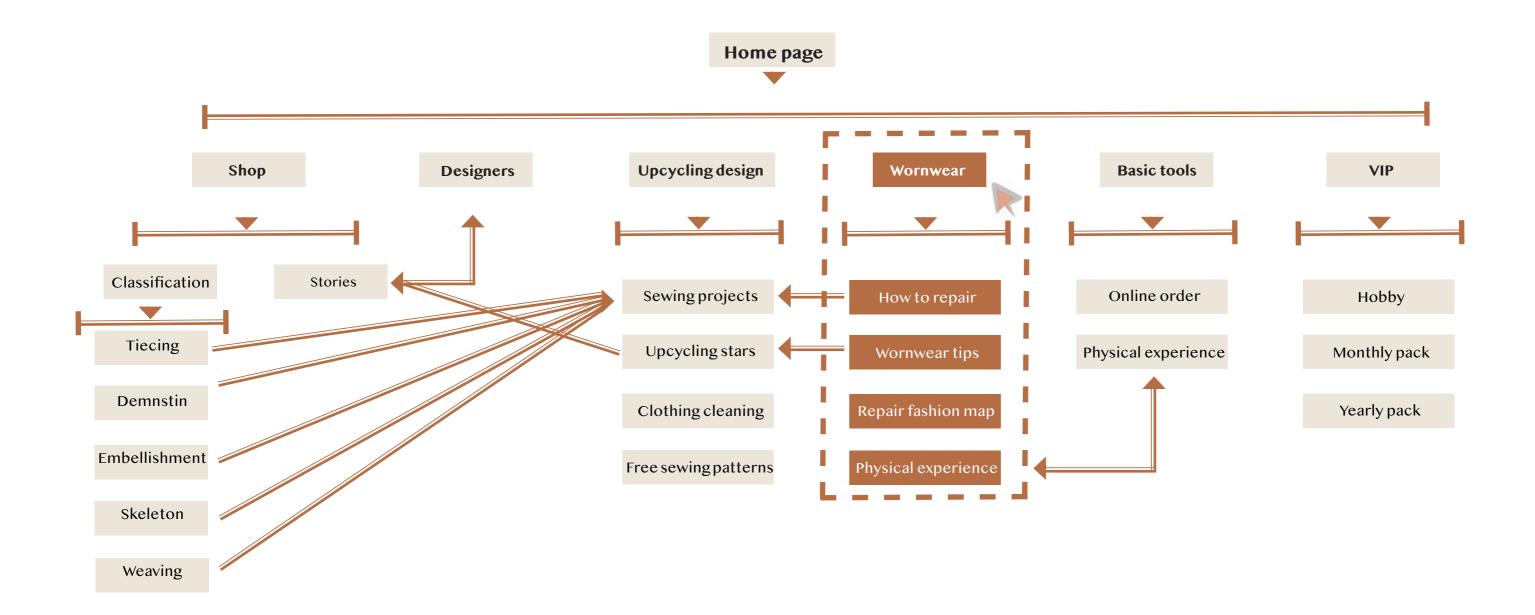
After sales service Return and exchange policy Return and exchange process Refund instructions

Business services

100%bubtainably aourced Handmade in house China and worldwide shipping

About us | Contact us | Contact customer service | Quality assurance | Risk monitoring | After-sales service | Logistics inquiries

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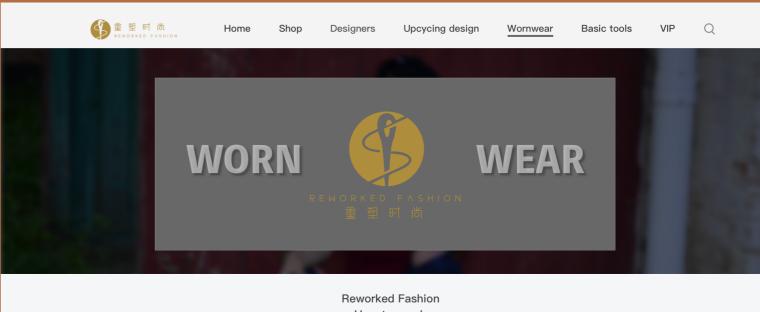


# Wornwear page



Wornwear is at the center of Reworked fashion's development of sustainable clothing.

The aim is that the best thing we can do for the planet is to consume less and take more from what we already have. Join us in restoring, sharing and recycling your gear.



# How to repair

Their repair difficulties,thus increasing the life of the product Learn about the "Wornwear" service process here





# **WORNWEAR TIPS**

REPAIR THE CLOTHES







width of clothes











Home Shop Designers Upcycing design

Wornwear

Basic tools VIP

Q



# Reworked Fashion Map

you can find in many corners of China. E.g. Beijing, Henan, Shenzhen...













We guarantee everything we make.

D

Pay

Alipay Wechat pay

PayPal Visa

Know how your clothes are made.

**(B)** 

We give back for every sale.

? Help

Shpping guidance

Shopping demo Free registration

Brands list

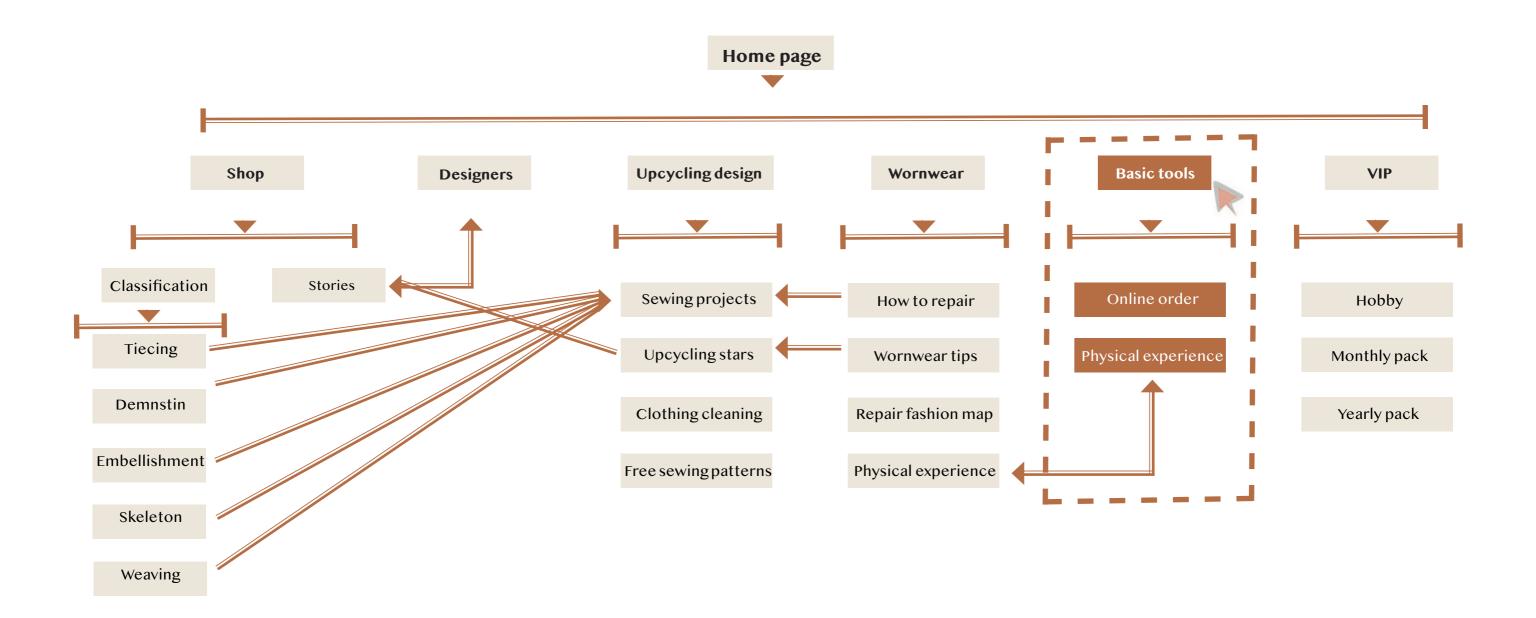
Shipping

Free shipping policy Delivery time guarantee goods Tracking

After sales service

Return and exchange policy Return and exchange process Purchase Extended Warranty Service Refund instructions ZHONG Business services

100%bubtainably aourced Grade avintage clothing Handmade in house
China and worldwide shipping JING

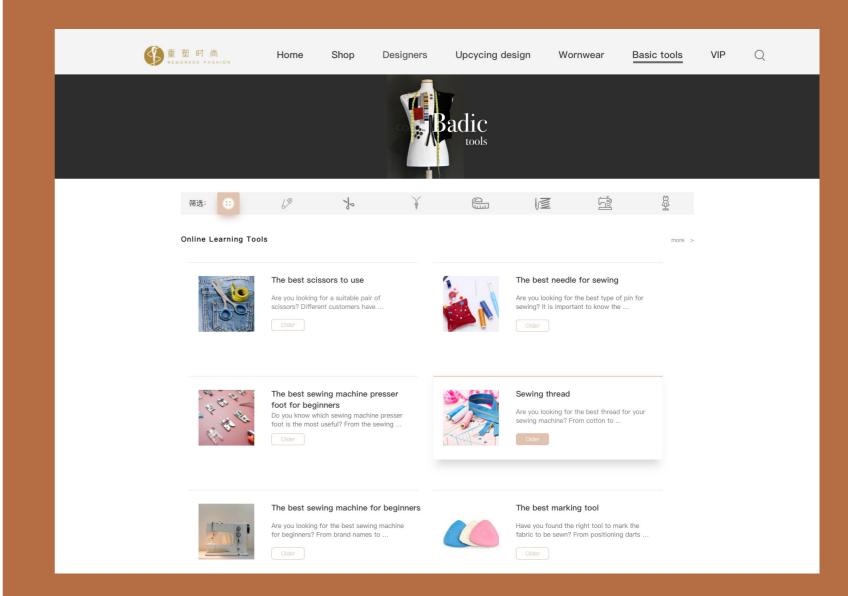


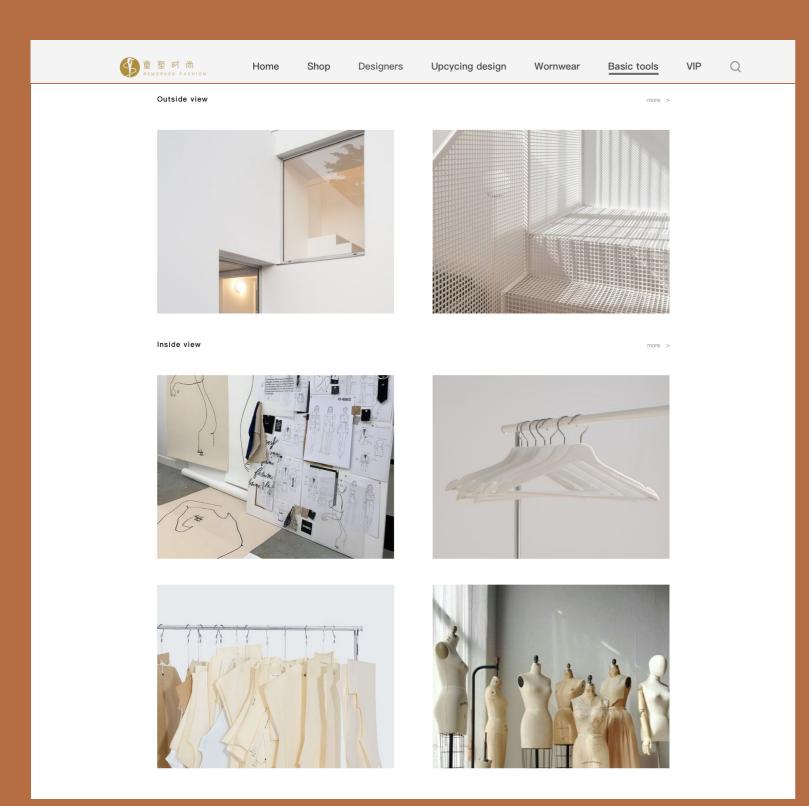
# Basic tools page



# Tools ordering service:

You can find all the basic tools for making garments to assist you in your home restoration and reworked design.





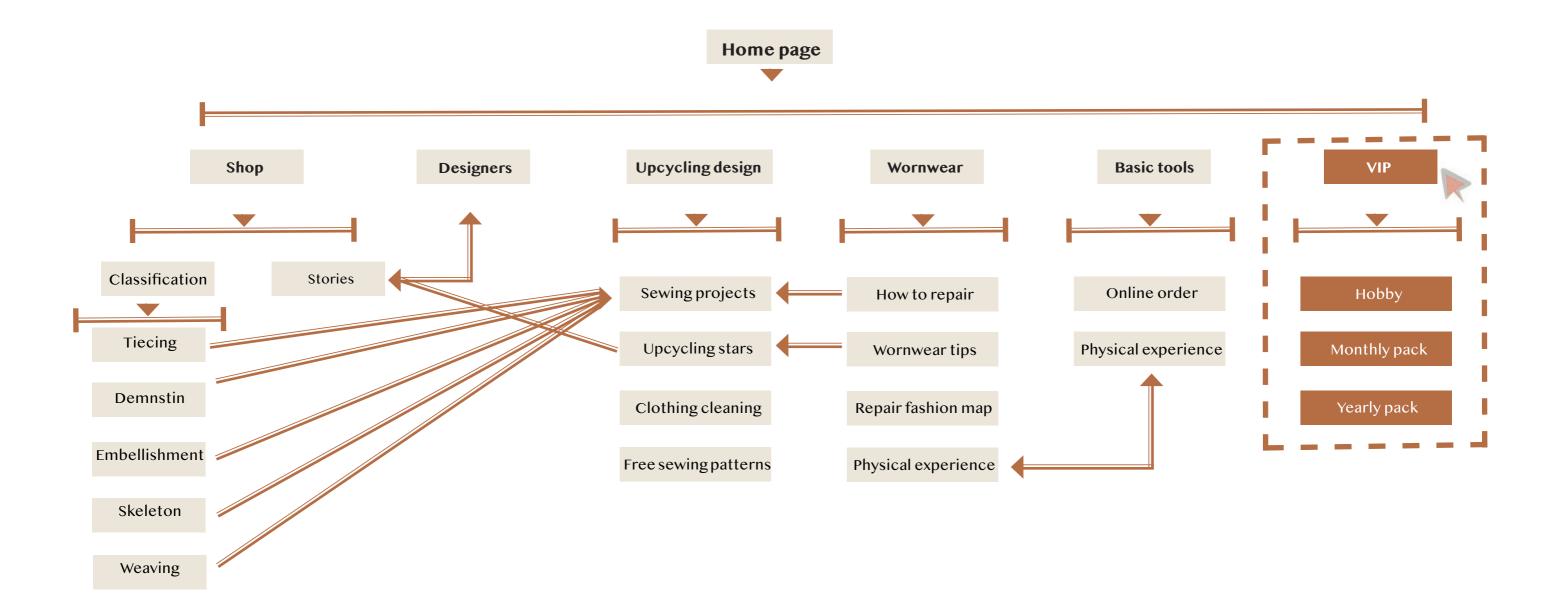
# VIP page



# - "Personalization" service process:

By professional stylists, we provide you with personalized matching services. The goal is to provide you with convenient, high-quality, sustainable pre-owned clothing to suit your preferences.

JING



eva ouxiu

伊华·欧秀





**Arrival** 

新品·上市

# "PERSONALIZATION" SERVICE PROCESS



Receive personalized

Style Alert" includes unlimited personalized styles of pre-owned designer goods including clothing, shoes, handbags and accessories. In addition, personalization can be done at any time based on your specific requirements. Our goal is to provide you with convenient, pre-owned high-quality, sustainable clothing that meets your preferences.



Respond with

Stylists will be open Monday through Friday and will actively recommend products. When a personal stylist finds a piece you like, you will be notified via text message.



Receive items

The clothes you have selected will fly to



After-sales service

If there is any quality problem or you change your mind, please feel free to contact us.



Feedback

Your opinion is vital to us, please leave your thoughts online.

# UNLOCK YOUR 7-DAY TRIAL

Afterwards,\$49.00/Canael anytime

# HERE'S A TASTE OF **OUR STYLISTS**



Huohuo Han



Kakakaoo



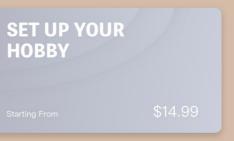
Liz



Home Shop Designers Upcycing design

Wornwear

Basic tools



# Set up your hobby

your personal style and preferences. If you are not satisfied with your current look, please contact one of our online technicians.

# Monthly pack

With our monthly pack, you can choose new clothing and accessories

At the end of the month, you'll decide if you want to continue to renew and receive a new round of my product push.





# **Yearly pack**

For customers who want to continue subscribing to our products, the yearly pack offers the same as the monthly pack, but with the option to choose which current items you want to keep. Receive a new pairing every month automatically at a much better price.

# "Personalization" service process

Receive personalized style alerts
 Style Alert" includes unlimited personalized styles of pre-owned designer goods including clothing, shoes, handbags and accessories. In addition, personalization can be done at any time based on your specific requirements. Our goal is to provide you with convenient, pre-owned, high-quality, sustainable clothing that meets your preferences.

Respond with "buy" or "pass"

Stylists will be open Monday through Friday and will actively recommend products. When a personal stylist finds a piece you like, you will be notified via text message.

3. Receive items
The clothes you have selected will fly to you.

If there is any quality problem or you change your mind, please feel free to contact us.

5.Feedback
Your opinion is vital to us, please leave your thoughts online.

Activity description

Employee description

Number of workstations

E-mail

Password

SIGN UP

ZHONG

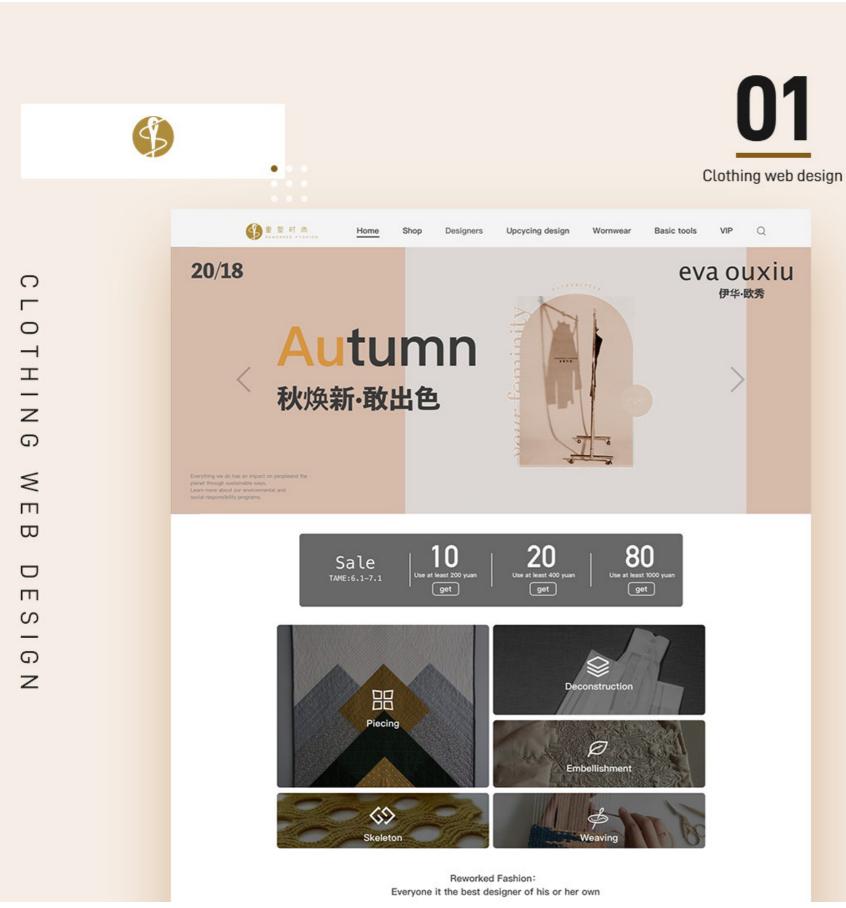
JING

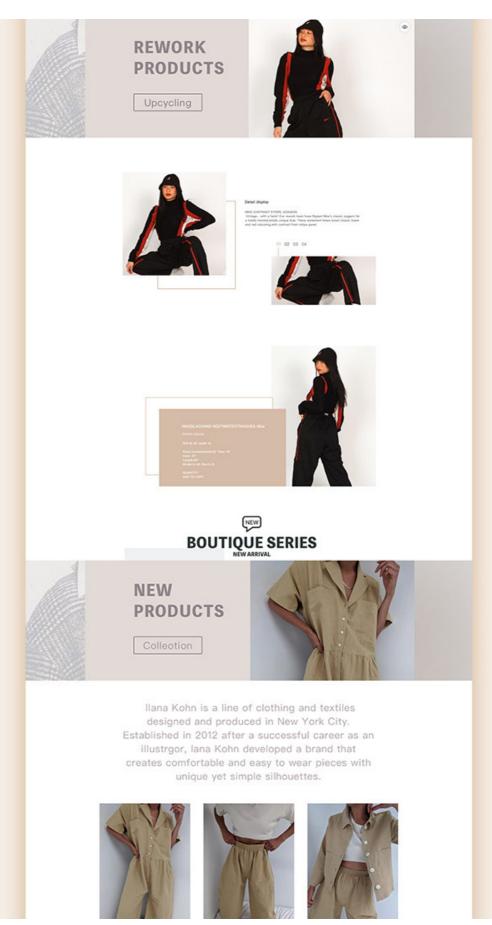
162

**WEB** 

**DESIGN** 

# **Project display**





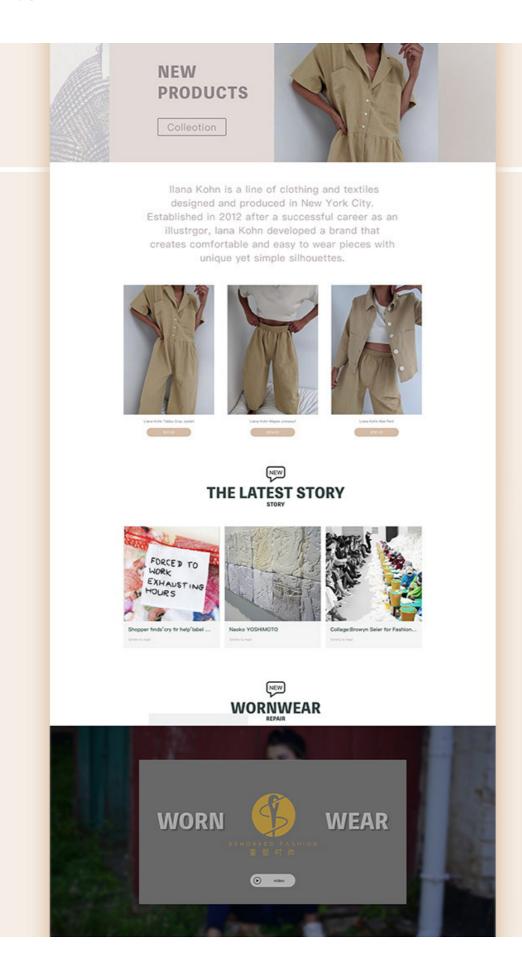
THONG JING

ZHONG

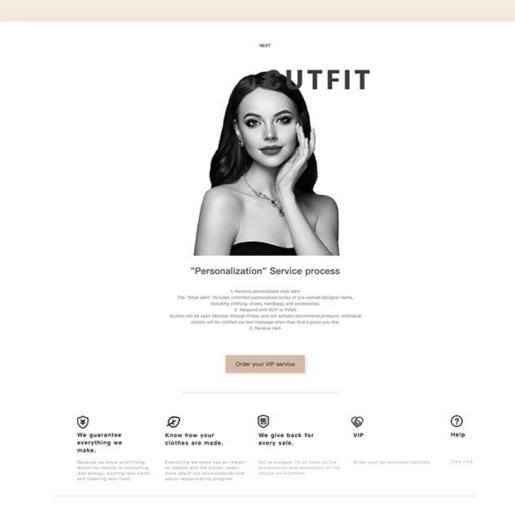
WEB

**DESIGN** 

Z



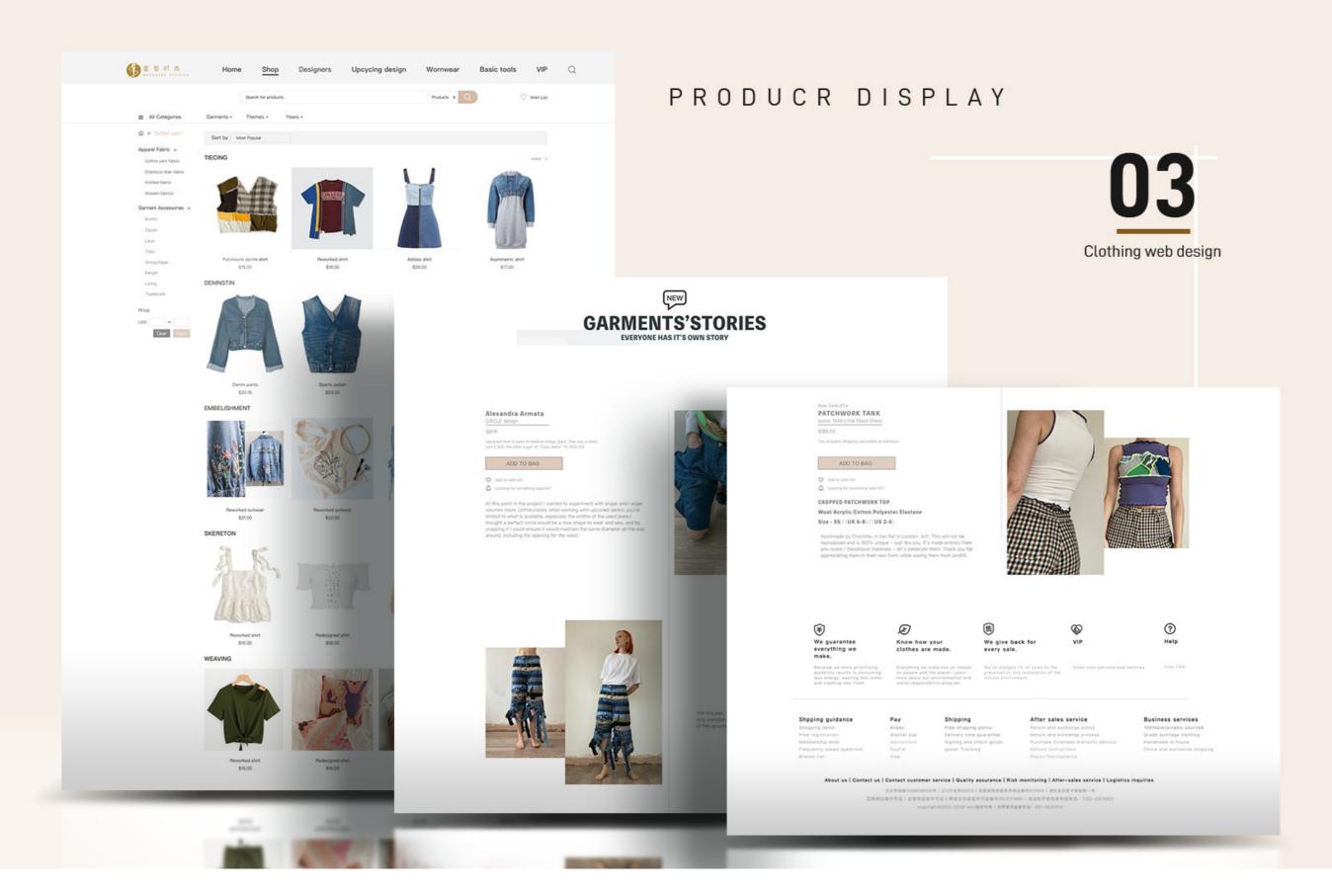
Clothing web design



169

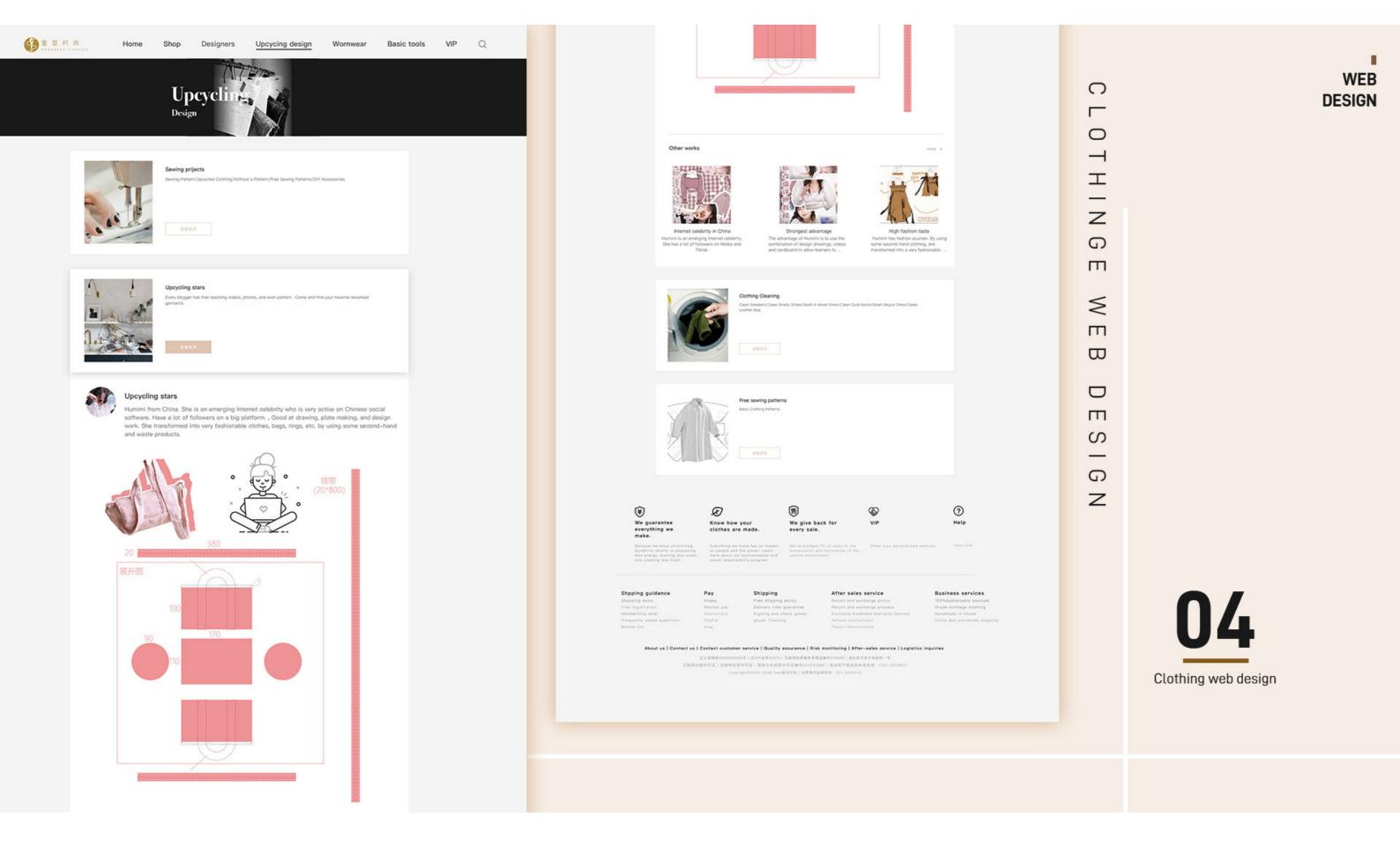
ZHONG JING





THONG JING

ZHONG JING



THONG JING

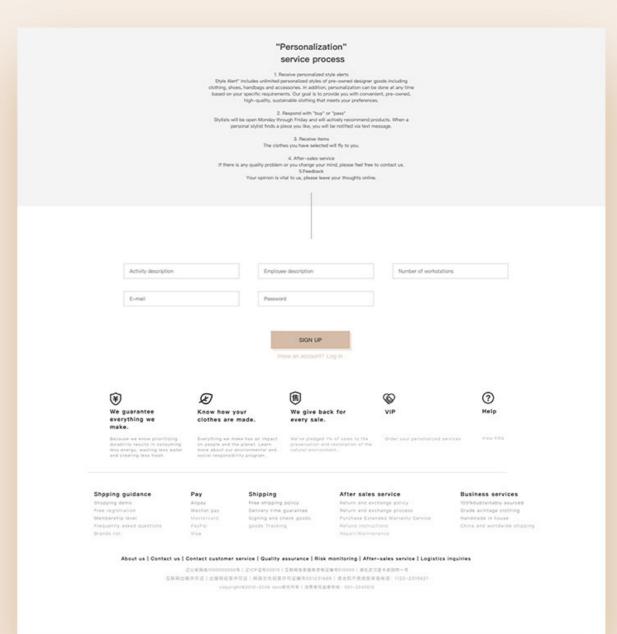
JING



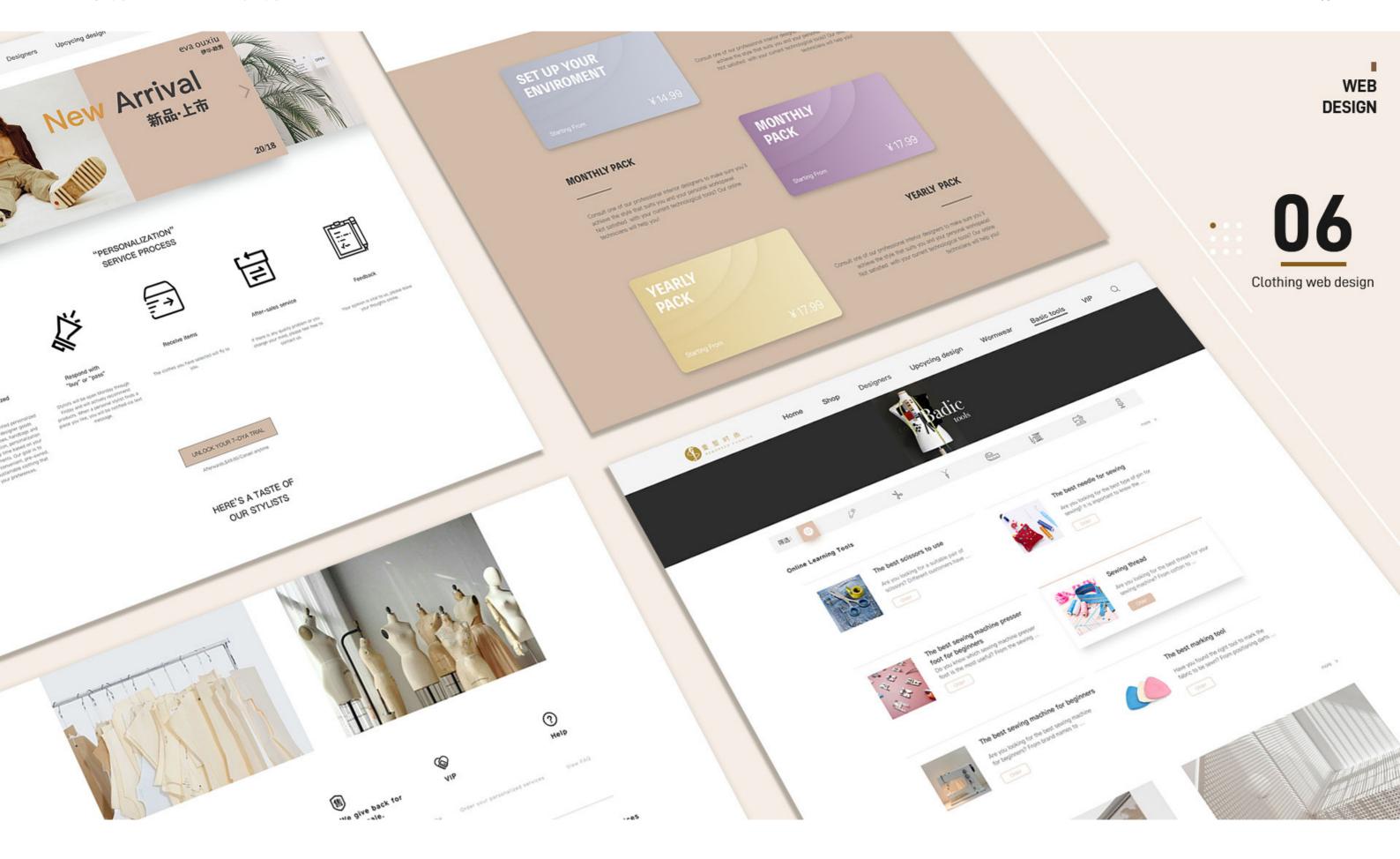
WEB **DESIGN** 

Cothing web design





172 JING ZHONG



ZHONG

# Physical Spaces"

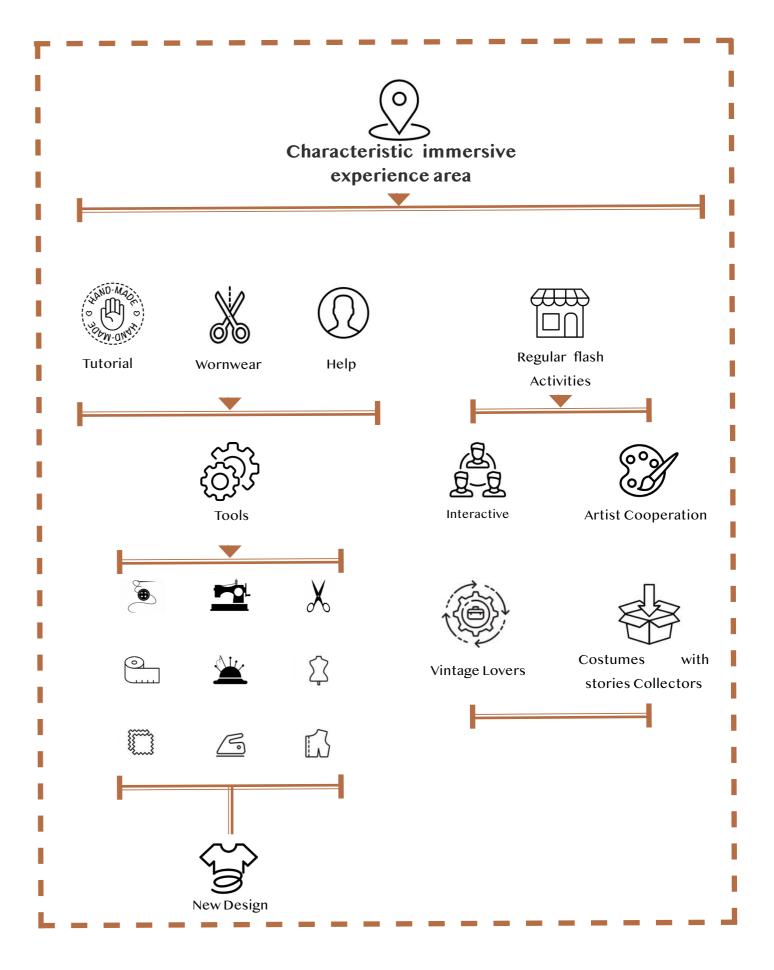
# 4.2.4. Characteristic immersive experience area

Experiential physical stores are the future.

Everyone is the best designer, and the experience place is being reimagined. From the new opportunities for personalization to the multi-sensory design environment to the interactive teaching and help experience, find our physical store, which can provide you with all the convenience you need, welcome to the immersive physical world.

1. Social interaction is at the core of this concept. Encourage people with common hobbies to participate, share their experiences with each other and participate in flash activities that interest them, and even bring social media to the physical experience on the spot.

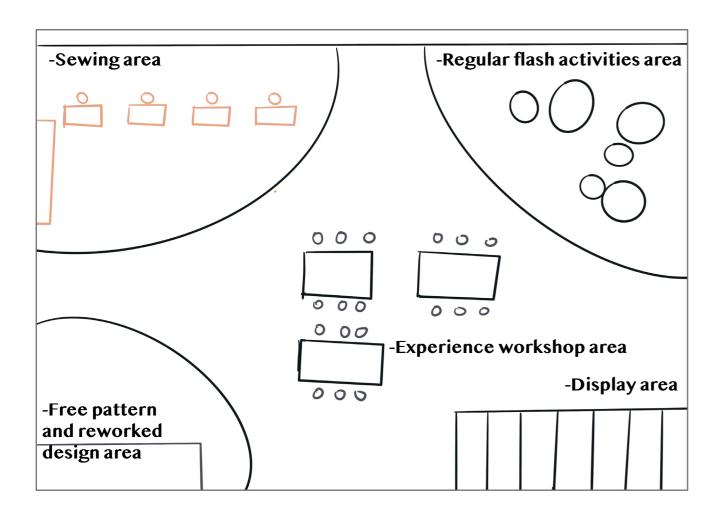
- 2. The completely open storefront is windowless and barrier-free, aiming to "realize your own design." Provide you with all the tools you need to help you with the repair or new design work.
- 3. Through investigation and research, it is found that the experienced method is a combination of online and offline. Brands and experience stores can take advantage of the comprehensive strength of physical and digital assets. In order to establish emotional connections, enviable inspiration and exclusive experience methods, it will ultimately involve winning the favor of consumers through thoughtful products and experiences."



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ZHONG

# -Floor plan and reference



















JING

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190

-Display area

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