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O.2.1 Innovative Business Models for Circular Transition of Women Entrepreneurs

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BWCON, CCIS, PBN, Ropot Botique

Versioning and Contribution History

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1 Introduction

Circular economy offers important opportunities for women entrepreneurs. It can help them reduce waste, use resources more efficiently, develop new products and services, build stronger customer relationships and create more sustainable businesses.

Within the WE.Circular project, circular business models were developed to show how women-led businesses can create, deliver and capture value in a circular economy. In simple terms, the models explain how a business can work in a more circular way, while also remaining competitive, innovative and attractive for customers.

The business models were developed as part of the WE.Circular support process for women entrepreneurs in the Danube Region. They are based on the ideas and needs of women entrepreneurs who took part in the WE.Circular Innovation Contest and in the co-creation activities organised through the WE.Circular Labs.

The development process started with the WE.Circular Innovation Contest, which identified women-led businesses with promising circular ideas. After the contest, co-creation groups were established in the participating countries. These groups brought together project partners, experts, stakeholders and women entrepreneur finalists.

The co-creation groups worked together in the WE.Circular Labs to explore the business ideas, identify challenges and discuss possible circular solutions. The process followed a common Co-creation Methodology developed within the project. It used open innovation and design thinking approaches, meaning that the models were not created only by experts, but through joint work with the entrepreneurs and stakeholders.

This approach helped ensure that the models reflect real business needs and are connected to practical challenges faced by women entrepreneurs in different sectors and countries.

The project originally planned to develop three circular business models, linked to the three key areas of the project: secondary raw materials; production and consumption; waste management.

During the co-creation process, however, it became clear that the needs of women entrepreneurs were more diverse. The participating businesses were active in different sectors and had different starting points. Some needed support to redesign products. Others needed better access to sustainable materials, improved production and

packaging systems, stronger digital tools, better communication with customers, or more partnerships.

For this reason, the partnership developed six circular business models instead of three. This made it possible to better reflect the different ways in which women entrepreneurs can start or strengthen their circular transition.

The six developed models are:

1. Circular Design Accelerator
2. Resource Champions
3. Production Optimizers
4. Smart Digital Enablers
5. Market Educators
6. Collaborative Ecosystems

Together, these models still contribute to the original three key areas of the project, but they present them in a more detailed and easier-to-use way.

The WE.Circular business models are not general circular economy models. They focus especially on women entrepreneurs and their specific needs when starting, developing or scaling a business.

The models take into account that women-led businesses may face different challenges, such as limited access to finance, smaller teams, lack of time, weaker networks, or the need for more tailored support. At the same time, many women entrepreneurs are strongly motivated to build responsible, sustainable and community-oriented businesses.

Another important feature of the models is the focus on digitalisation. Digital tools can support circular business in many ways: by improving traceability, reducing waste, managing data, communicating impact, reaching customers, or creating new services. The models also look at how digital and smart solutions can support circular transition.

2 Scope of the document

DRP0200020 WE.Circular - Boosting digital and industrial capacity for sustainable circular transition of women entrepreneurs in the Danube Region is a project implemented under the Interreg Danube Region Programme. Its main goal is to **increase digital and business skills of women entrepreneurs for circular transition** and to **equip the main stakeholders with skills necessary to develop and implement smart specialization strategies**, supporting women entrepreneurs from the Danube Region for transition to industry 4.0 while fulfilling circular economy aspects. It will be achieved through better integrated policies and innovative practical solutions.

By strengthening **digital, industrial, and circular competences**, WE.Circular builds an inclusive ecosystem that connects women entrepreneurs, business support organisations, academia, and policymakers through **training, innovation, and transnational collaboration**.

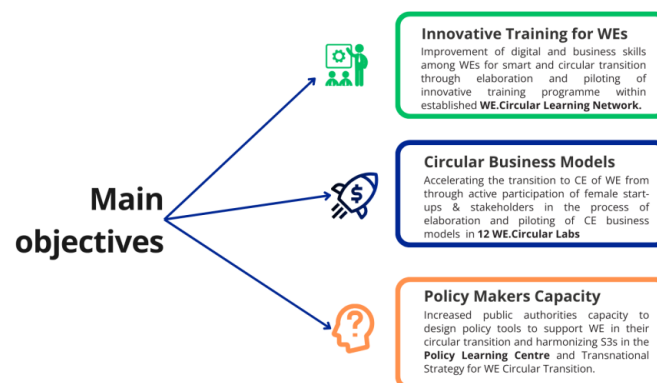


Figure 2-1: WE.Circular project main objectives

The project brings together **15 project partners** and **11 associated strategic partners** from **12 countries** who share the belief that women play a key role in shaping the future of sustainable innovation. Through a combination of **capacity-building, research, policy development, and transnational learning**, WE.Circular strengthens the regional ecosystem that supports women entrepreneurs in adopting circular business models and digital technologies.

Lead Partner:

Regional Agency for Entrepreneurship and Innovations – Varna (RAPIV), Bulgaria

Project Partners:

Varna Free University “Chernorizets Hrabar” (Bulgaria) • Innovation Region Styria LTD (Austria) • Technology Park Varaždin (Croatia) • IREAS – Institute for Structural Policy (Czech Republic) • BWCON GmbH (Germany) • Pannon Business Network (Hungary) • MGFU (Hungary) • Chamber of Commerce and Industry of Štajerska (Slovenia) • Slovak Business Agency (Slovakia) • Ropot Boutique (Romania) • Organization for Entrepreneurship Development (Moldova) • Foreign Trade Chamber of Bosnia and Herzegovina • University of Sarajevo (Bosnia and Herzegovina) • Association of Business Women in Serbia

Associated Strategic Partners:

SPIRIT Slovenia • Ministry of Economy and Industry (Bulgaria) • Ministry of Culture and Innovation (Hungary) • Circular Slovakia • Women Entrepreneurs Club (Hungary) • Ministry of Economy (Moldova) • Ministry of Science, Higher Education and Youth (Bosnia and Herzegovina) • Economic Chamber of Styria – Dep. founder and economic services (Austria) • City of Varaždin (Croatia) • Chamber of Commerce of Serbia • Viitor Plus (Romania).

This output presents the six circular business models developed by the WE.Circular partnership. It explains the main idea behind each model, the type of challenges it addresses, the value it can create, and its potential for transfer to other sectors and regions.

The models were developed from real company cases and co-creation scenarios. However, this public document does not present sensitive company information. Details about individual company actions, specific partnerships, internal business plans or detailed revenue streams are not included. Instead, the models are presented in a general and transferable way, so they can be useful for a wider group of women entrepreneurs, support organisations, policy makers and circular economy stakeholders.

Practical guidance on how to apply the models is provided in the separate CE Business Models Toolkit. Detailed results from the testing phase are presented in the Pilot Testing Report. This document focuses on presenting the six developed business models as public project results that can support wider circular transition in the Danube Region.

3 Development process of the business models

The WE.Circular business models were developed through a step-by-step process that combined project methodology, co-creation with women entrepreneurs, expert input, peer review and pilot testing. The aim was to make sure that the models are not only based on circular economy theory, but also reflect real business needs, challenges and opportunities identified in the Danube Region.

The process was closely linked to the WE.Circular Labs. The Labs were created as collaborative spaces where women entrepreneurs, experts, project partners and stakeholders could work together on circular and digital business transformation. They followed a Living Lab approach, meaning that ideas were developed, discussed, tested and improved in real-life business contexts rather than only on paper.

3.1 Innovation Contest and WE.Circular Labs

The development of the business models started from the WE.Circular Innovation Contest. The contest helped identify women-led businesses with promising ideas, products, services or technologies linked to circular economy. These companies became an important source of practical information for the development of the business models.

The Innovation Contest showed that women entrepreneurs in the Danube Region are already active in many areas of circular transition. Their ideas covered different sectors and challenges, such as sustainable materials, product redesign, packaging, reuse, repair, digital solutions, customer engagement, upcycling and waste reduction.

The WE.Circular Labs provided the working environment for turning these ideas into business model pathways. Each Lab worked with selected women entrepreneurs and relevant stakeholders to better understand the current business situation, the main barriers and the possible circular solutions.



The Labs were designed to support women entrepreneurs in moving from general sustainability ambitions to more concrete business model changes. Their role was not only to provide advice, but also to create a space for dialogue, experimentation and validation. This was important because circular transition often affects many parts of a business at the same time, including materials, production, logistics, communication, partnerships and revenue logic.

3.2 Co-creation workshops and methodology

The development process was guided by a common Co-creation Methodology. This methodology provided the project partners with a structured process for developing innovative circular business models based on the Innovation Contest, national co-creation groups, open innovation and design thinking.

Co-creation groups were established in the participating countries. They included project partners, Associated Strategic Partners, experts, stakeholders and women entrepreneur finalists from Innovation contest. The groups worked in the WE.Circular Labs and supported the development of the business models from different perspectives.

The co-creation process brought together different types of knowledge. Women entrepreneurs shared their business experience, needs and challenges. Experts contributed knowledge on circular economy, digitalisation, materials, production, waste management, markets and business development. Stakeholders brought wider ecosystem perspectives, including policy, financing, support services and cooperation opportunities.

The national co-creation workshops included three main parts. First, women entrepreneurs presented their business ideas, current models and the challenges they faced in circular transition. Second, participants worked on challenge mapping and ideation, using design thinking and circular business model tools. Third, experts and stakeholders provided feedback and helped refine the proposed solutions.



Photo 1: National co-creation workshop, Bulgaria, 03.2025, credit: RAPIV

The methodology originally focused on three key circular economy areas:

- secondary raw materials;
- production and consumption;
- waste management.

However, the co-creation process showed that the needs of women entrepreneurs were more diverse. The business ideas could not be fully represented by only three broad models. Some companies needed support with product redesign. Others needed better resource efficiency, stronger production systems, digital tools, market education or partnerships. As a result, the project developed six circular business models, while still keeping a clear link with the original three thematic areas.

3.3 Development of the six business models pathway

After the national co-creation activities, the project partners analysed the challenges, ideas and recommendations collected from the participating companies and stakeholders. The aim was to identify common patterns across countries and sectors.

Although the companies were different, many of them faced similar challenges. These included difficulties in accessing sustainable materials, limited circular design capacity, inefficient production or packaging systems, lack of digital tools, low customer awareness and weak cooperation with partners.

Based on these shared needs, the partnership grouped the results into six circular business model pathways:

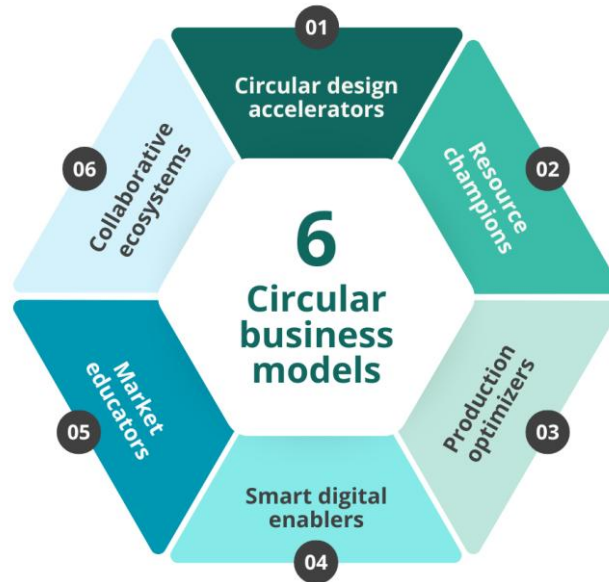


Figure 3-1: WE.Circular Business Models; credit: own illustration

Each model represents a different entry point for circular transition. Some models focus on products and materials, others on production systems, digitalisation, market demand or cooperation. Together, they form a broader and more flexible portfolio than originally planned, allowing different types of women-led SMEs to find a model that better reflects their situation.

The WE.Circular Labs Concept later confirmed this logic, describing the six business models as structured solution packages that address common barriers faced by women-led enterprises and propose practical actions for improving circularity, efficiency and market positioning.

3.4 Peer-review validation

After the first versions of the business models were developed, they were presented for peer review. The peer-review event took place on 17 September 2025 in a hybrid format, online and in person at Impact Hub Bucharest, Romania. It involved 27 participants and six peers with relevant experience in circular economy, policy, business support and ecosystem development.

The purpose of the peer review was to validate and improve the six business models. The peers assessed whether the models were practical, scalable and relevant for

women-led enterprises in the Danube Region. They also looked at how the models contributed to the three original thematic areas of the project: raw materials, production processes and waste management.



Photo 2: Peer-review meeting, Romania, 10.2025, credit: RAPIV

The peer review examined the models' strengths, gaps, risks, feasibility, scalability and readiness for piloting. It also helped identify synergies between the models and possible improvements before testing. The peer review confirmed that the six models were relevant and complementary, and that together they form an integrated framework for supporting women entrepreneurs in their circular transition.

The feedback from peers was used to refine the models before the pilot testing phase. The recommendations focused mainly on making the models clearer, more realistic and easier to adapt by SMEs with different levels of readiness.

3.5 Pilot testing of the models

After the peer-review phase, the models were tested through the WE.Circular Labs within 6 months-period. The aim was to check how the models could work in real SME conditions and what should be improved before finalisation. The pilot testing followed the Living Lab logic and the "test before invest" approach. This means that companies could test selected ideas, actions or business model elements before making larger investments or long-term commitments. The approach helped reduce risk and allowed companies to understand what was feasible in their own business context. The pilot testing was also used to validate the methodology in real conditions. It helped project partners understand how well the Lab approach worked, how stakeholders cooperated, what barriers appeared during implementation and which tools or processes needed improvement.

3.6 Transformation into public and transferable models

The business models were developed from real company cases and co-creation scenarios. During the internal development process, they included more detailed information on possible actions, partners, revenue streams, readiness levels and expected impacts.

However, this output is a public document. For this reason, sensitive company-specific information is not included. Details related to individual business plans, specific partnerships, internal actions, pricing ideas or concrete revenue streams are presented only in a generalised way.

The models are therefore not presented as individual company business plans. They are presented as transferable circular business model pathways that can be adapted by different women entrepreneurs, sectors and regions.

This approach makes the output useful for a wider audience, while respecting the confidentiality of the companies involved. It also supports the wider transfer of WE.Circular results to business support organisations, innovation actors, public authorities and circular economy stakeholders.

Together, the six business models show that circular transition can start from different points: product design, resource use, production and packaging, digital tools, market awareness or collaboration. This diversity reflects the real needs identified through the WE.Circular process and strengthens the potential for replication across the Danube Region.

4 Business model logic

A business model explains how a company creates value, delivers this value to customers and partners, and captures value in a way that allows the business to remain sustainable and competitive.

In the context of circular economy, this logic changes. Value is not created only by producing and selling more products. It can also be created by using fewer resources, extending the life of products, reducing waste, reusing materials, offering services instead of ownership, engaging customers in repair or return systems, and building partnerships that keep materials and products in use for longer.

The WE.Circular business models follow this logic. They show different ways in which women entrepreneurs can integrate circular economy principles into their businesses while also strengthening their market position, customer relationships and innovation capacity.

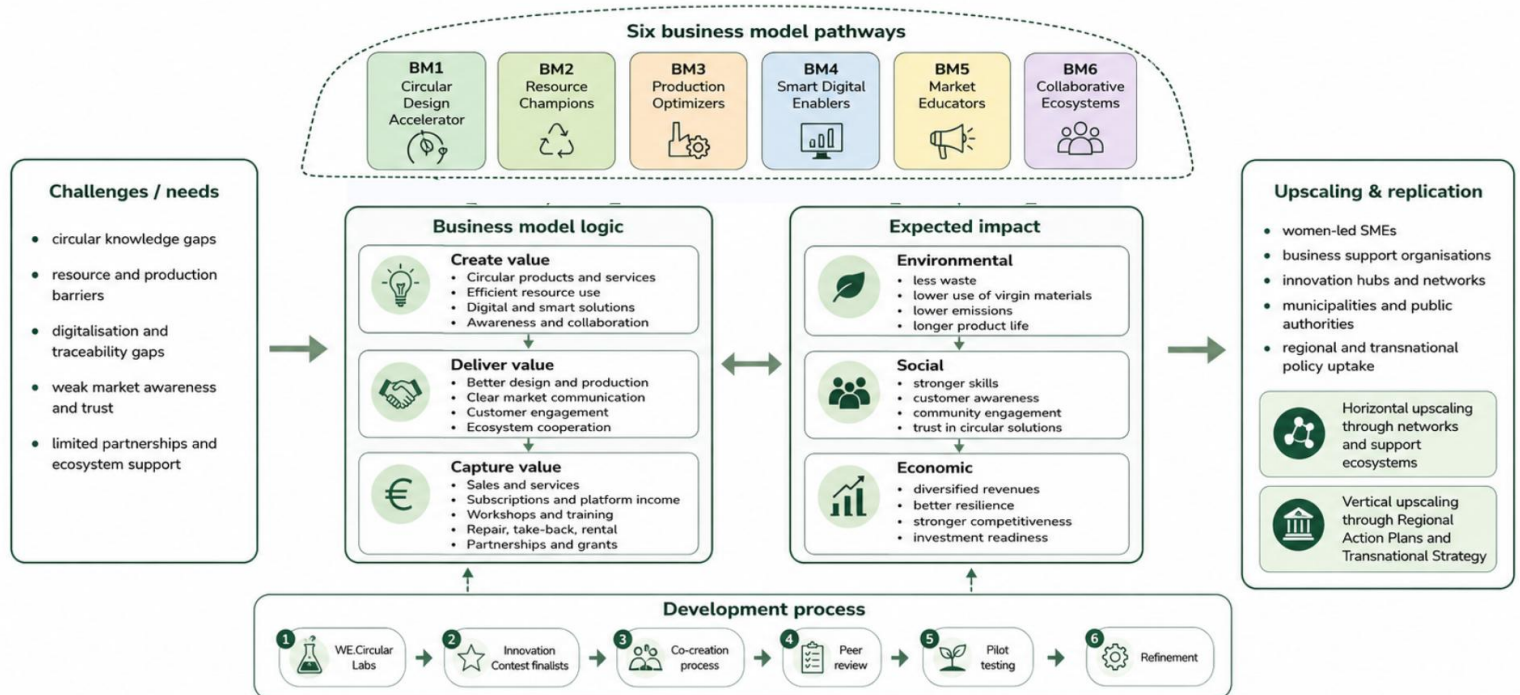


Figure 4-1: WE.Circular Business Models Logic, credit: own illustration

4.1 Creating circular value

In circular business models, value can be created in several ways. A company may redesign a product so it lasts longer, can be repaired more easily or can be reused after its first life. Another company may create value by using recycled, bio-based or local materials instead of virgin resources. Others may reduce waste in production, introduce refill or return systems, use digital tools to improve traceability, educate customers, or work with partners to share resources and knowledge. For women entrepreneurs, circular value creation can also be closely linked to community, trust and purpose. Many women-led businesses are **motivated not only by profit, but also by the wish to create positive environmental and social impact**. Circular business models can help turn this motivation into a clearer business direction. Examples of circular value creation include:

- reducing the use of virgin materials;

- extending product life through repair, reuse or redesign;
- turning waste or by-products into new resources;
- reducing packaging and production waste;
- improving transparency through digital tools;
- helping customers make more sustainable choices;
- creating local partnerships and circular value chains;
- building stronger trust through clear sustainability communication.

Circular value is therefore broader than the product itself. It includes environmental value, customer value, business value and social value.

4.2 Delivering circular value

In a traditional business model, value is often delivered through the sale of a product. In circular business models, delivery can take many different forms. A company may deliver value through a reusable product, a repair service, a refill system, a rental model, a digital platform, an educational workshop, a take-back system, or a partnership with another organisation.

This means that circular value delivery often requires more than one actor. For example, a reusable packaging model may need cooperation with logistics providers, retailers, cleaning services and customers. A repair or reuse model may need skilled repair actors, collection points and communication tools. A digital traceability model may need technology providers, data systems and customer-facing information. For this reason, **partnerships are very important in circular business models**. Women entrepreneurs do not need to implement all circular solutions alone. Business support organisations, municipalities, universities, suppliers, recyclers, digital experts, NGOs and customer communities can all help deliver circular value.

Digital tools can also support value delivery. QR codes, online platforms, customer apps, digital product passports, dashboards, newsletters and social media channels can help companies explain what they offer, show the impact of circular practices, manage returns or engage customers in circular behaviour. Examples of circular value delivery include:

- selling durable, repairable or reusable products;

- offering refill, repair, rental or subscription services;
- using digital platforms to connect customers, suppliers or partners;
- providing clear product information through labels or QR codes;
- organising workshops or awareness activities;
- setting up take-back, return or reuse systems;
- working with partners to collect, repair, redistribute or recycle products;
- using communication campaigns to explain circular value.

Good value delivery makes circular solutions easy to understand and easy to use. If customers do not understand how a circular product or service works, they are less likely to participate. For this reason, communication, trust and user-friendly processes are essential.

4.3 Capturing circular value

Capturing value means that the business also **receives benefits from the circular model**. These benefits may be financial, but they can also include stronger customer loyalty, reduced costs, improved visibility, better partnerships, access to new markets or stronger investment readiness.

In circular business models, value capture does not always come only from selling more products. Companies may create new income through services, subscriptions, repair, rental, reuse, training, digital platforms, partnerships or impact-related offers. They may also reduce costs by using resources more efficiently, lowering waste, improving production processes or working with partners.

For small and medium-sized companies, value capture should be realistic and gradual. Not every circular idea immediately creates a new revenue stream. Some actions first create visibility, trust, knowledge or customer engagement. These can later support stronger sales, new partnerships or investment opportunities.

Examples of circular value capture include:

- sales of circular, durable or redesigned products;
- income from repair, upgrade or customisation services;
- subscription, rental or product-as-a-service models;

- refill, return or deposit-based systems;
- workshops, training or educational services;
- digital platform fees or marketplace commissions;
- consulting or implementation services;
- cost savings from reduced waste and better resource use;
- improved access to grants, investors or public support;
- stronger brand value and customer loyalty.

Circular value capture also depends on the **company's readiness**. Some businesses can immediately introduce new services or digital tools. Others may first need to test the idea, build partnerships, improve communication or collect customer feedback.

The WE.Circular models therefore recognise that circular transition is often a step-by-step process. A company may begin with a small action, such as redesigning one product, reducing one type of waste, testing a return system or improving customer communication. Over time, these actions can become part of a stronger and more integrated circular business model.

4.4 The role of digitalisation in circular business model

Digitalisation can support all three parts of the business model logic: creating, delivering and capturing value.

Digital tools can help companies create value by improving product design, tracking materials, analysing customer behaviour or reducing waste. They can help deliver value by making circular solutions easier to access, manage and communicate. They can also help capture value by enabling new services, subscriptions, platforms, data-based offers or stronger impact reporting. However, digitalisation should not be seen as a goal by itself. A digital tool is useful only when it supports a real circular need. For example, a QR code can help customers understand how to repair or return a product. A dashboard can help a company monitor waste reduction. A digital platform can connect suppliers and users of secondary materials. A customer app can support refill reminders or return incentives.

For many women-led SMEs, digitalisation can start with simple tools. It is not always necessary to begin with advanced technologies such as artificial intelligence, blockchain

or IoT. Simple databases, online forms, QR codes, spreadsheets, websites, social media or customer feedback tools can already support circular transition.

The most important question is not “Which technology should be used?”, but “Which circular problem should this technology help solve?”

4.5 Business models logic

The six WE.Circular business models apply the same basic logic of creating, delivering and capturing value, but each model starts from a different circular challenge.

BM 1: Circular Design Accelerator creates value through better product and service design. It delivers value through durable, repairable, reusable or more transparent products and services. It captures value through circular products, repair, reuse, customisation, rental, workshops or stronger brand trust.

BM 2: Resource Champions creates value by improving the use of materials and reducing resource dependency. It delivers value through efficient material flows, recycled or bio-based inputs, and stronger supply chains. It captures value through circular product sales, reduced costs, partnerships, grants or investment readiness.

BM 3: Production Optimizers creates value by improving production, packaging and logistics systems. It delivers value through refill, return, reusable packaging, subscription or circular delivery models. It captures value through recurring sales, B2B partnerships, packaging services or better production efficiency.

BM 4: Smart Digital Enablers creates value through data, traceability and digital tools. It delivers value through platforms, dashboards, digital product passports, customer apps or digital services. It captures value through subscriptions, software services, platform fees, consulting or data-based services.

BM 5: Market Educators creates value by increasing awareness, trust and customer understanding. It delivers value through communication, education, storytelling, workshops and transparent information. It captures value through stronger demand, product sales, training services, sponsorships, memberships or public programmes.

BM 6: Collaborative Ecosystems creates value through cooperation. It delivers value through shared resources, partnerships, networks, community activities and joint initiatives. It captures value through shared services, co-branded offers, grants, workshops, rental, repair cafés or partnership-based projects.

5 WE.Circular Business Models overview

The WE.Circular project developed six circular business models that present different pathways for circular and digitally supported business transformation. Each model reflects a specific entry point for change: design, resource use, production systems, digitalisation, market awareness or collaboration.

The models are not fixed formulas. They can be adapted to the sector, size, readiness and ambition of each company. A women-led SME may follow one model, combine elements from several models, or use them as inspiration for improving its own business logic.

The models are presented below in a short summary format. More detailed descriptions are included in **Annex 1 – Detailed Description of the Six WE.Circular Business Models**.

5.1 Circular Design Accelerator

The **Circular Design Accelerator** model supports companies that want to redesign products, services or customer experiences according to circular economy principles. It focuses on moving circularity to the beginning of the design process, instead of treating waste reduction or reuse as an additional activity after the product is already developed.

The model addresses challenges such as short product lifetimes, difficult repair, limited reuse options, mixed or unsuitable materials, weak end-of-life solutions and low customer participation in care, repair or return activities.

It is especially relevant for companies where design decisions strongly influence material use, product durability and customer behaviour. This may include fashion and textiles, accessories, packaging, cosmetics, furniture, crafts, hospitality products, design-based businesses and small-scale manufacturing.

The model encourages companies to work with several circular design principles:

- durability and longer product life;
- repairability and easier maintenance;
- modularity and adaptability;

- reuse, refill or take-back options;
- better material choices;
- clearer product information;
- customer involvement in care, repair or return.

Through this model, companies can create value by offering products or services that last longer, generate less waste and communicate their circular value more clearly. It can also support stronger customer loyalty, better brand positioning and new service opportunities, such as repair, customisation, rental, workshops or take-back activities.

The model contributes to all three WE.Circular thematic areas: it supports better use of materials, improves production and design logic, and helps reduce waste through longer product lifecycles.

5.2 Resource Champions

The **Resource Champions** model supports companies that want to use materials more efficiently, reduce dependence on virgin resources and create value from secondary, recycled, bio-based, local or waste-derived inputs.

The model responds to challenges such as unstable access to sustainable materials, high costs of circular inputs, production waste, weak material recovery systems, limited supplier cooperation and difficulties in proving the environmental value of circular materials.

It is especially relevant for companies where materials are central to the business model. This may include packaging, textiles, recycling, upcycling, industrial materials, waste-to-product initiatives, furniture, cosmetics, social enterprises and production-oriented SMEs.

The model focuses on four main directions:

- securing sustainable and reliable material inputs;
- improving resource efficiency in production;
- reducing and reusing waste streams;
- strengthening cooperation with suppliers, recyclers and other partners.

Resource Champions helps companies move from resource dependency to resource resilience. This means that businesses become less vulnerable to material shortages, price increases and unstable supply chains. At the same time, they can improve their environmental performance and strengthen their market credibility.

The model can create value through lower material losses, better use of by-products, stronger supply chains, more sustainable products and improved readiness for funding or investment. It is especially useful for companies that want to demonstrate measurable circular impact, such as reduced virgin material use, waste avoided or resources kept in circulation.

The model mainly contributes to the WE.Circular thematic areas of secondary raw materials and production and consumption, while also supporting waste reduction and material recovery.

5.3 Production optimizers

The **Production Optimizers** model supports companies that need to improve their production, packaging, refill, return or logistics systems in order to make circularity operational.

Many circular ideas fail not because the idea is weak, but because the operational system behind it is not ready. For example, reusable packaging requires collection, cleaning, storage, redistribution and customer participation. Refill or subscription models require planning, stock management, communication and reliable delivery. The Production Optimizers model addresses exactly this operational side of circular transition.

It is relevant for companies in household care, cosmetics, food and beverages, personal care, refill businesses, packaging-intensive sectors, e-commerce and subscription-based models. It can also be useful for companies that plan to invest in new production or logistics infrastructure, but first need to test what is realistic.

The model focuses on:

- improving production and logistics processes;
- testing reusable, returnable or refillable packaging;
- reducing packaging and operational waste;

- improving customer participation in return or refill systems;
- strengthening distribution and retail partnerships;
- testing circular operations before larger investments.

Through this model, companies can create value by reducing packaging waste, improving process efficiency and building stronger control over production and delivery. It can also support recurring customer relationships, especially when linked to refill, subscription or return systems.

The model is particularly useful for companies with a circular product idea that needs a stronger operational base. It helps them move step by step, starting with smaller pilots or selected product lines before scaling to more complex infrastructure.

The model mainly contributes to the WE.Circular thematic area of production and consumption, with strong links to waste management and packaging circularity.

5.4 Smart Digital Enablers

The **Smart Digital Enablers** model supports companies that need digital tools to make circular activities more transparent, measurable, efficient and scalable.

Circular business models often depend on information. Companies need to know where materials come from, how products are used, whether packaging is returned, how much waste is avoided, what customers do, and what impact is created. Without reliable data, circular systems can be difficult to manage and difficult to communicate.

This model is relevant for digital platforms, circular marketplaces, retailers, manufacturers, fashion tech solutions, tourism platforms, reuse and repair services, food upcycling initiatives, rental models, refill systems and companies that need better traceability or customer-facing digital tools.

The model focuses on several digital functions:

- traceability of products and materials;
- digital product information;
- customer engagement tools;
- platforms and marketplaces;
- data collection and dashboards;

- lifecycle tracking;
- AI, IoT or other smart tools where relevant.

An important principle of the model is gradual digitalisation. Not every SME needs advanced technologies from the beginning. For many companies, simple tools such as QR codes, spreadsheets, online forms, customer databases, landing pages or basic dashboards can already support circular transition. More advanced solutions, such as digital product passports, AI, IoT sensors or blockchain, become relevant only when they respond to a clear business need and when the company has the capacity to use them.

The model creates value by improving transparency, reducing inefficiencies, strengthening customer trust and opening new digital service opportunities. It can also support compliance with future market expectations related to product data, traceability and sustainability information.

Smart Digital Enablers contributes to all three WE.Circular thematic areas because digital tools can support material tracking, production efficiency, waste reduction, reuse, return systems and customer participation.

5.5 Market Educators

The **Market Educators** model supports companies whose circular products or services need stronger awareness, trust and customer understanding.

In many cases, the challenge is not only to develop a circular product, but also to explain why it matters, how it works and why customers should choose it. Circular solutions may be more durable, reusable, repairable, local, recycled or lower-impact, but this value is not always visible to customers. The Market Educators model helps companies make this value clearer and more credible.

It is relevant for companies in sustainable products, fashion, crafts, retail, education, upcycling, reuse, biodiversity, local production, community initiatives, hospitality and other sectors where customer behaviour and communication are important.

The model focuses on:

- awareness campaigns;
- storytelling and branding;
- workshops, trainings and demonstrations;

- transparent communication;
- proof-based sustainability claims;
- customer feedback and participation;
- partnerships with schools, NGOs, municipalities, media or experts.

The model helps companies build trust and reduce the risk of greenwashing. It encourages them to communicate circular value in a way that is simple, honest and supported by evidence. This is important for customers, but also for partners, public institutions, investors and support organisations.

Market Educators can create value through stronger visibility, customer loyalty, higher demand, educational services, workshops, sponsorships, public programmes or partnerships. For many SMEs, the first benefit may not be immediate revenue, but stronger recognition, clearer positioning and better customer confidence.

The model contributes to all three WE.Circular thematic areas because awareness and behaviour change are necessary for better material use, circular production and waste reduction.

5.6 Collaborative Ecosystems

The **Collaborative Ecosystems** model supports companies that cannot implement circular solutions alone and need cooperation with partners, suppliers, customers, communities, institutions or other businesses.

Circular transition often requires more than the capacity of one small company. A business may need access to recycled materials, shared equipment, repair actors, logistics partners, digital expertise, market visibility, public support or customer communities. The Collaborative Ecosystems model responds to this need by placing cooperation at the centre of circular value creation.

It is relevant for SMEs working in reuse, repair, upcycling, rental services, sustainable fashion, local production, event services, circular marketplaces and community-based initiatives. It is also relevant for companies that need stronger access to materials, infrastructure, knowledge or partners.

The model focuses on:

- building partnerships and networks;

- sharing resources, tools, space or knowledge;
- creating local or regional value chains;
- involving customers and communities;
- organising joint initiatives, events or pilots;
- strengthening trust between ecosystem actors;
- gradually formalising cooperation where useful.

This model helps companies move from isolated circular actions to cooperation-based circular solutions. It can start with informal collaboration, such as joint events, shared promotion or contact exchange, and later develop into more structured partnerships, shared services, co-branded offers or joint projects.

Collaborative Ecosystems creates value by reducing individual limitations, sharing costs, improving access to resources and increasing visibility. It can also generate strong non-financial value, such as trust, knowledge exchange, community engagement and stronger local circular ecosystems.

The model contributes to all three WE.Circular thematic areas because cooperation is often needed to access secondary materials, improve production systems, organise reuse or repair, and manage waste as a resource.

5.7 Complementary of six models

The six WE.Circular business models are closely connected. They should not be seen as separate or competing options, but as complementary pathways that can support different stages or aspects of circular transformation.

For example, a company may start with the **Circular Design Accelerator** to redesign a product, then use the **Resource Champions** model to improve material sourcing, and later apply **Market Educators** to communicate the circular value to customers. Another company may combine **Production Optimizers** with **Smart Digital Enablers** to manage refill, return or reusable packaging systems. A third company may need the **Collaborative Ecosystems** model to build the partnerships required for scaling.

This complementarity is one of the strengths of the WE.Circular approach. It recognises that circular transition is rarely based on one isolated action. In practice, companies

often need a combination of design, materials, operations, digital tools, communication and cooperation.

Together, the six models cover the circular value chain from design and resource sourcing to production, use, reuse, communication, digitalisation and ecosystem cooperation. They provide a flexible framework that can be adapted by women entrepreneurs, business support organisations, innovation actors and policymakers working to support circular transition in the Danube Region.

6 Upscaling and Replication Potential

The six WE.Circular business models were developed as transferable pathways that can be adapted beyond the companies directly involved in the project. Their value lies not only in the specific business cases from which they were developed, but also in the broader logic they offer for supporting circular and digitally enabled business transformation.

The **models can be used by women entrepreneurs**, business support organisations, innovation hubs, chambers of commerce, training providers, municipalities, policymakers and other stakeholders working on circular economy, SME development, digitalisation and inclusive entrepreneurship. They are especially relevant because they are **based on real challenges identified by women entrepreneurs in different Danube Region countries and because they offer flexible entry points for circular transition**.

The replication potential of the models is strengthened by their **adaptability**. They are not limited to one sector or one type of company. They can be applied in fashion, textiles, packaging, food, cosmetics, tourism, crafts, retail, education, reuse, repair, digital platforms, local production and other SME sectors where circular economy opportunities exist. A company may use one model, combine elements from several models, or apply them gradually as its circular and digital readiness grows.

The models **can also be used by organisations that support SMEs**. They can serve as a basis for mentoring, workshops, peer-learning activities, innovation contests, acceleration programmes, circular economy training or advisory services. For example, a textile-focused support programme may use the Circular Design Accelerator and Market Educators models. A packaging or refill initiative may combine Production Optimizers with Smart Digital Enablers. A local circular economy network may use

Collaborative Ecosystems and Resource Champions to strengthen cooperation between companies, suppliers, recyclers and public actors.

The **strongest replication potential appears when the models are used together with the WE.Circular Labs approach**. The Labs provide a practical environment where companies can discuss challenges, test ideas, receive expert feedback and connect with relevant stakeholders. In this way, the models are not only written concepts, but can become working tools for business transformation. The Labs also support the “test before invest” logic, helping companies explore circular solutions before making larger financial or organisational commitments.

At the same time, successful replication requires **adaptation to the local context**. Each country, region and sector has different levels of circular economy maturity, digital readiness, infrastructure, customer awareness, available expertise and policy support. For this reason, the models should not be copied mechanically. They should be adapted to the specific needs of the target group and the local ecosystem. Replication should start with a clear understanding of the companies to be supported. Some companies may need help to redesign products or services. Others may need access to sustainable materials, better production and logistics systems, digital tools, customer awareness or stronger partnerships. Once the main challenge is clear, the most relevant model or combination of models can be selected. Expert and mentoring support is also important for replication. Many SMEs need practical help to translate circular economy ideas into concrete business actions. This is especially true when the model involves digital tools, new partnerships, investment, certification, customer behaviour change or operational changes. The WE.Circular experience showed that circular transition is often gradual and that companies benefit from support that helps them define realistic first steps.

Stakeholder engagement is another key condition. Circular business models often depend on cooperation with suppliers, recyclers, logistics providers, repair actors, digital experts, municipalities, universities, business support organisations, customers and local communities. Without such cooperation, many circular ideas remain difficult to implement. The Collaborative Ecosystems model is therefore not only one of the six models, but also an important principle for replication of the whole WE.Circular approach.

The models also have strong potential for policy uptake. Many barriers faced by women entrepreneurs cannot be solved only at company level. Circular transition often requires access to finance, infrastructure, digital skills, advisory services, testing opportunities,

market visibility, certification support and stronger cooperation between public and private actors. Public authorities and policy stakeholders can use the models to better understand what type of support women-led SMEs need in order to move from interest in circular economy to real implementation. From a policy perspective, the **models can inform targeted support schemes for women entrepreneurs, circular economy measures for SMEs, digitalisation programmes, voucher schemes, pilot actions, mentoring initiatives and regional innovation strategies.** They can also support the **integration of gender-sensitive approaches into green and digital transition policies.** This is important because women entrepreneurs often need support that combines business development, skills, networks, visibility and practical implementation opportunities.

The models are also connected to the wider WE.Circular policy work. They can support the **Regional Action Plans by translating strategic priorities into concrete business support directions.** For example, if a region identifies a need for better use of secondary materials, the Resource Champions model can provide a useful reference. If customer awareness is a barrier, the Market Educators model can guide awareness and trust-building actions. If cooperation between ecosystem actors is weak, the Collaborative Ecosystems model can support networking and partnership-building measures.

At transnational level, the models provide a common language for discussing circular and digital transition of women entrepreneurs across the Danube Region. Although countries and sectors differ, many women-led SMEs face similar barriers: limited practical knowledge, weak access to finance and expertise, insufficient digital readiness, low customer awareness, fragmented ecosystems and difficulties in testing circular solutions. The six models help structure these challenges and show possible ways to respond to them.

The long-term use of the models does not require the creation of completely new structures. They can be integrated into existing services, programmes and networks, such as business advisory services, innovation hubs, chambers, municipalities, universities, women entrepreneur networks, training programmes and future transnational cooperation projects. They can also be used together with other WE.Circular outputs, especially the CE Business Models Toolkit, the WE.Circular Labs Concept, the Strategy for Sustainability of the Labs, the Regional Action Plans and the Transnational Strategy.

The models can continue to evolve after the end of the project. Circular economy policies, market expectations, digital technologies and product information requirements will continue to develop. This means that the models should remain flexible and open to further update. Their main strength is that they provide a structured but adaptable basis for supporting women entrepreneurs in different contexts.

The upscaling and replication potential of the WE.Circular business models lies in their flexibility, practical orientation and connection to real business needs. They can support individual companies, strengthen business support services, inform policy measures and contribute to wider circular transition in the Danube Region and beyond.

7 Conclusions

The development of the WE.Circular business models shows that circular transition for women entrepreneurs is not a single path, but a process that can start from different business needs and opportunities. Some companies may begin by redesigning products, others by improving material use, production systems, digital tools, market communication or cooperation with partners. The six models developed within WE.Circular reflect this diversity and provide a flexible framework for supporting women-led SMEs in different sectors and contexts.

The final portfolio of models: **Circular Design Accelerator, Resource Champions, Production Optimizers, Smart Digital Enablers, Market Educators and Collaborative Ecosystems**, translates the original three thematic areas of the project into more specific and practical circular transition pathways. Together, they cover key aspects of circular business development: design, resources, production, digitalisation, customer awareness, partnerships and ecosystem cooperation.

The process used for developing the models was one of the main strengths of the output. The models were not prepared only as theoretical concepts. They were built on the ideas and challenges of women entrepreneurs who took part in the WE.Circular Innovation Contest, further developed through co-creation in the WE.Circular Labs, validated through peer review and refined after pilot testing. This step-by-step process helped ensure that the models respond to real business needs and remain relevant for practical use. The current document presents these results in a public and transferable way, without including sensitive company-specific information.

The models also confirm the importance of integrated support. Circular transition requires more than awareness or isolated training. Women entrepreneurs need practical guidance, access to expertise, opportunities to test ideas, digital support, better visibility, stronger partnerships and links to wider innovation ecosystems. The WE.Circular Labs approach proved useful in this respect, as it created a collaborative environment where companies, experts, stakeholders and support organisations could work together on business model transformation.

Digitalisation is another important cross-cutting element. The models show that digital tools can support circular transition by improving traceability, communication, customer engagement, data management, impact measurement and new service development. At the same time, the experience of WE.Circular confirms that digitalisation should be gradual and connected to clear business needs. Simple tools may already create value for many SMEs, while more advanced technologies can be introduced when the company has the capacity, data and partners to use them effectively.

The six models are also complementary. In practice, a company may need more than one model to move forward. Product redesign may require better material sourcing. Reusable packaging may need digital tracking and customer education. A circular service may depend on strong local partnerships. This complementarity makes the WE.Circular portfolio more flexible and more useful for different stages of business development.

The upscaling and replication potential of the models is significant. They can be used by women entrepreneurs, mentors, trainers, business support organisations, innovation hubs, chambers, municipalities and policymakers. They can support workshops, advisory services, acceleration programmes, regional circular economy initiatives, policy dialogue and future support measures for women-led SMEs. Their value is strengthened by the fact that they can be adapted to different sectors, local conditions and levels of circular and digital readiness.

The WE.Circular business models contribute to the wider objective of the project: strengthening the capacity of women entrepreneurs in the Danube Region to take part in the circular and digital transition. They provide a practical and transferable result that connects company-level experience with wider ecosystem and policy learning. By showing different ways to create, deliver and capture circular value, the models can

continue to support women entrepreneurs and stakeholders beyond the lifetime of the project.

The main message is that circular transition becomes more achievable when it is practical, gradual, supported and connected to real business needs. The WE.Circular models offer such a basis: they help women entrepreneurs identify where to start, how to structure their circular transition and how to turn sustainability ambitions into stronger, more resilient and future-oriented businesses.

Annexes:

A.1: Business model 1 Circular Design Accelerators

General information

This **Business model 1 Circular Design Accelerators** has been developed as part of the WE.Circular project to help female-led companies to make the shift from traditional linear production to a circular design approach. It responds to common challenges identified during co-creation workshops organized in each project partner country by WE.Circular Labs, where companies from diverse sectors, shared barriers such as unsustainable materials, short product life cycles, and limited customer engagement in product reuse. The model offers a structured, adaptable framework to rethink design, embed circular practices, and create products and services that deliver greater environmental, social, and economic value.

The model's structure is built around five strategic focus areas: **redesign for circularity**, **integrate lifecycle thinking**, **empower customer participation**, **communicate circular value**, and **apply data-informed planning**. For each focus, the model provides a clear description, suggested actions, and examples of how the actions can be applied in practice. This structure allows companies to choose the most relevant actions depending on their sector, scale, and current level of readiness.

The development of this model was guided by both existing circular economy best practices and the concrete scenarios created for 16 companies during the WE.Circular co-creation process. These companies represent a diversity of sectors, including fashion, packaging, cosmetics, hospitality, and artisanal crafts, demonstrating the flexibility of the model across contexts.

To protect company confidentiality, the examples in this annex are anonymised. Company names are replaced by internal index codes, and descriptions are presented by sector or business profile. The codes are used only to show how different types of companies may apply the model, without disclosing sensitive company-specific information.

As the model is focusing mainly on transition from linear to circular aspects and strengthening the circular potential of the businesses, it cannot be linked with only one of the key areas identified in WE.Circular project. Therefore it is applicable for all three of them.

Covered key areas: Production processes, Waste management, Raw materials

Problems and needs addressed by the model

Many women entrepreneurs (WEs) struggle to apply circular design principles due to a lack of know-how, tools, and capacity. Products are often designed for short-term use, made from mixed or hard-to-repair materials, and not accompanied by systems for reuse, resale, or customer engagement. These results in inefficient material use, faster obsolescence, and lower perceived product value.

Value proposition

The model supports WEs in transforming their design approach from linear to circular. It helps them create products that last longer (durability, reparability); are easier to disassemble and reuse; engage customers in maintenance, reuse, or upgrade cycles; and minimize waste from production and post-use stages.

Through this model, companies receive a mix of design support, practical tools, and learning opportunities to reimagine their product or service with embedded circular value.

Target users

The model is intended for companies that:

- **Need a strategic redesign** of their product or service concept to shift from linear to circular, **not** just small tweaks.
- Share common design-related barriers (lack of modularity, non-repairable products, unsustainable materials, no reuse or take-back loops).
- Will benefit from a structured programme that helps them **embed circularity from the start of the design phase**.

The model is designed for a broad spectrum of companies whose work can directly benefit from integrating circular design principles:

- **Companies** producing garments, packaging, décor, furniture, or hospitality products that are seeking to extend product life cycles, reduce waste, and access new markets.
- **Designers and product developers** aiming to embed sustainability from the concept stage, incorporating repairability, modularity, and material traceability.

- **SMEs transitioning to sustainable operations**, looking for practical tools and tested methodologies to move from linear to circular systems.
- **Local communities and cooperatives** involved in reuse, repair, craft production, or small-scale manufacturing, who can integrate circular design into their offerings.
- **Educational institutions and training providers** that can adopt the model as part of design, engineering, or entrepreneurship curricula.

Concept of the business model

The model functions as a modular service package offered to companies. It integrates creative, technical, and market-facing elements to foster design innovation aligned with CE principles.

The concept is grounded in actual co-creation scenarios and learning from WEs that participated in WE.Circular Labs. These scenarios revealed diverse design-related challenges across different production sectors, such as packaging, fashion, hospitality, and furniture. Despite varied sectors, common themes emerged:

- Lack of modularity or reparability in design
- Limited awareness or application of sustainable materials
- Poor integration of customer feedback or post-sale product use
- Minimal infrastructure for repair, return, or reuse loops

The model responds to these shared needs by offering a structured but adaptable pathway for WEs to assess, rethink, and reconfigure their product and service designs. It encourages companies to reflect on the lifecycle of their products and to plan incremental changes through co-creation and tailored circular strategies.

For effective implementation, companies applying the model will require supporting digital tools that facilitate lifecycle tracking and performance monitoring. Such tools may include lifecycle dashboards, digital product passports, or material flow monitoring systems that help visualize and assess progress toward circularity. In addition, the use of standardized impact indicators, such as metrics on material recirculation, CO₂ reduction, or customer participation in reuse and repair, will be necessary to ensure consistent evaluation and transparent communication of results across sectors.

Companies may apply the model selectively according to their sector, size, resources,

and readiness. The model should be used as a flexible framework rather than as a fixed list of mandatory actions. SMEs may begin with simple and low-cost circular design measures before introducing more complex digital or infrastructure-based solutions.

Key actions for application of the model

When applying the key actions, SMEs should first identify measures that are feasible with their current resources. Low-cost entry actions may include storytelling, simple product labels, customer feedback collection, educational formats, small repair or reuse activities, and basic transparency communication. More resource-intensive actions, such as digital tracking, lifecycle dashboards, larger take-back systems or advanced data tools, can be considered when internal capacity and partner support are available.

The following table merges the strategic focus areas with practical implementation suggestions, offering a guide for transitioning from linear to circular models:

| Strategic focus | Description of the strategic focus | Suggested actions for implementation | Relevant for companies |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Redesign for circularity | Convert products into modular, mono-material, and repairable formats, making them easier to disassemble, upgrade, and recycle | <ul style="list-style-type: none"> • Audit existing products for complexity and mixed materials; redesign using modular and mono-material components. • Introduce transformable or multifunctional products to extend usability. • Use standardized components to simplify repair and replacement. • Develop product lines specifically designed for disassembly and material separation | <p>BM1-C02 – Sustainable concept store / ethical fashion and lifestyle products</p> <p>BM1-C03 – Reusable packaging for e-commerce</p> <p>BM1-C04 – Sustainable fashion / clothing-as-a-service</p> <p>BM1-C05 – Reusable event decoration and interior products</p> <p>BM1-C06 – Modular hospitality products</p> <p>BM1-C07 – Circular platform for second-life children's products</p> <p>BM1-C08 – Sustainable fashion with natural and biodegradable materials</p> <p>BM1-C09 – Upcycled and zero-waste fashion design</p> <p>BM1-C10 – Small-batch fashion accessories / repair and upcycling</p> <p>BM1-C11 – Natural cosmetics and refillable packaging</p> <p>BM1-C12 – Local food / microgreen production with reusable packaging</p> <p>BM1-C13 – Artisanal sustainable fashion / repair and rental services</p> <p>BM1-C14 – Natural cosmetics and modular/refillable packaging</p> <p>BM1-C15 – Natural candles and refillable home fragrance products</p> <p>BM1-C16 – Sustainable fashion and upcycling education platform</p> |

| | | | |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Integrate lifecycle thinking | Plan for the full product journey – from design and production to use, maintenance, reuse, and recovery. | <ul style="list-style-type: none"> • Introduce take-back, repair, rental, and reuse services to extend product life. • Design and implement composting or organic waste management systems for relevant sectors. • Establish partnerships for refurbishment, recycling, and component recovery. • Build service contracts that include ongoing maintenance or refurbishment cycles. | All companies |
| Empower customer participation | Enable customers to extend product value and engage in second-life use. | <ul style="list-style-type: none"> • Organize co-creation labs, repair workshops, and product reuse events. • Create incentive programs for returning used products (e.g., deposit systems, loyalty points). • Introduce rental, subscription, or leasing models to shift from ownership to access. • Involve customers in design customization to increase product attachment and longevity. | M1-C01 – Rural hospitality and circular tourism BM1-C02 – Sustainable concept store / ethical fashion and lifestyle products BM1-C04 – Sustainable fashion / clothing-as-a-service BM1-C05 – Reusable event decoration and interior products BM1-C07 – Circular platform for second-life children's products BM1-C08 – Sustainable fashion with natural and biodegradable materials BM1-C09 – Upcycled and zero-waste fashion design BM1-C10 – Small-batch fashion accessories / repair and upcycling BM1-C11 – Natural cosmetics and refillable packaging BM1-C12 – Local food / microgreen production with reusable packaging BM1-C13 – Artisanal sustainable fashion / repair and rental services BM1-C14 – Natural cosmetics and modular/refillable packaging BM1-C15 – Natural candles and refillable home fragrance products BM1-C16 – Sustainable fashion and upcycling education platform |
| Communicate circular value | Make the environmental and social value of circular products visible and credible to customers, partners, and investor | <ul style="list-style-type: none"> • Use QR codes, story labels, and transparency dashboards to communicate environmental and social impact. • Obtain third-party certifications and eco-labels to validate claims. • Share lifecycle impact data in marketing materials. • Develop storytelling campaigns to highlight circular practices and community benefits. | BM1-C01 – Rural hospitality and circular tourism BM1-C02 – Sustainable concept store / ethical fashion and lifestyle products BM1-C03 – Reusable packaging for e-commerce BM1-C04 – Sustainable fashion / clothing-as-a-service BM1-C05 – Reusable event decoration and interior products BM1-C06 – Modular hospitality products BM1-C07 – Circular platform for second-life |

| | | | |
|-------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | children's products BM1-C08 – Sustainable fashion with natural and biodegradable materials BM1-C09 – Upcycled and zero-waste fashion design BM1-C10 – Small-batch fashion accessories / repair and upcycling BM1-C11 – Natural cosmetics and refillable packaging BM1-C13 – Artisanal sustainable fashion / repair and rental services BM1-C14 – Natural cosmetics and modular/refillable packaging BM1-C15 – Natural candles and refillable home fragrance products BM1-C16 – Sustainable fashion and upcycling education platform |
| Apply data-informed planning | Use data insights to optimize product lifecycle, performance, and sustainability impact. | <ul style="list-style-type: none"> • Track returns, repairs, and customer feedback to inform design improvements. • Use IoT, blockchain, or digital product passports to record product history and usage cycles. • Apply predictive analytics for demand forecasting and resource planning. • Monitor environmental savings (e.g., CO₂ reduction, waste diverted) to guide strategic decisions | BM1-C03 – Reusable packaging for e-commerce BM1-C06 – Modular hospitality products BM1-C07 – Circular platform for second-life children's products BM1-C08 – Sustainable fashion with natural and biodegradable materials BM1-C09 – Upcycled and zero-waste fashion design BM1-C11 – Natural cosmetics and refillable packaging BM1-C17 – Reusable textile service / circular textile solutions |

To effectively apply these actions, companies will benefit from integrating suitable digital and monitoring tools. The introduction of lifecycle tracking dashboards, data management systems, and circular performance indicators can significantly improve their ability to plan, measure, and communicate progress in circular transformation. The model therefore encourages users to adopt or develop such instruments as part of their long-term implementation strategy.

Customer participation models such as return schemes, repair events, reuse formats, rental or subscription concepts can first be tested on a small scale before wider implementation. Technical transparency tools such as QR codes, digital product passports or traceability dashboards should be introduced progressively and in line with relevant regulatory developments. Data-informed planning can start with accessible tools such as spreadsheets, customer feedback forms, return records, repair logs or simple sales analysis. Some examples are provided in Annex 5.

Potential partners

Transitioning to a circular design model is rarely achieved in isolation. The companies applying this model will require a supportive network of partners who can provide specialized expertise, access to technology, infrastructure for collection and reuse, as well as new market opportunities. Potential partners play a crucial role in removing barriers, accelerating the implementation of circular strategies, and scaling solutions beyond the company's own capacity.

In practice, these partners can contribute to:

- Supplying sustainable and traceable raw materials.
- Designing and prototyping products for durability, repairability, and modularity.
- Enabling take-back, repair, refurbishment, and reverse logistics.
- Providing digital tools for traceability and lifecycle monitoring.
- Validating sustainability claims through independent certification.
- Educating customers and building market demand for circular products.
- Universities and design schools to embed circular design into curricula

Companies applying this model should start partnership development with the most operationally relevant actors for their circular action. For take-back or reuse systems, this may include reuse centres, repair services, material recovery actors or local logistics providers. For packaging-related actions, cooperation with packaging suppliers, refill infrastructure providers or circular packaging platforms may be needed. Municipalities and local authorities can support pilots through public visibility, access to local networks or small-scale infrastructure. Partnerships should be tested first through small pilot activities before being scaled into formal long-term cooperation.

| Partner category | Description | Companies that need this category most |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Technical and material partners | Provide design expertise, sustainable materials, and infrastructure for repair, refurbishment, and reverse logistics. These partners help companies redesign products, source eco-materials, and set up take-back systems. | All companies |
| Digital and data partners | Deliver traceability, lifecycle monitoring, and sustainability verification tools. This includes IoT, blockchain, and certification services | BM1-C03 – Reusable packaging for e-commerce BM1-C06 – Modular hospitality products BM1-C07 – Circular platform for second-life |

| | | |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | that provide transparency and build consumer trust | children's products BM1-C08 – Sustainable fashion with natural and biodegradable materials BM1-C09 – Upcycled and zero-waste fashion design BM1-C11 – Natural cosmetics and refillable packaging BM1-C14 – Natural cosmetics and modular/refillable packaging BM1-C15 – Natural candles and refillable home fragrance products BM1-C17 – Reusable textile service / circular textile solutions |
| Market and communication partners | Support customer engagement, storytelling, and market expansion for circular products and services. Includes marketing agencies, marketplaces, and retail distribution networks. | All companies |
| Knowledge and education partners | Collaborate on research, curriculum development, and practical training for circular design and production. Universities, design schools, and vocational institutions can host innovation labs, provide mentorship, and co-develop circular design modules. | BM1-C02 – Sustainable concept store / ethical fashion and lifestyle products BM1-C06 – Modular hospitality products BM1-C08 – Sustainable fashion with natural and biodegradable materials BM1-C09 – Upcycled and zero-waste fashion design BM1-C10 – Small-batch fashion accessories / repair and upcycling BM1-C11 – Natural cosmetics and refillable packaging BM1-C14 – Natural cosmetics and modular/refillable packaging BM1-C16 – Sustainable fashion and upcycling education platform |
| Institutional and financial partners | Provide funding, policy support, and infrastructure that enable scaling. Includes municipalities, public procurement bodies, and green finance institutions | All companies |

Revenue streams

In a circular economy, revenue streams are often more diversified than in linear models, combining product sales with services, reuse programs, and value-added customer engagement. For companies applying this Model, this diversification supports longer product life cycles, recurring income, and stronger customer relationships.

Revenue streams are context-dependent. Companies are not expected to activate all revenue streams at the same time. SMEs may start with existing product sales, small paid workshops, repair or customization services, or simple take-back incentives, and

later explore subscription models, certification-related services, sponsorships or licensing when market demand and capacity increase.

The table below outlines the most relevant revenue streams for the cluster, grouped by category:

| Revenue Stream Category | Description | Examples for companies |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product sales (Circular Products) | Revenue from selling products designed for durability, repairability, or reuse. | Modular hospitality products (BM1-C06); transformable fashion accessories (BM1-C10); biodegradable or refillable cosmetics packaging (BM1-C11 , BM1-C14); refillable candle containers (BM1-C15); multifunctional garments (BM1-C16). |
| Product-as-a-Service / Subscription models | Customers pay for access or use rather than ownership, ensuring products return to the provider for reuse or refurbishment. | Clothing subscription model (BM1-C04); rental of reusable event decoration (BM1-C05); refill subscription for home fragrance products (BM1-C15); reusable textile service model (BM1-C17). |
| Repair, upgrade, and customization services | Fees for extending product life through repair, refurbishment, or customization. | Garment repair and restyling (BM1-C02); décor refurbishment (BM1-C05); artisanal fashion repair and redesign (BM1-C13); customised refill containers (BM1-C15); garment redesign through take-back (BM1-C16). |
| Deposit-return and take-back programs | Income through deposits or service fees for returning items for reuse or recycling. | Deposit-return for reusable decoration (BM1-C05); reusable e-commerce packaging with deposit system (BM1-C03); cosmetics container return programmes (BM1-C11 , BM1-C14); candle container return incentives (BM1-C15); garment take-back and redesign (BM1-C16). |
| Workshops and co-creation experiences | Revenue from engaging customers in learning and making, often strengthening brand loyalty. | Circular fashion workshops (BM1-C09); tourism-based sustainability experiences (BM1-C01); repair and upcycling labs (BM1-C08); sewing and upcycling workshops (BM1-C16); customer co-creation activities in sustainable lifestyle retail (BM1-C02). |
| Licensing and IP monetization | Licensing of designs, zero-waste patterns, or proprietary processes. | Zero-waste pattern library licenses (BM1-C09); modular product design IP (BM1-C06); scalable circular design concepts for fashion or product-based businesses (BM1-C10 , BM1-C16). |
| Impact data and certification services | Selling access to verified impact data or certification support as part of the product/service. | Lifecycle data dashboards for B2B clients (BM1-C03 , BM1-C06); traceability and certification for sustainable fashion products (BM1-C08); impact communication for natural cosmetics and refill systems (BM1-C11 , BM1-C14). |
| Partnership and sponsorship revenue | Funding from corporate partnerships, public programmes, or sponsorship of circular initiatives. | ESG-driven corporate partnerships for sustainable lifestyle products (BM1-C02); co-branded sustainability campaigns linked to local food and reusable packaging (BM1-C12); sustainability partnership programmes for natural cosmetics and wellness products (BM1-C14); education or CSR partnerships for upcycling workshops (BM1-C16). |

Key impact

Measuring and communicating impact is essential for companies adopting the Circular Design Accelerators model. It allows them to track progress, demonstrate value to customers and partners, and secure investment. Impacts are best assessed across environmental, social, and economic dimensions, ensuring a holistic view of performance.

| impact dimension | description | examples from cluster a companies | linked strategic focus |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| environmental impact | Reduction of waste, emissions, and use of virgin materials through redesign, reuse, and recycling. | Extended garment lifespan through subscription or clothing-as-a-service model (BM1-C04); reusable packaging replacing single-use packaging in e-commerce (BM1-C03); reusable and refillable cosmetics packaging (BM1-C14); refillable candle containers reducing material waste (BM1-C15); durable multifunctional garments and textile reuse through workshops (BM1-C16). | redesign for circularity, integrate lifecycle thinking |
| social impact | Creation of new skills, stronger customer engagement, and community participation in circular initiatives. | Guest education in sustainable tourism and resource efficiency (BM1-C01); co-creation workshops engaging customers in upcycling and sustainable lifestyle choices (BM1-C02); repair and reuse training for fashion customers (BM1-C08); customer engagement through packaging return incentives (BM1-C14); customer involvement in refill and reuse programmes (BM1-C15); sewing and upcycling workshops supporting behavioural change (BM1-C16). | empower customer participation, communicate circular value |
| economic impact | Diversification of revenue streams, creation of long-term customer relationships, and cost savings through resource efficiency. | Recurring income from refurbishment or maintenance contracts for modular hospitality products (BM1-C06); deposit-return model improving retention and repeated use of event decoration products (BM1-C05); new revenue from rental and repair services in artisanal fashion (BM1-C13); partnership-based revenue from sustainable cosmetics or wellness product lines (BM1-C14); subscription-based refill services building customer loyalty (BM1-C15); diversified revenue through garment sales, workshops and take-back redesign services (BM1-C16). | apply data-informed planning, integrate lifecycle thinking |

To ensure comparability of results and transparent reporting, the implementation of the model should include the use of standardized impact indicators. These may cover environmental, social, and economic dimensions such as the share of materials

recirculated, estimated CO₂ savings per product, or customer participation rates in reuse, return, or repair schemes. Including such metrics will allow companies to measure progress consistently, communicate achievements more effectively, and strengthen evidence of impact across the participating sectors.

For small businesses, impact measurement should be practical and accessible. Suggested tools include a basic monthly monitoring sheet, customer participation log, repair and return register, material reuse record, and short customer feedback form. Example indicators may include number of repaired items, number of returned products, share of reused materials, estimated waste avoided, number of participants in workshops, repeat customers, and customer satisfaction with circular services.

Readiness level

Assessing readiness is important to understand how prepared companies are to adopt and test the circular design accelerators model. This includes their current level of circularity, internal capabilities, available resources, and partner networks.

For the purpose of this project, readiness is assessed at three levels:

- **high** – the company already applies several circular practices, has infrastructure or partnerships in place, and can quickly pilot and scale the model.
- **medium** – the company applies some circular elements, has partial infrastructure, but requires additional capacity building or partnerships to fully implement the model.
- **low** – the company is at an early stage of circular transition, with limited infrastructure or partnerships; significant preparation is needed before testing.

For most companies that are currently at a medium readiness level, the focus should be on deepening their existing circular practices and closing operational or strategic gaps that limit their ability to test and scale the Circular Design Accelerators model. Improving readiness often begins with **strengthening technical capacity**, which means refining product designs so they are more modular, repairable, and easy to disassemble, while also securing a reliable supply of sustainable and traceable raw materials. For companies working with packaging or refill systems, this also includes designing durable, user-friendly formats and ensuring the reverse logistics and cleaning processes are in place. At the same time, companies benefit from establishing robust

systems for repair, refurbishment, and reverse logistics, often through **collaboration with specialized partners**.

Integrating full lifecycle thinking into operations is another important step. This involves formalizing take-back schemes, rental or subscription services, and creating clear end-of-life pathways for materials, whether through recycling, composting, or other recovery methods. For refill-based models, it means ensuring customers have easy access to refill points or return systems. Documenting these processes is essential to ensure they can be replicated and scaled over time. Alongside operational improvements, customer engagement needs to be strengthened. By **hosting co-creation events, offering loyalty programs, and making repair, reuse or refill services attractive and accessible**, companies can foster a more active role for customers in extending the value of products.

The **adoption of digital tools** also plays a key role in readiness improvement. Implementing traceability systems, such as QR codes or blockchain, allows companies to monitor products throughout their lifecycle and communicate verified environmental and social impacts. Data analytics can help optimize production, forecast demand, and measure the tangible results of circular strategies.

Finally, readiness is supported by **access to financial and institutional backing**. Companies can benefit from applying for green investment funds, EU programs, or local government incentives that reduce the cost of scaling. Participation in industry networks and circular economy platforms can open doors to new markets and valuable partnerships.

Adaptability

The Circular Design Accelerators model is built to work across sectors, product types, and regions. Its core principles: modularity, lifecycle thinking, and customer participation, remain constant, but the way they are applied can be tailored to each company's needs, resources, and market context. This flexibility allows it to deliver value in small-scale artisanal production, medium-sized manufacturing, and service-based businesses.

For companies, adaptability means selecting the most relevant strategic focuses and applying them in ways that match their sector and readiness. A fashion brand might adopt subscription services and repair workshops, while a packaging producer could prioritize reusable systems and deposit-return schemes. The model can also adjust to

rural contexts with local material sourcing and community-based repair, or to urban markets using e-commerce and logistics networks.

Implementation can be phased or comprehensive, allowing companies to start with one change, such as redesigning for modularity, introducing refill or take-back schemes, and expand as capacity and market acceptance grow. This balance of structure and flexibility ensures that enterprises of all sizes can integrate circular practices while contributing to waste reduction, resource efficiency, and long-term value creation.

SMEs can move from pilot-scale circular actions toward broader implementation by documenting pilot results, estimating resource needs, identifying required partners, and assessing whether external funding, grants or co-financing are needed before scaling.

Potential risks and mitigation strategies

The implementation of the Circular Design Accelerators model presents several potential risks related to financial capacity, behavioral change, and operational feasibility. While the model is highly relevant and scalable, its success depends on companies' readiness, available resources, and stakeholder collaboration. The following overview summarizes the key risk categories and the recommended mitigation strategies derived from peer review feedback and practical insights from participating companies.

Here are some potential risks and mitigation strategies:

| Potential risk | description | Mitigation strategies |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Financial risks | SMEs may lack the upfront investment capacity to adopt new circular design systems, purchase sustainable materials, or develop digital infrastructure for lifecycle tracking. Limited access to dedicated funding mechanisms can delay or restrict implementation. | Develop a financial toolkit including ROI calculators and funding guidance to demonstrate the long-term cost savings of circularity. Support access to EU green funds, local subsidies, and impact investment instruments. Encourage collaborative funding models and co-financed pilot projects through public-private partnerships. |
| Behavioral risks | Customer engagement in reuse, return, and repair programs may remain low without clear incentives. Limited consumer awareness of circularity and resistance to new purchasing models (e.g., subscription or take-back systems) may affect adoption rates | Launch awareness and education campaigns emphasizing the benefits of participation. Introduce incentives such as loyalty programs, discounts, or deposit refunds to increase customer engagement. Strengthen storytelling around environmental and social value through QR-based transparency tools and circular branding. |
| Operational risks | Companies may lack internal capacity, technical knowledge, or skilled workforce to implement repair, refurbishment, and reverse logistics processes. Infrastructure for take-back, | Offer targeted capacity-building and mentoring programs through WE.Circular Labs and WE.Circular Learning Network. Establish local partnerships for repair and logistics with existing service providers. Support companies in developing standardized |

| | | |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | sorting, or material recovery may also be underdeveloped in some regions. | operating procedures for circular product handling, including repair and refurbishment protocols |
| Digital and data management risks | Some SMEs may struggle to implement or manage digital tools for traceability, impact measurement, or data reporting due to technical or financial limitations. | Provide access to ready-to-use digital dashboards, templates, and product passport frameworks developed under the project. Offer basic digital literacy training to ensure companies can manage lifecycle data and measure impact effectively |
| Policy and institutional risks | Lack of consistent regulatory frameworks, unclear standards, or insufficient incentives for circular economy adoption can hinder long-term business transformation. | Engage with local municipalities and industry associations to promote enabling policies. Encourage alignment with EU Green Deal goals and Extended Producer Responsibility (EPR) schemes. Use the project's results to advocate for policy support and tax incentives for circular business adoption. |

Implementation of the actions by the companies

The following examples illustrate how the suggested strategic actions can be applied by different company profiles, depending on their business model, products, services and operational context. The examples are anonymised and presented through profile codes in order to protect company confidentiality and avoid publishing sensitive business information.

These case-inspired profiles provide practical insights into how women entrepreneurs can implement circular principles through design, service innovation, lifecycle thinking, customer engagement and communication of circular value.

BM1-C01 is a rural hospitality business offering accommodation and authentic cultural experiences. The profile aims to transition towards circular tourism by minimising operational waste and inspiring visitors to adopt more sustainable behaviours.

The **main challenge is to integrate sustainability into the guest experience in a practical and engaging way**. The profile is preparing to implement a set of circular actions tailored to the hospitality sector. These include guest education programmes that introduce circular practices in tourism through hands-on experiences, such as composting and energy conservation. The profile also plans to establish a composting system for organic kitchen and garden waste, reducing landfill dependency and supporting on-site soil regeneration. In addition, energy audits can be carried out to identify areas for efficiency improvements and to support the gradual integration of renewable energy sources. This model fits this profile because it redesigns the tourism experience to actively involve guests in sustainability, making circularity part of the core service offer.

Expected results include reduced operational waste and emissions, stronger customer understanding of sustainability, and improved brand differentiation through authentic circular tourism practices.

Strategic focus groups: integrate lifecycle thinking; communicate circular value; redesign for circularity.

BM1-C02 is a sustainable concept store and lifestyle business promoting sustainable fashion, accessories and home décor from different designers. It combines physical and digital retail, ethical production, upcycling techniques, consumer education, workshops and sustainable corporate gift offers.

The profile faces **challenges related to managing and scaling operations across multiple designer partnerships, digitalising impact measurement and customer experience, expanding market reach and developing return and reuse systems.**

This model fits the profile because it embeds repair, reuse and co-creation into the brand experience, transforming customer relationships and product lifecycles.

Planned actions may include launching a product take-back and upcycling programme, hosting co-creation labs to engage customers in reuse, and collaborating with ESG-oriented corporate clients.

Expected results include increased material efficiency, broader market reach and measurable sustainability impact.

Strategic focus groups: redesign for circularity; empower customer participation.

BM1-C03 is a reusable packaging profile for e-commerce, based on packaging produced from recycled textile waste. The solution is designed to replace single-use plastic and cardboard packaging with durable, recyclable and traceable packaging that integrates digital tracking, such as QR codes or a digital product passport. The business model can include subscriptions, security deposits and value-added services such as branding, cleaning and logistics.

This model fits the profile because it transforms packaging from a single-use product into a managed circular service, closing the loop in e-commerce logistics.

The **main challenges include finalising a scalable pricing and logistics model, developing and testing tracking software, convincing B2B customers to switch from disposable to reusable packaging, and establishing reliable cleaning and reverse logistics systems.**

Planned actions may include refining the pricing model, completing digital product passport integration and piloting reverse logistics with selected clients.

Expected results include reduced packaging waste, stronger regulatory readiness and increased adoption of reusable packaging.

Strategic focus groups: redesign for circularity; communicate circular value; integrate lifecycle thinking.

BM1-C04 is a sustainable fashion profile producing timeless and high-quality garments. While it already integrates circular aspects such as small-batch production and natural fabrics, the planned shift involves a strategic redesign of the business model towards clothing-as-a-service rather than only product ownership.

The main challenges include changing customer habits, managing garment circulation logistics and maintaining quality over multiple use cycles.

Planned actions may include launching a subscription wardrobe service that offers customers rotating garment access, combined with repair and restyling services. Co-creation workshops can also be developed to engage customers in garment personalisation and care.

This model fits the profile because it enables a full redesign of the clothing lifecycle, embedding service-based use and customer engagement into the core business.

Expected results include higher product utilisation rates, reduced textile waste and stronger customer loyalty.

Strategic focus groups: empower customer participation; integrate lifecycle thinking; redesign for circularity.

BM1-C05 is a reusable event decoration and interior products profile. Its products are already eco-oriented, but the planned changes aim to strategically reconfigure customer interaction with the product lifecycle in order to ensure reuse and reduce waste.

The main challenges include encouraging clients to return items for reuse and scaling a circular logistics system.

Planned actions may include introducing a deposit-return system for decoration items, integrating lifecycle storytelling through QR codes, and expanding take-back programmes to new markets.

This model fits the profile because it formalises reuse loops in event decoration and strengthens customer incentives for product return.

Expected results include increased reuse rates, reduced demand for virgin materials and stronger positioning as a circular event decoration provider.

Strategic focus groups: communicate circular value; integrate lifecycle thinking; empower customer participation.

BM1-C06 is a modular product profile for the hospitality sector. It is based on products designed for long-term use, refurbishment, repair and recycling. The profile aims to deepen its lifecycle design and service approach in order to extend product use and reduce material waste.

The **main challenges include scaling the refurbishment model, demonstrating measurable sustainability impact and differentiating in a competitive market.**

Planned actions may include introducing third-party quality seals, providing transparent lifecycle data and developing B2B contracts for annual refurbishment or maintenance services.

This model fits the profile because it strengthens existing modular design with lifecycle transparency and service-based customer contracts.

Expected results include reduced raw material demand, increased client retention and stronger market positioning through verified sustainability.

Strategic focus groups: redesign for circularity; integrate lifecycle thinking; communicate circular value.

BM1-C07 is a circular platform profile for second-life children's products, combining resale, refurbishment and digital personalisation. The profile aims to redesign product lifecycle processes to improve refurbishment quality and increase user participation.

The **main challenges include building efficient refurbishment workflows, ensuring consistent quality across second-life products and encouraging regular customer returns.**

Planned actions may include establishing an integrated refurbishment process with quality control, launching a gamified return and reward system, and using digital tools to match products with users for optimal lifecycle use.

This model fits the profile because it embeds refurbishment and customer engagement as core lifecycle strategies, ensuring that products circulate for longer and maintain value.

Expected results include higher rates of product reuse, reduced waste from discarded children's items and stronger customer loyalty.

Strategic focus groups: redesign for circularity; empower customer participation; integrate lifecycle thinking.

BM1-C08 is a sustainable fashion profile creating garments from biodegradable and natural materials, using ethical small-scale production. The profile already applies several circular principles, such as natural materials and ethical production, but its planned actions include stronger design-phase changes, such as garments designed for disassembly, repair and return systems, and digital product passports for lifecycle transparency.

The **main challenges include scaling production while maintaining sustainability standards,**

building consumer awareness and integrating new digital tools.

Planned actions may include designing modular garments with detachable components, launching a take-back and repair programme, and piloting digital tracking to verify sustainability claims.

This model fits the profile because it transforms the fashion design process towards modularity, traceability and long-term usability.

Expected results include increased reuse and repair rates, reduced textile waste and greater consumer trust through transparent product information.

Strategic focus groups: redesign for circularity; communicate circular value; integrate lifecycle thinking.

BM1-C09 is an upcycled and zero-waste fashion design profile. Its current upcycling and zero-waste approach is already strong, but planned changes such as modular production systems, standardised zero-waste pattern libraries and digital product information represent a strategic redesign of the production model to enable scaling without losing circular integrity.

The **main challenges** include **scaling production while preserving the zero-waste approach, streamlining design-to-production processes and engaging more customers in the story behind the products.**

Planned actions may include creating an open-access zero-waste pattern library for designers, developing modular garment collections and integrating traceability features to showcase material origins and waste prevention.

Expected results include minimised production waste, increased product lifespan and expanded influence through shared zero-waste resources.

Strategic focus groups: redesign for circularity; integrate lifecycle thinking; communicate circular value.

BM1-C10 is a small-batch fashion accessories profile based on durable products, personalisation, upcycling and repair. The profile aims to strengthen circularity by introducing transformable designs and scaling take-back and repair systems.

The planned actions represent a strategic design-phase enhancement that changes product conception and use cycles, rather than only adding small improvements.

The **main challenges** include **building customer awareness of repair services, integrating modular design into current collections and balancing small-batch production with circular service scalability.**

Planned actions may include launching accessories that can be adapted or modified by the user, expanding the take-back system to include refurbishment and resale, and introducing

workshops to teach repair skills.

Expected results include extended product life, reduced material waste and stronger customer-brand connection.

Strategic focus groups: redesign for circularity; empower customer participation; integrate lifecycle thinking.

BM1-C11 is a natural cosmetics profile producing handmade skincare from natural and organic ingredients, including the use of by-products and biodegradable packaging. The profile aims to strengthen circularity by implementing reusable and refillable packaging systems, take-back programmes and lifecycle impact tracking.

This model fits the profile because it redesigns the product-service model to make packaging a recoverable and reusable resource.

The **main challenges include designing practical refill systems, ensuring packaging durability and building customer participation.**

Planned actions may include developing standardised refill packaging, setting up a return and refill programme through retail and direct channels, and introducing digital tracking to monitor environmental savings.

Expected results include reduced packaging waste, increased customer loyalty and verified sustainability claims.

Strategic focus groups: redesign for circularity; integrate lifecycle thinking; communicate circular value.

BM1-C12 is a low-waste local food production profile offering fresh produce through subscription-based models, using biodegradable packaging and composting practices. The profile aims to strengthen circularity by decentralising production, creating cooperative production networks and integrating reusable packaging loops.

Decentralised, demand-driven production and packaging loops require redesign of production and service delivery systems. This means shifting the structure of the business model, not only optimising operations.

The **main challenges include setting up reliable partner production sites, managing packaging returns and maintaining product quality across distributed locations.**

This model fits the profile because it redesigns both production and delivery systems to operate within closed-loop, community-based networks.

Planned actions may include establishing local cultivation or production hubs, introducing a standardised reusable packaging system with collection and cleaning, and developing cooperative agreements for shared resource use.

Expected results include reduced packaging waste, shorter supply chains and greater resilience through local production.

Strategic focus groups: redesign for circularity; integrate lifecycle thinking; empower customer participation.

BM1-C13 is an artisanal sustainable fashion profile using natural materials, zero-waste techniques and redesign or upcycling services. The profile already applies circular aspects, but aims to redesign its circular model by adding rental, take-back and repair services to extend product lifecycles.

The **main challenges** include building a rental system that preserves garment quality, encouraging customers to return used items and integrating repairs into the business workflow.

Planned actions may include creating a formal rental programme for selected collections, introducing trade-in and repair incentives, and promoting these services through digital channels.

Expected results include extended garment lifespan, reduced textile waste and new revenue streams from service-based models.

Strategic focus groups: redesign for circularity; empower customer participation; integrate lifecycle thinking.

BM1-C14 is a natural cosmetics and wellness products profile using locally sourced ingredients and eco-friendly packaging. The profile already applies elements of sustainability, but seeks to go further by introducing reusable and modular packaging systems.

The motivation to strengthen circularity comes from the desire to reduce environmental impact, differentiate the brand through sustainability leadership and increase customer engagement.

The **main challenges** involve finding innovative reusable packaging formats suited to cosmetics, establishing partnerships with packaging suppliers and innovators, and educating consumers to return or reuse packaging.

Planned actions may include developing a modular and refill-friendly packaging line, launching a consumer packaging return scheme with incentives, and integrating stronger sustainability messaging into marketing materials.

Expected results include measurable reduction in packaging waste, stronger brand positioning in sustainable markets and increased customer loyalty through active participation in circular initiatives.

Strategic focus groups: redesign for circularity; integrate lifecycle thinking; empower customer participation.

BM1-C15 is a natural candles and home fragrance products profile. The profile already uses eco-friendly ingredients and recyclable packaging, but aims to shift towards a refillable candle and container system to reduce waste and extend the life of product containers.

The motivation is to improve environmental performance, reduce material use and build stronger customer relationships through refill and reuse opportunities.

The **main challenges** include **designing refill systems that are easy for customers to use, setting up refill stations or collection points, and encouraging behaviour change so customers prefer refills over new purchases.**

Planned actions may include introducing refill stations in partner stores or through direct sales, designing modular candle holders and containers that can be reused for longer periods, and launching communication campaigns highlighting the waste reduction benefits of refills.

Expected results include a significant decrease in packaging and container waste, improved customer retention and stronger environmental branding.

Strategic focus groups: redesign for circularity; integrate lifecycle thinking; empower customer participation.

BM1-C16 is a sustainable fashion and educational platform profile. It designs small collections of multifunctional, durable garments using sustainable materials and organises sewing workshops where participants learn to repair, repurpose and upcycle textiles. Leftover fabric is creatively reused to produce smaller items, reducing waste.

Planned actions may include implementing a structured garment take-back and redesign programme, scaling sewing workshops into CSR initiatives and schools, and partnering with eco-conscious retailers and online platforms.

This model fits the profile because it integrates design-for-durability with education and active customer engagement, reinforcing slow fashion principles.

Expected results include reduced textile waste, stronger consumer awareness of sustainable fashion and new income streams from workshops and garment redesign services.

Strategic focus groups: redesign for circularity; integrate lifecycle thinking; empower customer participation; communicate circular value.

Example of transparency tools for communicate the circular value

| purpose | Example tools | Possible use by SMEs |
|---------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Basic product transparency | QR Code Monkey, Canva QR Code, Adobe Express QR Code | Create QR codes linking to product story, materials, care instructions, repair guidance or return options |
| Dynamic QR information | Beaconstac, QR Code Generator PRO | Update product information after labels are printed |
| Product identification | GS1 identifiers, QR/NFC labels | Link products or batches to material origin, supplier data or lifecycle information |
| Digital Product Passport preparation | GS1 Digital Link, CIRPASS guidance, Circularise | Prepare for future DPP requirements and structure product data. |
| Advanced supply-chain traceability | TextileGenesis, TrusTrace, Circularise | Track materials, suppliers, certifications and product lifecycle data |
| Sustainability storytelling | Canva, Adobe Express, product story webpage | Present product journey, circular value and social/environmental benefits |
| Impact communication dashboard | Looker Studio, Flourish, Airtable interfaces | Show selected impact data such as repairs, returns, reused materials or waste avoided |

Example of impact measurement tool

| purpose | Example tools | Possible use by SMEs |
|------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------|
| Basic KPI tracking | Excel, Google Sheets, Airtable, Notion | Track repairs, returns, reused materials, waste avoided, customer participation |
| Customer feedback | Google Forms, Microsoft Forms, Typeform | Collect feedback on take-back, repair, reuse or rental services |
| Waste tracking | Excel, Google Sheets, internal waste log | Record kg of waste avoided, reused, recycled or diverted |
| CO₂ / GHG estimation | GHG Protocol tools, SME Climate Hub tools | Estimate emissions or savings from selected circular actions |
| Product lifecycle assessment | openLCA | Compare environmental impact of materials, design options or product systems |
| Circular performance monitoring | Simple dashboard in Looker Studio or Airtable | Visualise monthly circular KPIs for internal and external communication |
| Workshop / participation tracking | Event registration forms, CRM, spreadsheets | Monitor number of participants, repeat engagement and customer involvement |

A.2: Business model 2 Resource Champions

General information

This Business Model 2 **Resource Champions** has been developed as part of the WE.Circular project to help female-led companies maximize resource efficiency and scale up circular production. It responds to common challenges identified during co-creation workshops in Germany, Slovenia, Moldova, and Romania by WE.Circular Labs. Companies from sectors such as packaging, fashion, and recycling shared barriers including difficulty in securing sustainable materials, inefficient processes, high costs of circular operations, and limited customer awareness of recycled products. The model offers a structured, adaptable framework to strengthen resource use practices, optimize operations, engage markets, and build investment appeal for circular businesses.

The model's structure is built around four strategic focus areas: Secure sustainable inputs, Optimize processes and logistics, Engage and incentivize circular participation, and Strengthen investment readiness. For each focus, the model provides a clear description, suggested actions, and examples of practical application. This structure allows companies to choose the most relevant actions depending on their sector, scale, and current level of readiness.

The development of this model was guided by concrete scenarios created for four companies during the WE.Circular co-creation process. These companies represent a diversity of contexts – a protective packaging provider using agricultural waste, a sustainable fashion brand using recycled textiles, a social enterprise upcycling used cooking oil, and an industrial waste recycling company. This diversity demonstrates the flexibility of the model across contexts.

As the model focuses mainly on improving resource loops and operational efficiency, it cannot be linked with only one of the key areas identified in the WE.Circular project. Therefore, it is applicable to all three of them.

Covered key areas: *Raw materials*

Problems and needs addressed by the model

Many women entrepreneurs (WEs) aiming to be "resource champions" struggle with critical barriers in their shift to circularity. They often face unreliable access to eco-friendly or recycled raw materials, high costs in sourcing or certifying these inputs, and inefficient production processes that limit their capacity to scale. In addition, inadequate infrastructure for collecting and reusing materials (e.g. reverse logistics for returns or waste collection) and low market awareness or incentives for circular products make it hard to close resource loops. Furthermore, these WEs often lack investment and technical support – such as funding for new equipment, laboratory testing, or certifications – needed to grow their circular innovations. These challenges result in underutilized waste resources, continued reliance on virgin materials, and a limited overall impact of their circular solutions.

Value proposition

The model supports WEs in transforming their resource management approach from linear to circular. It helps them secure sustainable raw materials and inputs at scale, reduce waste and costs through streamlined processes, and increase the value derived from resources over multiple life cycles. By following this model, companies can improve the quality and credibility of their circular products (through certifications and quality control), engage customers and partners with transparent circular practices, and ultimately strengthen their business viability.

Through this model, companies receive a mix of practical support: guidance on building resilient supply chains for recycled or certified materials, tools for process optimization and digital monitoring, strategies for market engagement and customer incentive programs, and mentorship in investment readiness (e.g. preparing funding applications and scaling plans). This comprehensive support enables WEs to extract maximum value from materials, deliver proven environmental benefits, and attract the market and financial resources needed for growth.

Target users

The model is intended for companies that:

- Operate with resource-intensive or waste-generating products/services and need to significantly improve material efficiency and circular use of resources, not just make minor tweaks.

- Share common resource-related barriers, such as dependence on costly virgin materials, difficulty obtaining recycled inputs, high energy or production waste, or lack of systems to reclaim and reuse waste.
- Would benefit from a structured program that helps them scale up circular operations – including improving supply chains, upgrading processes, engaging customers, and accessing funding opportunities.

The model is designed for a broad spectrum of companies whose work can directly benefit from strengthening resource efficiency and circular value chains:

- Manufacturers and product companies (e.g. in packaging, textiles, furniture, cosmetics) looking to replace virgin raw materials with recycled or renewable ones, reduce waste in production, and ensure their resources circulate longer.
- Recycling, upcycling, or waste-management ventures (especially female-led SMEs) that transform waste into new products and seek support to optimize processes and expand their capacity and partnerships.
- Social enterprises and community initiatives focused on reusing waste or by-products (such as cooking oil, agricultural waste, textile offcuts) and aiming to increase their environmental and social impact while improving financial sustainability.
- SMEs with proven circular product ideas (e.g. compostable materials, secondary raw material production) that require additional investment, technology, or certifications to scale up and reach broader markets.
- Educational institutions, incubators, and support organizations that provide training in resource efficiency or circular supply chains and can adopt the model's framework to mentor women entrepreneurs in sustainable operations.

Concept of the business model

The model functions as a modular service package offered to companies, integrating supply chain, operational, market, and financial elements to foster resource-centric circular innovation. It is grounded in actual co-creation scenarios and learnings from the WEs that participated in WE.Circular Labs. These scenarios revealed diverse resource-related challenges across different sectors – from compostable packaging and ethical

fashion to social upcycling and industrial recycling. Despite varied business types, common themes emerged:

- **Resource access and efficiency gaps:** Companies struggle to secure stable supplies of recycled or eco-certified materials and to fully utilize all materials in production, leading to continued use of virgin resources or higher material costs.
- **Process and infrastructure limitations:** Without optimized processes or adequate infrastructure (for example, systems for collecting used materials, energy-efficient machinery, or digital monitoring), circular operations remain small-scale or inefficient.
- **Market awareness and incentive gaps:** Customers or clients often have low awareness of the benefits of circular products, or lack motivation to return used items and support reuse; this reduces demand and participation in circular schemes.
- **Investment and capacity needs:** Many WEs lack the necessary funding, laboratory/testing facilities, or space to expand, as well as the certifications and business partnerships that would make scaling up feasible.

The model responds to these shared needs by offering a structured but adaptable pathway for WEs to strengthen their resource loops and operational capacity. It encourages companies to address the full lifecycle of resources in their business – from sourcing inputs and production efficiency to product use, retrieval, and reintegration of materials – through targeted strategic actions. Companies are guided to build partnerships (for materials, logistics, technology, and funding), adopt data-driven tools (such as IoT sensors for waste tracking or digital design software), and implement incentive mechanisms that bring customers and suppliers into the circular process. By planning incremental changes in these focus areas and leveraging co-creation insights, enterprises can gradually reconfigure their value chain to be more resource-resilient and circular. The model provides flexibility so that each company can tailor the approach to its specific materials, sector, and readiness level, ensuring practical implementation of circular strategies that improve resource efficiency, reduce waste, and drive sustainable growth.

As the model is based on different resource loops and material types, companies should assess which closed-loop solutions are technically and economically realistic for their sector. Some loops, such as reuse, collection or simple material substitution, may

be easier to test, while technically complex recycling, industrial processing or certified material recovery may require specialised partners, testing capacity and longer preparation.

Key actions for application of the model

When applying the actions below, SMEs are encouraged to start with measures that are feasible with their current resources, such as mapping available inputs, improving material efficiency, communicating circular value, or testing small customer participation incentives. More complex actions, such as reverse logistics systems, certification, digital monitoring or equipment upgrades, can be introduced gradually when capacity, partners and financing are available.

The following table merges the strategic focus areas with practical implementation suggestions, offering a guide for transitioning from linear resource use to a circular, resource-efficient model:

| Strategic focus | Description of the strategic focus | Suggested actions for implementation |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Secure sustainable inputs | Ensure a reliable supply of sustainable, recycled, or certified raw materials and optimize material usage to reduce dependency on virgin inputs. | <ul style="list-style-type: none"> • Form supplier partnerships for recycled or bio-based materials (e.g. link with industrial by-product providers, local recyclers, or farmers for agricultural waste). • Qualify and certify inputs to meet standards (obtain eco-certifications like compostability or GOTS textiles to build trust in materials). • Improve material efficiency in production by adopting better design tools (e.g. CAD patterns to minimize fabric offcuts) and reusing scrap materials internally. • Localize and diversify input sources to avoid shortages – for example, use regional waste streams and maintain multiple sourcing options to secure enough feedstock as you scale <p>For small companies, a practical first step can be to map existing material sources, identify one or two reliable suppliers, and test whether sustainable or recycled inputs meet quality, cost and availability requirements before scaling procurement.</p> |
| Optimize processes and logistics | Improve production processes, energy use, and logistics (including reverse logistics) to increase efficiency, reduce waste, and handle circular | <ul style="list-style-type: none"> • Conduct process audits to identify waste and inefficiencies in production (energy, water, material use) and implement lean practices to eliminate them. • Adopt digital tools and automation (e.g. IoT sensors, ERP systems) to monitor operations and streamline workflows – |

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| | flows at scale. | <p>for instance, track waste collection bins fill levels or automate material sorting.</p> <ul style="list-style-type: none"> • Strengthen reverse logistics for take-back and reuse, by developing efficient collection networks and partnerships (e.g. with logistics firms or municipalities for returning used packaging or collecting post-consumer waste). • Upgrade equipment and infrastructure to more sustainable options (energy-efficient machinery, modular production lines) that can handle recycled materials and larger volumes with less waste and downtime. <p>For companies developing new materials, recycled products or industrial circular solutions, process optimisation may also include small-scale prototype testing, basic technical documentation, and preparation for industrial application. This can help verify product quality, production feasibility and compliance requirements before scaling.</p> |
| Engage and incentivize circular participation | Increase market acceptance and stakeholder engagement by raising awareness and providing incentives for customers and partners to participate in circular practices. | <ul style="list-style-type: none"> • Launch awareness campaigns and transparent communication to educate customers about the environmental benefits of the products (e.g. share impact data on waste saved or give product origin stories) and build trust in recycled or upcycled goods. • Implement incentive programs such as deposit-return schemes, discounts, or loyalty rewards that encourage customers to return packaging or products for reuse/recycling (for example, a deposit on reusable packaging or a voucher when returning used clothes or oil). • Obtain third-party eco-certifications and quality seals and prominently communicate these to overcome skepticism, proving that recycled/upcycled products meet high standards (this can be crucial for B2B clients in packaging or for consumers of fashion/cosmetics). • Engage communities and networks through workshops, co-creation labs, or pilot programs (for instance, host upcycling workshops or partner with local NGOs for collection drives) to involve stakeholders directly in the circular initiative and create community champions for the product. <p>Customer participation measures should be designed around real market drivers, including ease of use, comfort, price, convenience and trust. Sustainability benefits should be communicated clearly, but the participation model should also be simple and attractive for customers.</p> <p>Return schemes, repair events, reuse formats, subscription or rental concepts can first be tested through small pilots, limited product groups or selected customer segments before wider implementation.</p> |

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| Strengthen investment readiness | Build the capacity to attract funding and partnerships for scaling, by improving the business case, demonstrating impact, and ensuring the necessary infrastructure and skills are in place. | <ul style="list-style-type: none"> • Develop a robust business plan and funding strategy highlighting the circular model's market potential and impact (quantify waste reduced, potential cost savings, social benefits) to appeal to investors or grant programs. • Pursue strategic certifications or pilots (e.g. get product quality certifications, conduct a Life Cycle Assessment) to validate the model's credibility and reduce perceived risk for funders. • Network with financial and institutional supporters: engage with green investment funds, government programs, or accelerators for circular businesses to access capital and mentorship. • Invest in critical capacity that investors look for – for example, set up a small-scale innovation lab or demo facility to develop prototypes (as a proof-of-concept), secure land or permits for expansion (such as a recycling site permit), and train key staff in operations and financial management. These steps ensure that when funding is obtained, the company can effectively deploy it to scale quickly. |
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Coordination and Information-Sharing Mechanisms

Effective circular resource management depends on close collaboration and transparent communication among all participating stakeholders. To facilitate this, companies applying the Resource Champions model are encouraged to establish shared coordination platforms or matchmaking systems that connect suppliers, recyclers, and customers.

Examples include digital databases for available recycled materials, online communities for exchanging production by-products, and local stakeholder roundtables organized by chambers of commerce or regional development agencies. Such mechanisms can significantly reduce inefficiencies, build trust, and accelerate material flow within circular networks.

Potential partners

Transitioning to a resource-efficient circular model is rarely achieved in isolation. The companies applying this model will require a supportive network of partners who can provide specialized expertise, access to technology and materials, infrastructure for collection and processing, as well as new market opportunities. Potential partners play a crucial role in removing barriers, accelerating implementation of circular strategies, and scaling solutions beyond the company's own capacity.

In practice, these partners can contribute to:

- Supplying sustainable and traceable raw materials (e.g. recycled inputs, agricultural residues) to ensure a steady and certified feedstock.
- Providing technical expertise and equipment for product development and production (such as prototyping new recycled products, or machinery for processing waste materials).
- Enabling take-back systems and reverse logistics, including collection, transport, and handling of used materials or products for reuse or recycling.
- Offering digital tools and support for traceability, monitoring, and process automation (for example IoT systems to track resource flow or software for optimizing patterns and routes).
- Validating sustainability claims through independent certification and laboratory testing of materials and products.
- Educating customers and building market demand for circular products, by supporting marketing campaigns, educational workshops, or demonstration projects.

Partnership building should start from the most critical implementation need of the company. For secure inputs, this may mean stable cooperation with suppliers, recyclers or agricultural by-product providers. For take-back and reuse, SMEs may first approach local logistics actors, municipalities, reuse centres or material recovery partners. For scaling, institutional and financial partners can support certification, equipment, testing or pilot infrastructure. Partnerships can be tested through small pilot arrangements before being formalised into long-term cooperation.

The table below outlines key partner categories and their roles, along with which companies in this cluster would benefit most from each:

| Partner category | Description |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Technical and material partners | <p>Provide access to sustainable raw materials (recycled inputs, biobased materials) and technical know-how or facilities for processing and production. These partners help companies secure high-quality secondary materials and improve their production processes or develop new recycled products. They may include material suppliers, recycling facilities, R&D labs, equipment manufacturers, or industrial experts who can set up micro-factories and processing lines.</p> <p>For companies using recycled, bio-based or waste-derived materials, the reliability of supply is a key implementation condition. Partnerships should therefore address not only material</p> |

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| | type, but also continuity of supply, quality consistency, documentation and scalability. |
| Digital and data partners | Deliver traceability, monitoring, and optimization tools that improve efficiency and transparency. This includes IoT solution providers, software developers for resource tracking (e.g., waste collection apps, digital design software), and data analytics services. Such partners equip companies with the technology to monitor material flows, manage inventory, and verify sustainability performance (e.g. digital platforms for tracking waste sourcing and product lifecycle). |
| Market and communication partners | Support customer engagement, awareness raising, and market expansion for circular products and services. These partners can include marketing agencies, sustainable marketplaces, educational NGOs, or media and community organizations. They help craft compelling communication (storytelling about environmental impact), connect products with eco-conscious customers, and run campaigns or workshops to boost participation in circular initiatives. |
| Institutional and financial partners | Provide funding, policy support, and infrastructure that enable scaling of circular innovations. This category includes government programs, municipalities, international donors, impact investors, and green financing institutions. They can offer grants, favorable loans, incubation, or public-private partnerships, as well as policy incentives (like procurement of recycled products or permits for facilities). Such partners are critical to overcoming the initial investment hurdle and creating an enabling environment for growth. |
| Educational, Organizational, and Policy Support Partners | <p>In addition to technical, digital, market, and financial partners, education and institutional partners play an essential role in scaling circular resource management.</p> <ul style="list-style-type: none"> • Educational institutions and training centers (e.g., universities, vocational schools, design academies) can provide capacity building, awareness campaigns, and technical training for staff and communities involved in circular production. • Chambers of commerce and business associations can act as facilitators of matchmaking, logistics coordination, and regulatory communication between public and private actors. • Public authorities and policy bodies can establish incentive schemes, tax benefits, and regulatory frameworks that foster trust and information exchange between companies. <p>Together, these partners strengthen local ecosystems, enhance readiness, and provide continuous learning opportunities for enterprises transitioning to circular practices.</p> |

Revenue streams

In a circular economy model, revenue streams are often more diversified than in traditional linear businesses. Companies in the Resource Champions cluster combine product sales with services and partnerships, turning waste into value through multiple channels. This diversification supports more resilient income, makes better use of materials (by generating revenue at different stages of the resource cycle), and can strengthen customer and partner relationships.

For companies applying this model, revenue may come not only from selling products

but also from offering circular services (like leasing or take-back programs), securing licensing deals, and forming funded collaborations. Such a mix of revenues helps them extend the lifecycle of materials and build a sustainable financial foundation for growth.

For companies that require certification, testing, equipment upgrades or pilot infrastructure, funding access should be considered part of revenue and scaling preparation. Grants, sponsorships, public programmes, impact investment or co-financed pilots can help cover early costs before circular revenue streams become stable. Certification pathways should also be linked to investment readiness, as verified quality and impact can reduce risk for funders and customers.

The table below outlines the most relevant revenue stream categories for the anonymised BM2 company profiles. The examples are presented by profile code and sector description, without disclosing company-specific commercial information:

| Revenue Stream Category | Description | Examples |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Sales (Circular Products) | Income from selling goods that are made through circular processes or from recycled materials. These are direct sales of the company's main products which have embedded circular value (e.g. made from waste inputs, designed to be reusable or compostable). This remains a core revenue source while enabling waste reduction. | <p>BM2-C02 – Sustainable fashion / recycled textiles: sales of fashion items made from recycled or eco-certified textiles.</p> <p>BM2-C03 – Social upcycling of used cooking oil: sales of eco-friendly products, such as candles or cleaning products, created by upcycling used cooking oil.</p> <p>BM2-C04 – Industrial waste recycling / secondary raw materials: sales of recycled construction or industrial material products, such as aggregates, components or recovered material inputs, to B2B customers.</p> |
| Product-as-a-Service models | Revenue from offering products via a service or rental model rather than one-off sales. Customers pay for the use of a product which is recovered afterward, creating a recurring revenue and ensuring the product (or material) returns to the provider for reuse or recycling. | BM2-C01 – Protective packaging / bio-based materials: provision of reusable or compostable protective packaging as a service to client companies, supported by service fees, rental logic or subscription-based arrangements. |
| Deposit-Return and Take-Back Programs | Income or cost offset obtained through deposit fees or take-back schemes. Companies charge a refundable deposit for products or packaging, or organize buy-back of used items, ensuring high | BM2-C01 – Protective packaging / bio-based materials: deposit fees for reusable packaging units, encouraging business clients to return them for reuse and reducing packaging loss. |

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| | return rates. While deposit funds are returned upon item return, such programs can attract customers and sometimes unredeemed deposits or processing fees contribute to revenue. | BM2-C02 – Sustainable fashion / recycled textiles: take-back of used garments or textile materials, creating inputs for upcycling or new circular products |
| Workshops and Training Experiences | Revenue from engaging others in learning or co-creation activities related to the business's circular practices. Companies may offer workshops, training sessions, or educational experiences (sometimes for a fee, or sponsored by partners) which not only educate but also promote the brand and can create an additional income stream. | BM2-C04 – Industrial waste recycling / secondary raw materials: training workshops for industry partners, students or public stakeholders on recycling techniques, circular construction or secondary material use. BM2-C03 – Social upcycling of used cooking oil: community workshops on used oil collection and upcycling, potentially supported by municipalities, CSR sponsors or environmental programmes. |
| Licensing and Franchising | Revenue generated by licensing a proprietary process, product design, or business model to other companies or regions. Instead of directly scaling operations everywhere, the company earns income by allowing others to use their circular innovation (often for a licensing fee or royalty), thereby expanding impact. | BM2-C01 – Protective packaging / bio-based materials: licensing of a decentralised or micro-factory packaging-as-a-service concept to manufacturing partners or clients in other locations. BM2-C04 – Industrial waste recycling / secondary raw materials: potential future licensing of recycled material formulas, processing techniques or tested circular material applications to established manufacturers |
| Partnership and Sponsorship Revenue | Funding obtained through strategic partnerships, sponsorships, or grants. This is not a traditional sales income but funds that support the business (often for pilot projects, R&D, or social impact activities). It can come from corporate sponsors, government innovation grants, or NGO programs aligned with circular economy and social goals. | BM2-C03 – Social upcycling of used cooking oil: sponsorship or CSR support from companies interested in waste reduction, social impact and community engagement. BM2-C04 – Industrial waste recycling / secondary raw materials: EU, national or regional innovation funding for recycling laboratories, testing facilities or pilot infrastructure. BM2-C02 – Sustainable fashion / recycled textiles: sustainability innovation grants or support for eco-certification, equipment upgrades and circular textile sourcing. |

Key impact

Measuring and communicating impact is essential for companies adopting the Resource Champions model. It allows them to track progress, demonstrate value to customers, partners, and investors, and build a strong case for support. Impacts are best assessed across environmental, social, and economic dimensions, ensuring a holistic view of performance and helping the business balance planet, people, and profit outcomes.

For SMEs with limited resources, impact measurement can start with simple tools such as spreadsheets, monthly material logs, customer return records, workshop attendance lists, basic waste tracking sheets or simple before-and-after comparisons. Suitable entry indicators may include kilograms of waste collected or avoided, share of recycled or bio-based inputs, number of returned products or packages, customer participation rate, and revenue from circular products or services.

Monitoring and Evaluation Framework

To effectively measure progress, companies implementing the Resource Champions model should establish a simple yet structured monitoring framework. This includes defining environmental, social, and economic indicators aligned with their core operations, for example, kilograms of waste avoided, jobs created for vulnerable groups, or revenue share from circular activities.

Digital tracking tools such as resource dashboards, IoT-based material flow monitoring, or impact reporting templates can help quantify results and support transparent communication with partners, investors, and customers. Regular evaluation will also enhance learning across participating companies and provide evidence for scaling and funding applications.

The table below outlines these impact dimensions, their relevance, and examples from cluster B companies, along with which strategic focus areas drive them:

| Impact dimension | Description | Examples from cluster a companies | Linked strategic focus |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| Environmental impact | Reduction of waste, emissions, and use of virgin materials through improved resource sourcing, reuse, and efficient processing. | <p>BM2-C01 – Protective packaging / bio-based materials: use of agricultural by-products in packaging can replace fossil-based foam or other conventional packaging materials, reducing landfill waste and CO₂ emissions.</p> <p>BM2-C02 – Sustainable fashion / recycled textiles: incorporation of recycled fabrics reduces demand for new textile fibre production and limits textile waste sent to landfill.</p> <p>BM2-C03 – Social upcycling of used cooking oil: diversion of used cooking oil from improper disposal prevents water and soil pollution by transforming it into new eco-products.</p> <p>BM2-C04 – Industrial waste recycling / secondary raw</p> | Secure sustainable inputs; Optimize processes and logistics |

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| | | materials: recycling of foundry sand, construction debris or other industrial waste into new material products reduces raw material extraction and avoids dumping of industrial waste. | |
| Social impact | Creation of green jobs, inclusion of underrepresented groups, and greater community engagement in circular practices. This often involves educating stakeholders and changing behaviors toward sustainability. | BM2-C03 – Social upcycling of used cooking oil: creation of employment and skills development opportunities for vulnerable or underrepresented groups, while engaging the community in used oil collection and recycling. BM2-C04 – Industrial waste recycling / secondary raw materials: promotion of women's participation and leadership in a traditionally male-dominated industrial recycling sector, combined with knowledge sharing through workshops and stakeholder engagement. BM2-C02 – Sustainable fashion / recycled textiles: promotion of sustainable fashion awareness and cooperation with local suppliers, customers and communities to support more responsible clothing consumption. | Engage and incentivize circular participation; Strengthen investment readiness |
| Economic impact | Diversification of revenue streams, cost savings through resource efficiency, and creation of new market value from waste materials, leading to improved business resilience and competitive advantage. | BM2-C01 – Protective packaging / bio-based materials: service-based packaging models and use of agricultural by-products can create recurring revenue and help clients reduce packaging waste management costs. BM2-C03 – Social upcycling of used cooking oil: transformation of a waste stream into marketable eco-products can open new markets and diversify income sources. BM2-C04 – Industrial waste recycling / secondary raw materials: development of recycled products for the construction or industrial sector can respond to growing demand for green materials and attract investment for scaling. BM2-C02 – Sustainable fashion / recycled textiles: improved material efficiency and use of recycled textiles can reduce waste, lower production costs and strengthen market differentiation for eco-conscious customers. | Optimize processes and logistics; Strengthen investment readiness |

Readiness level

Assessing readiness is important to understand how prepared companies are to adopt and test the Resource Champions model. This includes evaluating their current level of circularity, internal capabilities, available resources, and partner networks.

For the purpose of this project, readiness is assessed at three levels:

- **High** – the company already applies several circular practices, has infrastructure

or partnerships in place, and can quickly pilot and scale the model.

- **Medium** – the company applies some circular elements or has done initial pilots, but requires additional capacity building, partnerships, or investments to fully implement and scale the model.
- **Low** – the company is at an early stage of circular transition, with limited infrastructure or partnerships; significant preparation and development are needed before testing the model at scale.

For most companies in this cluster, the readiness level is in the medium range. These businesses have demonstrated a proof of concept or early circular initiatives, but need to deepen their capacities and networks to fully realize the Resource Champions model. The focus at medium readiness is on strengthening the fundamentals: ensuring consistent access to sustainable materials, refining production processes to handle larger volumes efficiently, and developing the necessary partnerships for logistics and supply chain support.

Improving readiness often starts with technical capacity. Companies should refine their processes so that recycled or sustainable inputs can be integrated without compromising quality or cost – for example, calibrating machines to work with recycled materials, or establishing quality control for inputs like used oil or recovered textiles. At the same time, setting up the reverse logistics and material handling systems is crucial (e.g., implementing reliable collection routes for used materials or returnable packaging cleaning processes) so that as volume increases, the system remains effective.

Another key step is to strengthen market engagement and customer readiness. Companies can pilot customer incentive programs (such as small-scale deposit-return trials or community collection events) to gauge response and iron out any issues before scaling. Educating core customers and stakeholders early ensures that once the model is expanded, there is a base level of trust and participation.

The adoption of digital tools can significantly enhance readiness. By introducing monitoring systems (for instance, tracking material inputs, returns, and inventory through software or IoT), companies gain data that helps anticipate challenges, optimize operations, and transparently communicate impact – all of which make it easier to attract investors and partners later on.

Finally, financial and institutional support improves readiness. Companies are encouraged to seek preliminary funding (grants or seed investments) to build needed

infrastructure (like a small testing laboratory or upgraded equipment) and to join industry networks or accelerator programs for mentorship. These moves not only provide resources but also signal to larger investors that the company is serious and prepared for growth.

Tailored Capacity-Building and Regional Adaptation

Peer review feedback emphasized that readiness must be addressed differently depending on regional context and sectoral maturity. Companies in less developed regions may need stronger public support, technical training, and access to shared facilities before they can test the model. Tailored capacity-building actions, such as matchmaking events, joint training programs with universities, and regional hubs coordinated by chambers of commerce, can help overcome these disparities and ensure that circular transition benefits reach a broader range of enterprises.

Adaptability

The Resource Champions model is built to be adaptable across different sectors, scales of business, and regional contexts. Its core principles – securing sustainable resources, operational efficiency, stakeholder engagement, and investment preparedness – remain constant, but the way they are applied can be tailored to each company's needs, resources, and market context. This flexibility ensures the model can deliver value in small artisan businesses, medium-sized manufacturers, as well as larger waste-processing enterprises.

For companies, adaptability means selecting the most relevant strategic focuses and customizing the actions. For example, a fashion brand might prioritize securing eco-fabrics and running consumer awareness campaigns (emphasizing sustainable inputs and customer engagement), while a recycling facility might focus on upgrading machinery and forging supplier agreements (emphasizing process optimization and investment readiness). The model's focus areas can be applied in combinations that match a business's specific pain points and opportunities.

Adaptation also occurs across different environments: - In a local or rural context, a company might leverage community relationships and locally available waste (for instance, a rural entrepreneur working with local farms to collect agricultural residues as inputs). Here, simpler technologies and community engagement might take precedence, aligning with available infrastructure. - In a more urban or advanced context, companies might lean on sophisticated technology (IoT for city-wide waste

collection, e-commerce platforms for reaching consumers) and larger institutional partnerships (municipal programs for recycling). The model can accommodate these by scaling up the digital and partnership aspects accordingly.

Implementation can be phased or comprehensive. Some enterprises may start with one focus area – for instance, first establishing a reliable recycled material supply chain – and then gradually introduce other elements like customer incentives or new financing rounds. Others, especially if they have higher capacity, might implement multiple changes in parallel (e.g., simultaneously launching a new process technology and a marketing campaign for their circular product). The model's guidance allows for both approaches, ensuring that companies do not feel a one-size-fits-all pressure but can sequence changes in a manageable way.

Enabling Environment and Incentive Structures

Successful adaptation of the Resource Champions model also depends on a supportive policy environment. Local and national authorities can accelerate uptake by providing targeted incentives, such as grants for process upgrades, certification cost subsidies, or public procurement preferences for circular products. Furthermore, regional cooperation platforms—supported by chambers of commerce or innovation agencies—can serve as matchmaking spaces for circular entrepreneurs, investors, and public stakeholders. These frameworks create trust, enhance knowledge exchange, and enable coordinated scaling across different contexts.

This balance of structured focus and flexible application means that enterprises of various sizes and sectors can integrate circular practices at their own pace. By adapting the model's recommendations to their unique situation, each company can improve resource efficiency, reduce waste, and create long-term value. Ultimately, the adaptability ensures that whether it's a small social enterprise upcycling household waste or a growing manufacturer replacing raw materials with recyclates, the Resource Champions model can be tuned to drive their circular transition effectively.

Implementation of the actions by the companies

The following examples illustrate how the suggested strategic actions can be applied by different company profiles, depending on their business model, resource flows, products and operational context. The examples are anonymised and presented

through profile codes in order to protect company confidentiality and avoid publishing sensitive business information.

These case-inspired profiles provide practical insights into how women entrepreneurs can implement circular principles through sustainable inputs, resource efficiency, logistics optimisation, customer and partner engagement, and investment readiness.

BM2-C01 is a protective packaging profile using agricultural by-products, such as grain husks, as a resource for sustainable packaging solutions. The profile is currently at pilot stage and aims to scale from pilot production to industrial production while maintaining its circular advantage.

The **main challenges** include reducing unit costs to compete with conventional fossil-based packaging, securing certifications such as compostability and food-contact safety, ensuring consistent quality if production is decentralised, and developing reliable return logistics so that used packaging can be collected, reused or composted.

Planned actions include transitioning towards a packaging-as-a-service model with decentralised micro-factories at large client locations or regional hubs. Instead of only selling packaging, the profile would install small production units, possibly in cooperation with clients, to produce packaging locally and later collect it after use.

The profile also plans to integrate digital or IoT-enabled monitoring to track packaging batches through their use cycle and ensure that materials are not lost. A closed-loop take-back system with deposit fees can be implemented, where clients pay a deposit on each reusable packaging unit and are incentivised to return it for reuse or proper composting.

In addition, the profile is pursuing strong certification, including industrial compostability and food-contact safety, in order to build B2B trust and meet the requirements of larger clients.

This model fits the profile because it embeds circularity into the business proposition by offering a service that helps ensure packaging does not become waste. By operating micro-factories on-site or regionally, the profile can reduce transport emissions and engage clients directly in the circular process.

Expected results include increased packaging reuse rates, measurable waste reduction through the use of agricultural by-products, and stronger competitive positioning as a provider of low-waste or zero-waste packaging solutions.

Strategic focus groups: secure sustainable inputs; optimise processes and logistics; engage and incentivise circular participation; strengthen investment readiness.

BM2-C02 is a sustainable fashion profile producing apparel with eco-friendly materials. The profile already uses some organic or upcycled fabrics, but faces challenges related to access to high-quality recycled or certified textiles and the need to improve manufacturing efficiency.

The **main needs** include better sourcing options for recycled or certified materials, process digitalisation to reduce manual inefficiencies, and access to funding for equipment upgrades and product certification, such as organic or eco-textile standards.

Planned actions include building partnerships with local and regional suppliers of recycled fibres and fabrics to secure a stable supply of eco-materials. The profile also plans to introduce CAD tools to optimise pattern layout, which can significantly reduce fabric waste during cutting.

In parallel, the profile aims to develop a take-back system for its own garments. Customers can be encouraged, for example through small discounts or loyalty points, to return old garments. Returned items in good condition may be upcycled or resold, while worn-out pieces can be recycled into new textile fibres, supporting a more closed textile loop.

The profile is also seeking funding through grants or impact investment to purchase newer and more energy-efficient sewing equipment and to cover certification costs. This would strengthen credibility in international markets and support further scaling.

This model fits the profile because it helps address the full lifecycle of garments, from sourcing certified inputs to ensuring that products do not end up as waste. By optimising production with digital tools, the profile can reduce costs and strengthen its circular positioning.

Expected results include reduced use of virgin materials, lower production waste, stronger customer engagement through return and recycling schemes, and improved market positioning as a circular fashion business.

Strategic focus groups: secure sustainable inputs; optimise processes and logistics; engage and incentivise circular participation; strengthen investment readiness.

BM2-C03 is a work integration social enterprise profile that upcycles used cooking oil into eco-friendly products, such as oil-based candles or natural cleaning products, while creating employment opportunities for people from vulnerable groups.

The profile has already tested its concept on a small scale, but needs to expand raw material collection and product range in order to increase its environmental and social impact.

The **main challenges** include scaling logistics for used oil collection, building cooperation with restaurants, households and local authorities, improving digital presence and sales, and diversifying the product portfolio. The introduction of smarter collection technologies, such as IoT monitoring of oil collection containers, has also been identified as a need to improve efficiency.

Planned actions focus on expansion and technology. The profile plans to grow partnerships with HORECA actors and local municipalities in order to secure more consistent streams of used cooking oil. Agreements with restaurant chains or city waste departments can help divert used oil from improper disposal and channel it into circular production.

The profile is also defining specifications for a smart collection system, where oil collection containers can be equipped with sensors indicating when they are almost full. This can optimise collection routes, reduce unnecessary trips and prevent overflows.

On the product side, the profile is developing new eco-product prototypes that use waste oil combined with other waste-derived inputs. This can help broaden the product range and reach new customer segments. To improve market access, the profile also plans to strengthen digital marketing and e-commerce, including a stronger online shop and social media presence.

Storytelling is also important for this profile. Communication can highlight the double impact of each purchase: reducing environmental pollution and supporting social inclusion.

This model fits the profile because it builds on its unique strength: combining waste reduction with social employment. By improving collection logistics, introducing digital tools and diversifying products, the profile can increase both impact and business stability.

Expected results include higher volumes of used oil collected and recycled, reduced pollution from improper disposal, more employment opportunities for the target community and stronger public awareness of proper used oil collection and upcycling.

Strategic focus groups: optimise processes and logistics; engage and incentivise circular participation; strengthen investment readiness.

BM2-C04 is an industrial waste recycling profile with a focus on transforming waste streams, such as foundry sand or construction debris, into new materials for the construction sector. As a relatively young venture in a heavy industry context, the profile needs financial support for scaling, technology development, prototype creation and certification.

The **main challenges** include creating market-ready recycled material products, obtaining certification and quality validation, developing reliable industrial processes, attracting investment and building credibility in a traditionally male-dominated sector.

Planned actions include establishing a development laboratory to formulate and test construction elements made from recycled aggregates, such as bricks, tiles or other building components incorporating industrial waste materials. This laboratory can support the development of market-relevant prototypes that meet industry standards.

The profile is also pursuing product certification, such as CE marking, and conducting Life Cycle Assessment studies to validate environmental benefits. These certifications and data are important for convincing architects, industrial clients and construction actors of the quality and reliability of recycled products.

In parallel, the profile is working on a digital platform for waste tracking. Such a platform would allow waste generators and waste users to log and trace materials, improving transparency and supply of secondary raw materials. A mobile application may also be used to engage customers

or builders by showing where recycled materials can be used and where suitable waste can be delivered.

Internally, the profile plans to introduce an ERP system to manage materials, costs and inventory as it scales. Sensor technology may also be installed in production processes to measure input material quality in real time and ensure consistent output.

The profile also recognises the importance of visibility and networking for women entrepreneurs in industrial circular economy sectors. Links with international networks for women in STEM and circular economy can support mentoring, visibility and access to expertise. Funding strategy is also a key part of the model, including preparation for green investment programmes and EU project funding.

This model fits the profile because it provides a comprehensive approach to becoming a stronger circular economy actor in the construction value chain. It combines technical innovation, secondary raw material development, certification, digital tracking, funding strategy and ecosystem engagement.

Expected results include the launch of certified recycled building products, stronger circular supply chains for industrial waste materials, increased technical and human capacity to process larger waste volumes, and stronger positioning of women-led businesses in industrial circular economy sectors.

Strategic focus groups: secure sustainable inputs; optimise processes and logistics; engage and incentivise circular participation; strengthen investment readiness.

A.3: Business model 3 Product Optimizers

General information

This Business Model 3: **Production Optimizers** has been developed as part of the WE.Circular project to support female-led companies in strengthening their production and packaging processes with circular economy principles.

The model is based on an anonymised company profile focused on sustainable household care products. The profile is in the growth stage and faces specific production and logistics challenges, including the need to gain better control over packaging infrastructure, build capacity for returnable packaging, and scale subscription-based models across European markets.

Covered key areas: Production processes

Problems and needs addressed by the model

BM3-C01 has identified several challenges that limit its transition toward a fully circular business model. The most pressing issue is the lack of infrastructure for returnable packaging. At present, the company uses an external fulfillment provider that does not allow for closed-loop systems, which prevents BM3-C01 from implementing its vision of reusable packaging at scale. Building its own production and logistics facility is therefore a critical step to gain full control over this process.

Another key problem lies in the supply chain. Since BM3-C01 currently depends on external partners for product formulations and materials, it cannot always guarantee the desired level of sustainability and transparency. The company aspires to bring more of these processes in-house, ensuring that both the composition and lifecycle of products meet strict circular standards.

In addition to these structural barriers, the model recognizes the need for a gradual transition. Small and medium-sized companies may face difficulties in securing major investments for facility development; therefore, a step-by-step approach, starting with pilot-scale production or shared infrastructure, is recommended to reduce financial risk.

Customer engagement also presents a challenge. While subscriptions for eco-friendly laundry sheets and other products are growing, the broader public is not yet fully accustomed to returning packaging or understanding the benefits of circularity. To reach a wider market, the model highlights not only environmental benefits but also health, safety, convenience, and cost savings as drivers of customer participation.

Finally, scaling the model requires stronger logistics, digital tracking systems, and a more robust production base. Without these, international expansion would be difficult to achieve.

Value proposition

BM3-C01 positions itself as a pioneer in reshaping household care through **eco-friendly, concentrated products that minimize packaging waste and promote circular lifestyles.**

Its central value proposition is to provide households and businesses with convenient, sustainable alternatives to traditional cleaning products, ensuring both environmental impact reduction and customer comfort.

By establishing its own production facility, BM3-C01 will be able to design a closed-loop

system that collects and reuses packaging, guaranteeing full control over the product lifecycle. The integration of subscription models further strengthens the value proposition by offering predictability, cost savings, and ease of use for customers.

Beyond the functional benefits, BM3-C01 delivers strong symbolic value: consumers become active participants in circularity, contributing to waste reduction while enjoying high-quality, aesthetic, and minimalistic products. This combination of environmental responsibility and everyday practicality makes BM3-C01's proposition both innovative and competitive.

The model also emphasizes additional benefits that extend beyond sustainability. It highlights the health and safety advantages of natural, non-toxic products, the practicality of refill and subscription systems, and the economic benefits of reusable packaging and resource-efficient production. These features position circular household care as a high-quality, accessible, and attractive lifestyle choice.

Target users

The Production Optimizers model is designed for companies and consumers that need to strengthen their production and packaging processes with circular economy principles. In the case of BM3-C01, the model responds to different categories of users who benefit from sustainable household solutions and packaging loops.

The model is intended for:

- **Households** that want convenient, affordable, and sustainable home care products, benefiting from subscriptions or flexible one-time purchases.
- **B2B clients** such as retailers and eco-conscious brands looking to integrate circular products into their offerings and expand sustainable product portfolios.
- **Corporate CSR clients** that seek innovative ways to provide employees or partners with eco-friendly subscription packages and gifts, aligning with sustainability commitments.
- **International markets** where demand for sustainable home care is growing, particularly in European countries that are actively supporting circular consumption.

Concept of the business model

The Production Optimizers model for BM3-C01 is built around the ambition to consolidate production, logistics, and packaging into a fully circular system. By creating its own production facility, the company gains control over the quality, sustainability, and lifecycle of its products. The model emphasizes not only efficiency in production but also the integration of returnable packaging and customer participation as key drivers of circularity.

The concept of the model is structured around the following elements:

- **Dedicated production facility** – a sustainable and circularly designed hub where products are formulated, packaged, and shipped, while also serving as the center for packaging return, cleaning, and reuse.
- **Returnable packaging loops** – systems that allow customers to return packaging easily, enabling BM3-C01 to reuse materials and minimize waste.
- **Subscription and refill automation** – personalized and flexible subscription models with automated refills, ensuring convenience for customers and predictability for production planning.
- **Product line expansion** – the gradual introduction of new eco-friendly household products beyond laundry sheets, reinforcing BM3-C01's position as a comprehensive provider of sustainable home care.
- **Digital integration** – implementation of digital product passports, IoT-based tracking of packaging, and AI-driven demand forecasting to optimize logistics and improve transparency.
- **Customer education and engagement** – loyalty rewards, storytelling campaigns, and awareness programs that make circularity attractive and easy to adopt.

Key actions for application of the model

The Production Optimizers model for BM3-C01 is translated into four strategic focus areas. Each focus responds directly to challenges identified during the co-creation process and provides a pathway for implementation.

| Strategic focus | Description of the strategic focus | Suggested actions for implementation |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strengthen production and logistics infrastructure | Establishing a dedicated facility is critical for BM3-C01 to gain full control over product quality, minimize environmental impact, and manage packaging return systems internally. | <ul style="list-style-type: none"> • Design and build a production and packaging hub in collaboration with mjölk studio. • Integrate packaging, shipping, and reverse logistics within the facility. • Develop low-footprint processes aligned with circular principles. • Prepare technical specifications and operational requirements for the future production and packaging facility before major infrastructure investment, including capacity needs, equipment requirements, packaging flows, and basic cost assumptions. |
| Implement returnable packaging systems | Closing the loop on packaging is central to BM3-C01's mission. A return-based system ensures waste reduction and multiple reuse cycles. | <ul style="list-style-type: none"> • Pilot a returnable packaging scheme in the Czech market. • Design durable and attractive packaging for reuse. • Establish cleaning and redistribution processes in the logistics chain. • Before implementing a return scheme, conduct a feasibility assessment covering packaging durability, cleaning requirements, expected return rates, logistics costs, and customer willingness to participate. • Ensure that returnable packaging concepts are scalable and retail-compliant, including requirements for hygiene, storage, labelling, transport, and compatibility with retail distribution channels. |
| Educate and engage customers in circularity | Customer awareness and participation are vital for circular models to succeed. BM3-C01 must motivate users to actively return and reuse packaging. | <ul style="list-style-type: none"> • Launch awareness and storytelling campaigns. • Introduce loyalty programs rewarding returns. • Provide digital tools for refill reminders and customer feedback. • Before wider scaling, run structured customer testing and feedback loops to refine packaging usability, communication messages, subscription offers, and overall product-market fit. |
| Expand product line and international reach | To ensure long-term resilience, BM3-C01 must broaden its product range and scale operations to international markets. | <ul style="list-style-type: none"> • Develop new sustainable home care products. • Adapt subscription and return systems for European markets. • Build distribution partnerships with eco-conscious retailers abroad. |

Potential partners

The success of the Production Optimizers model depends on BM3-C01's ability to collaborate with a wide network of partners.

Strategic alliances with established eco-brands, packaging innovators, and complementary product founders will strengthen the model's market reach and enhance resource efficiency through shared infrastructure. Partnerships with universities, design schools, and innovation hubs will support capacity building, research, and the integration of circular design principles into education and training. In addition, collaboration with public institutions and municipalities can facilitate access to infrastructure and policy support for take-back systems, while investors and funding programs can provide financial backing for scaling circular production and logistics.

Based on the co-creation report, the following categories of partners are considered essential.

| Partner category | Description |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Architects and sustainable design studios | Essential for developing BM3-C01's planned production facility according to circular principles, using local and natural materials, and integrating spaces for packaging return, cleaning, and reuse. |
| Suppliers and manufacturers | Provide reliable, sustainable raw materials and allow BM3-C01 to reduce dependency on third-party product formulations, ensuring control over quality and sustainability. |
| Packaging and logistics partners | Support the design, collection, cleaning, and redistribution of returnable packaging, filling a critical gap in BM3-C01's current model where external fulfillment limits circular systems. |
| Public institutions and local authorities | Offer policy support, infrastructure collaboration, and visibility for circular initiatives, helping BM3-C01 integrate returnable systems at a community and regional level. |
| Investors and funding programs | Provide capital for constructing the production hub and scaling into new European markets; includes EU Green Deal mechanisms, national grants, and sustainability-focused investors. |
| Community groups and NGOs | Help raise awareness, educate customers about circularity, and promote adoption of returnable packaging through campaigns and co-creation initiatives. |
| Eco-brands and similar product | Serve as strategic partners for joint initiatives, co-branding, and shared logistics |

| | |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| founders | or infrastructure. Collaboration with similar producers enables resource sharing, joint awareness campaigns, and stronger market penetration. |
| Knowledge and education partners | Universities, design schools, and innovation hubs supporting research, training, and skill development in circular production, packaging design, and digital traceability. These partners also contribute to integrating circular economy principles into educational programs. They can also support feasibility work, technical planning, prototype testing, and preparation of future production solutions before larger infrastructure investments are made. |

Revenue streams

BM3-C01 diversifies its income sources by combining subscriptions, direct sales, partnerships, and innovative circular services. The table below summarizes the most relevant revenue streams based on the co-creation process.

| Revenue Stream Category | Description | Examples |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Subscription services | Recurring revenue from flexible monthly or quarterly plans, ensuring customer convenience and predictable cash flow. | Laundry sheet subscriptions with refill automation and loyalty rewards. |
| One-time purchases (e-commerce) | Direct sales to customers who prefer testing or occasional buying, serving as an entry point to circular products. | Single packs of eco-friendly laundry sheets and home care products. |
| B2B partnerships | Collaborations with eco-conscious retailers and brands to distribute products more widely and reach new customer bases. | Retail partnerships for BM3-C01 laundry sheets and future product lines. |
| Corporate CSR programs | Tailored subscriptions or gift packages for companies integrating sustainability into employee benefits or partner relations. | Subscription gift boxes used in CSR initiatives. |
| Deposit-return and packaging services | Additional income through deposits, fees, or service charges related to packaging return systems. This both incentivizes reuse and supports logistics costs. | Deposit-return scheme for reusable packaging once BM3-C01's facility is operational. |

Key impact

Measuring and communicating impact is crucial for BM3-C01 as it scales its Production Optimizers model. The impact spans environmental, social, and economic dimensions, as summarized below.

| Impact dimension | Description | Examples from cluster a companies | Linked strategic focus |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Environmental impact | Reduction of packaging waste and carbon footprint by shifting to returnable packaging and localized production. | Elimination of single-use plastics; CO ₂ savings from operating own facility with integrated logistics. | Strengthen production and logistics infrastructure; Implement returnable packaging systems |
| Social impact | Raising consumer awareness and encouraging active participation in circular economy practices, while creating new local jobs. | Loyalty and reward schemes for packaging returns; customer education campaigns; new employment opportunities in the production hub. | Educate and engage customers in circularity |
| Economic impact | Strengthening financial resilience through recurring income, diversified revenue streams, and market expansion. | Subscription-based recurring revenues; partnerships with eco-retailers; international growth opportunities. | Expand product line and international reach |

Readiness level

Assessing readiness is important to understand how prepared companies are to adopt and test the circular design accelerators model. This includes their current level of circularity, internal capabilities, available resources, and partner networks.

For the purpose of this project, readiness is assessed at three levels:

- **high** – the company already applies several circular practices, has infrastructure or partnerships in place, and can quickly pilot and scale the model.
- **medium** – the company applies some circular elements, has partial infrastructure, but requires additional capacity building or partnerships to fully implement the model.

- **low** – the company is at an early stage of circular transition, with limited infrastructure or partnerships; significant preparation is needed before testing.

BM3-C01 currently operates at a medium readiness level. The company has already implemented several core elements of circularity, such as subscription services and concentrated eco-friendly products, which reduce packaging and transportation impact. These features provide a solid foundation for transitioning toward a more advanced circular business model.

However, BM3-C01 does not yet possess its own production and packaging infrastructure. At present, it relies on external fulfillment providers that limit its ability to introduce returnable packaging systems and to fully control logistics. This dependency restricts the company's capacity to establish closed-loop processes and undermines the implementation of a complete circular model.

To strengthen readiness, the model recommends a gradual implementation path supported by partnerships and shared resources. Collaborating with other producers, logistics providers, and innovation hubs can accelerate progress, reduce costs, and ensure technical and operational preparedness before full-scale facility development. To overcome this limitation, BM3-C01 plans to establish its own facility by 2025/2026. This step will allow the company to integrate production, packaging, and logistics under one roof, enabling the design and operation of return systems and reusable packaging loops. Once these elements are in place, BM3-C01 will significantly increase its readiness level and be able to test, implement, and scale the Production Optimizers model both nationally and internationally.

Adaptability

The Production Optimizers model, while tailored to BM3-C01, demonstrates a high level of adaptability for other businesses that face similar challenges in production and packaging. Its structure is not limited to household care products but can be transferred to industries where packaging, logistics, and consumer participation play a decisive role.

Sectors such as personal care, cosmetics, food, and beverages can benefit from the same principles: developing their own production or processing hubs, designing reusable and returnable packaging, and implementing digital tools for tracking and transparency. Small and medium-sized enterprises can adopt the model on a smaller scale by piloting local return schemes and progressively building infrastructure, while

larger companies may integrate it more rapidly by investing in advanced logistics and automation.

The adaptability of the model also lies in its modular character. Companies can choose to begin with one strategic focus area, such as returnable packaging systems or customer engagement and then expand toward more complex elements like digitalization and international scaling. This flexibility ensures that the Production Optimizers model is not a one-size-fits-all solution but rather a framework that can be calibrated to the resources, readiness level, and ambitions of each company.

For BM3-C01, this adaptability means that once the model is successfully implemented in the Czech market, it can be replicated and scaled across European markets, adjusted to local consumer behavior, policy frameworks, and distribution networks.

Potential risks and mitigation strategies

Implementing the Production Optimizers model requires significant investments, systemic changes, and strong collaboration with multiple stakeholders. While the model offers high potential for environmental, social, and economic impact, BM3-C01 must anticipate and manage several risks that could affect its successful adoption and scaling.

1. Infrastructure and financial risks

Risk: High upfront investment in the production and packaging facility may strain financial resources, especially if construction or equipment costs exceed expectations. Delays in facility readiness could postpone the implementation of returnable packaging systems.

Mitigation: Diversify funding sources (EU Green Deal mechanisms, impact investors, national grants) and adopt a phased investment approach. Secure long-term partnerships with investors and build financial resilience through early scaling of subscription services to ensure predictable cash flow.

2. Supply chain dependency

Risk: Reliance on third-party suppliers for raw materials and product formulations may compromise sustainability standards, quality consistency, and transparency.

Mitigation: Gradually internalize production of key formulations and secure long-term contracts with certified sustainable suppliers. Develop contingency plans with multiple sourcing partners to reduce vulnerability.

3. Customer adoption and behavioral barriers

Risk: Consumers may resist returning packaging due to convenience issues, lack of awareness, or insufficient incentives, leading to low participation in circular loops.

Mitigation: Implement strong customer engagement campaigns, loyalty programs, and digital reminders for packaging returns. Design packaging that is both functional and aesthetically appealing to encourage reuse. Collaborate with community groups and NGOs to foster a culture of circularity.

4. Operational and logistics risks

Risk: Setting up and managing return logistics, including collection, cleaning, and redistribution of packaging, may prove more complex or costly than anticipated. Inefficient systems could undermine customer trust and environmental goals.

Mitigation: Start with small-scale pilots in the Czech market to test logistics efficiency, then optimize before scaling internationally. Leverage digital tracking (IoT, product passports) to monitor packaging flows. Partner with local logistics providers experienced in reverse logistics.

5. Market expansion risks

Risk: Entering international markets may be slowed by different consumer habits, regulatory environments, and distribution challenges. Misalignment with local policies could delay or block expansion.

Mitigation: Conduct thorough market research and adapt the business model to local contexts. Collaborate with eco-conscious retailers and leverage public institution support in target markets. Develop scalable but flexible systems that can be adjusted to policy frameworks and consumer behavior.

6. Regulatory and compliance risks

Risk: Changes in EU or national legislation regarding packaging, waste management, or consumer protection could require additional investments or adjustments in processes.

Mitigation: Maintain close collaboration with policymakers and sustainability networks to anticipate regulatory changes. Position BM3-C01 as a proactive partner in shaping circular economy policies, ensuring compliance readiness and potential early-mover advantages.

7. Technological risks

Risk: Digital tools for tracking, automation, and forecasting may face implementation challenges, such as integration issues or customer data protection concerns.

Mitigation: Partner with experienced technology providers and adopt proven, scalable solutions. Ensure compliance with data privacy regulations (GDPR) and build transparent communication with customers regarding data use.

Implementation of the actions by BM3-C01

BM3-C01 – Sustainable household care and returnable packaging profile will implement the **Production Optimizers** model step by step, starting with actions that strengthen control over production, packaging and logistics.

The first priority is the development of a dedicated production and packaging facility. This facility will bring together product formulation, packaging, logistics and packaging return processes in one integrated operational hub. By centralising these activities, the profile will be able to improve quality control, reduce dependency on external fulfilment providers and create the necessary conditions for a returnable packaging system.

In parallel, **BM3-C01** will pilot a reusable packaging system in the local market. The pilot will test how customers return packaging, how returned packaging is collected and cleaned, and how the system can be managed efficiently before being scaled to wider markets. Customer loyalty incentives and awareness campaigns will support participation and encourage behaviour change.

Digital tools will be introduced gradually, according to the profile's capacity and needs. These may include product passports, return tracking tools and IoT-based monitoring to improve logistics, transparency and data collection. The use of digital tools will help the company monitor packaging flows, communicate circular value to customers and prepare for future scaling.

Expected results include stronger control over production and packaging processes, reduced packaging waste, improved customer participation in return systems, and a more scalable circular business model for subscription-based household care products.

Strategic focus groups: optimise production and packaging processes; introduce returnable packaging systems; improve logistics and traceability; strengthen customer participation.

A.4: Business model 4 Smart Digital Enablers

General information

This **Business Model 4 Smart Digital Enablers** is developed within the WE.Circular project to help companies move from ad-hoc sustainability efforts to data-driven, verifiable and scalable circular operations. The model focuses on enabling technologies - traceability, lifecycle data capture, digital product passports, IoT sensing, data analytics and certification tooling - to create transparency, drive better design and operational decisions, and unlock new value streams.

The model's structure is built around these strategic focus areas:

- Platform limitations and integration gaps;
- AI usage gaps and limited functionality;
- Lifecycle visibility and traceability;
- Data collection and analysis;
- Logistics and byproduct management;
- Customer engagement and market differentiation.

The development of this model was guided by existing circular economy good practices and by concrete scenarios created during the WE.Circular co-creation process. For the public version, the participating companies are anonymised and presented through profile codes.

The profiles represent a diversity of sectors, including textile and fashion, waste management and recycling, food and beverage, professional services, sustainable tourism and secondary raw materials exchange. This diversity demonstrates that smart digital tools can support circular transition in different business contexts, from reducing returns and waste to improving traceability, customer engagement, logistics and market access.

The anonymised profiles that shaped this model include:

- BM4-C01 – Digital fashion solution for size matching and garment optimisation;
- BM4-C02 – Circular textile service provider;
- BM4-C03 – Food waste reduction and surplus food management initiative;

- BM4-C04 – Waste management and recycling technology solution;
- BM4-C05 – Digital fashion and styling solution;
- BM4-C06 – Sustainable tourism and accommodation platform;
- BM4-C07 – Digital marketplace for secondary raw materials;
- BM4-C08 – Professional services profile supporting circular business development.

Covered key areas: Production processes, Waste management, Raw materials

Problems and needs addressed by the model

Many women entrepreneurs struggle to integrate advanced digital tools into their circular economy strategies in a way that is both cost-effective and user-friendly. Key challenges identified include:

- **Technology integration gaps** – Need for multi-platform versions of existing software; API-based integrations for faster and more flexible operation; ensuring AI and blockchain features enhance rather than overcomplicate the user experience.
- **Data quality and lifecycle visibility** – Insufficient AI model accuracy (e.g., sizing predictions), lack of AI-driven trend tracking, and missing lifecycle performance metrics; limited ability to use AI and IoT for comprehensive product journey tracking.
- **Operational optimisation** – Difficulties in collecting and analysing demand data for production planning; need for scalable data collection systems, and digital tools for deposit and inventory management.
- **Logistics and circular flow management** – Need for optimised logistics supported by digital tracking (QR/Rfid), gamified customer engagement tools, and impact dashboards to encourage returns, refills, and reuse.
- **Trust, compliance, and transparency** – Challenges in providing credible sustainability tracking features.

Value proposition

The Smart Digital Enablers model helps companies turn fragmented, manual processes

into streamlined, data-driven circular operations. Designed as a tiered adoption pathway (low → medium → high) for SMEs, it starts with low-cost, open-source components and builds capabilities through targeted training in data literacy and practical AI use. It enables:

- Real-time, accurate decision-making
- Verified transparency through digital product passports
- Operational efficiency via automated tracking and reporting
- New revenue opportunities from service-based models
- Stronger customer engagement through digital tools and gamification

This model provides both the technological foundation and practical guidance to make circular strategies measurable, scalable, and profitable.

Target users

The model is intended for companies and organisations that need robust, technology-driven solutions to monitor, optimise, and verify their circular operations. It is designed for those aiming to integrate advanced digital tools - such as AI, IoT, and blockchain - into everyday processes in a practical, scalable way.

It is particularly relevant for:

- **SMEs** in sectors such as fashion, packaging, cosmetics, furniture etc. that need to improve lifecycle visibility, track product use, and optimise resource flows,
- **Platforms and retailers** seeking to coordinate take-back, repair, and reuse services, while simplifying compliance reporting,
- **Manufacturers and producers** adopting subscription, Product-as-a-Service, or refill models who require integrated digital infrastructures for operations and impact measurement,
- **Circular service providers** offering repair, refurbishment, rental, or reuse services that can be enhanced through digital traceability and customer engagement tools.

By targeting these diverse user groups, the model ensures applicability across both product- and service-based businesses, from small artisan producers to larger industrial players.

Concept of the business model

The Smart Digital Enabler model addresses key technological and strategic priorities that support companies in transitioning to more circular, data-driven operations. The model function as a modular service stack offered to companies, combining:

- **Platform integration** – Connecting different systems through APIs and using scalable architecture to ensure they work smoothly together.
- **Advanced AI applications** – AI-driven process optimisation, predictive analytics, and personalised recommendations.
- **Lifecycle tracking** – IoT, QR/RFID, and blockchain tools for full product traceability.
- **Data management** – Automated data capture, smart databases, and performance dashboards.
- **Optimised logistics** – Digital platforms for efficient transport, inventory, and byproduct exchange.
- **Customer engagement** – Gamified portals and transparency tools to build trust and market differentiation.

This combination ensures that companies can integrate digital solutions step-by-step, adapting the scope to their maturity level, resources, and specific circular economy goals.

Before applying the Smart Digital Enablers model, companies are encouraged to **assess their current level of digital readiness**. This may include evaluating existing digital tools, data availability, internal skills, and integration capacity. Using simple digital maturity or readiness assessment tools can help identify starting points, prioritise investments, and select the most appropriate technologies. This ensures that companies adopt solutions that match their capabilities and can be realistically implemented and scaled over time.

Each **digital component included in the model contributes to specific circular economy outcomes**:

- **Platform integration**: enables seamless data exchange between systems,

reducing manual work, minimising errors, and supporting more efficient and coordinated circular operations across value chains

- **Advanced AI applications:** support process optimisation, demand prediction, and personalised recommendations, helping to reduce overproduction, improve resource efficiency, and extend product lifecycles
- **Lifecycle tracking tools** (e.g. IoT, QR/Rfid, blockchain, digital product passports): improve transparency and enable monitoring of product use, condition, and material flows across the entire lifecycle
- **Data management** (e.g. automated data capture, smart databases, dashboards): supports better decision-making, more efficient resource use, and continuous performance optimisation based on real-time data
- **Optimised logistics:** improves the movement of materials and products, reduces transport-related emissions, and enables more effective reuse, return, and byproduct exchange systems
- **Customer engagement tools** (e.g. gamified platforms, impact dashboards, transparency tools): encourage responsible consumption, increase participation in circular systems (e.g. returns, reuse), and strengthen trust in sustainable solutions

By linking each technology to a clear circular outcome, companies can better prioritise investments and more effectively communicate the value and impact of their digital solutions.

Key actions for application of the model

The following table combines key digital and technological focus areas with concrete implementation suggestions. The examples are presented through anonymised BM4 profile codes in order to avoid publishing company-specific information:

| Strategic focus | Description of the strategic focus | Suggested actions for implementation | Relevant for companies |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Platform limitations & integration gaps | Ensuring smooth integration between different digital tools and platforms to streamline operations and accelerate adoption. | Multiplatform software development – creating software versions compatible with different operating systems and devices; API-based integration – using Application Programming Interfaces to connect systems for | BM4-C01 – Digital fashion solution for size matching and garment optimisation: development of API-based sizing software and predictive sizing tools. BM4-C05 – Digital fashion and styling solution: exploration of |

| | | | |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | faster, more flexible data exchange. | B2B opportunities and partnerships with circular fashion platforms. |
| AI usage gaps & limited functionality | Expanding the use of AI tools to optimize processes, improve forecasting accuracy, deliver personalised recommendations, and boost user engagement. | <p>AI for process optimisation – including neural networks, machine learning models to improve efficiency in manufacturing;</p> <p>AI-based recommendation engines – algorithms suggesting products or content based on user data;</p> <p>Gamification modules – software elements adding points, challenges, or rewards to increase engagement;</p> <p>AI-driven matching tools – AI algorithms connecting projects with suitable investors or resources.</p> | <p>BM4-C02 – Circular textile service provider: customer app with gamified engagement and impact tracking.</p> <p>BM4-C03 – Food waste reduction and surplus food management initiative: use of AI tools for automated data collection.</p> <p>BM4-C05 – Digital fashion and styling solution: refinement of AI-based outfit recommendation functions.</p> <p>BM4-C06 – Sustainable tourism and accommodation platform: use of AI and blockchain-based features to strengthen transparency and sustainability communication.</p> <p>BM4-C07 – Digital marketplace for secondary raw materials: AI integration for faster and more accurate matching between projects, investors and resources.</p> |
| Lifecycle visibility & traceability | Increasing transparency and control over products and materials by tracking their journey and performance throughout the entire lifecycle. | <p>Digital product passports – electronic records storing product origin, materials, and lifecycle data;</p> <p>QR/RFID/NFC tagging – physical identifiers linked to digital records;</p> <p>IoT lifecycle monitoring – connected sensors capturing product use and condition in real time;</p> <p>Transparency pages – public-facing web interfaces showing verified product and sustainability data.</p> | <p>BM4-C02 – Circular textile service provider: digital product or bag tracking through QR/RFID-based tools, customer app and impact tracking.</p> <p>BM4-C06 – Sustainable tourism and accommodation platform: blockchain-based sustainability tracking and transparent communication of green accommodation data.</p> |
| Data collection & analysis | Enhancing decision-making by gathering, processing, and visualising data in real time to support | <p>Smart databases – scalable, cloud-based data storage and retrieval systems;</p> <p>AI-enabled data collection – automated gathering and</p> | <p>BM4-C01 – Digital fashion solution for size matching and garment optimisation: data dashboards supporting production planning and reduced returns.</p> <p>BM4-C03 – Food waste reduction</p> |

| | | | |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | planning | processing of large datasets; Data dashboards – visual analytics platforms for real-time tracking of KPIs, trends, production processes etc. | and surplus food management initiative: AI-supported tools for automated data collection. BM4-C05 – Digital fashion and styling solution: development of an impact tracking dashboard. |
| Logistics & byproduct management | Optimising the movement of materials and products to reduce costs, minimise environmental impact, and maximise reuse. | Byproduct matchmaking platforms – digital hubs connecting waste producers with potential users; Eco-transport integration – software optimising routes for low-emission transport; Digital work order systems – tools managing workflows (e.g., repairs and renovations) | BM4-C02 – Circular textile service provider: integrated logistics and eco-transport solutions supporting circular textile flows. BM4-C03 – Food waste reduction and surplus food management initiative: smart database connecting by-products, surplus resources and upcycling opportunities. |
| Customer engagement & market differentiation | Creating engaging experiences that involve customers in circular initiatives and differentiate the brand through visible impact. | Gamified customer apps – mobile apps with reward-based sustainability activities; Impact tracking dashboards – tools visualising the environmental and social benefits of actions; AI-enabled customer support – chatbots and virtual assistants providing instant, personalised help. | BM4-C02 – Circular textile service provider: customer app with gamification and impact tracking to increase user engagement. BM4-C05 – Digital fashion and styling solution: gamification campaign encouraging more circular fashion behaviour. BM4-C06 – Sustainable tourism and accommodation platform: digital visibility and customer-facing communication tools to promote sustainable tourism choices. |

General implementation logic

To support practical application, the model should be approached through a structured and step-by-step implementation logic.

Digital maturity as a starting point:

Not all actions presented in this model are equally relevant for every company at the same time. Their applicability depends on the company's level of digital maturity (low, medium, or high).

- Companies at a **low digital maturity level** may prioritise basic solutions, such as simple data collection tools, QR-based tracking, or standalone digital applications that can be implemented with minimal integration.

- At a **medium level**, companies can focus on connecting systems, improving data analytics, and introducing AI-supported tools to enhance efficiency and decision-making.
- Companies with **high digital maturity** are better positioned to implement advanced solutions, such as fully integrated platforms, predictive analytics, blockchain-based traceability, or complex customer engagement systems.

By aligning actions with their current capabilities, companies can adopt digital solutions step-by-step, reducing risks and ensuring that each investment delivers practical value.

Phased implementation approach:

The Smart Digital Enablers model should be applied through a phased implementation logic, allowing companies to start with realistic, low-risk steps before moving towards more advanced digital integration:

- **Phase 1 – Conceptual preparation:** Define the main circular challenge to be addressed, assess digital readiness, identify available data sources, map existing tools and processes, and select 1–2 priority actions.
- **Phase 2 – MVP development:** Develop a minimum viable solution that tests the selected action in a limited scope. This may include simple dashboards, QR-based tracking, basic data collection tools, pilot databases, or prototype customer-facing functions.
- **Phase 3 – Testing and validation:** Test the MVP with internal users, customers, or selected partners. Collect feedback on usability, data quality, operational value, and circular impact before scaling.
- **Phase 4 – Advanced digital integration:** Gradually expand towards more complex solutions, such as API-based system integration, AI-supported analytics, predictive tools, blockchain-enabled traceability, or fully integrated customer engagement platforms.
- **Phase 5 – Scaling and continuous improvement:** Use performance data and user feedback to improve the solution, expand it to additional products, sites, partners, or markets, and refine the business model around the digital service.

This phased approach helps SMEs avoid overinvestment, reduce implementation risks, and ensure that digital tools are introduced only when they create clear operational and circular value.

Advanced technologies as modular components:

This staged approach is particularly important when **considering more advanced technologies** such as AI-based optimisation and recommendation systems.

Advanced AI-based optimisation and recommendation systems should be considered as modular, advanced components rather than baseline requirements for all SMEs. While such tools can significantly enhance efficiency, forecasting accuracy, and customer personalisation, their implementation typically requires sufficient data availability, technical capacity, and integration readiness.

For companies at earlier stages of digital maturity, it is often more effective to start with simpler rule-based systems, basic data analysis, or standard software solutions before moving towards more advanced AI-driven functionalities. As data quality and system integration improve, AI modules can be gradually introduced to extend capabilities and create additional value.

From technical integration to market-ready solutions:

Beyond technical integration, scaling digital circular solutions often requires enabling commercial and strategic actions. These may include defining clear pricing logic for digital services (e.g. SaaS or platform-based models), developing white-label or modular solutions for different client segments, preparing investment pitches to secure funding, and positioning the solution for enterprise or B2B markets.

Such steps help translate technical capabilities into viable business models, ensuring that digital tools are not only operational but also scalable, market-ready, and financially sustainable.

Customer engagement and digital visibility:

Customer engagement in digital circular models is not limited to apps or gamification features, but also depends on strong customer-facing communication tools and digital visibility.

This includes:

- well-structured websites
- clear presentation of services and impact
- optimised user journeys that make circular options easy to understand and access

In user-oriented or platform-based sectors, companies should also prioritise:

- website optimisation (navigation, clarity, mobile usability)
- consistent communication across digital channels (social media, newsletters, platform interfaces)

These elements help ensure that digital solutions are not only technically functional, but also visible, user-friendly, and capable of driving real engagement and behaviour change.

Potential partners

Transitioning to a Smart Digital Enabler model relies on a strong ecosystem of collaborators who can bring advanced digital and technological capabilities and sector-specific expertise. Companies adopting this model will benefit from partners who provide cutting-edge tools for data collection and analysis, AI integration, platform interoperability, and lifecycle traceability. These partnerships are essential for overcoming technological barriers, accelerating the adoption of smart solutions.

| Partner category | Description | Companies that need this category most |
|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Technology transfer organizations, Digital experts, AI developers, Cybersecurity experts | Develop AI tools, smart databases, and automated systems for data collection, prediction, and matchmaking. | BM4-C01 – Digital fashion solution for size matching and garment optimisation: API-based sizing software, predictive sizing tools and data dashboards. BM4-C03 – Food waste reduction and surplus food management initiative: AI-supported database for by-product matching and automated data collection. BM4-C07 – Digital marketplace for secondary raw materials: AI tools for project-investor, resource or partner matching. |
| Web developers and UX/UI designers | Build and optimise user-friendly digital platforms, integrating advanced features without compromising usability | BM4-C05 – Digital fashion and styling solution: integration with circular fashion platforms and improvement of customer-facing digital functions. BM4-C08 – Professional services profile supporting circular business development: enhancement of digital service interfaces, online tools and customer journeys. |

| | | |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Local tailors, repair shops, and upcycling services | Support refurbishment, product lifecycle extension, and customer engagement in circular systems. | BM4-C05 – Digital fashion and styling solution: connection of outfit recommendation tools with repair, restyling and upcycling options. BM4-C02 – Circular textile service provider: refurbishment, repair and reuse of textile products supported by digital tracking. |
| Municipalities and SMEs | Provide real-world testing environments and operational support for piloting digital tracking or process optimisation solutions. | BM4-C04 – Waste management and recycling technology solution: piloting of circular product-service prototypes and process optimisation tools. BM4-C02 – Circular textile service provider: municipal or SME support for testing deposit-return systems, collection points and circular logistics. |
| E-commerce and logistics providers | Enable integration of tracking, return systems, and gamified customer engagement features. | BM4-C02 – Circular textile service provider: digital tracking of reusable textile products through QR/RFID tools and return logistics. BM4-C06 – Sustainable tourism and accommodation platform: integration of sustainability tracking and customer-facing transparency tools in the tourism and hospitality value chain. |
| Sustainability-focused organisations and marketplaces | Offer networks and platforms for promoting sustainable products, sharing impact data, and reaching eco-conscious customers. | BM4-C06 – Sustainable tourism and accommodation platform: eco-certification, impact transparency and visibility of sustainable tourism offers. BM4-C07 – Digital marketplace for secondary raw materials: platform-based promotion of circular investment, material exchange and sustainable business opportunities. |
| Financial institutions or green funds | Provide capital for digitalisation and circular pilots via grants, low-interest loans, guarantees, and blended finance; co-fund shared infrastructure (e.g., platform-as-a-service) to lower unit costs; support staged adoption plans and offer voucher schemes for training and onboarding. | It may be important for any company. |

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| Sector associations | Advocate and coordinate standardised digital product passports (DPPs) and interoperability standards across members; run peer-learning/mentoring networks and sector-wide training for data literacy & practical AI use; support cross-border data-exchange protocols to ease scaling | It may be important for any company. |
| Policy-makers | Ensure pilots follow key EU rules (DPP, CSRD/ESG, GDPR), rewards proven impact (dashboards, traceability). | It may be important for any company. |

The **relevance and type of partners** required may vary **depending on the company's level of digital maturity**:

- At early stages, companies may primarily rely on accessible partners such as digital service providers, developers, or local implementation partners to support basic system setup and testing.
- At a medium level, partnerships may expand towards integration experts, data specialists, or sector-specific service providers who can support system interoperability and data-driven operations.
- At higher levels of digital maturity, more advanced partners—such as AI developers, certification bodies, or cross-sector platform operators—become increasingly relevant to support scaling, automation, and advanced functionalities.

This staged approach allows companies to build partnerships progressively, aligning collaboration needs with their technical capacity and strategic development.

Market access and scaling partners:

In addition to technical and operational partners, companies may also benefit from collaboration with market-access intermediaries or industry consultants, particularly when scaling digital circular solutions.

These partners can support:

- access to enterprise clients or larger market segments
- positioning and communication towards B2B or institutional audiences
- preparation for commercial scaling (e.g. enterprise onboarding, service packaging)

Such partnerships are especially relevant in later stages of development, where the success of the solution depends not only on technical performance, but also on effective market entry and expansion.

Revenue streams

The table below outlines the most relevant revenue streams for the cluster, grouped by category:

| Revenue Stream Category | Description | Examples for involved companies |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product-as-a-Service /Subscription models/ Software-as-a-Service | <p>PaaS: Customers pay for access or use rather than ownership, ensuring products return to the provider for reuse or refurbishment.</p> <p>SaaS: Customers pay a regular (monthly/annual) fee to use the online software and APIs. Plans can be basic or advanced, and include help and maintenance.</p> | <p>BM4-C01 – Digital fashion solution for size matching and garment optimisation: subscription-based access to sizing software, APIs and predictive sizing tools.</p> <p>BM4-C03 – Food waste reduction and surplus food management initiative: B2B subscription for access to a smart database connecting by-products, surplus materials and upcycling opportunities.</p> <p>BM4-C05 – Digital fashion and styling solution: subscription model for personalised outfit recommendations, wardrobe optimisation or circular fashion services.</p> <p>BM4-C07 – Digital marketplace for secondary raw materials: platform subscription fees for users, investors, project owners or circular economy actors.</p> |
| Commission-based marketplace revenue | Percentage-based commissions from successful transactions, sales, or investment matches made through the platform. | <p>BM4-C07 – Digital marketplace for secondary raw materials: commission from successful investment matches, project-partner connections or circular business opportunities.</p> <p>BM4-C05 – Digital fashion and styling solution:</p> |

| | | |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | affiliate or commission-based revenue from sustainable brands, repair services or circular fashion partners. |
| Deposit-return and take-back programs | Revenue from deposit systems that encourage product returns and reuse. | BM4-C02 – Circular textile service provider: security deposits for reusable textile products, such as bags or other reusable items, combined with digital tracking and return management. |
| Repair, upgrade, and customization services | Fees for extending product life through repair, refurbishment, or customization. | BM4-C02 – Circular textile service provider: refurbishment or repair of reusable textile products supported by digital tracking. BM4-C05 – Digital fashion and styling solution: customised recommendations linked to repair, restyling, upcycling or wardrobe optimisation services. |
| Consulting and implementation services | Fees for supporting clients in adopting digital, circular, or process-optimisation solutions. | BM4-C04 – Waste management and recycling technology solution: consulting for circular product-service models, process optimisation and pilot implementation. BM4-C08 – Professional services profile supporting circular business development: support for digital solution integration, circular strategy development, client onboarding and impact communication. |
| Monetising anonymised data insights | Selling aggregated/benchmark reports, trend dashboards, or API access to anonymised datasets. | BM4-C03 – Food waste reduction and surplus food management initiative: monetising anonymised insights on by-product flow trends, surplus availability, resource matching patterns and upcycling opportunities. |
| Training and certification programs for SMEs | Offering digital training and certification programs for SMEs (Paid digital training, assessments, and badges to build data/AI and circular skills) | BM4-C02 – Circular textile service provider: partner onboarding and training for deposit-return operations and digital tracking. BM4-C04 – Waste management and recycling technology solution: training for circular product-service models, digital tools and operational optimisation. BM4-C07 – Digital marketplace for secondary raw materials: training or tools related to ESG, |

| | | |
|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | CSRD-readiness, circular investment or project presentation. BM4-C08 – Professional services profile supporting circular business development: provider onboarding and training for platform adoption, digital service use and circular business support. |
|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Not all revenue streams are equally feasible at the same stage of digital development. Simpler models (e.g. services, basic support) are typically more suitable at earlier stages, while more advanced models (e.g. subscriptions, data monetisation, platform-based revenues) require higher digital maturity, stronger infrastructure, and a more established customer base.

Key impact

Measuring and communicating impact is a key for companies applying the Smart Digital Enabler model, ensuring progress tracking and value demonstration across environmental, social, and economic dimensions.

| Impact dimension | Description | Examples from the cluster companies | Linked strategic focus |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Environmental impact | Reduction of waste, resource use, and emissions through process optimisation, predictive tools, and lifecycle tracking. | Relevant for all companies | Lifecycle visibility & traceability; Data collection & analysis; Logistics & byproduct management |
| Social impact | Promoting sustainable consumption habits, increasing transparency, and supporting behaviour change toward circular practices. | BM4-C02 – Circular textile service provider: consumer engagement in reuse through digital tracking, return systems and gamified participation. BM4-C05 – Digital fashion and styling solution: digital wardrobes and recommendations encouraging more conscious fashion choices. BM4-C06 – Sustainable tourism and accommodation platform: increased awareness of eco-tourism and sustainable accommodation options. BM4-C07 – Digital marketplace for secondary raw materials: public visibility of sustainable projects, circular investment opportunities and resource-related initiatives. | Customer engagement & market differentiation; Lifecycle visibility & traceability |
| Economic impact | Enabling cost savings, creating new revenue | BM4-C07 – Digital marketplace for secondary raw materials: improved access to funding | Platform limitations & |

| | | | |
|--|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| | streams, and fostering green market growth through scalable digital solutions. | and investment opportunities for sustainable projects. BM4-C01 – Digital fashion solution for size matching and garment optimisation: more efficient production and fewer returns, leading to lower costs. BM4-C03 – Food waste reduction and surplus food management initiative: improved market access for by-products and surplus resources. BM4-C08 – Professional services profile supporting circular business development: digital solution integration supporting operational efficiency and client service improvement. BM4-C04 – Waste management and recycling technology solution: consulting and support for circular product-service models. | integration gaps; AI usage gaps & limited functionality; Data collection & analysis |
|--|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|

Impact measurement

To make these impacts visible and actionable, companies should track a small set of clear indicators using tools that match their level of digital maturity.

Core KPIs (recommended for all companies):

- Return rates and reuse cycles
- Number of active users or participants
- CO₂ saved or emissions avoided
- Repeat usage or engagement (e.g. repeat returns, platform activity)
- Product or service utilisation rate (e.g. frequency of use, rental cycles, active lifecycle use)
- Customer conversion rate (e.g. from platform visit to action such as return, reuse, or purchase)
- Basic operational efficiency indicators (e.g. reduction in waste, unused stock, or manual processes)

Monitoring approach for early-stage companies

Start simple and focus on building basic data practices:

- Use spreadsheets or simple tracking tables to record key data (e.g. returns, reuse cycles, number of users)

- Collect data manually from existing operations (e.g. sales, logistics, customer interactions)
- Focus on a limited set of core KPIs that are easy to track and understand
- Establish simple routines (e.g. weekly or monthly updates) to ensure consistency in data collection
- Gradually improve data quality by standardising how information is recorded

The goal is to build data awareness and consistency without introducing unnecessary complexity.

Monitoring approach for more advanced companies

Move towards automated and integrated monitoring systems:

- Use integrated dashboards to visualise real-time performance across operations, customers, and impact indicators
- Connect different systems (e.g. logistics, customer platforms, product tracking tools) to enable automatic data flow
- Automate KPI calculation and reporting to reduce manual work and improve accuracy
- Use data analytics tools to identify trends, optimise processes, and support decision-making
- Align monitoring systems with external requirements (e.g. reporting standards, digital product passports, ESG frameworks)

The goal is to enable continuous monitoring, optimisation, and data-driven decision-making.

Readiness level

Assessing (digital) readiness is important to understand how prepared companies are to adopt and test the Smart Digital Enablers model. This includes their current level of digitalisation, capacity to collect and analyse data and ability to integrate advanced technologies.

As in the previous models, (digital) readiness is assessed at three levels:

- **high** – the company already applies several digital solutions, has strong data capabilities or tech partnerships in place, and can quickly pilot and scale smart tools.
- **medium** – the company applies some digital tools, has partial infrastructure, but requires additional capacity building to fully implement the model.
- **low** – the company is at an early stage of digitalisation, with limited infrastructure or skills; significant preparation is needed before testing.

For most companies that are currently at a medium readiness level, the focus should be on deepening their existing digital practices and closing gaps that limit their ability to implement data-driven and technology-based circular strategies. Improving readiness often begins with strengthening data collection and analytics capacity, ensuring systems can track real-time operational data, material flows, customer engagement, and sustainability impacts.

Integrating AI-driven tools is another important next step. This involves applying machine learning, predictive maintenance, or automated product recommendations, as well as using blockchain or QR-based systems to provide transparent lifecycle information. By embedding these digital enablers, companies can communicate verified impacts and differentiate themselves in the market.

Alongside technology adoption, customer-facing digital tools such as apps, dashboards, and gamification features are critical to strengthen engagement and demonstrate value. These solutions encourage behavioural change and help scale circular practices.

Finally, readiness is supported by financial and institutional support, particularly for covering the costs of technology development and integration. Access to EU programs, digitalisation funds, or partnerships with research organisations can accelerate adoption and ensure solutions remain competitive.

Adaptability

The Smart Digital Enablers model is flexible enough to support companies in very different situations—from early-stage startups to established SMEs—by helping them use digital tools that match their actual needs. It follows a staged, tiered adoption path (low → medium → high) so that lower-maturity firms can start small and scale when ready. Its main drivers are data use, system integration, and digital customer engagement (e.g. apps, dashboards, or gamification tools), with a preference for low-

cost, open-source options where feasible and targeted training in data literacy and practical AI to avoid underutilisation. The way these are applied depends on the sector and the resources available.

For example, small local service providers can benefit from simple digital tracking tools, such as QR codes or RFID tags, to monitor the use and return of reusable items. Consumer-facing digital platforms may focus on refining AI recommendation engines and offering clear, easy-to-read dashboards that show users the environmental impact of their choices. Manufacturing companies can use data analytics to optimize production planning and reduce waste, while businesses in highly regulated sectors may find blockchain useful to certify product origins and provide verifiable sustainability claims.

Adaptation does not need to happen all at once. Companies can begin with one or two basic elements - such as QR codes or a simple data dashboard - supported by short, hands-on training, and later expand to more advanced solutions (e.g. blockchain verification, predictive analytics, or gamified engagement). Others might directly integrate several features if they already have the digital skills and infrastructure.

This approach ensures that the model can be applied in both local and international contexts, with companies choosing the tools that best support their growth, sustainability goals, and customer expectations. By aligning the pace of adoption with digital maturity—and by using open, cost-effective components plus focused upskilling—the model keeps costs under control and helps ensure tools are actually used. Where needed, a brief readiness check (low/medium/high) can guide which tier to start from and what training or support is required to progress.

Risks and mitigation

This section summarizes the main risks to implementing the Smart Digital Enablers model, how to reduce them, and what could limit scaling across regions and sectors. Wording is intentionally simple and practical.

Implementation risks

- Technical complexity: SMEs may struggle to deploy or maintain AI, IoT, or blockchain; legacy systems and unclear vendor guidance add friction.
- Cost barrier: Upfront spend on sensors, software, integration, and change

management can be high—especially at low digital maturity.

- Data security & privacy: Sharing operational/supply-chain data raises cyber-risk and confidentiality concerns.

Scaling limits

- High upfront costs for scale: Pilots work, but roll-out budgets (devices, integrations, support) can stall expansion.
- Limited expertise: Without ongoing training, tools are underused and benefits fade after pilots.
- Interoperability & privacy constraints: Different national/regional rules and incompatible systems slow cross-border data flows and multi-partner use.

Mitigation

1) Start with a focused implementation plan

- Identify 1–2 priority use cases (e.g., traceability for one product line, or a basic return-tracking loop).
- Set clear success metrics (CO₂ saved, return rate, reuse loops, time saved in reporting) and a 90-day pilot scope.
- Map what you already have (systems, data, devices) and what is missing.

2) Build the right team and skills

- Assign an internal owner (operations or quality lead) and a small cross-functional squad (IT, ops, finance).
- Deliver concise trainings on data literacy and practical AI usage to all relevant users.
- Develop operational playbooks (step-by-step guides, checklists) to support day-to-day use and handover.

3) Reduce cost and complexity by design

- Prefer shared options (platform-as-a-service) and proven open-source components where appropriate.
- Phase investments (pilot → validate → scale) with explicit go/no-go checkpoints tied to value.

- Reuse existing sensors and infrastructure where feasible; integrate rather than rebuild.

4) Embed security and compliance from inception

- Implement role-based access, strong authentication, encryption, and regular backups.
- Document data collection purposes, access rights, and retention periods; minimise data to what is necessary.
- Conduct a basic privacy and security review prior to partner connections and go-live.

5) Secure interoperability and avoid lock-in

- Use open APIs and common data models; maintain a system of record for product identities and lifecycle events.
- Align with digital product-passport logic (unique IDs, materials, events) to facilitate future compliance.

6) Execute a controlled rollout

- Begin with one site or one product family; document the process and timeline, then replicate.
- Pilot with a small set of motivated partners (supplier, recycler, logistics) before broader deployment.
- Keep the user experience straightforward; defer advanced functionality to later phases.

7) Arrange financing early

- Prepare a concise business case (costs, expected savings, risk reduction).
- Combine internal budgets with available external instruments (grants, vouchers).

8) Monitor KPI set and act promptly

- Track adoption (active users, feature use), value (CO₂ saved, return rate, reuse loops), risk (incidents), and cost (cost per site onboarded).
- If thresholds are not met, pause further rollout, resolve root causes, and resume with updated procedures.

9) Prepare contingency arrangements

- Maintain a fallback mode for core operations if advanced modules are unavailable.
- Keep an incident response checklist (roles, notifications, timelines).

This approach helps SMEs introduce digital circular solutions with lower risk, controlled cost, and clear proof of value—while staying compliant and ready to scale.

Implementation of the actions by the companies

The following examples illustrate how the Smart Digital Enablers model can be applied by different companies to strengthen their circular transition. These 8 case-specific examples demonstrate how digital tools, data-driven solutions, and smart technologies support sustainability goals across diverse sectors, from fashion and food upcycling to tourism.

BM4-C01 is a software-as-a-service solution designed to reduce returns in online fashion retail by matching customer body measurements with garment parameters. Unlike conventional sizing tools, the solution considers body shape, fabric elasticity and design details to provide more accurate recommendations. This can help reduce return rates, improve sales conversion and strengthen customer loyalty.

The model fits this profile because it supports expansion beyond a single e-commerce platform and enables stronger use of AI and data capabilities. It also supports the profile's ambition to become a driver of waste prevention and circular design in fashion by turning return data into useful sustainability insights.

Planned actions include developing a multiplatform version and API-based integrations for easier adoption, as well as continuous AI improvements in cooperation with designers and users. Pilot projects with sustainable brands and second-hand or recycling platforms can demonstrate measurable benefits. The profile may also expand its impact dashboard with fit and sustainability insights, showing avoided CO₂ emissions, reduced textile waste and garments with longer life cycles.

Partnerships with certification or verification organisations are recommended to ensure validated results, while consumer engagement campaigns can raise awareness about waste prevention through better fit. To secure growth, the profile can also prepare tailored investment pitches and participate in targeted funding initiatives.

Expected results include reduced overproduction, less textile waste going to landfill, lower emissions from returns and longer-lasting clothing. For brands, the profile provides data-driven

tools to align design and production with circular principles. New revenue opportunities may arise from subscriptions to sizing and sustainability dashboards, licensing predictive algorithms, consulting for waste-reduction strategies and partnerships with recycling marketplaces.

Strategic focus groups: platform integration; advanced AI applications; data intelligence; lifecycle tracking; customer engagement.

BM4-C02 operates a deposit-and-return system for reusable textile products, replacing single-use packaging with durable and washable alternatives. The profile provides a full-service solution for business clients: supplying reusable textile products, collecting and washing them, and redistributing clean items back into circulation. This system can reduce waste, lower packaging costs and promote sustainable consumption among customers.

The model is highly relevant for this profile because scaling the system requires efficient logistics, reliable traceability and customer engagement, all of which can be supported by digital tools. Digitalisation enables the profile to manage the growing complexity of product circulation and build transparency into its operations while keeping the customer experience simple.

Digital tracking systems using QR or RFID identifiers can help monitor usage cycles, return rates and product durability, providing valuable data for optimisation. A customer app could further support engagement by showing personalised impact dashboards, sending return reminders and offering gamified incentives to boost participation.

On the operational side, AI-supported route planning and smart logistics can make collection and redistribution more efficient, ensuring availability of clean products while reducing costs and emissions. Integration with municipal or smart city deposit systems could also support wider reuse infrastructure and increase visibility.

Expected results include significant reductions in single-use packaging waste, measurable CO₂ savings through optimised logistics and improved customer loyalty through transparent and engaging feedback on sustainability impact. The system also shows that digital innovation can make reuse more convenient and competitive.

Strategic focus groups: lifecycle tracking; data intelligence; optimised logistics; customer engagement.

BM4-C03 is a circular food profile focused on transforming food industry by-products and underutilised resources into higher-value products. In addition to operating its own consumer products, the profile collaborates with food producers and retailers to design upcycled product assortments and promote circular food solutions. By building partnerships and educating consumers, it contributes to making food upcycling more visible and practical.

The model is highly relevant because it supports the profile's long-term ambition to establish a digital matchmaking platform for food industry by-products. While this system may still be

under development, it represents an important future direction that can help scale activities, automate partner acquisition and create transparent, data-driven upcycling ecosystems.

Planned digital opportunities include the creation of a smart database categorising by-products and potential applications, supported by AI-driven recommendation engines that generate tailored upcycling proposals. Automated outreach tools could streamline partner acquisition by identifying potential collaborators and sending personalised offers. To build trust in sensitive food value chains, traceability tools could also verify material origins and ensure transparency.

Expected results include a significant reduction of organic food waste, monetisation of previously underutilised by-products and new cross-sector collaborations in the food industry. In the longer term, the platform can strengthen consumer trust through transparency, expand circular value chains across borders and generate additional revenue through consulting services, co-branding opportunities and commission-based matchmaking.

Strategic focus groups: data intelligence; advanced AI applications; optimised logistics; lifecycle tracking; customer engagement.

BM4-C04 is a company profile specialising in innovative products and circular solutions, including the development of new materials and prototypes that can replace conventional resource-intensive products. Its activities are particularly relevant for sectors such as construction and packaging. By turning industrial waste into valuable inputs, the profile aims to promote circular solutions that can be scaled across different markets.

The model is a strong fit because the profile's future growth depends on better design processes, lifecycle monitoring and stronger market visibility, all of which can be supported by digital tools. These enablers can accelerate the transition from innovative prototypes to market-ready circular products.

Relevant digital opportunities include using AI-supported design tools to create scalable solutions from recycled materials and integrating IoT sensors into products to monitor lifecycle performance and durability. Digital platforms can also support industrial symbiosis by matching one client's waste streams with another's resource needs. In parallel, online channels and data-driven marketing tools can help raise awareness of the profile's solutions and attract pilot partners.

Expected results include more efficient design processes, validated prototypes ready for piloting and improved traceability of circular solutions.

Strategic focus groups: advanced AI applications; lifecycle tracking; customer engagement; platform integration.

BM4-C05 is a subscription-based digital platform designed to encourage circular fashion consumption. By combining AI, machine learning and digital visualisation, the platform offers

wardrobe digitisation, personalised outfit recommendations, repair and upcycling guidance, and affiliate shopping with sustainable brands. Its core value lies in promoting reduced consumption and textile waste prevention through digital engagement.

The model is highly relevant because the profile's growth depends on scaling digital tools for personalisation, impact tracking and user engagement. Its main challenges include attracting a broad user base, integrating local repair and upcycling services into the platform, and ensuring reliable sustainability data to communicate measurable impact.

Proposed actions include refining the AI recommendation engine and enhancing the impact tracking dashboard to better demonstrate environmental benefits to users. Formalising partnerships with local repair and upcycling providers can expand the service offer, while gamification campaigns can support behaviour change and customer loyalty.

In addition, developing APIs for brand integration, experimenting with traceability tools and using data analytics can strengthen the profile's position in the emerging field of digital circular fashion.

Expected results include stronger user acquisition and engagement, deeper integration of circular services and measurable sustainability impact communicated transparently to consumers and partners.

Strategic focus groups: advanced AI applications; customer engagement; data management; lifecycle tracking.

BM4-C06 is a digital platform dedicated to eco-friendly accommodation, connecting sustainable providers with eco-conscious travellers. The platform can generate revenue through subscriptions and booking commissions and may expand into local eco-experiences such as farm visits, guided hikes and craft workshops. Its ambition is to become both a marketplace and a trusted quality label for sustainable tourism.

The model is relevant because the platform already integrates digital booking and verification tools and can further strengthen transparency, trust and differentiation through AI and traceability solutions. AI can support personalised travel recommendations and insights on sustainability performance, while traceability tools can support more reliable verification of eco-certifications.

Phased adoption of AI-driven recommendations and certification tracking can improve user engagement, build trust and ensure that sustainability claims are more visible and verifiable.

Expected results include wider adoption of eco-certification among accommodation providers, stronger positioning of sustainable tourism and increased awareness and engagement from travellers. In the longer term, this type of platform can be adapted and scaled to other markets.

Strategic focus groups: customer engagement; lifecycle tracking; platform integration; data

management

BM4-C07 is a digital platform dedicated to financing green and socially responsible projects. It connects sustainability-focused initiatives with investors and corporate actors that need to respond to ESG and sustainability reporting requirements. Its revenue model can combine success-based fees, subscription access to advanced tools and consulting services for ESG or impact-related compliance.

The model is highly relevant because the platform's competitive advantage depends on digitalisation. Key opportunities include the integration of AI tools for project screening and investor-project matching, the creation of standardised templates for replicating successful green projects, and the adoption of transparent reporting tools to verify impact.

These digital upgrades can enable faster funding cycles, stronger alignment between projects and investors, and higher trust in sustainability claims.

Expected results include faster deployment of green innovations, measurable environmental and social impact from funded projects and stronger visibility for the sustainability ecosystem. Through the scaling of circular economy and green projects, the platform can contribute to systemic change, while educating investors and building a stronger culture of impact-driven finance.

Strategic focus groups: platform integration; data management; customer engagement; lifecycle tracking.

BM4-C08 is developing an all-in-one mobile application and content management system tailored for tourism accommodation providers. The solution replaces printed guest materials with a digital guest information and facility management platform, reducing paper waste and integrating sustainability into daily operations.

Guests benefit from streamlined check-in, access to property details and recommendations for local eco-friendly attractions and events, while property owners gain tools for facility management, maintenance tracking and centralised guest communication.

The model is relevant because the profile's success depends on using digitalisation to improve efficiency and sustainability in tourism. Planned AI-driven features, such as predictive maintenance and personalised guest support, can enhance adoption and demonstrate measurable operational benefits. At the same time, cooperation with eco-accommodation providers can help position the platform as a green alternative in the tourism market.

Proposed actions include launching the platform with core functionalities, followed by phased integration of AI tools to ensure ease of use for providers with limited digital skills. Onboarding and training programmes can support adoption, while strategic cooperation with local tourist boards and certified green accommodation providers can expand visibility. In the longer term,

adapting the platform to neighbouring eco-tourism markets can open pathways for regional scaling.

Expected results include reduced paper consumption, improved resource efficiency in accommodation management and stronger integration of sustainability practices into the tourism sector.

Strategic focus groups: platform integration; advanced AI applications; customer engagement.

A.5: Business model 5 Market Educators

General information

The **Business model 5 Market Educators** addresses the challenge that many customers and business partners still lack awareness or appreciation of circular economy principles. Without a clear understanding of sustainability benefits, even innovative circular products or services often face limited adoption and slower market uptake.

This model responds to such gaps by focusing on education, awareness raising, and storytelling. The goal is to build stronger demand for sustainable products and services, empower consumers to make informed choices, and encourage businesses to integrate circular practices into their operations.

Key thematic needs include:

- **Market & customer gaps** – bridging the disconnect between circular solutions and customer expectations.
- **Market awareness** – ensuring that the added value of circular products and services is effectively communicated.

The strategic focus areas are:

- **Awareness campaigns** – using targeted communication and marketing tools to highlight the value of circular products and services.
- **Education and training** – actively engaging in initiatives that raise awareness and provide practical knowledge on circular economy principles for market actors and local communities.
- **Storytelling and branding** – creating strong narratives around sustainability that connect with consumer emotions and cultural values.
- **Demonstration and co-creation** – showcasing circular solutions through events, workshops, and real-life examples that involve customers directly.

- **Market trust and credibility** – ensuring that sustainability claims are transparent and validated, to strengthen consumer confidence.
- **Partnership networks** – working with businesses, municipalities, and associations to amplify impact and expand outreach.

The development of this model was guided by existing circular economy good practices and by concrete scenarios created during the WE.Circular co-creation process. For the public version, the participating companies are anonymised and presented through profile codes.

The profiles represent different contexts, including sustainable retail, circular fashion, reuse and repair, education, community engagement and sustainable creative products. This diversity demonstrates that market education can support circular transition across different sectors by making circular value more visible, understandable and attractive to customers and partners.

The anonymised profiles that shaped this model include:

- BM5-C01 – Sustainable retail and community marketplace profile;
- BM5-C02 – Circular consumer product profile based on innovative sustainable materials;
- BM5-C03 – Education and community initiative for circular and sustainable practices;
- BM5-C04 – Upcycling and creative reuse profile;
- BM5-C05 – Sustainable creative products and customer education profile

Covered key areas: Production processes, Waste management, Raw materials

Problems and needs addressed by the model

Many companies struggle to effectively raise awareness of the true benefits of circular solutions, as customers often lack the time, opportunity, or reliable information to assess the real sustainability impact of products. For many consumers, sustainability is not yet a priority or even a consideration when making purchasing decisions, which makes the task even more challenging.

At the same time, many businesses promote products or practices as “sustainable” even when they do not truly deliver measurable benefits, which undermines trust and

creates confusion. The widespread issue of greenwashing further complicates decision-making, leading to skepticism about product quality and durability. As a result, businesses face difficulties in making their circular value visible in ways that resonate with different audiences.

These challenges highlight the need for education, transparent communication, and authentic storytelling to bridge the gap between sustainable practices and consumer understanding. During the co-creation process, companies expressed the following key needs:

During the co-creation process, companies highlighted several challenges that limit their ability to position themselves as circular businesses:

- **Low consumer awareness of circular practices** – many customers and partners are not fully informed about the environmental and social benefits of circular products, making it difficult for companies to differentiate their offer.
- **Skepticism and lack of trust** – consumers often doubt the quality, safety, effectiveness or durability of products marketed as sustainable, especially in markets affected by greenwashing.
- **Weak communication methods** – businesses struggle to clearly convey the added value of circular solutions in a way that resonates with diverse customer groups.
- **Insufficient brand visibility** – companies often lack the resources and tools to strengthen their market position through sustainability-focused marketing and authentic storytelling.

Value proposition

The model supports women entrepreneurs in positioning themselves as educators and advocates of circular economy principles, and in overcoming two persistent barriers to circular adoption: (1) market & customer gaps - where circular offerings don't yet meet customer expectations on convenience, performance, price, design, or access - and (2) market awareness - where the added value of circular products and services is not clearly or credibly communicated.

By adopting this model, companies receive support to bridge these gaps through clear communication, awareness-raising activities, and storytelling that translates technical

sustainability benefits into relatable, customer-oriented messages. This helps ensure that circular products and services are not only available, but also understood, trusted, and valued in the marketplace. In doing so, the model empowers businesses to differentiate their brand, strengthen consumer trust, and foster more sustainable consumption choices.

Target users

The model is intended for organisations that:

- Struggle to make the added value of their circular products or services visible and understandable to customers and partners.
- Face skepticism, greenwashing concerns, or low consumer trust that limits adoption of sustainable solutions.
- Need structured approaches to raise awareness, communicate benefits credibly, and engage diverse audiences.

The model is designed for a broad spectrum of companies whose work depends on bridging awareness and trust gaps:

- **Enterprises** in retail, crafts, fashion, or hospitality that require stronger sustainability-focused marketing and customer engagement to differentiate themselves.
- **Educational and community initiatives** that aim to spread knowledge about reuse, repair, upcycling, or responsible consumption.
- **SMEs and startups** introducing innovative eco-products or services, who need support in storytelling, eco-marketing, and impact communication to gain market traction.
- **Local producers, artisans, or social enterprises** whose sustainable practices are undervalued or misunderstood, and who can benefit from awareness campaigns or certification-backed narratives.
- **Networks, NGOs, and training providers** that seek to integrate circular economy awareness into their outreach, capacity building, or community programmes.

Concept of the business model

The Market Educators model is built on the idea that circular products and services can only succeed if their value is clearly understood and trusted by customers, partners, and the wider market. Many sustainable solutions fail to reach their potential because consumers are either unaware of their benefits. At the same time, businesses often lack the tools, resources, or strategies to effectively communicate their impact.

This model addresses these gaps by equipping companies with structured approaches for awareness building, education, and market engagement. It promotes the use of storytelling, eco-marketing, impact communication, and participation in awareness-raising initiatives.

The flexibility of the model allows it to be applied across different sectors – from retail, crafts, and fashion to hospitality and education – ensuring that companies can tailor awareness strategies to their specific audiences. By embedding education and transparent communication into their business practices, companies can strengthen customer trust, overcome skepticism, and create new market opportunities for circular solutions.

The Market Educators model can also be applied through hybrid organisational structures that combine mission-driven activities with commercial offers. This is especially relevant for companies and initiatives where education, awareness raising, and community exchange are closely linked to monetised services or products, such as workshops, training programmes, digital learning materials, curated product sales, memberships, or sponsored awareness campaigns. In this sense, the model does not require companies to choose between social impact and business viability; instead, it helps them connect educational and community-oriented activities with revenue-generating opportunities.

Key actions for application of the model

The following table links the strategic focus areas with practical actions, illustrating how companies can raise awareness, build trust, and educate markets to support the wider adoption of circular practices:

| Strategic focus | Description of the strategic focus | Suggested actions for implementation | Relevant for companies |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Awareness campaigns* | Targeted outreach to highlight the environmental and social benefits of circular products and services | <ul style="list-style-type: none"> • Launch sustainability-themed campaigns using social media, local media, and events, directly linked to the company's own product or service offering. • Collaborate with influencers, community leaders, and eco-brands to expand reach or build a "brand ambassador network" of real users who can authentically endorse and validate the brand's sustainability values. • Develop campaigns linked to specific consumer habits (e.g., reducing single-use plastics). | BM5-C01, BM5-C02, BM5-C03, BM5-C04, BM5-C05 |
| Education and training initiatives** | Participation in initiatives that provide accessible knowledge and tools about circular practices for market actors and communities. | <ul style="list-style-type: none"> • Organize workshops or community events focused on reuse, repair, and upcycling. • Create accessible digital educational materials (guides, videos, toolkits, e-learning modules, apps, QR code based infos). • Create a website or a landing page dedicated to showcasing recycled products and sharing information related to sustainability. • Collaborate with civil society organizations or local organizations to integrate circular content into broader awareness-raising programs. | BM5-C03, BM5-C01, BM5-C05, BM5-C04 |
| Storytelling and branding*** | Building authentic narratives that link products to cultural values, personal stories, and community impact. | <ul style="list-style-type: none"> • Develop brand stories that highlight the journey of products and their environmental value (infographics, short animations, sustainability labels with QR codes on the product that links to a short story about its sustainability impact or support for the local community.) • Use creative media (videos, exhibitions, blogs) to connect emotionally with customers. • Gamified awareness campaigns – for example, a "calculate your impact" game that shows consumers how much waste or CO₂ they have saved by choosing the product. | BM5-C02, BM5-C04, BM5-C05, BM5-C01 |

| | | | |
|----------------------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| | | <ul style="list-style-type: none"> • User-generated content campaigns – encouraging customers to share their own stories (e.g., “how I reuse this product”), which the company can feature in its marketing. | |
| Demonstration and co-creation | Engaging consumers directly through participatory experiences that showcase circular practices. | <ul style="list-style-type: none"> • Host open workshops where customers can repair, upcycle, or co-create products. • Organize public demonstrations at fairs, markets, and cultural events. • Pilot co-creation projects with schools, cultural houses, or community centers. | BM5-C01, BM5-C03, BM5-C04 |
| Market trust and credibility**** | Strengthening confidence in circular claims by ensuring transparency and authenticity. | <ul style="list-style-type: none"> • Leverage third-party certifications, eco-labels, or expert assessments to ensure sustainability claims are credible and verifiable • Communicate clear impact data (e.g., waste reduced, CO₂ saved). • Establish transparency tools such as impact dashboards or product labels. • Interactive customer feedback tools – creating digital surveys or quick online polls where customers can share feedback on the sustainability aspects of products. This both engages them directly and helps the company refine its messaging. | BM5-C02, BM5-C05 |
| Partnership networks | Building alliances with public and private actors to amplify awareness and expand outreach. | <ul style="list-style-type: none"> • Collaborate with other circular SMEs to create joint campaigns. • Form partnerships with municipalities, local chambers, or cultural institutions, EU programmes. • Engage with international sustainability networks for visibility and funding. | BM5-C01, BM5-C03, BM5-C04 |

***Awareness campaigns** can take multiple forms depending on the company's target audience, resources, and communication channels. These may include:

- digital campaigns (e.g. social media storytelling, short videos, influencer collaborations),
- school-based initiatives (such as educational sessions or interactive workshops),
- community events (local fairs, open days, or thematic sustainability events),
- and product-based demonstrations that showcase the circular value in practice.

In addition, awareness activities can be embedded into community exchange or marketplace-type formats, such as swap events, resale platforms, co-creation spaces, or local circular marketplaces, where learning and engagement happen through direct participation rather than traditional promotion. Companies can start with small-scale, low-cost activities and gradually expand towards more structured and multi-channel approaches as their capacity and experience grow.

****Educational activities** within this model may take various forms, including hands-on workshops, product-based learning tools (e.g. DIY kits or guided use of circular products), live demonstrations, and awareness kits designed for schools, communities, or events.

Depending on the target group, educational activities may need to be adapted to different levels of knowledge, expectations, and contexts. For this reason, they should be tested and refined in collaboration with relevant stakeholders (such as teachers or community partners) to ensure they are practical, engaging, and easy to use.

It is also important to distinguish between non-commercial awareness activities and structured educational offers. While awareness actions (e.g. free events, campaigns, or informal knowledge sharing) primarily aim to inform and engage audiences, educational formats such as workshops, training programmes, or digital learning platforms can be developed as monetised services, contributing to the company's revenue streams.

*****Storytelling and branding** are not limited to narratives and campaigns, but are also supported by concrete communication tools. These include product packaging, digital channels (such as websites and social media), and a consistent content strategy that helps convey the company's circular value in a clear and engaging way. In many cases, companies already apply circular practices but lack a strong, market-facing identity. In such situations, rebranding or improving visual coherence (e.g. logos, product presentation, messaging style) can be an important enabling step to make their sustainability efforts more visible and understandable to customers.

******Market trust** can be strengthened through transparent and proof-based communication that clearly explains the circular value of products and services. This may include sharing verifiable information on materials, production processes, environmental impact, or product lifecycle, as well as using simple, customer-friendly messaging supported by visuals, labels, or certifications. Providing concrete examples, data points, or third-party validation can help reduce skepticism and build credibility over time.

Where the model is applied through community-based or online exchange formats (such as platforms, marketplaces, or co-creation spaces), trust also depends on the quality of the user experience. Ensuring good browsability, ease of use, clear information, and transaction safety (e.g. transparent terms, secure payment options, reliable feedback systems) is essential to support user confidence and active participation.

Potential partners

Transitioning to a market educator role in the circular economy requires strong partnerships with organizations that can amplify awareness, validate sustainability claims, and build trust among consumers. For the companies applying this model, partners provide not only expertise and credibility but also essential distribution, education, and communication channels. Based on the co-creation reports of the five enterprises, the following partner groups are most relevant:

| Partner category | Description | Companies that need this category most |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| NGOs and community organizations | Deliver awareness campaigns, organize local events, and provide credibility for sustainability communication. Help companies reach citizens through trusted community channels | BM5-C01, BM5-C03, BM5-C04, BM5-C05 |
| Educational and training institutions | Act as hubs for spreading knowledge about circular practices through workshops, seminars, and training modules. Enable scaling of awareness activities | BM5-C03, BM5-C01, BM5-C05, BM5-C02, BM5-C04 |
| Suppliers and material partners | Provide sustainable raw materials and demonstrate traceability, which supports communication of product authenticity and quality. | BM5-C02, BM5-C04, BM5-C05 |
| Municipalities and public authorities | Offer legitimacy, infrastructure, and promotional support for awareness campaigns and eco-events. Can also provide small grants or public visibility. | BM5-C01, BM5-C02, BM5-C03 |
| Digital and media partners | Develop platforms, apps, or online campaigns to make sustainability communication interactive (gamification, e-learning, impact dashboards). | BM5-C03, BM5-C01, BM5-C05, BM5-C02, BM5-C04 |
| Professional and industry experts | Strengthen consumer trust by validating sustainability claims (e.g. health professionals, designers, influencers) | BM5-C02, BM5-C04, BM5-C05, BM5-C03 |

Partnership development is often a gradual process that depends on the company's capacity, sector, and national or local context. In the early stages, companies may start by collaborating with more accessible, informal or service-oriented partners, such as community actors, marketing or communication experts, digital support providers, or advisory organisations. These initial partnerships can help build visibility, test ideas, and strengthen communication efforts. As the company grows and its activities become more structured, cooperation can expand towards more formal institutional partnerships with municipalities, educational institutions, or larger networks.

Revenue streams

In a circular economy, revenue streams for Market Educators are built not only on direct product sales, but also on education, awareness campaigns, and partnerships. For companies applying this model, diversification ensures both financial sustainability and greater impact, as income is generated while also raising market awareness and customer engagement.

The table below outlines the most relevant revenue streams for the cluster, grouped by category:

| Revenue Stream Category | Description | Examples for involved companies |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product sales (Circular Products) | Revenue from selling products designed for durability, repairability, or reuse. | BM5-C04 – upcycled fashion pieces; BM5-C05 – reused textiles and packaging-based creative products; BM5-C02 – natural biodegradable chewing gum. |
| Workshops and co-creation experiences | Revenue from engaging customers in learning and making, often strengthening brand loyalty. | BM5-C01 – creative reuse workshops for parents and children; BM5-C03 – seed-saving and biodiversity workshops; BM5-C04 – fashion repair and upcycling demos. |
| Education and training services | Paid courses, learning materials, and training sessions that provide knowledge about circular economy practices for schools, businesses, and communities. | BM5-C03 – seed diaries, digital learning modules, and training programmes; BM5-C01 – sustainability education for families and kids |

| | | |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Partnership and sponsorship revenue | Funding from corporate partnerships, public programmes, or sponsorship of circular initiatives. | BM5-C02 – partnerships with health professionals and eco-clubs; BM5-C03 – CSR collaborations with companies; BM5-C01 – partnerships with schools and local governments. |
| Subscription models (Subscription for products) | Recurring fees for product bundles or refill packs (e.g., monthly kits), with member benefits such as discounts, early access, or exclusive content. | BM5-C02 – natural gum refill subscriptions |

Not all revenue streams can be activated at the same stage of business development, and companies should consider their readiness before introducing more complex models. Education and training services, for example, often require a clearly defined service offer, target group, and pricing logic before they can be successfully monetised.

Sponsorship-based revenues typically depend on a later stage of development, when the company has achieved stronger visibility, credibility, and a proven track record that is attractive for external partners.

Similarly, subscription models usually require a more advanced business stage, including a stable and recurring customer base, consistent product or service delivery, and sufficient operational capacity to maintain long-term engagement.

Key impact

The Market Educators model creates impact primarily through awareness, education, and trust-building. While its direct environmental footprint may be smaller than that of production-focused models, its systemic influence can be significant, as it shapes consumer behaviour, market demand, and brand credibility. The table below summarises the key impacts across environmental, social, and economic dimensions:

| impact dimension | description | examples from cluster companies | linked strategic focus |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| environmental impact | Products are increasingly created using waste materials, reused and recyclable resources, supporting waste reduction and lowering the demand for virgin raw materials. | BM5-C04 – upcycled fashion pieces made from discarded textiles; BM5-C05 – reuse of textile waste in creative products; BM5-C02 – biodegradable packaging and plastic-free gum. | Education and training, Market trust and credibility |

| | | | |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| social impact | Strengthens consumer knowledge, builds trust in circular brands, and empowers communities to actively engage in sustainability. Educational workshops, storytelling, and partnerships foster cultural change and greater inclusivity. | BM5-C01 – workshops for families on reuse and DIY creativity; BM5-C03 – seed-sharing and biodiversity education. | Awareness campaigns, Education and training, Market trust and credibility, Demonstration and co-creation |
| economic impact | Enhances brand visibility and market differentiation for SMEs offering circular solutions. By reducing scepticism and raising awareness, companies can reach new customer segments and attract investors or partners. | BM5-C01 – marketplace enabling resale and creative exchanges; BM5-C03 – hybrid revenue through courses, memberships and CSR products | Awareness campaigns, Partnership networks |

Indicative KPIs for monitoring awareness and education impact:

The impact of awareness-raising and education activities can be supported by a set of simple but structured KPIs. These indicators help companies monitor performance, understand user behaviour, and refine their communication and engagement strategies over time.

Awareness and engagement indicators:

- Engagement rate (e.g. likes, shares, comments, video views on digital platforms)
- Reach and impressions of campaigns (number of people exposed to content)
- Website traffic or content views (e.g. visits to sustainability-related pages)

Participation and learning indicators:

- Number of participants in workshops, events, or training sessions
- Number of downloads or users of educational materials (e.g. toolkits, apps, QR-based content)
- Feedback scores or satisfaction rates from participants

Trust and customer behaviour indicators:

- Repeat purchase rate or returning customers
- Customer feedback related to trust, quality, or sustainability perception
- Conversion rate from awareness activities to actual purchases or engagement

Partnership and ecosystem indicators:

- Number of active partnerships or collaborations
- Growth of partner network over time
- Number of joint campaigns, events, or co-created initiatives

While companies may not track all indicators from the beginning, selecting a small set of relevant KPIs can already provide valuable insights and support more data-driven decision-making.

Readiness level

Readiness for the Market Educators model depends on how prepared companies are to invest in awareness-building, communication, and credibility around circular practices.

- High – companies already integrate education and awareness into their operations, have strong storytelling capacity, established networks with schools, NGOs, or eco-clubs, and can quickly launch campaigns or partnerships.
- Medium – companies apply some awareness or branding activities but lack systematic strategies, professional communication tools, or broader networks. Additional capacity-building, mentoring, or partnerships are required to scale their impact.
- Low – companies are at an early stage of market education, with limited visibility, weak consumer engagement, or no structured activities to build trust in circular practices. Significant preparation is needed before piloting larger campaigns or outreach initiatives.

For most companies currently at a medium readiness level, the priority should be strengthening their capacity to communicate the real value of circular solutions. This often means developing clearer narratives, supported by transparent data, that counter greenwashing and resonate with different audiences. Companies can improve readiness by experimenting with small-scale campaigns (e.g., short social media challenges or local pop-up events) before scaling to larger initiatives. Partnering with schools, NGOs, or municipalities can also provide credibility and access to broader audiences. Digital tools – such as QR codes linking products to sustainability stories, or customer feedback platforms – can make awareness efforts more interactive and trustworthy. Finally, readiness is also reinforced by building partnerships with marketing experts or communication agencies that can help translate technical circular practices into accessible and engaging messages for the public.

Adaptability

The Market Educators model is designed to be flexible across sectors, products, and community contexts. Its core principle is that circular practices only succeed when their value is understood, trusted, and visible to the market. While the specific communication tools, campaigns, and engagement methods may vary, the underlying focus on education, awareness, and credibility remains constant.

For companies, adaptability means choosing the most relevant strategic focus areas and applying them in ways that match their size, resources, and target audience. A small craft business may prioritize storytelling and authentic branding, while a community initiative could focus on workshops and participatory events. Larger companies may emphasize professional awareness campaigns or partnerships with municipalities, NGOs, and retailers to reach broader audiences.

The model also adjusts to local realities: in rural areas it can take the form of community workshops or knowledge-sharing initiatives, while in urban markets it may rely more on digital platforms, social media campaigns, and collaborations with eco-influencers.

This balance of structure and flexibility ensures that enterprises of different scales and sectors can apply the Market Educators model to raise awareness, strengthen consumer trust, and build market demand for circular products and services, while contributing to cultural and behavioral change.

Risks and mitigation

Key risks and barriers

- **Capacity constraints:** small companies may lack sufficient staff or specialised skills to run education/awareness activities at quality and cadence.
- **Unprofitable online campaigns:** paid/organic campaigns may not convert, driving up customer acquisition cost.
- **Late ROI realisation:** education-first initiatives can take longer to show revenue or measurable behavioural change.
- **Audience mismatch:** information fails to reach the intended segments or decision-makers.

Mitigation

- **Research first, then act:** run a short audience and channel discovery research (interviews, small A/B tests) and create a concise action plan (target segments, key messages, channels, KPIs) before launching any education or campaign.
- **Pilot, then scale:** start with low-cost, high-learning pilots
- **Right message, right channel:** map segments to channels (schools, local gov, community groups, sector associations); co-create content with trusted partners to extend reach.
- **Plan for capacity:** define roles (content lead, community manager, data/analytics), create a simple content calendar and reusable templates; outsource peaks if needed.

Implementation of the actions by the companies

This section presents examples of how the Market Educators business model can be applied in practice. The five company cases demonstrate how women entrepreneurs from various sectors can raise awareness, improve customer understanding, and communicate the added value of circular solutions. Through tailored education, storytelling and partnerships, these profiles show different ways to engage audiences and strengthen the market uptake of sustainable products and services.

BM5-C01 is a hybrid online–offline platform that engages parents and children in circular practices through the resale of second-hand children’s products and creative upcycling activities. By combining e-commerce with community events and workshops, the profile encourages families to reduce waste, extend product life and explore hands-on sustainability in everyday life.

This model fits well with **BM5-C01**, as it bridges market education with practical circular solutions. Families not only gain access to affordable reused products, but also participate in activities that raise awareness about sustainability and empower children to become active contributors.

Planned actions include expanding the online platform to support the full cycle of buying, selling and swapping second-hand items, as well as providing access to educational content and gamified eco-impact dashboards. Offline actions include organising creative workshops and school-based programmes where children and parents can co-create toys, clothing and art from recycled materials. Partnerships with schools and local governments can support the collection of reusable materials and strengthen sustainability education through eco-maker clubs and family-oriented upcycling events.

Expected results include increased consumer awareness of the circular economy, active participation of children and parents in sustainable practices, and measurable reductions in waste through the reuse of children's products. The community-driven approach is expected to enhance brand visibility, build trust and create replicable models for scaling to other regions.

Strategic focus areas: awareness campaigns; education and training; storytelling and branding; demonstration and co-creation; partnership networks.

BM5-C02 develops and distributes a natural consumer product made from biodegradable raw materials and packaged in recyclable solutions, offering a healthier and more sustainable alternative to conventional polymer-based products. Its current portfolio includes natural products with innovative functional ingredients, targeted at consumers who seek healthier lifestyles and sustainable consumption.

The profile faces significant challenges in raising consumer awareness, since many people do not realise that conventional alternatives may contain plastic-based components. Limited access to mainstream retail channels and higher production costs compared to mass-market competitors make market entry and scaling more difficult. In addition, consumers may doubt the effectiveness of functional ingredients, requiring further validation through research.

Circular opportunities lie in educational marketing campaigns that explain the environmental and health value of natural alternatives, building partnerships with eco-clubs, schools and health professionals to establish credibility, and expanding into European markets where consumers are more open to sustainability-driven innovations. Collaborations with universities and research institutes can help prove the benefits of functional ingredients, while distributors, bio shops and eco-focused retail partners can facilitate greater visibility and volume.

Planned actions include strengthening sustainability criteria and documentation for raw materials, mapping additional suppliers to secure scalability, launching awareness campaigns, developing consumer-facing materials and videos, partnering with research institutions for scientific validation, running small-scale consumer or clinical tests, and piloting collaborations with eco-distributors and bio shops to test rollout, pricing and market positioning.

Expected results include higher consumer awareness of the environmental and health benefits of biodegradable alternatives, expanded retail presence through eco-focused partners and stronger credibility through scientific validation. Overall, the initiative is expected to reduce plastic-related pollution and generate stronger consumer demand for sustainable alternatives.

Strategic focus areas: awareness campaigns; education and training; market trust and credibility; partnership networks.

BM5-C03 is an educational platform dedicated to promoting seed-saving practices, biodiversity conservation and sustainable gardening through circular economy principles. Its business model combines grant funding, individual donations and revenue-generating educational

services, ensuring both impact and financial sustainability.

At the same time, the profile faces challenges such as finding viable ways to monetise informal seed-sharing practices, overcoming limited recognition within standard circular economy frameworks, and addressing legal uncertainties linked to regulations that could restrict non-commercial seed exchange.

The model is highly relevant for **BM5-C03**, as its mission directly targets the gap between circular solutions and public awareness. By positioning seed preservation as a core element of circularity, the profile can counter consumer scepticism, build recognition for small-scale community initiatives and influence systemic thinking in agriculture. Educational activities, awareness campaigns and storytelling are not only supporting tools, but central to its long-term impact and financial sustainability.

Planned actions include developing hybrid revenue streams through physical and digital products, such as planting diaries and seed packages, alongside workshops and courses that combine learning with practical value. A digital platform for seed and knowledge exchange can enable the sharing of seeds, plant surpluses and cultivation know-how, making community-based circularity more visible and accessible.

At the same time, partnerships with NGOs, schools, municipalities and CSR-focused companies can expand outreach, while collaborations with legislative experts and European networks can help address regulatory challenges.

Expected results include greater public awareness of biodiversity and seed-saving, improved recognition of informal circular practices, and the creation of a sustainable hybrid financial model. The development of a digital exchange platform can diversify income sources and strengthen community engagement, while advocacy and education can contribute to systemic change in how circularity is understood and applied in agriculture.

Strategic focus areas: awareness campaigns; education and training; storytelling and branding; market trust and credibility; partnership networks.

BM5-C04 is a purpose-driven microenterprise offering sustainable fashion through the creative reuse of textile waste. The profile transforms discarded garments and fabrics into unique, handcrafted clothing, accessories and custom-designed pieces, often incorporating textiles with personal meaning. Its business model combines product sales, customisation services and interactive workshops, serving both eco-conscious individuals and B2B clients seeking sustainability-oriented programmes.

Education is also central, with DIY content, talks and school programmes that encourage conscious consumption.

The model is highly relevant for **BM5-C04**, as one of its greatest challenges lies in low consumer awareness and misconceptions about upcycled fashion. At the same time, consumer

engagement remains limited, with many potential customers not yet committed to sustainable fashion choices or unsure how these products fit into their lifestyle.

By focusing on education and storytelling, the profile can help shift mindsets away from fast fashion, communicate the environmental benefits of textile reuse and justify the added value of unique, handcrafted products. Strengthening marketing and brand visibility is therefore essential, not only to overcome price sensitivity, but also to reach the target audience more effectively and foster long-term customer commitment.

Planned actions include launching targeted digital and offline awareness campaigns, developing educational video content for social media and participating in pop-up shops to directly connect with customers and convey the story behind each product. Partnerships with textile waste processors can support scaling, while collaborations with schools and community initiatives can enhance educational outreach. Exploring more sustainability-oriented markets may also support expansion.

Expected results include increased awareness of sustainable consumption, stronger demand for upcycled fashion, improved brand recognition and reduced textile waste through reuse and creative design.

Strategic focus areas: awareness campaigns; education and training; storytelling and branding; demonstration and co-creation.

BM5-C05 is a female-owned sustainable fashion microbusiness specialising in handmade crochet and sewn accessories, mainly customisable bags. Products are crafted in small batches using recycled cord yarn and other traceable, locally sourced or repurposed materials. The business currently generates income through online sales and presence at craft fairs. Its mission is to promote mindful consumption and reduce overproduction in the fashion industry by offering long-lasting, functional and unique products.

The model is highly relevant for **BM5-C05**, as one of the key challenges lies in low awareness and engagement among potential customers who are still influenced by fast fashion trends. By combining education, storytelling and transparent communication, the profile can better reach and activate its target audience, showing the value of handcrafted and sustainable fashion.

A future website with customisation options and educational features can strengthen trust and improve accessibility, while partnerships with sustainability-focused organisations and pop-up presences can expand outreach and credibility.

Planned actions include launching a professional website with customisation tools, expanding educational content through social media, developing workshops and DIY kits, and piloting a repair and take-back programme. These steps can help the profile reach new customers, increase visibility and build a strong community around sustainable crafting.

Expected results include greater consumer awareness of sustainable fashion, reduced textile

waste through reuse and repair, improved customer engagement through personalisation and workshops, and stronger positioning of the brand as a credible advocate of mindful consumption.

Strategic focus areas: education and training; storytelling and branding; demonstration and co-creation; partnership networks.

A.6: Business model 6 Collaborative Ecosystems

General information

This **Business model 6 Collaborative Ecosystems** has been developed as part of the WE.Circular project to help female-led companies to make a network of diverse stakeholders (companies, institutions, customers, public sector, communities), who can jointly create, deliver, and capture value. Unlike traditional linear models (one company selling to customers), an ecosystem model is multi-directional, interdependent, and co-creative. It responds to common challenges identified during co-creation workshops organized in each project partner country by WE.Circular Labs, where companies from diverse sectors, shared barriers such as lacking partnerships and supportive networks.

The development of this model was guided by both existing circular economy best practices and the concrete scenarios created for 3 companies during the WE.Circular co-creation process. For the public version, the participating companies are anonymised and presented through profile codes.

The profiles represent different contexts, including textile and fashion, professional services, community-based circular initiatives, waste management, reuse and repair. This diversity demonstrates that collaborative ecosystem models can be applied across sectors where circular transition depends on cooperation, shared resources, trust, knowledge exchange and joint market development.

The anonymised profiles that shaped this model include:

- BM6-C01 – Sustainable fashion and circular service profile;
- BM6-C02 – Professional services and circular cooperation profile;
- BM6-C03 – Reuse, repair and community circularity profile.

Covered key areas: Raw materials, Production processes, Waste management

Problems and needs addressed by the model

Many women entrepreneurs (WEs) are missing networks, partnerships, or ecosystems to support circular business models. They are struggling with visibility, limited capacities, space limitation and time, they need expert knowledge, customer awareness about sustainable products, stable and scalable access to recycled raw materials. Lack of collaboration leads to wasted resources and missed market opportunities.

Value proposition

The model supports WEs in transforming collaboration from linear, competitive, isolated business models to regenerative, cooperative, and network-based models. It helps them to reach a broader audience, to involve customers into production process and to change public perception about second-hand good or sustainable products.

Through this model, companies receive stable and scalable suppliers of recycled raw materials, access to shared infrastructure, equipment and expert knowledge and customers who are more aware of the importance of recycling, reusing and sustainability.

Target users

The model is intended for companies that:

- Need to built relationships with local suppliers and small manufacturers, stable and scalable access to recycled raw materials.
- Have limited capacities, space limitation and time
- Are looking for deeper customer engagement, eco-conscious consumers, who are looking for unique items and are aware of benefits of recycling, reusing, zero-waste lifestyle.

The model is designed for companies that can be involved in ecosystem and can benefit from collaboration:

- **Companies** that are sharing the same economy model (eco-conscious brands), looking for sustainable suppliers
- **eco-conscious influencers, event agencies, platforme owners**, who are equally committed toward circularity

- **Local communities and cooperatives** involved in reuse, repair, craft production, or small-scale manufacturing, who can collaborate with different actors in circular economy
- **Educational institutions and training providers** that can adopt the model as part of socially responsible entrepreneurship curricula

Concept of the business model

The main concept of Collaborative Ecosystems Model is that value is co-created, shared, and captured across a network of independent but interconnected actors.

Ecosystem-building does not need to begin with complex formal structures. Many SMEs can start with informal cooperation such as occasional resource sharing, joint promotion, or small pilot initiatives. As trust and mutual value increase, these relationships can gradually develop into more structured and long-term partnerships.

By creating an eco-system, the companies get access to more reliable suppliers, better contacts with customers and clients as well as stronger community engagement in sustainability efforts.

The concept of the model is structured around the following elements:

- **Connecting** - building relationships and networks between stakeholders (suppliers, customers, community, educational institutions etc.)
- **Sharing** - exchanging data, knowledge, infrastructure, and resources.
- **Co-creating** - developing products, services, or solutions together
- **Capturing** - distributing benefits fairly among participants.

Key actions for application of the model

The following table merges the strategic focus areas with practical implementation suggestions, offering a guide to collaborative ecosystem:

| Strategic focus | Description of the strategic focus | Suggested actions for implementation | Relevant for companies |
|----------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Use shared resources | Save money and time by using what the ecosystem already offers. | <ul style="list-style-type: none"> - Share labs, tools, or logistics services. - Join digital platforms for knowledge and data exchange. - Start with simple sharing arrangements such as temporary storage space, shared transport deliveries, shared event equipment, co-working | For all companies |

| | | | |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| | | <p>production areas, or exchange of underused tools.</p> <ul style="list-style-type: none"> - Use simple written agreements defining responsibilities, timing, and costs before moving to more formal cooperation models. | |
| Expand Partnerships & Networks | <p>Create connections with bigger companies, other small firms, universities, or public organizations.</p> | <ul style="list-style-type: none"> -Join business support organizations, networks, accelerators, innovation hubs. - Engage in matchmaking events. - Start with small pilot projects together. - Build long-term relationships with local companies, sustainable suppliers - Establish partnerships based on industrial symbiosis - Apply for funding or grants together with partners. - Begin with local first-step cooperation with nearby SMEs, craftsmen, community groups, or service providers. - After successful pilot cooperation, gradually expand toward municipalities, educational institutions, industry associations, and larger ecosystem partners. - Prioritise partnerships where both sides receive clear operational or market benefits. | For all companies |
| Change customer mindset and behavior | <p>Educate customers to become more eco-conscious and prepared to buy recycled, restored and sustainable products</p> | <ul style="list-style-type: none"> -Organize or join educational events and workshops on repair and upcycling -Create partnership with influencers, who can promote your product -Prepare before-know presentation of products, so customers can appreciate your effort - include customers into the process of creating products, so they can connect to them better | For all companies |
| Build trust | <p>Show partners you are reliable and open.</p> | <ul style="list-style-type: none"> - Include corporate values into marketing strategy - Be transparent about progress, results and challenges, include customers to give you feedback, ideas and solutions . - With story-telling attract customers to believe in your purpose and product - Be present, not only on-line (web-shop) but also in real life (fairs, pop-up stores) | For all companies |

Potential partners

The Model is about collaboration and set-up of an ecosystem and for that purpose it is important to create a big supportive network of partners who can provide regular

delivery, shared resources, improve sales, visibility, trusted and well educated customers, interest in products. Partnership development may start with a small number of highly relevant actors and gradually expand as the ecosystem matures.

In practice, these partners can contribute to:

| Partner category | Description | Companies that need this category most |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Suppliers and manufacturers | Provide materials, buy back some products, have good prices, can be partners in small pilot projects, share tools, space and knowledge. | all |
| Market and communication partners | Support customer engagement, storytelling, and market expansion for circular products and services. Includes marketing agencies, marketplaces, and retail distribution networks. | all |
| Educational sector | Provides knowledge for companies and educate consumers to be more aware of circular economy benefits. | all |
| Institutional and financial partners | Provide funding, policy support, and infrastructure that enable scaling. Includes municipalities, public procurement bodies, and green finance institutions. | all |
| Community groups and NGOs | Help raise awareness, educate customers about circularity, and promote adoption of returnable packaging through campaigns and co-creation initiatives. | all |

Revenue streams

In a circular economy, revenue streams are often more diversified than in linear models, combining product sales with services, reuse programs, and value-added customer engagement. For companies applying this Model such diversification supports, and stronger customer relationships.

Collaboration-based ecosystem activities may also develop into revenue streams over time. For example, free workshops can evolve into paid training formats, joint product development can create co-branded offers, and shared services such as logistics or repair support may become fee-based services once demand is validated. SMEs may begin with pilot cooperation and gradually formalise monetisation models.

The table below outlines the most relevant revenue streams for the cluster, grouped by category:

| Revenue Stream Category | Description | Examples for involved companies |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product sales or product rental (Circular Products) | Revenue from selling products designed for durability, repairability, or reuse or revenue from renting the products. | Handmade bags and accessories from recycled materials (BM6-C01); rental of event decoration (BM6-C02); sale of pre-owned furniture and other household items (BM6-C03). |
| Financial grants | Grants that support initiatives of such companies | Grants supporting educational and circular awareness initiatives (BM6-C03 , BM6-C01). |
| Repaire cafe | Serves as a community-driven approach to repair and upcycling, minimizing waste outputs | Repair café activities supporting reuse, repair and community engagement (BM6-C03). |
| Organization of workshop | Organizing workshops on reuse, renovation and upcycling | Workshops empowering people to restore and repurpose items themselves (BM6-C03 , BM6-C01). |
| Allert subscription | Paid newsletter offering early access to new products and tips for free items | Furniture alert subscription or similar early-access circular product notification service (BM6-C03). |

Key impact

Measuring and communicating impact is essential for companies adopting the Collaborative Ecosystem model. It allows them to show partners how their contribution benefits the ecosystem and build trust and strengthen collaboration, attract new opportunities, secure funding and support, improve decision-making, strengthen reputation and legitimacy. Impacts are best assessed across environmental, social, and economic dimensions, ensuring a holistic view of performance.

For SMEs with limited resources, ecosystem performance can be monitored through simple indicators such as number of active partners, number of joint initiatives implemented, shared resources used, number of co-created products or services, customer participation in joint events, and new revenue generated through collaboration. These indicators can be tracked with basic spreadsheets or simple internal records.

| impact dimension | description | examples from cluster companies | linked strategic focus |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| environmental impact | Resource efficiency and circularity: Reduced material use, lower emissions with efficient logistics and process optimization and lower waste through redesign, reuse and recycling. | BM6-C02 – cooperation with event agencies to create trust-based relationships and a shared vision for reducing waste and material use, including deposit-based return schemes. BM6-C03 – collaboration with specialists in sustainable renovation to create more sustainable products and extend the life of household items. BM6-C01 – cooperation with vehicle dismantlers, associations and automotive sector actors to support sustainability objectives and improve access to secondary raw materials. | Industrial symbiosis through raw material sourcing, high contribute to sustainability of all involved |
| social impact | Creation of new skills, stronger customer engagement, and community participation in circular ecosystems. | BM6-C02 – collaboration with local influencers to promote zero-waste lifestyles and encourage customers and event guests to think more sustainably. BM6-C03 – opening a community workshop or repair café for repairing small items, providing guidance, education and opportunities for social connection. BM6-C01 – engagement of communities and schools through workshop-based production and joint communication campaigns promoting sustainable consumption. | Educating and engaging customers and business partners in the circular economy and empowering their participation |
| economic impact | Diversification of revenue streams, creation of long-term customer relationships, and cost savings through resource efficiency. | BM6-C02 – collaboration with local event agencies to incorporate sustainable choices into major events, such as weddings, festivals and public gatherings. BM6-C03 – cooperation with local craftspeople to address limited internal capacity, build customer loyalty and accelerate circular circulation. BM6-C01 – collaboration with automotive sector actors to create eco-conscious corporate gifts or promotional items, while building brand recognition beyond online channels through fairs and pop-up stores. | Expand market access and visibility |

Readiness level

Assessing readiness is important to understand how prepared companies are to adopt and test the Collaborative Ecosystem model. This includes their current level of circularity, internal capabilities, available resources, and partner networks.

For the purpose of this project, readiness is assessed at three levels:

- **high** – the company already applies several circular practices, has infrastructure or partnerships in place, and can quickly pilot and scale the model.

- **medium** – the company applies some circular elements, has partial infrastructure, but requires additional capacity building or partnerships to fully implement the model.
- **low** – the company is at an early stage of circular transition, with limited infrastructure or partnerships; significant preparation is needed before testing.

All three companies (sosan.design, SNOVÁ and Sto.re) are currently at a medium readiness level, the focus should be on deepening their existing circular practices and closing operational or strategic gaps that limit their ability to test and scale the Collaborative Ecosystem model. Generally, to improve readiness, companies have to strengthen internal capacities (personal, space, supply, sustainable material) and then create new partnerships that can contribute to more effective circularity through mutual collaboration and networking.

First important step is to look at internal capacities and look for **collaborations, that can fill capacity issues** during times of increased demand and peak periods. Building long-term relationships with local suppliers, craftsmen/companies, communities with purpose to share tools, renting materials, joint services, to share knowledge, customers, logistic services, also with platform sharing model

Connected with first step is **expanding of partnerships & networks** to create value that none of them could achieve alone. Seek win-win outcomes of cooperation, highlight shared purpose (circularity), values and unique strengths, look for partners with similar focus or present them with benefits of collaboration.

Collaborative ecosystem has to involve also customers, who need to see benefit of circularity not only for planet but also for them as individuals from economical point of view as well as their own responsibility for a greener future. To **change customers mindset and behavior**, companies have to be involved in education of customers with workshops (making repair, reuse or refill services attractive and accessible), storytelling, to include them in the process of restoring and producing sustainable products, to give them some benefits for their efforts (loyalty programs, discounts).

Last important step is **building trust and brand** toward new partners and customers with transparency, success stories, good prior cooperation, with presence not only on-line, but also in real life, with common values in whole ecosystem, to create community, where everyone is welcome, who is ready to share, cooperate and give benefit to circularity of the whole partnership.

Adaptability

The Collaborative Ecosystem model is built to work across sectors, product types, and regions. Its core principles: shared purpose, complementary strengths, trust and transparency, fair value sharing, flexibility, enabling platform or system, remain constant, but the way they are applied can be tailored to each company's needs, resources, and market context. This flexibility allows it to create different kind of collaboration, depending on company needs, focus and market change.

Implementation can be phased or comprehensive, allowing companies to start with one change, such as new partner collaboration or new solution of customers mindset. This balance of structure and flexibility ensures that enterprises of all sizes can integrate circular practices while contributing to waste reduction, resource efficiency, and long-term value creation.

Potential risks and mitigation strategies

Implementing the Collaborative Ecosystem model is also subject to certain risks associated with the core challenges the model aims to solve: lack of collaboration, limited capacity, and customer resistance to circular products.

Risk Area: Partnership and Ecosystem Management

- **Risk:** Breakdown of collaboration or lack of commitment from partners, leading to unreliable supply chains (e.g., for recycled raw materials) or infrastructure sharing failures.
- **Mitigation: Building trust and strong networks.** This involves being transparent, sharing success stories, demonstrating reliability, and creating win-win outcomes with partners. Sosan.design, for instance, must strengthen its supply security with vehicle dismantlers. SNOVÁ needs long-term relationships with local growers and event-related companies. Additional practical mitigation tools include short written cooperation agreements, clearly defined responsibilities, pilot-phase testing of new partnerships before long-term commitment, and simple conflict-resolution procedures agreed in advance.

Risk Area: Operational Constraints and Capacity

- **Risk:** Limited internal capacity, space, or expert knowledge in the women entrepreneurs' companies, as well as financial limitation, prevents them from effectively participating in or scaling the ecosystem.

- **Mitigation: Sharing resources and expanding partnerships** to fill capacity gaps. For example, Sto.re can collaborate with craftsmen to share tools, work, and knowledge to overcome limited capacity. Companies can share labs, tools, or logistics services.

Risk Area: Market and Customer Adoption

- **Risk:** Customers remain unaware or unwilling to purchase recycled, restored, or second-hand goods, limiting the market and revenue streams for circular products.
- **Mitigation: Changing customer mindset and behavior.** This is done through educational events, workshops (like Sto.re's Repair Café), storytelling, involving customers in the creation process, and collaborating with eco-conscious influencers.

Implementation of the actions by the companies

This section presents examples of how the **Collaborative Ecosystems** business model can be applied in practice. The three anonymised profiles demonstrate how women entrepreneurs can use partnerships, shared resources, customer engagement and ecosystem cooperation to strengthen circular business models.

Through collaboration with suppliers, service providers, communities, customers, public actors and sector organisations, these profiles show how circular value can be created and scaled beyond the capacity of one company alone.

BM6-C01 is a sustainability-focused fashion microbusiness that creates handmade bags and accessories from recycled materials, including materials from the automotive sector and textile waste used for linings. The business is strongly dependent on the availability of suitable secondary materials. Therefore, partnerships with vehicle dismantling organisations, individual dismantling facilities and relevant sector associations are important to strengthen supply security and improve brand visibility.

The business currently operates mainly through direct-to-consumer online sales. However, physical retail presence through pop-up stores, design fairs and circular economy events could offer valuable opportunities to reach new customer segments, enable in-person product interaction and build brand recognition beyond the online sphere.

Cooperation with automotive sector actors could further strengthen visibility and create shared value. Upcycled accessories could be developed as eco-conscious corporate gifts or

promotional items, contributing to the partners' sustainability and green marketing objectives while increasing the perceived value of the products among customers.

Since production is highly time- and labour-intensive, workshop-based production can also be explored. In this approach, customers actively participate in creating their own products. This experience-driven model adds value for customers, strengthens emotional attachment to the product and can reduce production pressure, as several participants can work on items at the same time.

This model fits **BM6-C01** because it connects material sourcing, customer engagement, brand visibility and partnership-based growth. By building a collaborative ecosystem around secondary materials, workshops and corporate partnerships, the profile can improve access to resources, diversify revenue streams and strengthen its circular identity.

Expected results include improved access to secondary raw materials, stronger customer engagement, increased visibility through physical events and partnerships, and new opportunities for co-branded or experience-based products.

Strategic focus areas: use shared resources; expand partnerships and networks; change customer mindset and behaviour; build trust.

BM6-C02 is an innovative company profile specialising in the rental of wedding and event decorations, offering stylish, affordable and sustainable alternatives to single-use purchases. Circular principles are applied through the use of durable and recyclable materials, which are regularly maintained, refurbished or creatively repurposed.

To reduce seasonal availability risks and dependency on natural materials, the profile needs to build long-term relationships with local growers, makers and suppliers. This can secure more stable year-round access to natural materials and strengthen the local circular economy.

To strengthen brand identity and deepen customer engagement, it is recommended to translate the company's core values into its marketing strategy. The messages communicated to customers should clearly reflect what the brand stands for: reuse, reduced waste, aesthetic quality and responsible event choices.

Expanding partnerships and networks with event agencies, wedding planners, venues, decorators and other actors with a similar focus on circularity can create benefits for all involved. These partnerships can improve access to circular-oriented customers, who value the additional effort behind sustainable event solutions. They can also support full-package circular event offers, shared logistics, return systems and joint promotion.

This model fits **BM6-C02** because its circular value depends strongly on cooperation across the event ecosystem. The company can only scale reuse, return and refurbishment effectively if event actors, customers and suppliers work together.

Expected results include better access to circular customers, stronger local partnerships, reduced material waste from events, more efficient return systems and stronger positioning as a sustainable event decoration provider.

Strategic focus areas: use shared resources; expand partnerships and networks; change customer mindset and behaviour; build trust.

BM6-C03 is a social enterprise profile that promotes reuse, upcycling and circular waste management. The business focuses on collecting used furniture and household items, refurbishing them and selling pre-owned items online or in dedicated spaces with a circular approach.

The profile faces challenges related to limited capacity, space limitations and lack of specialised expert knowledge. Collaboration can help address these barriers by building long-term relationships with local communities, craftspeople, repair experts and companies. Such cooperation can support the sharing of tools, workspaces, services and practical knowledge.

Public perception of second-hand goods can also be improved through community-based activities. Opening a community workshop or repair café, where people can repair small items with expert guidance in a friendly atmosphere, can help demonstrate the value of reuse and repair. This approach promotes practical circular skills and creates benefits for the company, customers and the wider community.

The repair café model can also strengthen customer trust and social engagement. It helps people see second-hand and repaired products not as lower-value alternatives, but as meaningful, sustainable and creative choices.

This model fits **BM6-C03** because its impact depends on collaboration between customers, craftspeople, local communities and circular service providers. By building an ecosystem around reuse, repair and shared skills, the profile can extend product life, reduce waste and create stronger community participation.

Expected results include increased reuse of furniture and household items, stronger community engagement, improved perception of second-hand products, better access to repair expertise and new opportunities for workshops, repair services and local partnerships.

Strategic focus areas: use shared resources; expand partnerships and networks; change customer mindset and behaviour; build trust.

A.7: Summary of the six WE.Circular business models

| Business model | Main purpose | Key circular logic | Most relevant for | Typical actions |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BM1: Circular Design Accelerator | To support companies in redesigning products, services and customer experiences according to circular economy principles | Circularity starts from the design phase. Products and services are designed to be durable, repairable, reusable, refillable, modular or easier to recover at the end of use. | Companies that want to improve product design, extend product life, reduce waste and introduce reuse, repair, refill or take-back systems. | Product redesign, modular design, repair and reuse services, take-back schemes, refill systems, customer co-creation, lifecycle communication |
| BM2: Resource Champions | To help companies improve the use of materials, reduce waste and turn secondary resources into business value. | Waste and underused resources become inputs for new products, services or production processes. The model focuses on better sourcing, resource efficiency and stronger material loops. | Companies working with recycled, bio-based, recovered or secondary materials, or companies that want to reduce dependence on virgin resources. | Securing sustainable inputs, using recycled materials, improving material efficiency, developing take-back or collection systems, certification, resource tracking. |
| BM3: Production Optimizers | To support companies in improving production, packaging and logistics processes through circular economy principles | Circularity is achieved by optimising how products are made, packed, distributed and returned. The model focuses on operational efficiency and circular infrastructure. | Companies in growth stage that need better control over production, packaging, fulfilment, logistics or return systems. | Setting up circular production and packaging facilities, reusable packaging pilots, subscription systems, logistics optimisation, product passports, packaging return systems. |

| Business model | Main purpose | Key circular logic | Most relevant for | Typical actions |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BM4: Smart Digital Enablers | To help companies use digital tools and smart technologies to make circular operations more transparent, efficient and scalable | Digitalisation supports circularity through traceability, data collection, AI, dashboards, digital product passports, customer apps and platform-based solutions. | Companies that need better data, digital tracking, platform integration, customer engagement, impact measurement or AI-supported services. | Digital dashboards, QR/RFID tracking, AI-based recommendations, digital product passports, smart databases, platform integration, customer apps, impact tracking. |
| BM5: Market Educators | To support companies in raising awareness, building trust and educating customers and partners about circular solutions. | Circular products and services need informed customers and credible communication. The model focuses on education, storytelling, awareness and trust-building. | Companies whose circular solutions require stronger customer understanding, behaviour change, market visibility or credibility. | Awareness campaigns, workshops, storytelling, educational materials, co-creation events, customer engagement, partnerships with schools, NGOs, municipalities or experts |
| BM6: Collaborative Ecosystems | To help companies build networks of partners who jointly create, deliver and capture circular value | Circular transition is supported through cooperation between companies, customers, communities, public actors, suppliers and support organisations. | Companies that need partnerships, shared resources, ecosystem support, joint services or stronger local and sectoral cooperation. | Shared resources, partnership building, joint pilots, repair cafés, co-branded products, workshops, shared logistics, cooperation with suppliers, communities and institutions. |

Resources

D.2.1.1 WE.Circular Labs Concept – final version (2025)

D.2.1.2 Methodology for pilot testing – final version (2025)

Act.2.3 Co-creation methodology – final version (2025)

D.2.4.2 Pilot Testing Report (2026)

O.3.2 Transnational Strategy for WEs Circular Transition (2026)

O.3.1 Regional Action Plan: Austria (2026)

O.3.1 Regional Action Plan: Bosnia and Herzegovina (2026)

O.3.1 Regional Action Plan: Bulgaria (2026)

O.3.1 Regional Action Plan: Croatia (2026)

O.3.1 Regional Action Plan: Czech Republic (2026)

O.3.1 Regional Action Plan: Germany / Baden-Württemberg (2026)

O.3.1 Regional Action Plan: Hungary (2026)

O.3.1 Regional Action Plan: Moldova (2026)

O.3.1 Regional Action Plan: Romania (2026)

O.3.1 Regional Action Plan: Serbia (2026)

O.3.1 Regional Action Plan: Slovenia (2026)

Transnational Skills Needs and Gaps Analysis (2025)

Transnational Policy and Legislative Framework Analysis / Policy Analysis (2025)

National Stakeholder Group Meetings Reports (2025–2026)

D.2.2.4 Pop-up Store in Bratislava (2026)