





Stand Up! Training Circular Economy & Sustainability in the Textile and Fashion Sector









Content and time availability

Duration: 3 hours

Time	Duration	Торіс
	15'	The textiles industry in the Mediterranean region
	45'	Sustainability and CE in the textile and fashion industry: life cycle, value chain and Environmental impacts
	30′	Main aspects and trends: certificates/standards, legislation, block chain, big data, servitization, stakeholders
	90'	Circular business models







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- **1.** Introduction. The textiles industry in the Mediterranean region
- **2.** Sustainability and CE in the textile and fashion industry:
 - a) Environmental impacts
 - b) CE Introduction.
 - c) Textile Value Chain.
 - d) Life Cycle Assessments
 - e) Circular business strategies and business models
- 3. Main aspects and trends
 - a) Traceability & blockchain.
 - b) Product security and non hazardous chemicals
 - c) Certificates/standard
 - d) Labelled
 - e) Big data
 - f) Renting Second Hand
 - g) Textile Waste & recyclability
 - h) Decarbonization
 - i) Private and public initiatives

4. Circular business models and real cases (summary of the main aspects of the 10 circular business models) **(90 minutes)**

5. Bibliography and other online resources.







1. Introduction. The textiles industry in the Mediterranean region

Information about textile sector related with % of GDP repercussion, employers and companies of the main Mediterranean economy for textile sector:

- Egypt: 3,5% GDP 34% Industrial GDP. Employers: 1.000.000.
 Companies +4.000. Link
- Greece: 15% GDP. Employers: 17.000. Companies: 300 Link
- Italy: 1,3% GDP. Employers: 410.000. Companies: 50.000 Link
- Jordan: Employers: +70.000. Link
- Morocco: 15% Industrial GDP. Employers: 185.000. Companies: 1200. <u>Link</u>
- Spain: 2,8% GDP. Employers: +137.000. Companies +6.600 Link
- Tunisia: 3%GDP. Employers: 158,000. Companies: 1.592. Link





(15 minutes)



1. Introduction. The textiles industry in the Mediterranean region



- Same environmental challenges: climate change, waste management, water eutrophication, air pollution, water pollution, microplastics, etc.
- Different speed in social and environmental legislations. Each country has different social challengers, and different social and environmental legislation, norms and goals.





2. Sustainability and CE in the textile and fashion industry

a) Environmental impacts - challengers

Climate change (<u>Link</u>).

The fashion industry, including the production of all clothes which people wear, contributes to around <u>10%</u> of global greenhouse gas emissions due to its long supply chains and energy intensive production. The industry consumes more energy than the aviation and shipping industry combined.

(ONU, 2019)

□ Water pollution(Link).

UNCTAD data indicate that the clothing industry uses 93 billion cubic meters of water each year, a volume sufficient to meet the needs of five million people. **Microplastics.** Every year half a million tons of microfiber are thrown into the sea, which is equivalent to 3 million barrels of oil.







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2. Sustainability and CE in the textile and fashion industry

a) Environmental impacts – Environmental challengers

□ Loss biodiversity and ecosystems (<u>link</u>).

Nature is declining globally at unprecedented rates in human history – and the rate of species extinctions is accelerating, with grave impacts on people around the world now likely, warns a landmark new report from the <u>Intergovernmental</u> <u>Science-Policy Platform on Biodiversity and Ecosystem</u> Services (IPBES).

Textile sector uses important quantities of raw materials and some of them could cause environmental damage due to its obtaining, and it is necessary to analyse the risk by their own characteristics (synthetic, natural or artificial).







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2. Sustainability and CE in the textile and fashion industry

a) Environmental impacts – Campaigns examples:



It was the first campaign to challenge big clothing brands from all sectors to take responsibility for the environmental impacts of their manufacturing supply chains and commit to achieve zero discharges of hazardous chemicals by 2020 (Link).



Every second, the equivalent of one garbage truck of textiles is landfilled or burned. An estimated USD 500 billion value is lost every year due to clothing being barely worn and rarely recycled. Washing clothes releases half a million tonnes of plastic microfibers into the ocean every year, equivalent to more than 50 billion plastic bottles (Link)







2. Sustainability and CE in the textile and fashion industry

b) Circular Economy introduction

*paradigm shift

The circular economy^{*} (CE) is an attractive alternative that seeks to redefine what growth is, with an emphasis on benefits for the whole of society. This implies decoupling economic activity from the consumption of finite resources and eliminating waste from the system from design







2. Sustainability and CE in the textile and fashion industry

b) Circular Economy - introduction





2. Sustainability and CE in the textile and fashion industry







2. Sustainability and CE in the textile and fashion industry

c) Textile value chain

- CE should focus on materiality, depending on operational control & product typology (Develop of methodology's and protocols standards).
- ✓ In the textile sector main environmental impacts are in the supply chain through industrial processes & raw materials obtaining (use of hazardous chemicals, energy, water, waste, land uses, etc).
 - ✓ Raw materials. Use of low impact raw materials. There is many challengers to know what is the best option: BENCHMARK based on Life Cycle Assessments (Data origin). Examples: Made by, Higg Index.
 - ✓ Manufacturing. Wet process mills focus on Hazardous Chemicals & Energy
- Brands Designers. Design for recyclability and taking on consideration all the impacts in the value chain & suppliers
- ✓ Use of renewable resources and efficiency in resources consumption. (EcoShop, Logistic Centres Zero Waste, Eco Packaging, produce own energy in the production units, etc.)
- ✓ **Complex supply chain** with many production units involved to create each product, as example:







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2. Sustainability and CE in the textile and fashion industry

c) Textile value chain*

There exist many different value and supply chains, each product create different one*



In order to analyse the different impacts and Circular Economy attributes we can divide the production units based on either they include wet processes to dyeing or finishing, or not:

- ✓ Wet process: High use of water & energy, hazardous chemicals, produce wastewater, emissions, etc.
- Not wet process: mainly use electrical energy and could have waste production a cause of wastage.

Each textile product **could have a different supply chain, many different production units, different processes** and **different raw materials** that take a part in the manufacturing of o a product.



• Wet process

wet process

Could exist or not

LEGEND:





2. Sustainability and CE in the textile and fashion industry

c) Textile value chain







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2. Sustainability and CE in the textile and fashion industry





2. Sustainability and CE in the textile and fashion industry

c) Resume





2. Sustainability and CE in the textile and fashion industry

d) LCA. Life Cycle assessment

Life-cycle assessment or LCA (also known as lifecycle analysis) is methodology for а assessing environmental impacts associated with all the stages of the life-cycle of a commercial product, process, or service. For instance, in the case of a manufactured product, environmental impacts are assessed from raw material extraction and processing (cradle), through the product's manufacture, distribution and use, to the recycling or final disposal of the materials composing it (grave).

Ensure a good and real data is a key aspect in the LCA.

Real case: LEVI's. (Link)







2. Sustainability and CE in the textile and fashion industry

e) Circular business strategies:

- 1. Prevent pollution and save resources.
- 2. Recover resources after disposal.
- 3. Extend resource use and reduce disposal.
- 4. Increase resource utilization rate.
- 5. Shift to circular supplies and renewable resources.

Circular Economy Strategies





2. Sustainability and CE in the textile and fashion industry

e) Circular business strategies:

Circular Strategies and Business Models in the Southern Mediterranean

Strategy 1 / Prevent Pollution and Save Resources

Cleaner, Resource-Efficient, and Zero-waste Production

Strategy 2 / Recover Resources After Disposal

Design for Disassembly, Reassembly, and Recycling Collection and Recycling Upcycling

Strategy 3 / Extend Resource Use and Reduce Disposal

Design for Durability, Long Lasting, and Modularity Repairing and Upgrading Reselling

Strategy 4 / Increase Resource Utilization Rate

Rental/Leasing and Subscription

$Strategy\,5\,/\,Shift \,to\,Circular\,Supplies\,and\,Renewable\,Resources$

Value Chains Driven by Alternative, Low-Impact Fibers or Recycled Materials Slow Fashion in Full Control of the Value Chains







3. Main aspects and trends

a) Traceability & Blockchain

Traceability, as defined by ISO (in ISO 9001:2015 standard), is "the ability to identify and trace the history, distribution, location, and application of products, parts, materials, and services. A traceability system records and follows the trail as products, parts, materials, and services come from suppliers and are processed and ultimately distributed as final products and services". In general, a traceability system can be used to access information related to all involved actors, activities, and products including raw material components, processing conditions, logistics movements, carbon footprints, etc.

Traceability in textile supply chain is partially adopted by brands to share information related to their sustainability aspects in the form of green certifications, eco-cotton labels, carbon footprint data, or supplier details. Steps are required to promote traceability and develop consensus among the textile supply chain partners for the implementation of a single and complete traceability system that can record and share information related to each supply chain stage in a standardized format.

Tarun Kumar Agrawal, Rudrajeet Pal, Traceability in Textile and Clothing Supply Chains: Classifying Implementation Factors and Information Sets via Delphi Study, Sustainability 2019, 11, 1698; doi:10.3390/su11061698





3. Main aspects and trends

- a) Traceability & Blockchain
- b) Product security and non hazardous chemicals
- c) Certificates/standard
- d) Labelled
- e) Big data
- f) Renting Second Hand
- g) Textile Waste & recyclability
- h) Decarbonization
- i) Private and public initiatives





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3. Main aspects and trends

a) Traceability & Blockchain

Blockchain is a distributed ledger, immutable to any alteration, and has a natural chain-of-trail for transactions in a diverse ecosystem and could register the traceability.



Real case: Blockchain for Made in Italy. (Link)









3. Main aspects and trends

b) Product Security – Non Hazardous Chemicals Use

Hazardous chemicals are substances, mixtures and articles that can pose a significant risk to health and safety if not managed correctly.

They may have health hazards, physical hazards or both. Examples chemicals that can cause of adverse health effects include: toxic chemicals, chemicals that cause skin damage, etc.

There exist many strategies to manage the risk in chemical, in product and production:

- Restricted Substances List in product or/and • production, Certifications, laboratory analysis.
- Chemical inventory list, Safety Data Sheet & chemical management.

Textile sector uses many chemicals in order to:

Fibers, Yarn, Fabric preparation, colors, add technical attributes: waterproof, fire retardant, softness, finishing processes, etc.





3. Main aspects and trends

b) Product Security – Non Hazardous Chemicals Use. Examples:







3. Main aspects and trends

c) Certificates/standard

In the textile sector there are many standards regarding ensuring different attributes, include CE attributes the main aspects for product and production in the scope are:

- Raw materials content
- Chemicals
- Circular Economy attributes.
- Social aspects







3. Main aspects and trends

c) Other certification which could include CE attributes. Less water, energy, chemicals or high efficiency resources cares







3. Main aspects and trends

d) Labelled

The labelled is an important issue because is the connection between the product and the costumers, there exist rules and legislation to standardize important information such as: composition, size, origin, sustainable characteristics, etc.

The International Organization for Standardization (ISO) has identified three types of labels, that are presented in three standards:

- Type I, in ISO 14024: Environmental labels and declarations Type I environmental labelling -- Principles and procedures: A Type I label is a third-party assessment of a product based.
- Type II, in ISO 14021 Environmental labels and declarations -- Selfdeclared environmental claims
- Type III, in ISO 14025: Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures: Environmental Product Declaration (EPD), is a voluntary international certification aimed at providing relevant,





3. Main aspects and trends

e) Big data

Big data and use of data are day by day more important in the textile sector to manage and take decisions, and in the circular economy are important to know and control:

- Water and energy consumptions.
- > Control of suppliers.
- Assessment and comparison with others.
- In the facilities, the big data should be to control and manage consumption in production and manage internal data regarding: sales, internal management, Costumer Relationship Management, Enterprise Resourcing Planning, etc.
- For brands, other aspects are also important, such as: control of supply chain, logistics, sales with end costumer, interna control, etc.





3. Main aspects and trends

f) Renting – Second Hand

Nowadays there are many examples of second hand and renting clothes new business models in different countries and markets.

Both are able to extend the life of the products and ensure better end of life of the product.







3. Main aspects and trends

g) Textile waste & recyclability

Globally, an estimated **92 million tonnes of textiles waste** is created each year and the equivalent to a <u>rubbish truck full of clothes</u> ends up on landfill sites every second. By 2030, we are expected as a whole to be discarding more than **134 million tonnes of textiles a year**. There are two method of recycle:

- Mechanical: it is made by mechanical processes commonly used in preconsumer waste (industrial).
- Chemical: it is made through chemical processes. Commonly used to divide mix of fibers and in PET recycled to produce polyester.





3. Main aspects and trends

g) Textile waste & recyclability. Recyclability processing.

- Sorting (manually or automatic): <u>ordering</u>: arranging items in a sequence ordered by some criterion; <u>categorizing</u>: grouping items with similar properties by raw material, colors, kind of garment, commercial value etc.
- ✓ Second Hand Clothing Exportation Markets: the exportation of second-hand clothing is a growing global market.
- ✓ Prepare the pieces to recycle disassembly: remove buttons, zippers, and other accessories.
- Conversion of textile materials to New Products: creating new raw materials through mechanical or chemical recycling, to create new garments or other products (insulate materials, rags, etc.)
- ✓ Creating energy from Landfill incineration.





3. Main aspects and trends

h) Decarbonization

The fashion industry is responsible for 10 % of annual global carbon emissions, more than all international flights and maritime shipping combined. At this pace, the fashion industry's greenhouse gas emissions will surge more than 50 % by 2030. (<u>link</u>) There exist and International organization from UN which works with decarbonization goals in the textile sector with different working groups (<u>link</u>).



United Nations Climate Change











3. Main aspects and trends					
i) Private and public initiatives.					
Policy instruments Extraction of natural resources and sourcing of materials	Manufacturing and packaging	Acquisition & use	End-of-life		
Economic Instruments H2020	Smart regional investments in textile innovation.		EU funding for multinational research projects		
	Incentives and support for product-as a-service		through H2020:		
	models		<u>RESYNTEX</u> <u>TRAS2Cash</u>		







i) Private and public initiatives.



Communication

Instruments

Extraction of natural resources and sourcing of materials Manufacturing and packaging Acquisition & use

End-of-life

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The EU's <u>Green Public</u> <u>Procurement</u> guidelines on Textile Products and Services. The final criteria can be found in the GPP Technical report

Reports:

- <u>Environmental impact</u> of textile and clothes industry
- Improve textiles












3. Main aspects and trends

i) Private and public initiatives.



The Ellen MacArthur Foundation



Circle Economy



<u>Global Fashion</u> <u>Agenda</u>



Fashion for Good







4. Circular Business Models

Circular Strategies and Business Models in the Southern Mediterranean

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Strategy 4 / Increase Resource Utilization Rate

Rental/Leasing and Subscription

Strategy 5 / Shift to Circular Supplies and Renewable Resources

Value Chains Driven by Alternative, Low-Impact Fibers or Recycled Materials Slow Fashion in Full Control of the Value Chains







4. Circular Business Models





Kev Partners / Stakeholders

 Raw material (fiber, yarn, fabric, etc.) and chemical suppliers that provide ecofriendly inputs and improve eco-efficiency Equipment and

machinery suppliers that provide more efficient manufacturing systems and improved services Employees that

implement and contribute to the cleaner production measures Customers

Kev Activities

 Conducting cleaner production and energy efficiency audits

 Identifying cleaner production opportunities

 Identifying priority areas through life cycle assessments, material flow analyses, etc.

 Conducting technical and economic feasibility studies

 Developing and implementing cleaner production, energy efficiency and zero-waste action plans

Purchasing equipment



Value Propositions

 Provide brands&retailers with more circular and ecofriendly materials or garments and accessories and at reduced prices due to reduced operational costs

practices

Provide consumers with more circular and eco-efficiently produced garments and accessories, allowing them to reduce the environmental footprint of their fashion purchase



Customer Relationships

Joint projects and activities with brands&retailers that

- improve circular and eco-efficiency performance
- Relationships formed during compliance audits and when brands&retailers report their processes
- Stronger relationships with and commitments from brands&retailers
- Relationships with consumers that are more trustful and last longer Rusiness-to-business



Customer Segments

 Brands&retailers that produce/sell more ecoefficiently produced garments and accessories and are engaged with circular and sustainability practices

 Consumers seeking more circular and ecofriendly produced garments and accessories







4. Circular Business Models

b) Costs and revenues

Circular Economy focus

New goals



Cost Structure

There are possible cost items associated with eco-design practices, production, and communication:

- Human resources for eco-design, manufacturing, and selling
- External experts and designers for eco-design and manufacturing
- Costs related to trials and tests of eco-design measures
- Purchase of materials such as fabrics, zips, buttons, and other garment components
- Purchase and setting up of equipment and tools for dying, cutting, sewing, and ironing
- Rental or acquisition of physical infrastructure (shops, workshops, factories) and office material
- Production costs (energy, water, maintenance, etc.)
- Transportation and distribution costs
- Development and maintenance of sales and communication activities



Revenue Streams

There are revenue streams associated with sales and maintenance/repair services, if applicable:

Feasibility and pay-back periods depend on the market and demand for durable, long-lasting and modular products. The spread of slow fashion principles is expected to promote this business model as well. Strong design capabilities are also critical







4. Circular Business Models





Economic

- Increased resource efficiency and reduced costs at both company and value chain levels
- Development of new products and new markets
- Increased demand for cleaner production and energy efficient services



Environmental

- Reduced chemical (hazardous and non-hazardous) use in production processes
- Eliminated/reduced hazardous chemicals content in the products
- Reduced GHG emissions
- Reduced water and energy consumption
- Reduced amount of textile waste sent to landfills
- Improved compliance with regulations and standards



Social

- A safer and cleaner environment for the community
- Products that contain no/less hazardous chemicals for consumers
- Lower-price products for consumers due to reduced production costs
- Job creation in the cleaner production services market
- Increased collaborations and interactions between companies and all stakeholders





4. Circular Business Models



Opportunities and Drivers for Businesses

 Much room for improvement in cleaner and resource-efficient production hath is total and hath is total and hath is total and hath processing f

Expanding i Challenges and Barriers for Businesses

- Human resource and external consultancy needed for audits and implementation
- Investments needed especially for new equipment and technologies
- Insufficient R&D and innovation capacity
- Incufficient incentives and financial aids







4. Circular Business Models

a) Cleaner, Resource-efficient, and Zero-waste production

It creates value through process eco-innovation and the following eco-efficient measures: pollution prevention and reduction of resource consumption at the source (input changes, equipment modification and new process technologies); re-use and recycling of materials; and product eco-design (materials, no chemicals)

Drivers to analyse:

Key partners: <u>Suppliers</u> (raw materials, fibers, chemicals, etc) to improve eco-efficience, employees, customer to develop new products, R&D centers, <u>cleaner production systems</u>, NGO's, citizens.

Key activities: Energy and cleaner audits, identify opportunities, priorities through Life Cycle Assessment, feasibilities studies, actions plans to improve (energy efficiency, zero waste, etc.), tools for cleaner production, monitoring inputs and outputs, environmental management systems, cooperate with consultants and customers, training employers, communication with stakeholders...

Value Propositions. <u>Provide brands&retailers</u> with more circular and <u>ecofriendly materials or garment</u>, Provide consumers with more circular and <u>eco-efficiently produced garments</u> and accessories.

Key resources: Human resources, all the inputs (energy, water, machinery, infrastructure, etc) monitoring, etc.









4. Circular Business Models

a) Cleaner, Resource-efficient, and Zero-waste production

Drivers to analyse:

Customer relationship. Joint projects and activities with brands&retailers that improve circular and eco-efficiency, produced garments and accessories, <u>Relationships formed</u> during compliance audits, stronger relationships with and commitments, relationships with consumers, Business-to-business commercial relationships and offline/online points of sale.

Channels: For businesses: Sales: fairs, e-business portals, wholesales, Communication: fairs, websites, social media, emails, phone calls, conferences/sectoral meetings. For consumers: Sales: website, apps, shops, Communication: websites, social media, emails

Customer segment. <u>Brands&retailers</u> that produce/sell more ecoefficiently produced garments and accessories and are engaged with circular and sustainability practices, <u>consumers seeking</u> more circular and ecofriendly produced garments and accessories.

Cost structures: Human resources, external expert, costs related with measurement, analysis and monitoring, R&D activities, trials and tests, new equipment and technology investments, etc.

Revenue streams: <u>Cost reductions: r</u>educed use of raw materials and chemicals, water consumption and wastewater treatment, energy use, energy use, waste management and disposal, compliance with legislation and standards. **Additional sales:** Additional sales due to increased competitiveness (lower costs and prices), new markets for more circular and eco-friendly produced materials, new customers for more circular and eco-efficiently produced materials



4. Circular Business Models

a) Cleaner, Resource-efficient, and Zero-waste production

Potential Impacts

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Economic

- Increased resource efficiency and reduced costs at both company and value chain levels
- Development of new products and new markets
- Increased demand for cleaner production and energy efficient services

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Environmental

- Reduced chemical (hazardous and non-hazardous) use in production processes
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Social

- A safer and cleaner environment for the community
- Products that contain no/less hazardous chemicals for consumers
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- Job creation in the cleaner production services market
- Increased collaborations and interactions between companies and all stakeholders







Key activities: T.Santa is a vertical textile supplier (spinning, weaving, fabric dyeing and finishing), they develops R&D (new processes and products) to reduce their footprint and using raw materials with less environmental impact to his clients.

Costumer segment: Brands

Add value and Impact: Economic - Environmental Open new markets, internal scrap recycling, saved resources and reduced associated environmental impacts, reduction of virgin raw material, water, and pesticides as well as energy and CO2 emissions, save water by 20 to 92%, energy by 40 to 50%.

This also helps the demand for sustainable materials increase in the market.





What circular measures do they apply?

Textil Santanderina has reduced its operational costs through cleaner production measures and increased its turnover with the help of sustainable fabrics by:

Resource efficient and cleaner Production.

Optimizing resources, sustainable dyes.

Audits

R&D new products

An integrated approach for water and energy efficiency

□ Water and energy reduction. Less CO2

- Waste reduction and internal recycling
 - Recover yarn and fabric waste to create new raw materials and third companies cooperation to recycle own waste and post consumer garments







4. Circular Business Models

b) Design for disassembly, reassembly, and recycling

Once a product ceases to be functional, this business model recovers and recycles it back into production without discarded it. To this end, the product should be designed so that it can be easily disassembled, reassembled, and recycled when it reaches the end of its life. This can be achieved by using recyclable materials, avoiding mixtures of a variety of materials, and using easily separable components.

Drivers to analyse:

Key partners: Suppliers (fabrics, non hazardous dyes, to improve eco-efficience, machinery to provide more efficient manufacturing system, employees, <u>designers and consultants</u>, <u>R&D centers</u>, <u>universities</u>, costumers, consumers, brands, <u>collection and recycling companies</u>, brands, retailers and designers that use recycled fabrics or garments, banks, investors, and other organizations, public organizations, citizens.

Key activities: <u>Implementing a life cycle thinking</u> approach and eco-design measures to ensure the circularity of garments through biodegradability, easily separable components, and unblended materials (100% cotton or polyester), ssourcing alternative raw materials, purchasing equipment and tools, garment manufacturing processes, setting up the infrastructure to manufacture, sales and distribution activities, communicating and interacting.

Value Propositions. Provide brands&retailers with garments and accessories easy to recycle, which reduces environmental footprint, support their circular economy strategies, allow end of life (close the loop)

Key resources: Human resources, <u>ecodesign, biodegradable</u> inputs (raw materials) and other inputs (energy, water, machinery, infrastructure, etc) monitoring, etc.







4. Circular Business Models

b) Design for disassembly, reassembly, and recycling

Drivers to analyse:

Customer relationship: <u>Relationships with conscious consumers that are more trustful and last longer, Stronger</u> relationships and greater commitments between retailer and manufacturer, Business-to-business commercial relationships and offline/online points of sale that provide opportunities to create CE-related relations with the customers

Channels: For consumers: Points of sale: websites, apps, shops, markets: websites, social media, email. For businesses: Points of sale: fairs, e-business portals, Communication: websites, email, phone calls.

Customer segment: <u>Consumers interested in purchasing garments and accessories designed to facilitate reuse and recycling,</u> customer segments with larger sale shares and sustainability awareness: premium segment, young, middle aged group, womenswear, Brands&retailers interested in selling clothes easy to reuse and recycle.

Cost structure: Human resources, costs related to trials and tests of eco-design measures, purchase of materials, purchase and setting up of equipment and tools for dying, cutting, sewing, and ironing, rental physical infrastructure, production costs, logistic, maintenance.

Revenue streams: Pos consumer. For designers and small brands: revenue from selling to consumers, for manufacturers: revenue from selling to retailers and brands, Feasibility and pay-back periods depend on the availability and cost of new inputs that support recyclability, the extent of the additional investments required, etc.









4. Circular Business Models

b) Design for disassembly, reassembly, and recycling

Potential Impacts



Economic

- Increase in the demand for recyclable materials
- Expansion of the sustainable garment and accessories market
- Value and savings created through the use of recycled materials and elimination of virgin materials
- Expansion of the garment and accessories collection and recycling sector
- Reduction in costs. associated with landfilling and incinerating end-oflife products

Environmental

- Reduction in the overall environmental impacts stemming from the extraction, processing, and waste management of non-recyclable materials products
- Reduction in the amount of garment and accessories waste landfilled or incinerated
- Improvement in the ecodesign and sustainability perspective at both company and value chain levels

 A safer and cleaner environment for the

community

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Social

- Job creation and an increase in the demand for sustainable fashion designers
- Job creation in the garment and accessories collection and recycling sectors.
- Raised awareness among consumers of eco-designed products







4. Circular Business Models. Real case

b) Design for disassembly, reassembly, and recycling



Key activities: Organic Cotton Colours is a Spanish textile company dedicated, among many other activities, to the maunfacturing of garments that are made only of 100% organic cotton and dyed with organic materials.

Added value and Impact: Economic - Environmental Made with one single material and hence, easier to be recycled; this material is organic (lower environmental impact); no aggressive chemicals (no water pollution), fair trade (job creation),

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Costumer segment: final customer



4. Circular Business Models. Real case

b) Design for disassembly, reassembly, and recycling









4. Circular Business Models

c) Collection and recycling

This business model includes collecting, sorting, and recycling wastes as well as selling recycled materials. However, not all recycling creates the same value. Collection and recycling businesses are critical for implementing the strategy of recovering resources after disposal. It is relevant to both production waste and end-of-life garments, or pre-consumer and post-consumer waste (respectively)

Drivers to analyse:

Key partners: Customers: garment manufacturers, brands&retailers, recycled textile buyers, and municipalities, suppliers: logistic companies and collectors or recycling partners, retailers that copperates, partners to reuse (postconsumer), Equipment and technology suppliers that collect and recycle pre and post-consumer textile wastes, R&D centers and universities that improve sorting and recycling techniques, Certifications, Banks investors, municipalities and NGOs that cooperates, employers, public organizations, waste collectors, citizens. Key activities: Identifying and characterizing the textile waste to be collected and recycled, Identifying, sorting and recycling needs and technologies, waste producers, collection partners, and other suppliers, collection points, suitable recycled fiber/yarn, reuse channels for reweareable items, purchasing equipment and tools to collect and recycle pre and postconsumer, setting up collection, sorting, and recycling infrastructure, sales and distribution activities, licenses and procedures, certify materials, cooperating with stakeholders, communication.









4. Circular Business Models

c) Collection and recycled.

Drivers to analyse:

Value proposition. Pre-consumer: Provide textile manufacturers with the <u>opportunity to sell their waste</u> than paying to dispose of it, provide textile manufacturers with <u>recycled fibers</u>, provide textile manufacturers with <u>recycling services</u>, provide brands&ratailers with the <u>opportunity to valorize their unsold garments</u> for which a more efficient way, provide municipalities with collection and recycling services. Post-consumer: Provide brands&retailers with <u>collection</u>, sorting and recycling services for their own products, <u>increasing extended producer responsibility</u>, Provide textile manufacturers with <u>fibers recycled directly from their own products</u>, Provide municipalities with collection and recycling services.

Key resources: Human resources, textile scraps and clothes and accessories from textile/garments producers and consumers, a reliable supplier and cooperation network, logistics infrastructure and vehicles for collection and distribution, machinery and equipment for collection and recycling, premises (factories, workshops, and storage), energy and water, offline and online sales infrastructure, (web, social media, apps, physical shops) office equipment, investment capital.

Customer relationship: Collection recycling: Effective collection systems, intermediaries, and networks, Long-term agreements and commitments, business-to-business commercial relationships. **Selling recycled materials:** Strong and trustful relationships through standardized materials and the ability to meet customers' specific needs, business-to-business commercial, costumer references.







4. Circular Business Models

c) Collection and recycled.

Collection and recycling:.

Channels: Collection and recycling: direct collection, intermediaries, e-business portals. Selling recycled materials:

websites, fairs, e-business portals, offline sales, **Communication:** websites, email, phone calls, social media. **Customer relationship: Pre-consumer:** Textile manufacturers generating yarn/fabric wastes, Yarn, fabric and garment manufacturers willing to use recycled materials, Brands&retailers willing to valorize their unsold garments, Municipalities and valorize them, Manufacturers, brands &retailers which aim to have a circular supply chain, companies interested in managing post-consumer wastes.

Cost structure: Human resources, Purchase of wastes (pre and post-consumer textile wastes and other), Purchase and setting up of a production line for recycling, Logistics and transportation costs, Costs associated with R&D, pilot productions, tests, analyses and monitoring, Rental or acquisition of physical infrastructure (workshops, factories) and office materials, Logistics infrastructure, Transportation and distribution costs, Production costs (energy, water, maintenance, etc.), licenses, network, maintenance of sales and comunications.

Revenue streams: Services: Collection, sorting, recycling. Sales: Recycled, second hand. Preconsumer: waste producers, regenerated fibers, Post-consume: content and structure of collected ítems, whether the technologies for sorting and recycle, infraestructura or partners







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4. Circular Business Models

c) Collection and recycled.







c) Collection and recycled. Real case: Farbic Aid



Key activities: Fabric Aid increases the efficiency of second-hand clothes collection, sorting and distribution while reducing fabric waste predominantly by offering decent clothing at extremely affordable prices to marginalized communities.

Costumer segment: Marginalized communities: middle and lower socio-economic classes

Add value and Impact: Economic:

Open a low-cost market of clothes to marginalized lower and middle class of people selling at affordable prices in **Environmental:** Collection and recycling of textiles and clothes save resources and reduce associated environmental impacts, reduction of virgin raw material (525 000 items collected), plastic bags (1 650 000 plastic bags recycled), energy, and CO2 emissions (540 000 kg of CO2 emissions reduced).

Social: Enables underprivileged people to get decent clothing.





c) Collection and recycled. Real case: Farbic Aid



What circular measures do they apply?

Fabric Aid has reduced its operational costs through clothes and textile collection via donations. It also tends to minimize waste produced by:

Efficient use of resources.

- Using already existing textile fabrics rather than opting for raw material and thus diverting waste from landfills
- Using scraps and left-over fabric to create pillows and stuffing aiming at 0 waste

Upcycling

Upcycling torn clothes and scraps of textiles into new pieces of clothes

Energy , emissions and plastic reduction

- ■No heavy machinery are used hence decreasing CO2 emissions into air and energy consumption
- Collection bins are produced by recycled plastic bags









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4. Circular Business Models

d) Upcycling

Recycling is a general term used for the processes of collecting and processing waste, by-products, or other materials that would otherwise be discarded and converting them into new products. In contrast to recycling processes, where the new products have a lower value than the original, upcycling processes transform the material into products with greater value. Thus, as a business model, upcycling is the transformation of useless or unwanted products into new materials or products of better quality

Drivers to analyse:

Key partners: Waste suppliers: textile companies, waste managers, NGOs that collect waste, and individuals that bring in old clothes, Equipment and technology suppliers that manufacture garments and accessories, Customers: consumers and brands&retailers, employees, Banks, investors, and other organizations that provide access to funding, <u>Public</u> organizations that implement measures to encourage businesses, Other public organizations that provide policy support and licenses for waste collection and acquisition, citizens.

Key activities: <u>Identifying materials to be upcycled for production (textile scraps, used clothing, and non-textile waste streams such as plastic bottles), <u>Engaging with potential waste suppliers,</u> including implementing collection methods, Identifying required and suitable design features, including conducting test productions and getting feedback from potential customers, Purchasing equipment and tools, Garment and accessories manufacturing processes, setting up the infrastructure to manufacture and sell clothes, Sales and distribution, licenses, communicationg with consumers.</u>









4. Circular Business Models

d) Upcycling

Drivers to analyse:

Value propositions: Provide <u>consumers</u> with <u>upcycled garments and accessories</u>. Provide <u>brands&retailers</u> with <u>upcycled clothes</u> that support and improve their circularity strategies.

 Key resources: Human resources. <u>Wastes (textiles or other products likely to be transformed into fabric)</u>. Other materials needed to manufacture garments and accessories such as dyes, buttons, etc. Machinery and equipment for upcycling the product through dying, cutting, sewing, and ironing, Energy and water, Vehicles for collecting materials and/or distributing clothes, Premises (factories and workshops), Offline and online sales infrastructure (websites, social media, apps, and physical shops), Office equipment, Investment capital
Customer Relationships: Relationships with consumers that are more trustful and last longer. Usually, stronger relationships and greater commitments between retailers and manufacturers. Powerful communication required to convey the quality of upcycled products. Business-to-business commercial relationships and offline/online points of

sale that provide opportunities to create CE-related relationships with customers.

Channels: For consumers: Points of sale: websites, apps, shops, markets, Communication: websites, social media, email, For businesses: Points of sale: fairs, e-business portals, Communication: websites, email, phone calls.









4. Circular Business Models

d) Upcycling

Drivers to analyse:

Costomer segments: Consumers interested in purchasing garments and accessories produced from upcycled materials, Brands&retailers willing to sell upcycled clothes and engaged in circularity and sustainability practices Cost structure: Human resources, Purchase of waste (textile or other), Purchase of other materials (fabrics, buttons), Purchase of equipment and tools for creating fabrics, dying, cutting, sewing, and ironing, Rental or acquisition of physical infrastructure (shops, workshops, factories) and office material, Production costs (energy, water maintenance), Logistics infrastructure, Transportation and distribution costs, Permit/license procedures, Development and maintenance of sales and communication activities

Revenue Streams: There are revenue streams associated with sales to consumers and/or brands&retailers: The feasibility of this business model depends on finding favorable materials, in terms of cost, access, and continuity, as well as creating innovative, attractive, and value-added products from them. Such businesses generally start as a small-scale initiative and grow based on the market, demand, and creation of new collections/products.









4. Circular Business Models









d) Upcycling. Real case: La Brocante



Key activities: La Brocante is an upcycling furniture organization. It collects used donated textile furniture and old household appliances, up-cycles them, and sells them at reasonable prices reducing textile waste. La Brocante gives new life to used textile furniture through antiquing, re-selling them as vintage items and therefore generating revenues. Objects that cannot be sold or refurbished will be sent to be recycled

Costumer segment: Textile furniture donators and textile furniture buyers especially young couples who need help with furnishing their houses and vintage collectors

Additional Driver and Opportunity:

Potential for creating a social business by involving people from different segments especially people with disabilities **(30%)**

Add value and Impact:

Economic Open new markets for second hand, upcycled and recycled textile furniture with affordable prices.

Environmental Reducing the use of virgin textile raw material and textile waste disposal and handling (4000 textile furniture upcycled this year) and CO2 emissions reduction (approximately 360,000 Kg of CO2 reduced)

Social Jobs creation targeting specifically workers with disabilities.







d) Upcycling. Real case: La Brocante



What circular measures do they apply?

La Brocante has reduced its operational costs through using donated textile furniture. It also tends to minimize waste produced by:

Efficient use of resources.

Using already existing textile material rather than opting for raw textile material

Upcycling

Minimizing textile waste going to landfills by upcycling textile furniture or fixing them

Recycling

Recycling textile material from furniture that can't be fixed or upcycled and using them to fix other furniture

Energy emissions reduction

■No heavy machinery are used hence decreasing CO2 emissions into air and energy consumption









4. Circular Business Models

e) Design for durability. Long lasting and modularity.

In this business model, design is key for shaping how a product is manufactured and used and what happens when it is no longer needed or wanted. In other words, design features determine a product's circularity. For garments and accessories, product longevity is one of the biggest opportunities for reducing environmental footprints and enhancing circularity. If products have a longer usable life, they need to be replaced less frequently, facilitating less resource consumption and less waste generated.

Drivers to analyse:

Key partners: Suppliers of fabrics, finishes, buttons, zips, and other materials, Equipment and machinery suppliers for dying, cutting, sewing, and ironing, Designers and consultants, R&D centers, and universities for eco-design support, Employees, Customers: consumers, brands&retailers, and resale and rental companies, Banks, investors, and other organizations that provide access to funding, Citizens that benefit from sustainable practices

Key activities: Implementing a life cycle thinking approach and eco-design measures to ensure the circularity of garments and accessories through durability, longevity, modularity, standardized designs, etc, identifying and developing suitable construction (stitching, assembly, etc.), techniques, Sourcing suitable raw materials, finishes, buttons, zips, and other materials, Purchasing equipment and tools to manufacture clothes, Garment and accessories manufacturing processes (dying, cutting, sewing, and ironing), Setting up the infrastructure to manufacture and sell clothes, Preparing and conveying use and maintenance guidelines that increase durability and longevity, Sales and distribution activities especially relevant to the communication of ecodesign practices, communicating with customers and other stakeholders.







4. Circular Business Models

e) Design for durability. Long lasting and modularity.

Drivers to analyse:

Value propositions: Provide consumers with garments and accessories that can be used for a long time and are easy to repair, upgrade, adapt, and resell, which reduces the environmental footprint of purchasing and using clothes and saves consumers' money, Provide brands&retailers with durable, long-lasting, and modular garments and accessories, thus supporting and improving their brands and circularity strategies, Provide resale and rental businesses with garments and accessories that can be used by multiple users and stand up to frequent maintenance.

Key resources: Key Resources, Human resources, Strong eco-design capabilities, Materials that facilitate durability and longevity, Construction techniques that facilitate durability, longevity, and modularity, Machinery and equipment for dying, cutting, sewing, and ironing, Energy and water, Vehicles for distributing clothes, Premises (factories and workshops), Offline and online sales infrastructure (websites, social media, apps, and physical shops), Offlice equipment, Investment capital.

Customer relationships: Greater product attachment and trust from consumers as well as longer-lasting relationships, Stronger relationships and greater commitments from brands, retailers, and resale/rental companies, Potential communication of instructions regarding usage, maintenance, repair, etc., resulting in continuous interaction with all types of customers, Business-to-business commercial relationships and offline/online points of sale provide opportunities to create CE-related relationships with customers







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4. Circular Business Models

e) Design for durability. Long lasting and modularity.

Drivers to analyse:

Customer relationships:

Channels: For consumers: Points of sale: websites, apps, shops, Communication: websites, social media, email, For businesses: Points of sale: fairs, e-business portals, Communication: websites, email, phone calls

Customer Segments:

Consumers interested in purchasing durable and long-lasting garments and accessories, with sustainability and/or economic expectations, More common for sportswear, high-quality and luxury-premium segments, especially for the middle-aged group, Brands&retailers interested in selling clothes that are durable and last long, Resale and rental businesses looking for durable, long-lasting, and high-quality garments and accessories that can be used by multiple users and stand up to frequent maintenance.

Cost structure:

Human resources for eco-design, manufacturing, and selling, External experts and designers for eco-design and manufacturing, Costs related to trials and tests of eco-design measures, Purchase of materials such as fabrics, zips, buttons, and other garment components, Purchase and setting up of equipment and tools for dying, cutting, sewing, and ironing, Rental or acquisition of physical infrastructure (shops, workshops, factories) and office material • Production costs (energy, water, maintenance, etc.), Transportation and distribution costs, Development and maintenance of sales and communication activities.







4. Circular Business Models

e) Design for durability. Long lasting and modularity.

Drivers to analyse:

Cost structure:

Human resources, External experts and designers, Costs related to trials and tests of eco-design measures, Purchase of materials such as fabrics, zips, buttons, and other garment components, Purchase and setting up of equipment and tools, Rental or acquisition of physical infrastructure (shops, workshops, factories) and office material, Production costs (energy, water, maintenance, etc.), Transportation and distribution costs, Development and maintenance of sales and communication activities

Revenue streams:

There are revenue streams associated with sales and maintenance/repair services, if applicable: <u>Feasibility and pay-back periods depend on the market and demand for durable, long-lasting and modular products. The spread of slow fashion principles is expected to promote this business model as well. Strong design capabilities are also critical.</u>









4. Circular Business Models

e) Design for durability. Long lasting and modularity.

Potential Impacts

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Economic

- Creation of new products and new markets
- Expansion of the recycling sector
- Expansion of the recycled materials market
- Value and savings created by recycled materials



Environmental

- Reduction in the overall environmental impacts stemming from the extraction and processing of virgin materials
- Reduction in the overall environmental impacts stemming from the management of the upcycled waste
- Reduction in amount of waste landfilled or incinerated



Social

- Safer and cleaner environment for the community
- Reduced prices probably due to low-cost raw materials
- Job creation in the recycling sectors
- Job creation and increased demand for sustainable fashion designers
- Job creation for women particularly, with some working from home
- Raising awareness among consumers of upcycled products





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e) Design for durability. Long lasting and modularity. Real case: Flavialarocca



Key activities: Flavia La Rocca founded her brand in Italy in 2012 under her own name. She focuses on sustainability when designing her womenswear collection, and makes clothes in a responsible, dynamic, and innovative way. Every collection is made in Italy by local artisans, and the garment design is built on modularity using recycled, natural, and regenerated fabrics (100% eco-certified)

Costumer segment: Fashion costumers

Modular design extends the useful life of garments so they retain their highest economic value. Increasing functionality prevents the production and purchase of new garments and decreases the associated costs.

As increased reuse of garments decreases new garment production, the environmental impacts (use of water, raw materials, chemicals and energy, waste and emissions) associated with production processes are reduced.

Overall waste is reduced because transformability limits consumption. In addition to implementing modularity, Flavialarocca also uses natural fibers and helps decrease overall environmental impact before and after disposal





e) Design for durability. Long lasting and modularity. Real case: MUD Jeans



What circular measures do they apply?

Design is key for extending garment lifespan

Flavialarocca's dynamic product is a set of modular garments that can be transformed into different types of pieces.

The key design strategy involves using hidden zippers, ties, and other no-sew fastenings that allow components to be attached and detached. Thus, sleeves and hemlines can be changed and style and details switched up to create a neverending wardrobe.

There are also many color options for buttons and adjustable buttonholes for different combinations. A standard modular garment can be used 40 different ways. Interchanging parts also facilitate disassembly, reassembly, and repair in case of damage, and upgrading garment modules is easy.

Additionaly Flaviarocca only has supply chain with good perfonce in use of water, energy, recycled raw materials, etc.







4. Circular Business Models

f) Repairing and upgrading

As a BM, repairing means restoring a defective product's original function by renewing or replacing the problematic parts as well as through corrective maintenance activities. Repairing and upgrading as a business model creates different business opportunities and can be implemented in different ways.

Drivers to analyse:

Key partners: <u>designers</u> that design items for reparability/upgradibility; <u>suppliers of materials and spare</u> parts (like zips); <u>equipment and machinery suppliers</u> for repairing/upgrading operations; service <u>providers that repair/upgrade</u>, <u>collect</u>, <u>and deliver</u> garments and accessories.

Key activities: identifying repairing/upgrading <u>needs and contexts</u>; identifying a <u>guarantee and pricing system</u>; identifying <u>technical needs</u>, <u>materials</u>, <u>and spare parts</u>; identify required <u>design features and conducting test productions</u>; <u>engaging</u> with suppliers, brands , retailers, and second-hand and rental businesses; setting up the <u>infrastructure/network</u>; preparing <u>guides and kits</u> for consumers and to <u>inform</u> them; providing <u>repairing/upgrading services</u>; collecting information and <u>giving feedback</u> to actors for possible product improvements.

Value Propositions: brands and retailers can provide consumers with repairable/upgradable products as well as the <u>ability to repair or upgrade</u> them; service providers can offer consumers and companies <u>repairing and upgrading</u> services, and also offer it to brands.

Key resources: design and tailoring capabilities; materials, spare parts, as well as tool kits; machinery and equipment for some processes; workshops; and guides and kits.


4. Circular Business Models

f) Repairing and upgrading

Drivers to analyse:

Customer relationship: <u>Brands and retailers:</u> communication with consumers regarding guidelines; opportunity to get feedback from consumers. <u>Service providers:</u> long-term relationships with customers and also with businesses and service providers, as well as value chain suppliers.

Channels: For consumers: collection and delivery in the point of sale, repair points and through couriers; repair and sale of spare parts at the repair points and repair service providers. For businesses: collection and delivery through service providers.

Customer segment: <u>consumers</u> willing to use garments and accessories for longer by repairing and upgrading; looking for repairing and upgrading services for existing items; <u>brands, retailers, and second-hand rental</u> <u>companies</u> willing to outsource repairing and upgrading services.

Cost structure: human resources, purchase of materials and spare parts, purchase and setting up of equipment and machines, service providers for repairing and upgrading, etc.

Revenue streams: for brands & retailers, the feasibility depends on the balance between production and repairing costs, and pricing. Furthermore, the demand for long-lasting, repairable/upgradable products, and the consumers' approach to repairs are quite determinant.









Potential impacts



Economic

- Increase in demand for durable, long-lasting, and high-quality materials
- Expansion of the sustainable garment and accessories market
- Value and savings created through reduced production and use of virgin materials
- Expansion of the garment and accessories repair, upgrading, and maintenance industries
- Promotion of the resale and rental sectors
- Reduction in costs associated with landfilling and incinerating end-oflife products

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Environmental

- Reduction in the overall environmental impacts stemming from the extraction and processing of raw materials and from waste management of end-of-life products
- Reduction in the amount of garment and accessories waste landfilled or incinerated
- Improvement in the ecodesign and sustainability perspective at both company and value chain levels

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- Social
- Safer and cleaner environment for the community
- Job creation and icrease in the demand for circular fashion designers
- Job creation in repair, maintenance and upgrading industries
- Economic advantages for consumers obtained by using products for longer times
- Raised awareness of consumers for the value of repairing and upgrading







f) Repairing and upgrading.





Costumer segment: Costumers who wants repair and renovate



Add value and Impact: Economic – Environmental

In 2019, E-Terzi repaired 1,217 leather and 1,911 textile garments of various types. This roughly corresponds to 1.5 tons of leather and 1 ton of textiles that were retained in the system, preventing the production and processing of that amount of material. This reduces the overall environmental impacts associated with that production as well as waste and diversion from landfilling/incineration. E-Terzi gives consumers a low-cost option for reviving their defective or unwanted garments. This has an emotional aspect as well, since consumers can get family keepsakes repaired by E-Terzi and wear them once again. Moreover, E-Terzi has plans to expand its team by creating a network of experienced and qualified tailors from different parts of Turkey, both facilitating their services in different provinces and providing such artisans with a professional opportunity to carry out their skills.







f) Repairing and upgrading.



What circular measures do they apply?

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Extend resources use and reduce disposal through repair or modification of clothes from costumers.

E-Terzi has modernized traditional garment repair and tailoring: they are easily accessible through their website, which is their main advertising and marketing channel. The value proposition E-Terzi makes is to provide customers who want to get their garments repaired or modified with a way to communicate easily and a high-quality service that includes follow-ups. The most significant success factor is the very experienced and qualified tailors in charge of the repairs and modifications. Customers seeking a service for a certain product send E-Terzi a photo and receive a prompt reply detailing the process and price. If the customer accepts, the product is picked up from their home and delivered back once repaired or modified. E-Terzi specializes in leather garments, which require special skills and machines, and generates even higher value due to the high cost and environmental footprint of leather.







4. Circular Business Models

g) Reselling

It mainly refers to selling and buying second-hand garments and accessories and, as a business model, reselling appeals to businesses of different sizes . Nowadays, this model generally functions as an online platform where users can buy and sell second-hand products, and the possibility of reselling encourages consumers to take good care of their belongings.

Drivers to analyse:

Key partners: garment and accessories providers such as consumers, NGOs, municipalities, etc.; online platform and technology suppliers; suppliers that participate in the maintenance (and checking) of the items. Key activities: identifying the details of the model; establishing technological infrastructure and a digital platform, and also consider establishing an offline store; engaging with actors such as retailers to create an inventory with continuous improvement; establishing a system for the general management (cleaning, registration, quality checking...) of the garments and accessories; developing an effective collection and distribution scheme; managing agreements and other legal relationships with clients.

Value Propositions: provide consumers with the opportunity to <u>buy and sell second-hand fashion products</u>; provide brands and retailers with an <u>infrastructure</u> to create and implement a second-hand market.

Key resources: human resources, online platforms and technological infrastructures, an inventory, offline shops, storage, and logistic infrastructure.







4. Circular Business Models

g) Reselling

Drivers to analyse:

Customer relationship: <u>long-term and strong relationships</u> with customers<u>; trust and attachment through an</u> inventory and cleaning and maintenance services<u>; opportunity to create synergies</u> through an online platform.

Channels: sale (websites, apps...), communication (websites, social media...)...

Customer segment: <u>consumers</u> that want garments and accessories at low cost or willing to sell their used items that are in good condition; <u>brands</u> looking for a second-hand market for their products; <u>rental businesses</u> seeking second-hand items for their inventory.

Cost structure: human resources, purchase of garments and accessories, rental or acquisition of physical infrastructure, transportation, distribution, and other logistics costs, investment for digital infrastructure. **Revenue streams:** feasibility is based on the relatively low investment costs and the increased interest in consumers for second-hand in the fashion industry. Build up an attractive inventory supported by a reliable infrastructure is key. Online systems are the best option for this BM.







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g) Reselling. Real case: Dabchy



Key activities: Dabchy is an online platform (a website and a mobile app) that allows women to revamp their wardrobes by buying and selling their used clothing online.

Dabchy is a localized fashion marketplace.

Costumer segment: females, aged 18-45.

Spreading the share-versus-own mentality in fashion by helping consumers be more environmentally conscious and value-oriented. This is through sharing sustainable practices on social media campaigns to help people become more comfortable wearing used clothing. This will reduce Fashion Waste and create a new generation of doers and conscious consumers.

Dabchy has achieved its goals of bringing, in 5 years of activity, more than 500.000 registered users on the platform and a catalog of more than 1M items for sale. Also, we are expanding to Egypt in 2021.







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g) Reselling. Real case: Dabchy



Dabchy is not only about buying and selling but it is a whole new mindset emanating from a clear vision: rethinking and shaping the future of fashion e-commerce. The ultimate goal is to avoid the waste of textiles in Africa and the Arab world by proposing a solution that makes it possible to value unused clothing.

Extend Resource use and reduce disposal

 Reselling (Give clothes second life Through influencers, users, and all fashion lovers to the marketplace): an innovative and easy- give their clothes second lives. to-use retail sales platform for sellers



Design for Durability, long lasting, and

Modularity: «Pimp My Dressing» events in

come to redesign their old clothes and use

them once again to explore and promote

sustainable and circular fashion trends.

Recover resources after disposal

Upcycling (Though Upcycling events with

partner brands): Fashion fests where

different Tunisian regions, where people







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Potential impacts

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Economic

- Expansion of the garment and accessories second-hand and rental/ leasing markets, including associated services
- Expansion of the garment and accessories e-business market
- Value extension through reuse and the associated repair/maintenance activities
- Value creation with the opportunity of reselling pieces which are sorted from the post-consumer waste collected for recycling
- Reduced costs at the value chain level (waste management, raw materials usage, manufacturing)
- Garment production cost reduction by limiting overproducing



Environmental

- Reduced pressure on virgin resources
- Reduction in garment waste generation and landfill/incineration diversion
- Reduction in overall environmental impacts through the limited production of new items (water, GHG, chemicals, energy, waste, etc.)
- Reduction in the overall environmental impacts stemming from the management of garment and accessories waste



Social

A safer and cleaner
environment for the

community

- Job creation in secondhand, collection, maintenance, and repair operations
- Job creation in the e-business sector
- Economic advantages for consumers through lower-priced products and the ability to sell their used products
- Promotion of donating used products
- Consumers encouraged to reduce their purchases of new products and to better take care of their products during the use phase
- Raising consumer awareness of sustainable shopping and the value of reusing









4. Circular Business Models

h) Rental/leasing and subscription

Rental/leasing ad subscription systems are the base of this BM. The provider, who typically owns the product, becomes responsible for all the maintenance and cleaning operations. Each of the three mentioned options offer different conditions in the contract.

Drivers to analyse:

Key partners: garment and accessories providers; online platform, technology suppliers and maintenance service providers; suppliers that repair, clean, and maintain garments and accessories. **Key activities:** identifying the <u>details of the model terms</u>; establishing <u>technological infrastructure</u> and a digital platform; engaging with actors such as retailers to build up a <u>garment and accessories inventory</u> with continuous improvement; establishing a <u>system for the general management</u> (cleaning, registration...) of the garments and accessories; developing an effective <u>distribution and take-back scheme</u>; managing <u>agreements and other legal</u> <u>relationships</u> with clients.

Value Propositions: give consumers access to a <u>shared wardrobe</u>, offer consumers a <u>flexible and convenience a range</u> of garments and accessories suitable for different occasions; provide brands and retailers with an <u>infrastructure</u> through which to do the <u>renting process</u>; and help brands keep <u>track and collect</u> their garments and accessories.

Key resources: human resources, online platforms and technological infrastructures, an inventory, offline shops, storage, and logistic infrastructure.







4. Circular Business Models

h) Rental/leasing and subscription

Drivers to analyse:

Customer relationship: <u>long-term and strong relationships</u> with customers<u>; trust and attachment through an</u> inventory and cleaning and maintenance services<u>; opportunity to create synergies</u> through an online platform.

Channels: sale (websites, apps...), communication (websites, social media...)...

Customer segment: <u>consumers</u> interested in high-quality garments and accessories and unlimited wardrobes at low cost; attractive for <u>fast fashion wearers</u>, millennials from upper to middle class, or individuals that have temporarily/rapidly changed sizes; <u>brands</u> willing to rent/lease their products.

Cost structure: human resources, purchase of garments and accessories, rental or acquisition of physical infrastructure, transportation, distribution, and other logistics costs, investment for digital infrastructure. **Revenue streams:** feasibility depends essentially on the raising interest of consumers for renting/leasing in fashion industry. Relatively longer pay back periods, cashflow challenges and it is critical to assess the demand. Build up an attractive inventory supported by a reliable infrastructure is key. Online systems are the best option for this BM.









Potential impacts



Economic

- Expansion of the rental/ leasing and second-hand markets, including associated services
- Expansion of the e-business market
- Value extension of garments through use by multiple users and the associated repair/ maintenance activities
- Value creation with the opportunity to rent pieces that haven't been sold at the end of each season
- Reduced costs at the value chain level (waste management, raw materials usage, manufacturing)
- Production cost reduction by limiting overproducing



Environmental

- Reduced pressure on virgin resources
- Reduction in garment waste generation and landfill/incineration diversion
- Reduction in overall environmental impacts through the limited production of new items (water, GHG, chemicals, energy, waste, etc.)
- Reduction in the overall environmental impacts stemming from the management of garment and accessories waste



Social

- A safer and cleaner environment for the community
- Job creation in rental/ leasing, maintenance, and repair operations
- Job creation in the e-business sector
- Lower-priced products for consumers and the ability to rent for special occasions instead of buying
- Consumers encouraged to stop purchasing unneeded clothes at such a rapid rate
- Raising consumer awareness of sustainable shopping and the value of sharing





h) Rental/leasing and subscription. Real case: MUD Jeans



Key activities: MUD Jeans is a jeans brand which allows to rent the jeans with a high supply chain control, use of recycled raw materials, and close the loop project/take back program to create new denims and repairing and upgrading the old denims in their vintage collection.

Costumer segment: Jeans Users

pillar strategy: Circular Economy, Positive Activism and Fair Factories.

Mud Jeans has transparency with the supply chain explaining where the do each steep giving value to all the chain and choosing the best partners with certifications which guarantee social and environmental aspects and circular value chain.

Additionally Mud Jeans with their leasing has associated a take back program to reuse the raw material from old clothes.





h) Rental/leasing and subscription. Real case: MUD Jeans



What circular measures do they apply?

Mud Jeans has the circular economy in all their value chain and supply chain through: **Circular Design** (raw materials certified, best fabrics with high technology used (dry indigo), recycle to reuse the raw materials in new jeans), **upcycled** through the vintage collection (with this steep there are able to **extending the life or the jeans 9 month** and reducing carbon and water footprint by 20-30%.

Circular Economy Attributes:

- Without water use in dyeing process through their supplier Tejidos Royo, and promote sustainable and circular fashion trends. Chemical control with Nordic Swan Ecolabel, control of environmental footprint through Life Cycle Assessment and goals to reduce the energy and CO2 footprint.
- Recycle jeans from other brands and also the own jeans.
- · All the components designed for Recycling.
- Denim 100% recycled.
- Community of leasers.





4. Circular Business Models

i) Value chains driven by alternative, low-impact fibers or recycled materials

This BM focuses on the inputs and their impacts and aims to achieve full recyclability and biodegradability of the materials flowing and being transformed throughout the value chain. It targets unblended materials and cycles which are fully traceable and enable closed loops, but is applicable primarily to yarn, fabric, garment and accessories producers.

Drivers to analyse:

Key partners: <u>suppliers of circular inputs and materials</u> such as organic cotton and bamboo; <u>designers and consultants</u>, <u>R&D centers</u>, <u>and universities</u> for eco-design support; <u>certification organizations</u> that approve a product's compliance with relevant standards; and <u>citizens</u> that benefit from sustainable practices.

Key activities: identify circular input requirements and opportunities for ensuring circular value chains; sourcing alternative raw materials and inputs and doing supplier checks; designing, R&D and testing new products based on the new alternative inputs; and getting feedback from potential customers.

Value Propositions: provide <u>consumers</u> with <u>biodegradable</u> garments and accessories; provide brand and retailers and garment producers with <u>traceable fabrics or garments and accessories made of circular/sustainable materials</u>.

Key resources: eco-design capabilities and material expertise; sustainable raw materials such as recycled cotton and polyester.







4. Circular Business Models

i) Value chains driven by alternative, low-impact fibers or recycled materials

Drivers to analyse:

Customer relationship: trust generated by providing material and product certifications and standards; conscious consumers.

Channels: <u>For consumers</u>: points of sale (websites, apps...), communication (websites, social media...). For <u>businesses</u>: points of sale (fairs), communication (websites, local networks...)

Customer segment: <u>consumers</u> interested in purchasing garments and accessories made of circular and renewable and recyclable inputs; and <u>brands</u>, <u>retailers</u> and <u>garment</u> and <u>accessories</u> producers seeking traceable, circular/sustainable inputs, materials and products.

Cost structure: human resources, external experts and designers, certification costs, purchase of circular materials and inputs, rental or acquisition of physical infrastructure, transportation, distribution, and other logistics costs, etc. **Revenue streams:** feasibility depends essentially on the raising interest of consumers for renting/leasing in fashion industry. Relatively longer pay back periods, cashflow challenges and it is critical to assess the demand. Build up an attractive inventory supported by a reliable infrastructure is key. Online systems are the best option for this BM.









🔊 STAND Up!

Potential impacts



Economic

- Increase in demand for sustainable inputs and materials
- Expansion of the sustainable garment and accessories market
- Value and savings created through recycled materials and the elimination of virgin materials
- Reduction in costs associated with landfilling and incinerating end-oflife products



Environmental

- Reduction in the overall environmental impacts stemming from the extraction, processing, and waste management of non-recyclable/ biodegradable materials/ products
- Reduction in the amount of garment and accessories waste landfilled or incinerated
- Improvement in the circularity and sustainability perspective at both company and value chain levels



Social

- A safer and cleaner environment for the community
- Job creation and an increase in the demand for sustainable fashion designers
- Job creation in sustainable and circular materials and products
- Raised consumer awareness of circular products





4. Circular Business Models. Real case

i) Real case: Re.Verso



Key activities: Re.Verso is a circular evolved supply chain 100% Made in Italy composed of several different companies and selected transforming partners. Re.verso recovers fabric waste and sweater, from factories, companies and customers from the fashion industry. We manually selects and transform them into Re-Verso[™] regenerated yarns and fabrics.

Costumer segment: Brands and consumers

Add value and Impact: Economic - Environmental Recycle of post and preconsumer materials:

- 1000 kg of wool savings compared to virgin wool: -76 % energy, -82% water, -96CO2
- 1000 kg of cashmere savings compared to virgin cashmere: -82% energy, -89% water, -97% CO2.
- Fully traceable cycle.







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4. Circular Business Models. Real case

i) Real case: Re.verso

What circular measures do they apply?

Preconsumer process: they recover textile waste of the discount. various brands, coming from factories and companies in the fashion industry. They manually select and transform Re-Verso ™ yarns and fabrics. Then, they offer to the same brand a wide range of new product from their own waste: fabrics, yarns and accessories, that thanks to Re.Verso ™ technology and know-how are highly performing, in terms of fashion but also of chemical safety.

Takeback system: They recover, select and process exclusive wool and cashmere sweaters left by local customers at Re.Verso partner brand stores. Customers may take back old sweaters (only 100% wool and 100%

cashmere) at the partner brand store in order to obtain a discount.

Green Line sources, sorts and sanitizes postconsumer sweaters; Nuova Fratelli Boretti does the hand-picking selection, the mechanical transformation process to create raw Re-verso material; Filipucci develops the yars; A. Stelloni by Mapel develops fashion fabrics; Antica Valserchio develops fashion accessories.







4. Circular Business Models

j) Slow fashion in full control of the value chains

This BM, closely linked with the previous model, takes control of the entire value chain and acts as a response to the dominance fast fashion. It's based on the idea of applying eco-design measures at every life cycle stage of a product and follow features such as using high-quality standards, selling products locally or having sustainable supply chains.

Drivers to analyse:

Key partners: <u>designers and consultants</u>, R&D centers, and <u>universities</u> for eco-design support; <u>suppliers of circular</u> <u>inputs and materials</u> such as organic cotton and bamboo; an d <u>certification organizations</u> that approve a product's compliance with relevant standards.

Key activities: identify eco-design features and critical aspects of supply; identify suitable raw materials and inputs, but also production methods and designing-post product phases; using circular materials or creating a reliable supply chain; doing supplier checks and audits, and also cooperating with them; conducting eco-design, R&D and product testing while getting feedback from customers.

Value Propositions. <u>Provide consumers with slow fashion products</u> that are eco-designed; provide <u>brand and</u> <u>boutiques with slow fashion</u>.

Key resources: eco-design capabilities and material expertise; sustainable raw materials such as recycled cotton and polyester.







4. Circular Business Models

j) Slow fashion in full control of the value chains

Drivers to analyse:

Customer relationship. Conscious <u>consumers</u>, <u>brands and other sellers</u> and a strengthened relationship through product certifications and standards</u>.

Channels: <u>For consumers</u>: points of sale (websites, apps...), communication (websites, social media...).
<u>For businesses</u>: points of sale (fairs), communication (websites, local networks...)

Customer segment. <u>Consumers</u> interested in slow-fashion and eco-designed products; and <u>brands or boutiques</u> willing to sell slow fashion and eco-designed products.

Cost structure: human resources, external experts and designers, costs related to trials and tests, supply chain management, purchase and/or extraction/cultivation of materials and inputs, certification costs, rental or acquisition of physical infrastructure, transportation, distribution, and other logistics costs, etc. **Revenue streams:** feasibility and pay-back periods depend on the market demand (especially local) for slow fashion and eco-designed products, as well as the availability and cost of associated inputs, supplies and a government supporting circularity,









Potential impacts



Economic

- Increase in demand for sustainable inputs and materials
- Expansion of the sustainable garment and accessories market
- Value and savings created through recycled materials and the elimination of virgin materials
- Reduction in costs associated with landfilling and incinerating end-oflife products

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Environmental

- Reduction in the overall environmental impacts stemming from the extraction, processing, and waste management of non-recyclable/ biodegradable materials/ products
- Reduction in the amount of garment and accessories waste landfilled or incinerated
- Improvement in the circularity and sustainability perspective at both company and value chain levels



Social

- A safer and cleaner environment for the community
- Job creation and an increase in the demand for sustainable fashion designers
- Job creation in sustainable and circular materials and products
- Raised consumer awareness of circular products

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j) Slow fashion in full control of the value chains



Key activities: Saqhoute is an affordable luxury ready-to-wear brand for professional women. It offers women sustainably and ethically produced ready-towear garments that are transferable from one occasion to the next, enabling her to balance her family, career, and social endeavors effortlessly. It creates timeless pieces that can last for generations and recreate the concept of clothes being high in quality, versatile and lasting in design to the extent that you can pass it on to younger generations.

Costumer segment: Professional modern-day women aging 30-45

Add value and Impact: Economic – Environmental – Social

The brand aims to revive Egyptian cultural heritage and crafts through its carefully handmade pieces and locally inspired designs employing handicraft skills such as hand-embroidery to revive said practices. The team is predominantly of women and housewives whom we enable to work on the garments' embroidery at home. They rely heavily on the local supply chain to create their garments. They include social, environmental and cultural preservation in their supply chain. They are able to reduce fabric use by 15% thanks to modular design and they avoid fabric or garment waste ending up in landfills or burned.





j) Slow fashion in full control of the value chains



What circular measures do they apply?

- Sourcing deadstock material that is no longer appealing to other trend-driven brands or businesses and other locally fabric materials
- Work with limited quantities to create unique limited-edition pieces
- Modular design to reduce fabric use
- Clothes sold locally
- High quality, long-lasting and time-less clothes
- Collect scraps and fabric waste and donate/sell to third parties







5. Bibliography and other online resources

Ecotex Course (Sustainability & circular economy in textile sector): Eco Tex : Circular Economy Innovative Skills in the Textile Sector (ecotexerasmus.eu) Ellen MacArthur Foundation: Circular Economy - UK, USA, Europe, Asia & South America - The Ellen MacArthur Foundation. Switchmed project: SwitchMed "Circular business opportunities in the south Mediterranean: how can businesses lead the way to sustainable fashion?" publication now available - SwitchMed

