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D.1.4.2

Toolset supporting the uptake of business models fostering Cradle2Cradle

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Executive Summary

The present toolset provides an overview of tools which have as main purpose to foster the adoption of business models fostering a higher circularity of the products, services and processes of industrial businesses in general, and more specifically business models fostering the closing of material circles according to the cradle2cradles principles.

The tools displayed in this document have been considered in the specific context of the Cradle-ALP project and do not represent an exhaustive list of tools.

Considering the objectives of the Cradle-ALP project, the partners have decided to classify the most relevant tools according to the following categories:

- Tools for identifying / documenting transformation potential in businesses – focus on business models uptake.
- Tools for generating transregional B2B collaboration / innovation projects – focus on business models uptake.
- Tools for raising awareness promoting certification (in general – not promoting specifically the C2C label).

Contents

1. Introduction to the Cradle-Alp project

Cradle-ALP aims for mainstreaming cradle to cradle (C2C) approaches, circular design and circular substitutions (from the alpine region) for linear products in industrial processes, in different industrial sectors. The Alpine Space has many natural resources and the technologies to substitute fossil raw materials and toxic substances from production with circular and environmentally friendly alternatives. This should lead to the fact that materials and products can be led back into a healthy cycle after use. The focus of this project shall be on the substitution of chemical and fossil based/ unsustainable materials with more circular, sustainable and bio-degradable ones.

First, the partners will build a broad awareness and understanding in the public, the relevant industries as well as among stakeholders from policy and innovation intermediaries, for the opportunities, barriers and mechanisms of the transformation of industrial products towards higher circularity by means of C2C approaches, circular design and circular substitutions. Business support providers shall be trained to accompany the transformation of businesses along more circular value chains.

In a second step, the partners will explore in details and test opportunities for implementing C2C approaches, circular design and circular substitutions along specific value chains in the chemistry/plastics and wood/forestry sectors supported by digital technologies. Building on a thorough multidimensional (technology, policy, economy, etc.) roadmapping exercise, transnational groupings of stakeholders – including businesses – will be installed, with the aim to transfer the C2C roadmaps into industrial practice along exemplary value chains.

Finally, the partners will work towards ensuring a transnational policy convergence towards transnational S4 strategies in the priority sectors of the project and initiate common cross border funding instruments for the industrial C2C transformation.

2. Scope of the toolset supporting the uptake of technologies fostering Cradle2Cradle

The present toolset provides an overview of tools which have as main purpose to foster the adoption by business of technologies fostering a higher circularity of the products, services and processes of industrial businesses in general, and more specifically technologies fostering the closing of material circles according to the cradle2cradles principles.

The tools displayed in the present document have been identified by the project partners in the framework of:

- Identification of good practices and lessons learned from previous projects and activities within and outside the Alpine Space,
- A joint capitalisation workshop involving the members of the transnational expert support group,
- The initial steps of developing sectoral Cradle2Cradle industrial transformation roadmaps.

identified by the project partners.

The tools displayed in this document have been considered in the specific context of the Cradle-ALP project and do not represent an exhaustive list of tools.

Considering the objectives of the Cradle-ALP project, the partners have decided to classify the most relevant tools according to the following categories:

- Tools for identifying / documenting transformation potential in businesses- focus on business models uptake
- Tools for generating transregional B2B collaboration / innovation projects – focus on business models uptake.
- Tools for promoting certification (in general – not promoting specifically the C2C label).

3. Tools for identifying / documenting transformation potential in businesses – focus on business models uptake

Identifying and documenting the transformation potential of a company regarding the adoption of new business practices is essential for fostering innovation, particularly in enhancing the circularity of products and processes. Here's how this process can help:

- **Clarifying Goals and Objectives:** Identification and documentation of transformation potential provide clarity on the company's goals and objectives related to business model innovation. By clearly defining what the company aims to achieve through transformation, such as increased sustainability, competitiveness, or market share, businesses can align their innovation efforts and resources accordingly.
- **Mapping Current State:** Through this process, companies can assess their current state regarding circularity in products and processes. This involves mapping existing business practices, identifying inefficiencies, and evaluating environmental impacts. By understanding where they stand, companies can pinpoint areas for improvement and prioritize initiatives that have the greatest potential for enhancing circularity.
- **Identifying Opportunities and Challenges:** Identification and documentation of transformation potential help companies identify opportunities and challenges associated with adopting circular business models. This involves analyzing market trends, regulatory requirements, technological advancements, and competitive landscapes. By identifying opportunities for innovation and potential barriers to adoption, companies can develop strategies to capitalize on opportunities and overcome challenges effectively.
- **Engaging Stakeholders:** Involving stakeholders in the identification and documentation process ensures that diverse perspectives are considered and integrated into innovation efforts. This may include employees, customers, suppliers, investors, and community members. By soliciting input from stakeholders and incorporating their feedback, companies can foster buy-in, collaboration, and support for circularity initiatives, ultimately driving more effective innovation.
- **Setting Priorities and Roadmaps:** Based on the identified transformation potential, companies can set priorities and develop strategic roadmaps for innovation. This involves defining specific objectives, timelines, and resource allocations for implementing circular business practices. By setting clear priorities and timelines, companies can ensure that innovation efforts are focused and aligned with overarching business goals.
- **Building Cross-Functional Teams:** Transformational innovation often requires collaboration across different departments and functions within the organization. Identification and documentation of transformation potential facilitate the formation of cross-functional teams tasked with driving innovation initiatives. By bringing together diverse expertise and perspectives, companies can foster creativity, problem-solving, and knowledge sharing, leading to more robust and successful innovation outcomes.
- **Monitoring and Evaluation:** Documenting transformation potential enables companies to establish metrics and indicators for monitoring progress and evaluating the impact of innovation efforts. This involves tracking key performance indicators related to circularity, such as resource efficiency, waste reduction, and environmental impact. By regularly monitoring progress and evaluating outcomes, companies can identify successes, learn from failures, and make data-driven adjustments to their

innovation strategies.

In summary, the identification and documentation of transformation potential are crucial steps in driving innovation, particularly in increasing the circularity of products and processes. By clarifying goals, mapping current state, identifying opportunities and challenges, engaging stakeholders, setting priorities and roadmaps, building cross-functional teams, and monitoring progress and evaluation, companies can accelerate their journey towards adopting circular business models and driving sustainable innovation.

The following tools supporting such processes have been identified, assessed and documented:

Tools and guides

In the framework of the analysis dimension technologies, tools and guides are mostly digital tools, which enable businesses to assess for instance the recyclability of their products, to estimate the ecological footprint of their activities, to identify suitable bio-based materials according to their requirements, etc.

In a first step some tools were identified in order to get an appreciation of the possibilities already on the market.

Good practices identified:

- Circularity compass, KIC Climate
- Sustainable business model canvas

Industrial partnerships for specific material loops

The application of the cradle-to-cradle principles might be applied collectively by different businesses working jointly on closing specific materials loops. Some examples of such industrial partnerships have been identified by the partners.

Good practices identified:

- wear2wear™ textile loop, Germany
- ERDE agricultural plastics - Collection of agricultural films for closed loop, Austria

Considering the vast diversity of needs among businesses in the different industrial sectors addressed in Cradle-ALP, looking for relevant existing partnership before interacting with businesses in the pilots was deemed inefficient and very unlikely to succeed. It was decided that the partners shall much more aim for generating specific industrial partnerships in the framework of the pilots.

4. Tools for generating transregional matchmakings / innovation projects – focus on business models uptake

Business-to-business (B2B) collaborations and collaborative innovation projects play crucial roles in fostering the uptake of new business models by businesses, especially in driving transformation towards a more circular economy:

- **Pooling Resources and Expertise:** B2B collaborations allow businesses to pool their resources, expertise, and capabilities to address common challenges and pursue opportunities related to adopting new business models. By collaborating with other companies, businesses can leverage complementary strengths and knowledge, accelerating the uptake of new business models through shared learning and collective action.
- **Accessing New Markets and Customers:** Collaborative efforts enable businesses to access new markets and customers more effectively than they could individually. By partnering with other companies, businesses can combine their market reach and distribution channels, increasing the visibility and adoption of new business models. This is particularly beneficial for promoting circular economy principles, as collaborative initiatives can introduce circular products and services to a broader audience.
- **Sharing Risks and Costs:** Adopting new business models often involves risks and investment costs. Collaborative innovation projects allow businesses to share these risks and costs with their partners, making innovation more feasible and less burdensome for individual companies. By pooling financial resources and sharing the costs of research, development, and implementation, businesses can mitigate the financial barriers to adopting new business models, including those aimed at advancing circularity.
- **Fostering Ecosystem Innovation:** B2B collaborations and collaborative innovation projects contribute to ecosystem-level innovation by bringing together diverse stakeholders, including companies, research institutions, government agencies, and non-profit organizations. This ecosystem approach fosters collaboration, knowledge exchange, and co-creation of solutions that address complex challenges, such as transitioning to a circular economy. By engaging stakeholders from different sectors and disciplines, businesses can access diverse perspectives and expertise, leading to more innovative and sustainable outcomes.
- **Scaling Impact:** Collaborative efforts enable businesses to scale the impact of their innovation initiatives by reaching larger audiences and influencing broader networks. By partnering with multiple stakeholders, businesses can amplify their efforts to promote new business models and circular economy principles. This scalability is essential for driving systemic change and achieving meaningful progress towards sustainability goals, as it enables innovations to reach critical mass and create lasting impact across industries and value chains.
- **Facilitating Knowledge Transfer and Learning:** Collaborative projects provide opportunities for knowledge transfer and mutual learning among participating companies. By sharing best practices, lessons learned, and successful strategies, businesses can accelerate the adoption of new business models and circular economy practices. This knowledge exchange promotes continuous improvement and enables companies to learn from each other's experiences, increasing the effectiveness and

efficiency of innovation efforts.

- **Navigating Complex Challenges:** Transitioning to new business models, especially those aimed at advancing circularity, often involves navigating complex challenges related to technology, regulation, market dynamics, and consumer behavior. Collaborative initiatives provide a platform for companies to collectively address these challenges and develop innovative solutions. By working together, businesses can overcome barriers more effectively and accelerate the pace of transformation towards a circular economy.

In summary, business-to-business collaborations and collaborative innovation projects are essential for fostering the uptake of new business models by businesses, particularly in driving transformation towards a more circular economy. By pooling resources and expertise, accessing new markets, sharing risks and costs, fostering ecosystem innovation, scaling impact, facilitating knowledge transfer and learning, and navigating complex challenges, collaborative efforts enable businesses to accelerate innovation and achieve sustainable growth in a rapidly changing business landscape.

The following tools supporting such processes have been identified, assessed and documented:

Supply chain traceability tools, resources databases and innovation platforms

This category of practices regroups a series of web-based applications, which support the transition towards circular products by:

- Helping to make materials traceable,
- Stimulate the exchanges / trading of materials, recyclates, etc.
- Facilitating the identification of partners along value chains to close materials loops

Supply chain traceability

The role of traceability of products along a value chain for the adoption by businesses of new and more circular business models is significant:

- **Informing Design Decisions:** Traceability provides businesses with detailed information about the composition, origin, and lifecycle of products. This data informs design decisions, enabling companies to create products that are optimized for circularity from the outset. By understanding the environmental and social impacts associated with different materials and manufacturing processes, businesses can design products that are easier to recycle, repair, and reuse, aligning with circular business models.
- **Enabling Closed-Loop Systems:** Traceability facilitates the implementation of closed-loop systems, where products and materials are continuously recycled and reused within the value chain. By tracking the flow of materials, businesses can identify opportunities for closed-loop recycling, where end-of-life products are collected, disassembled, and reintegrated into the production process as secondary raw materials. This closed-loop approach reduces reliance on virgin resources and supports circular business models based on resource efficiency and waste reduction.
- **Supporting Product-as-a-Service Models:** Traceability enables businesses to offer

product-as-a-service models, where customers pay for the use of products rather than ownership. By tracking the usage and condition of products over time, businesses can optimize product performance, maintenance, and lifecycle management to maximize value for both customers and the environment. This shift from ownership to access promotes circularity by extending product lifespan, minimizing waste generation, and incentivizing manufacturers to design products for durability and longevity.

- **Facilitating Supply Chain Collaboration:** Traceability fosters collaboration and transparency within supply chains, enabling businesses to work together to achieve common circular economy goals. By sharing information about product components, materials, and production processes, companies can identify opportunities for joint initiatives, such as recycling programs, material exchanges, or collaborative product design. This collaborative approach enhances resource efficiency, minimizes waste, and creates shared value across value chains.
- **Enhancing Consumer Trust and Engagement**: Traceability builds consumer trust and engagement by providing transparent information about the sustainability and circularity of products. By allowing consumers to trace the journey of products from production to disposal, businesses can demonstrate their commitment to responsible practices and empower consumers to make informed purchasing decisions. This transparency fosters loyalty and brand advocacy among consumers who value sustainability, driving demand for circular products and supporting the adoption of circular business models.
- **Complying with Regulatory Requirements:** Traceability helps businesses comply with regulatory requirements related to product stewardship, recycling, and waste management. By accurately tracking the flow of materials and documenting compliance with relevant regulations, companies can avoid fines, penalties, and reputational damage associated with non-compliance. This proactive approach to regulatory compliance creates a favorable business environment for adopting circular business models, as companies demonstrate their commitment to environmental responsibility and legal compliance.

Overall, traceability of products along a value chain plays a crucial role in enabling businesses to adopt new and more circular business models by informing design decisions, enabling closed-loop systems, supporting product-as-a-service models, facilitating supply chain collaboration, enhancing consumer trust and engagement, and complying with regulatory requirements. By leveraging traceability to optimize resource utilization, minimize waste generation, and create value in a sustainable and circular manner, businesses can drive innovation and competitiveness in the circular economy.

The following tools supporting supply chain traceability have been identified, assessed and documented:

Good practices identified:

- Cicularise, Make Materials traceable through digitization (regulations, reporting, certificates, CO2 footprint). Netherlands.
- Circulor, monitor inherited emissions from the supply chain, track materials and compliance using Blockchain technology. United Kingdom

The use of such tools comes with a relative high complexity in terms of data collection and is

likely only suitable for business with a high digital maturity. Those tools were not deemed suitable for use in the context of Cradle-ALP, with limited time and resources dedicated to generating new circular projects in the framework of industrial pilots.

Innovation platforms

Web-based innovation platforms are digital tools or online platforms designed to facilitate and support innovation processes within organizations or across ecosystems. These platforms harness the power of the internet and web technologies to enable collaboration, idea generation, knowledge sharing, and problem-solving among diverse stakeholders. Here's a breakdown of their key components and functionalities, focusing on such aspects deemed the most relevant in the context of Cradle-ALP, thus excluding functionalities supporting internal collaboration among employees of the same company.

- **Knowledge Sharing:** Web-based innovation platforms serve as repositories of knowledge and best practices related to innovation. They allow users to access and contribute to a centralized database of information, including case studies, research articles, market insights, and success stories. By facilitating knowledge sharing and cross-pollination of ideas, these platforms help organizations stay informed about the latest trends, technologies, and strategies in their industry, fostering a culture of continuous learning and improvement.
- **Open Innovation Networks:** Many web-based innovation platforms operate as open innovation networks, connecting organizations with external partners, startups, research institutions, and other stakeholders. These networks enable collaborative innovation across organizational boundaries, allowing companies to access external expertise, resources, and opportunities for co-creation. By leveraging the collective knowledge and capabilities of a broader ecosystem, organizations can accelerate innovation and drive sustainable growth.
- **Data Analytics and Insights:** Web-based innovation platforms often incorporate data analytics capabilities to track and analyze innovation metrics, such as idea submission rates, engagement levels, and implementation outcomes. These platforms generate actionable insights that help organizations identify emerging trends, measure the effectiveness of innovation initiatives, and make data-driven decisions to optimize their innovation strategies. By leveraging data analytics, organizations can improve the efficiency and impact of their innovation efforts over time.

These platforms empower organizations to harness the collective intelligence of their stakeholders, accelerate the pace of innovation, and drive sustainable growth in an increasingly competitive and dynamic business environment.

The following tools supporting supply chain traceability have been identified, assessed and documented:

Good practices identified:

- Open Access Facilities: Pilots4U - Database of multipurpose open access pilot & demo-infrastructures
- Value Chain Generator (VCG.AI) - Database of technology providers, material providers, value chain partners and circular solutions to connect stakeholders to share

materials in circular economy.

Public funding schemes

While the activities on funding schemes in Cradle-Alp are focusing on transnational funding opportunities, the partners did collect some examples of funding schemes focusing on the circular economy transformation for SMEs: venture capital funds, voucher schemes, etc.

Good practices identified:

- European Circular Bioeconomy Fund
- Circular Economy Accelerator Programme, Scotland (see also ZWS above)
- Circular Economy Investment Fund, Scotland (see also ZWS above)
- Waldfonds, Austria
- FTI-Initiative Kreislaufwirtschaft, Austria
- Innovation Express

More details on funding schemes are to be found in D.1.4.1 Toolset supporting the uptake of technologies fostering Cradle2Cradle.

5. Tools for promoting certification (in general – not promoting specifically the C2C label).

Labels, certificates

Labels and certificates are ways to document and promote the conformity of a product or service with specific terms of references or charter. They support the branding and promotion of products by giving them visibility and highlighting the properties represented by the label or the certificate. 'Cradle2Cradle certified' itself is a certification according to the standards defined by the Cradle-to-Cradle Products Innovation Institute.

There are other labels or certificates on the market aiming to promote the C2C principles and the circular economy in general. Some examples have been identified and documented.

Good practices identified:

- Eco Lightouse
- Greenroom Voice (outdoor textiles)

Awareness campaigns

In the context of the collection of good practices for Cradle-Alp we have only focused on collecting awareness campaign practice which present an innovative character going significantly beyond the awareness activities already planned in the framework of Cradle-Alp. Examples for large events were highlighted by the partners.

Good practices identified:

- Thinkubator
- Labot Tempelhof

Role model companies

There are companies which are already certified Cradle2Cradle or apply the cradle-to-cradle principles in different ways. Different models have been identified by the partners as good practices.

Good practices identified:

- Aliplast – plasticy recycling, Italy
- Bergans – Outdoor textiles, Norway
- Biowert – grass-based biorefinery, Germany
- Favini – paer-based products, Italy
- Mixcycling – alternative materials to plastic, Italy

- Novamont - bioplastics and biochemicals, Italy
- Oviesse – textiles, Italy
- WayPointLight – chandeliers, Italy

6. Conclusions

The tools listed above have been assessed by the project partners with respect to their potential usefulness in the context of the Cradle-ALP project, more specifically for application in the context of testing the relevance of the industrial C2C transformation roadmaps in selected industrial sectors.

In the context of providing supports to SMEs with their circular transformation, the following tools have been identified as the most suitable.

The following tools have been identified as the most relevant ones:

- **Circularity compass**

  The Circularity Compass provides a way to illustrate how resources flow through our economy. It supports system thinking. By using the tools, you map the resource flows including co- used materials or produced by- products, it pays great attention to end-of-life treatment scenarios. The tool can be used to either analyse a sector, value chain or single company.

  A strong argument in favor of the tool in a European context, is that KIC Climate uses this tool in their trainings for sustainability advisers and in their work with companies. The Circularity compass is part of the Circularity Thinking tool series developed by Blomsma, Brennan and Tennant.

- **Sustainable business model canvas**

  The Business Model Canvas is a strategic tool that helps entrepreneurs and businesses visualize and design their business models. Developed by Alexander Osterwalder and Yves Pigneur, it provides a structured framework for understanding how different components of a business fit together. The Business Model Canvas is a concise way to map out a business model, fostering better decision-making and alignment within the organization.

  Building on the initial Business Model Canvas, alternatives have been developed by different organisations in order to take stronger into account the aspects of sustainability in general, and circularity in particular.

  While the Business Model Canvas has been widely adopted as a standard for describing business models, there is no such standard yet for a sustainability business model canvas or a circular business model canvas. However, those alternatives almost all build on the Business Model Canvas itself and add segments related to sustainability or circularity.

  In the context of the Cradle-ALP project, a tool like the (sustainable/circular) Business Model Canvas provides a useful approach to exploring efficiently the key aspects of new circular business models, as well as a basis for potential collaboration across businesses.

- **VCG – Value Chain Generator vcg.ai**

  The Value Chain Generator (VCG) is an AI data-driven platform designed to accelerate the circular economy transformation of regions by analyzing regional companies and their residuals to identify feasible circular business models and value chains.

  For companies, the VCG can more specifically help performing a mapping of residuals in the production processes and supply chain and find potential buyers.

  The VCG tool is especially relevant in the context of the Cradle-ALP project as its

focuses on **organic by-products and waste**.

- **Awareness campaigns**

The Cradle-ALP partners validated the use of the awareness campaign tested successfully in the framework of the Cradle-ALP project. It was organized as follows:

- Local awareness raising activities for Cradle3cracle in the project regions, building on thematically relevant workshops.
- Transnational online awareness campaigns, building on expert interviews.
- Onsite/online study visits of businesses/online study visits of companies implementing the Cradle2Cradle principles.

7. Annexes

In the following, the tools mentioned in the report are shortly described – links to further sources of information are provided.

Tools and guides

Good practices identified:

- Circularity compass, KIC Climate
- Sustainable business model canvas

In the following, the above practices are shortly described:

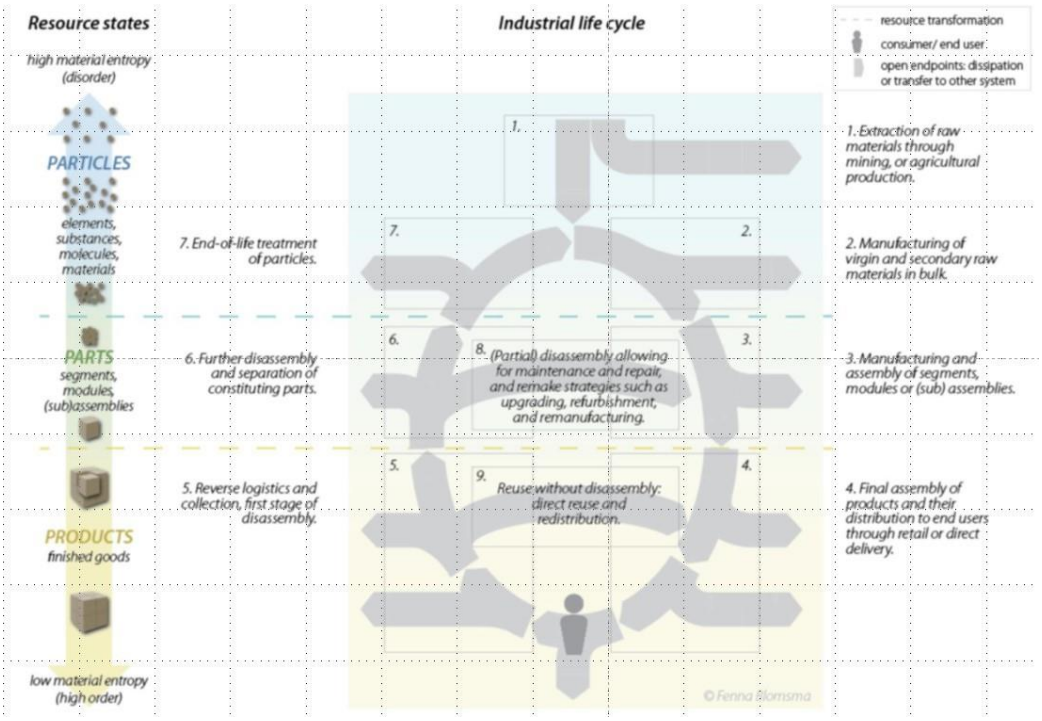
- **Circularity compass**

  The Circularity Compass provides a way to illustrate how resources flow through our economy. It supports system thinking. By using the tools, you map the resource flows including co- used materials or produced by- products, it pays great attention to end-of-life treatment scenarios.

  The tool can be combined and used with other tools (Big 5 structural wastes or value hill). The tool can be used to either analyse a sector, value chain or single company.

  This thorough analysis is the starting point for planning changes and seeing their impact on the entire system (e.g. using PESTLE). The tool offers quite a lot of complexity in deepness. This is needed to understand the entire system, on the other hand, the tool is not easy or ready to use by an untrained person.

  KIC Climate uses this tool in their trainings for sustainability adviser and in their work with companies. There have been showcased a lot of company examples. However, this is no public data. The Circularity compass is part of the Circularity Thinking tool series developed by Blomsma, Brennan and Tennant.



Source for further information: Link

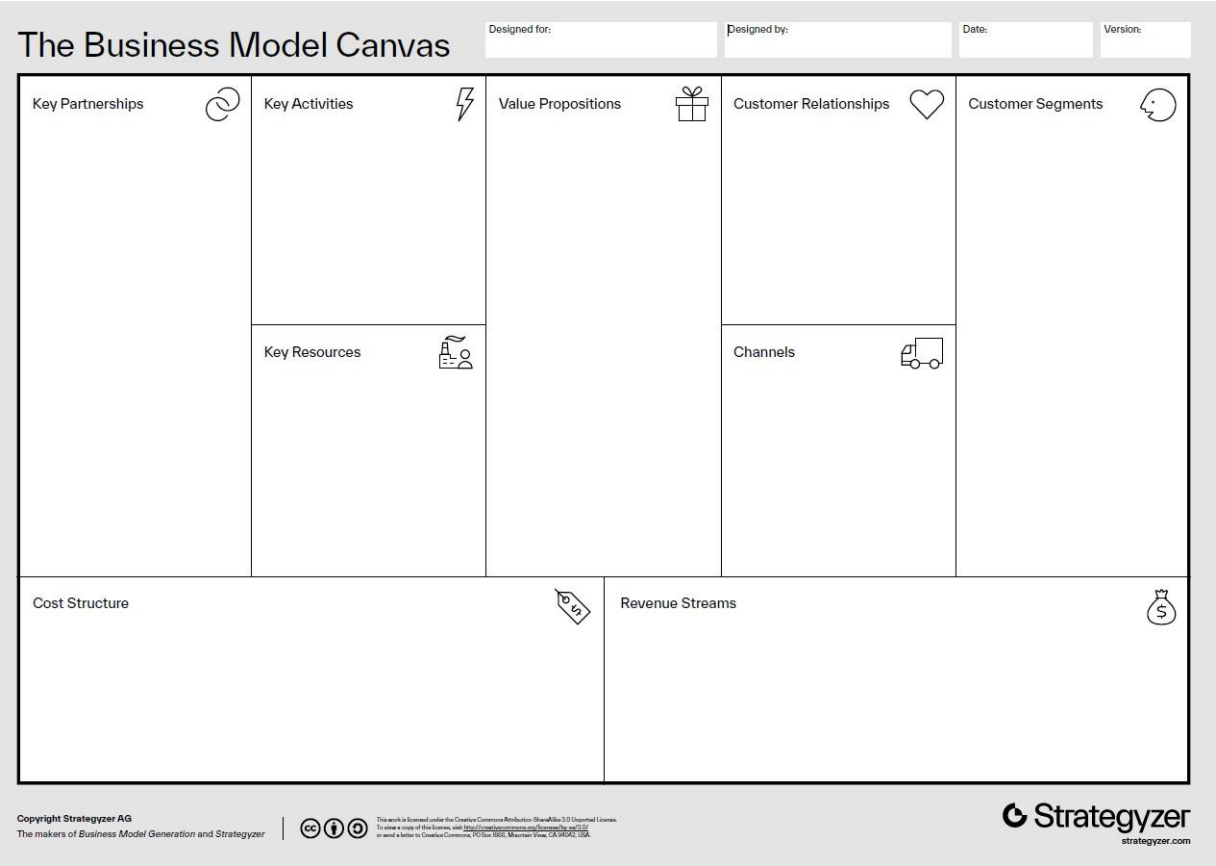
- **Sustainable business model canvas**

  The Business Model Canvas is a strategic tool that helps entrepreneurs and businesses visualize and design their business models. Developed by Alexander Osterwalder and Yves Pigneur, it provides a structured framework for understanding how different components of a business fit together. The key elements of the Business Model Canvas are:

  - **Customer Segments:** Identify the specific groups of customers or market segments you intend to serve. Understand their needs, preferences, and behaviors.
  - **Value Propositions**: Define the unique value your product or service offers to customers. What problem does it solve? How does it address their pain points?
  - **Channels**: Determine the channels through which you'll reach your customers. These can include direct sales, online platforms, partnerships, etc.
  - **Customer Relationships:** Consider how you'll build and maintain relationships with your customers. Will it be through personal interactions, self-service, or automated communication?
  - **Revenue Streams:** Identify the sources of revenue for your business. This could be from product sales, subscriptions, licensing, advertising, or other monetization methods.
  - **Key Resources:** List the essential assets and resources your business needs to operate successfully. These can include physical resources (e.g., equipment, facilities), intellectual property, human capital, and more.
  - **Key Activities:** Describe the critical activities your business performs to create and deliver value. This includes production, marketing, distribution, etc.
  - **Key Partnerships:** Consider strategic alliances and collaborations with other organizations. Partnerships can enhance efficiency, reduce costs, and provide access to new markets.
  - **Cost Structure:** Analyze your business costs. What are the fixed costs, variable costs, and other expenses associated with running your business?

  The Business Model Canvas is a concise way to map out a business model, fostering better decision-making and alignment within the organization.

  Source for further information: Link



Building on the initial Business Model Canvas, alternatives have been developed by different organisations in order to take stronger into account the aspects of sustainability in general, and circularity in particular.

While the Business Model Canvas has been widely adopted as a standard for describing business models, there is no such standard yet for a sustainability business model canvas or a circular business model canvas. However, those alternatives almost all build on the Business Model Canvas itself and add segments related to sustainability or circularity.

One of those alternatives is the one developed by Circulab. It especially includes segments on the positive and negative impacts of a business models, as well as a segment on the next use of products.

Source for further information: Link

It is also possible to use the classic Business Model Canvas by adding to each segment aspects relevant to sustainability and circularity.

Industrial partnerships for specific material loops

Good practices identified:

- wear2wear™ textile loop, Germany
- ERDE agricultural plastics - Collection of agricultural films for closed loop, Austria

In the following, the above practices are shortly described:

- **wear2wear™ textile loop, Germany**

  Industry partnership for closing the textile loop;

  Manufacturing new textiles solely from recyclable and single-origin materials.

  New functional apparel is manufactured with state-of-the-art production systems using recycled textiles from across Europe.

  Participating companies: Sympatex, Schoeller, PrimaLoft, Climatex, EMPA, BTK, CWS, Decontex, Texaid, Carl Weiske, TWD Fibres

Participation of 12 companies within the textile industry

Source for further information: Link

- **ERDE agricultural plastics**

  The initiative addresses the problem of non-uniform collection schemes for agricultural plastic waste. The motivation for developing a nationwide collection system is on one hand the unique homogeneity of this postconsumer waste and on the other hand the high quality of the multilayer stretchfilms, whose producers are eager to recycle them themselves.

  Therefore, ERDE collects the agricultural plastic films at collection points from the local farmers and loops them back to the producers, who are paying partners of the initiative. Those partners are spread all over Europe and the ERDE collection system covers not only Germany, but also Switzerland since 2022.xxx

  Source for further information: Link

Supply chain traceability

Good practices identified:

- Cicularise, Make Materials traceable through digitization (regulations, reporting, certificates, CO2 footprint). Netherlands.
- Circulor, monitor inherited emissions from the supply chain, track materials and compliance using Blockchain technology. United Kingdom
- Digiprime - Digital Platform for Circular Economy in Cross-Sectorial Sustainable Value Networks)

In the following, the above practices are shortly described:

- **Cicularise**

  Software platform that provides end-to-end traceability and secure data exchange for industrial supply chains. Supports customers to make Materials traceable through digitization, adapt to circular economy regulations, reporting and certificates and to track CO2 footprint.

  Source for further information: Link

- **Circulor**

  Allows to monitor inherited emissions from the supply chain, track materials, emissions and compliance using Blockchain technology

  Source for further information: Link

Innovation platforms

Good practices identified:

- Open Access Facilities: Pilots4U - Database of multipurpose open access pilot & demo-infrastructures
- Value Chain Generator (VCG.AI) - Database of technology providers, material providers, value chain partners and circular solutions to connect stakeholders to share materials in circular economy.

In the following, the above practices are shortly described:

- **Open Access Facilities: Pilots4U**

  Easily accessible database of multipurpose open access pilot and demo- infrastructures for the European bio-economy. Within this particular database, "bioeconomy" is translated into the 10 following main technologies: Industrial biotechnologies, Thermochemical conversions, Material technologies, Mechanical separations, Physicochemical separations, Pre-treatment, Pulping, Algae cultivation and harvesting, Anaerobic digestion.

  Source for further information: Link

- **VCG – Value Chain Generator vcg.ai**

  The Value Chain Generator (VCG) is an AI data-driven platform designed to accelerate the circular economy transformation of regions by analyzing regional companies and their residuals to identify feasible circular business models and value chains. Here is how the VCG can be used as a tool for this purpose:

  - **Data Analysis:** The VCG gathers and analyzes company data to assess the region's most prevalent residuals (by-products and waste streams) with the highest economic and climate impact. It can also integrate existing regional data to enhance its analysis.
  - **Smart-Matching:** The platform's BioLink algorithm matches the most prevalent residual materials with suitable technologies and business models for their transformation, ensuring value addition. It also identifies the right companies to participate in the new circular value chains for efficient implementation and project management.
  - **Validation:** To validate the identified circular value chain opportunities, the VCG facilitates data collection from companies to analyze the amounts of residuals available, current management practices, and market demands for new circular products. This validation process de-risks the development of selected value chains and enables the creation of suitable projects. Additionally, the VCG assesses the climate and economic benefits of each value chain.
  - **Circular Opportunity Portfolio:** The outcome of the advanced analysis conducted by the VCG is a Circular Opportunity Portfolio for the region. This portfolio provides key insights for developing a holistic plan that includes strategies, prioritization, and investments required to accelerate circular transformation efficiently and impactfully.

In summary, the Value Chain Generator serves as a comprehensive platform that leverages AI and data-driven insights to identify, analyze, and implement circular business models and value chains in regions, thereby facilitating the transition towards a more sustainable and circular economy.

For companies, the VCG can more specifically help performing a mapping of residuals in the production processes and supply chain and find potential buyers.

The VCG tool is especially relevant in the context of the Cradle-ALP project as its focuses on **organic by-products and waste**.

Source for further information: Link

Labels, certificates

Good practices identified:

- Eco Lightouse
- Greenroom Voice (outdoor textiles)

In the following, some of the above practices are shortly described:

- **Eco Lightouse**

  Through easily-implemented, concrete, relevant and profitable (in the widest sense: local, regional, global) measures, enterprises can improve their environmental performance, control their environmental impact and prove their dedication to corporate responsibility. The Eco-Lighthouse is a tool for authorities and for small, medium-sized and large enterprises in the quest for sustainability and increased eco-efficiency.

  The Eco-Lighthouse certification scheme integrates environmental management and both internal and external environmental measures, into the Norwegian Regulations relating to Systematic Health, Environmental and Safety Activities in Enterprises (Internal Control Regulations). Being Eco-Lighthouse certified thus equals full compliance with the Internal Control Regulations and with the relevant environmental regulations pertaining to the enterprise.

  The Eco-Lighthouse trains, approves and monitors Eco-Lighthouse consultants, including in-house consultants if an enterprise decides that an employee should undergo training and approval.

  An enterprise wanting to become an Eco-Lighthouse is required to hire a qualified Eco-Lighthouse consultant. The environmental statement (Miljøkartlegging) is generated based on the General and Specific industry criteria selected in the ELH web portal (Miljøfyrtårnportalen). The criteria are developed in collusion with relevant government bodies, scientific communities, interest groups and major customers, identifying and addressing the relevant environmental aspects in the industry addressed. The enterprise, through the environmental statement, confirms that the relevant industry criteria have been met before certification is carried out and this is then checked by the certifier. All industry criteria must be met to achieve certification. The enterprise must, with thorough preparation and training by the consultant, complete a detailed annual Climate and environmental report (årlig Klima- og miljørapport) with relevant

environmental statistics and a description of implemented environmental actions in the past year as well as those planned for the coming year (this in addition to the industry criteria).

The Eco-Lighthouse Foundations is certified per the ISO-9001:2015 standard.

Source for further information: Link

- **Greenroom Voice (outdoor textiles)**

  GreenroomVoice (GRV) was founded in 2012. It focuses on the communication of sustainability in the outdoor sports sector.

  The "independent third party organization" works at the interface between outdoor company and customers: As studies show, outdoor consumers in particular are increasingly interested in sustainable behaviour/ future, but are often unable to understand the environmental footprint and social impact of a product or service, its brand and its company. This is where GRV comes in, their Objective "is to foster clear, meaningful and trustworthy communication about CSR brand activities and their products."

  Transparency Tool _ A Framework for Sustainability Practice and Communication: The GRV "Transparency Tool supports brands with the help of a basic framework to be aligned with the latest EU legislative developments on sustainability practice, and to identify achievements, priorities, deliverables and progress."

  GRV/ the Transparency Tool is looking at three vectors _ Brand Management, Brand Commitment and the brand's Products including their supply chain.

  Source for further information: Link