



The Circular Economy Toolkit:

Empowering MSMEs Toward Sustainable Development



Building Markets
Small **Business.** Big **Impact.**



Acknowledgments

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Building Markets unleashes the transformational power of small businesses to address pressing social challenges by driving job creation and inclusive growth. Founded in 2004, the organization finds, builds, and connects competitive local SMEs to supply chains and investment. Utilizing this model, Building Markets has supported more than 26,700 SMEs, assisted those businesses in winning \$1.36 billion in contracts and \$21 million in loans, and helped create over 23,500 jobs across diverse markets like Türkiye, Jordan, Myanmar, Afghanistan, Liberia, and Haiti.

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Introduction

The global population is projected to reach almost 10 billion people by 2050.¹ To meet the needs of the world's growing population—such as food and water, housing, household goods, clothing, and transportation—the production of goods is on the rise. Much of this production is highly energy-intensive and requires the increased use of finite or limited materials. At the same time, the planet's resources are scarce, and our current economic system that requires “taking, making, and throwing away” is not sustainable. Instead, it is necessary to shift to a new circular economic system.

A shift to a new circular economic system provides a solution to reduce environmental harm and to tackle climate change by promoting sustainable economic development. Transforming and adapting to circular economy business models are vital activities that can help increase economic benefits for businesses while ensuring customers' needs are met. There is a significant opportunity to turn waste into valuable resources through recovering materials and products, reusing, repurposing, repairing, and recycling. Businesses can give materials a second life, extend their value, and avoid extracting scarce raw materials to ensure a stable supply chain of resources. In addition, this system can reduce dependency on sourcing materials from other countries, helping lower the associated logistics and transportation costs.

Managing social, economic, and environmental risks has become a priority for businesses. Consumer demand for sustainable products and more ethical practices is affecting brand reputation. In addition, social and environmental factors have become more important to investors and financial institutions when selecting long-term investments. There are numerous benefits to adopting circular economy business models. Sustainability practices can help businesses reduce environmental pressures, increase competitive advantage, generate savings on material costs, and access new markets. The circular economy opens up a license to operate to attract funding and consumers alike.

The circular economy responds to broader challenges, like biodiversity loss, water security, waste, and pollution. The role of businesses, both as an essential part of a local community and in the broader global context, is critical to creating and delivering benefits for people, the planet, and profit, ensuring a prosperous and healthy future for all.

¹ PRB. (n.d.). Population of Older Adults Increasing Globally Partly Because of Declining Fertility Rates. Retrieved May 19, 2022, from: <https://www.prb.org/news/population-of-older-adults-increasing-globally/>

WHY A TOOLKIT?

The circular economy is gaining global momentum. Competition globally has increased, and regulations, technological innovation, and social and environmental concerns are changing how enterprises do business today. Governments and organizations of all sizes, from multinationals to micro, small, and medium-sized enterprises (MSMEs), are building action plans and strategies to eliminate waste and pollution and protect our communities and ecosystems. But how do MSMEs move away from business as usual? Often, companies do not know where to start, or they find the transition to be complex. Simple solutions that replace circular inputs from supplies that have or can be recycled are an excellent place to start. The Building Markets' Circular Economy Toolkit aims to help MSMEs embrace the circular economy and sustainability, improve resource efficiency, and grow in sustainable and resilient ways.

The Toolkit explains why taking care of the environment and society can be profitable for businesses while avoiding future climate-related risks. It provides the tools, processes, and rationale to understand, design, validate, and implement circular economy strategies and business models into the organization and value chains.

Why Are MSMEs Essential for the Circular Economy?

MSMEs significantly contribute to the global economy, representing about 90% of businesses and 70% of employment worldwide, in addition to contributing more than 40% of GDP in emerging economies.² MSMEs also contribute to job creation, economic growth, social stability, and innovation. Research shows that companies that implement sustainable business models report better financial performance and are better placed to withstand climate and economic shocks.³ Supporting MSMEs in their sustainability transformation is essential for developing the green economy and is critical to meeting the United Nations (UN) Sustainable Development Goals (SDGs).⁴

Given the growing amount of legislation and regulatory frameworks related to sustainability and environmental policy, consumer demands, supply chain disruptions, resource scarcity, and materials price volatility, businesses must align operations and economic activities to more sustainable practices. Social and environmental priorities should be an urgent focus for all companies, providing an opportunity for greater mid and long-term resilience and growth.

The circular economy offers an excellent opportunity for all businesses to:

- Reduce costs
- Open new markets
- Maximize profitable growth
- Eliminate waste
- Reduce emissions
- Generate jobs and improve livelihoods
- Protect the environment and society



² The World Bank. (2022). Small and Medium Enterprises (SMEs) Finance. Retrieved May 19, 2022, from: <https://www.worldbank.org/en/topic/sme/finance>

³ University of Oxford, Arabesque Partners. (2015). From the Stockholder to The Stakeholder, How Sustainability Can Drive Financial Outperformance. Retrieved May 19, 2022, from: <https://www.arabesque.com/2020/02/04/from-the-stockholder-to-the-stakeholder/>

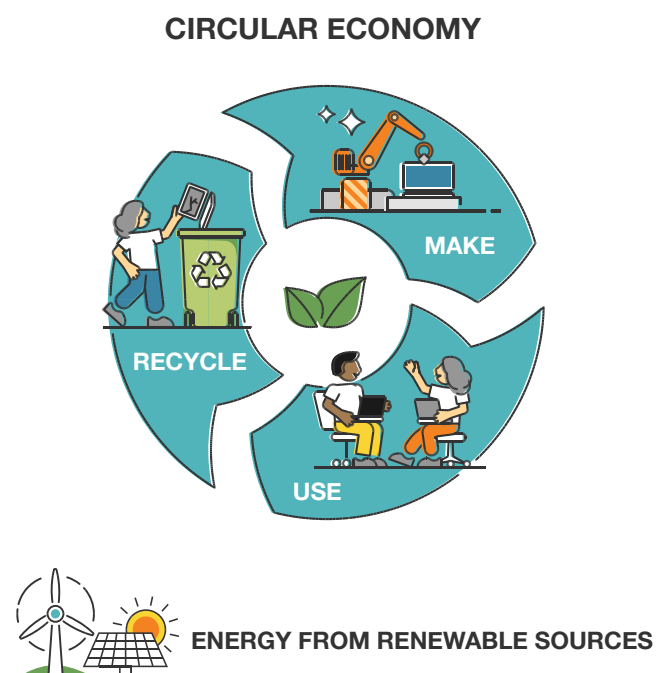
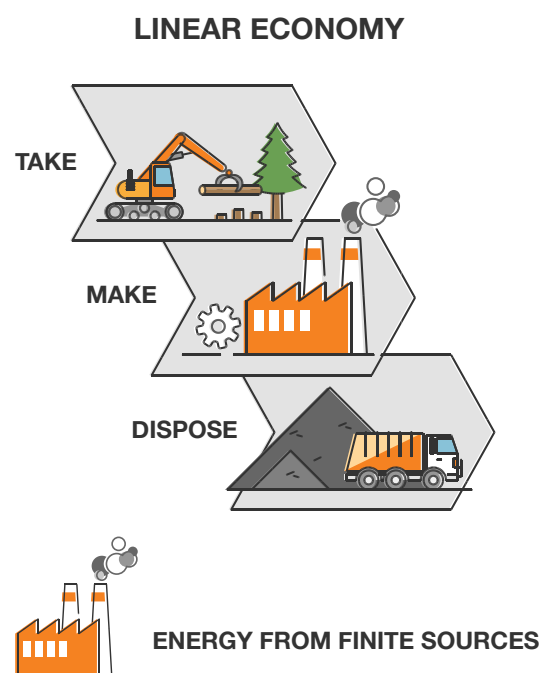
⁴ United Nations. (n.d.). The 17 Goals | Sustainable Development. United Nations. Retrieved May 19, 2022, from: <https://sdgs.un.org/goals>

What Is the Circular Economy?

The current traditional production and economic systems are “linear,” where businesses and consumers take, make, and throw away products and materials, generating significant amounts of waste. The waste generated pollutes the environment, posing serious health risks to communities globally. This causes businesses to miss the opportunity to turn waste into other products that can continue circulating in the system, providing constant value rather than immediate damage. Collectively, companies and consumers can, instead, think about turning discarded materials into valuable resources, extracting as much value as possible by keeping them circulating in the system.

There are many definitions for the circular economy. In this Toolkit, Building Markets employs the following definition, adapted from Geissdoerfer et al. (2020), that describes the concept, its principles, and how to implement it: The circular economy (CE) is a system in which resource input and waste, emissions, and energy leakages are minimized by cycling, extending, intensifying, and dematerializing material and energy loops. The CE can be achieved through digitalization, servitization, sharing solutions, durable product design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling.⁵

For example, instead of old furniture ending up in landfills, what if furniture manufacturers could recover the materials from their customers and turn them into other products for other customers? What if they could repair or remanufacture the furniture so the customer could reuse it? What if they could set up a leasing system for furniture so that the customer pays the manufacturer a monthly fee for the products instead of buying them outright? This would reduce the cost of materials needed, and would produce additional revenue streams from the repair service or the leasing model. Whatever model is chosen, the benefits are substantial. The Toolkit will explore these business models in more detail in the next section.



⁵ Geissdoerfer, M., Pieroni, M. P. P., Pigosso, D. C. A., & Soufiani, K. (2020). Circular Business Models: A Review. *Journal of Cleaner Production*, 277, 123741. Retrieved May 19, 2022, from: <https://doi.org/10.1016/j.jclepro.2020.123741>

The CE proposes a more efficient system with principles that focus on “people, planet, and profit,” breaking with the traditional perspective of growth from consumption. Adopting a CE approach means that a business can still grow while reducing the use of virgin materials and transitioning to more sustainable choices and green energy inputs.



Transition to a Circular Economy: Risks and Opportunities

The business case for the circular economy is evident. It can help reduce the cost of packaging, transportation, and materials use, reduce inefficiencies, and avoid higher prices for materials that can be recovered, reused, and recirculated instead. It can also support additional revenue streams by introducing new innovative business models.

However, changing business models, operations, and practices cannot be done overnight and requires an assessment of a business and an alignment with the broader ecosystem, including suppliers and customers. Essential questions in the transition to a circular model include:

- Where can the negative impact of operations be reduced?
- Where can innovation be applied to make a positive impact?
- Where are the more significant opportunities for the business to reduce waste and create value?
- What should be prioritized to deliver greater value?
- What should be the focus today to ensure long-term value and growth?
- How ready is the market for a new sustainable product or service?
- How can the business bring value to people, the planet, and prosperity?

The circular economy offers the potential to unlock significant value, risk mitigation, and sustainable growth. This guide aims to answer essential questions about the possibility of circular business models. It is worth considering the potential risks that can be faced today if linear and unsustainable models are continued. Some risks are related to material scarcity. For example, finite and high-demand materials might become more expensive as demand increases. Access to materials or products that can be recovered from customers or recycled inputs will help reduce costs. New environmental regulations also impact businesses, such as polluting penalties and higher taxes. Below is an outline of some potential risks that unsustainable companies may face, juxtaposed with the opportunities and benefits that circular and sustainable business models can generate.

 OPPORTUNITY	 RISK
<ul style="list-style-type: none">• Open new markets• Strengthen brand image• Higher competitive advantage• Cost savings, waste management, raw materials, and packaging• Emissions reduction• Job creation	<ul style="list-style-type: none">• Supply chain disruption• Price volatility for scarce materials• Regulatory and compliance• Difficulty in accessing financing• Climate-related risks, degradation of natural capital

The Role of the UN SDGs in Guiding Companies Toward a Circular Economy

Organizations worldwide are developing circular economy solutions and strategies that promote sustainable production, consumption, and recovery of products and materials through innovative and often simple solutions. Aligning sustainability strategies to the UN SDGs can help businesses track progress against their sustainability efforts and targets. Of the 17 SDGs, the following goals are relevant for companies engaging in the CE: Goal 11 (Sustainable Cities and Communities), Goal 12 (Responsible Consumption and Production), Goal 13 (Climate Action), and Goal 17: Partnerships for the Goals).⁶

Suppose a business uses highly intensive materials. In that case, recovering these to be reused or repurposed will help the business reduce material costs and align well with Goal 12, which aims to do more with less, increase resource efficiency, and promote sustainable living. An example is e-waste, which amounts to over 50 million tons of waste a year. In particular, the consumption of smartphones is on course to increase to 4% every year; however, a smartphone is made with materials that are at risk of depletion.⁷ Mining for these materials puts pressure on the environment, contaminating soil and water as well as posing health risks for workers and local communities. Recycling smartphones is critical to ensure materials recovery and protect the environment and society from harm and pollution.

CLOSING THE LOOP: URBAN MINING FOR SMARTPHONES

Closing the Loop collects phones that have reached their end of life in countries that lack the infrastructure or laws to support recycling. The company recovers materials that can be sold as scrap or recycled into new phones that are sold at affordable prices to locals in Africa and other emerging economies. It generates income for African communities and helps reduce CO2 emissions by avoiding the extraction of virgin resources. According to Closing the Loop, extracting gold from waste is estimated to reduce up to 90% of carbon emissions compared to classical mining. Closing the Loop aligns its business operations and strategy with SDGs 12 (Responsible Consumption and Production), 8 (Decent Work and Economic Growth), 1 (No Poverty), 3 (Good Health and Well-Being), 6 (Clean Water and Sanitation), 13 (Climate Action), and 17 (Partnerships for the Goals).

How the Circular Economy Creates Value

It is helpful to differentiate between technical and biological cycles when considering products and materials. Understanding the differences between these cycles can help identify how different types of material or waste can be reintroduced into the system and used for the longest time possible at their highest quality. The less a material is processed after its first use, the higher the quality and value the material or product will retain. This is because it will need less energy, less new and virgin material inputs, and require less labor and processing.

The process flow of different materials is represented in the circular economy butterfly diagram originally developed by the Ellen MacArthur Foundation.⁸ In this graphic representation of circular economy material flow, the biological cycle is shown on the left, and the technical cycle on the right. The smaller the circle, the higher the value that is extracted from the material or product. For example, a washing machine (the right-side/technical cycle) can go from collection to repair (the smallest and highest value circle), meaning it keeps the same purpose it was initially made for and retains the same value. For the biological cycle, feedstock and organic materials extraction can be used to make other by-products. For example, this type of material recovery generates a higher value out of waste for household items made with organic waste, such as lamps made from orange peels. Here are some examples that illustrate the two cycles.⁹

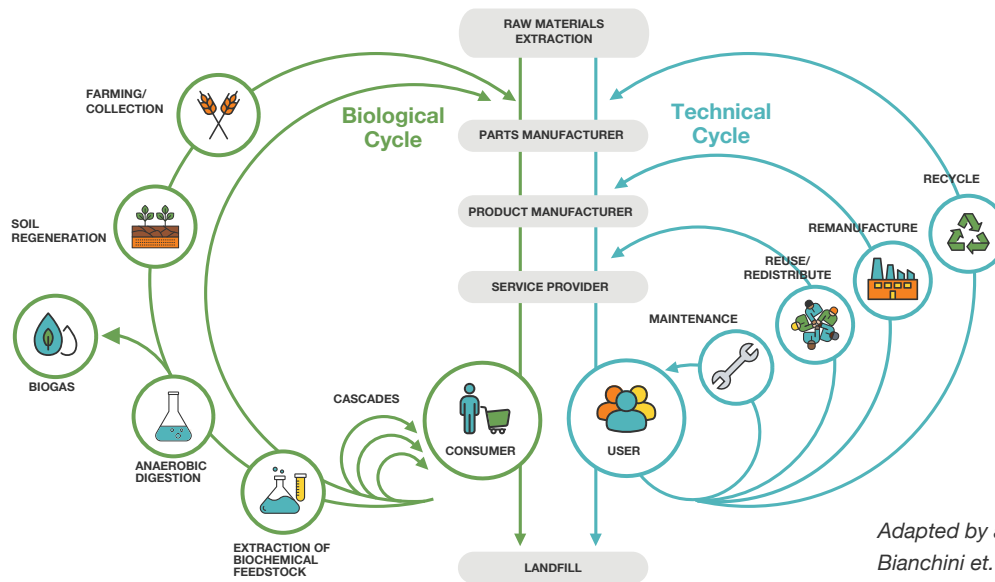
⁶ United Nations. (n.d.). The 17 Goals | Sustainable Development. United Nations. Retrieved May 19, 2022, from: <https://sdgs.un.org/goals>

⁷ WEEE Forum. (2021, October 13). International E-waste Day: 57.4m Tonnes Expected in 2021. Retrieved May 20, 2022, from: https://weee-forum.org/ws_news/international-e-waste-day-2021/

⁸ Ellen MacArthur Foundation. (n.d.). The Butterfly Diagram: Visualising the Circular Economy. How to Build a Circular Economy. Retrieved May 19, 2022, from: <https://ellenmacarthurfoundation.org/circular-economy-diagram>

⁹ Bianchini, Rossi, & Pellegrini. (2019). Overcoming the Main Barriers of Circular Economy Implementation Through a New Visualization Tool for Circular Business Models. *Sustainability*, 11(23), 6614. Retrieved May 19, 2022, from: <https://doi.org/10.3390/su11236614>

BUTTERFLY DIAGRAM



The biological cycle refers to organic materials such as wood, food, and water. These materials can be recycled or converted into bio-based materials, for example, agricultural waste that can be used for compost or biogas. Intensive farming and meat production puts significant pressure on the environment, resulting in erosion and degradation of soil and infertile land. Imitating the natural cycle of nature, where nutrients circulate in the system, can help improve biodiversity and maintain fertile ground for more significant and sustainable production. The example of Ecovative below highlights how agricultural feedstock can be converted into valuable resources to produce packaging, replacing unsustainable materials such as plastics.

ECOVATIVE: PACKAGING MADE OF MUSHROOM

Ecovative is a pioneer in sustainable packaging, replacing plastics and other petroleum-based packaging products. Ecovative's sustainable packaging has the same performance as plastic packaging. Their fully compostable products are made of mushroom roots (mycelium) mixed with low-value agriculture feedstock, mainly sourced from local crops. The production process is so simple that the cost of packaging is lower for customers. Ecovative also produces sustainable building insulation materials, leather substitutes, and other biomaterials.

The technical cycle refers to materials that are not renewable and cannot be composted, such as fossil fuels, plastics, and metals. However, these products and materials can be restored to keep circulating in the system for the longest time possible. This process can be done by repairing, disassembling for remanufacturing, or recycling to reuse parts and materials for other products. For example, repairing smartphones and extending their life for longer while preserving scarce rare materials.

APPLE: SMARTPHONE SELF-SERVICE REPAIR

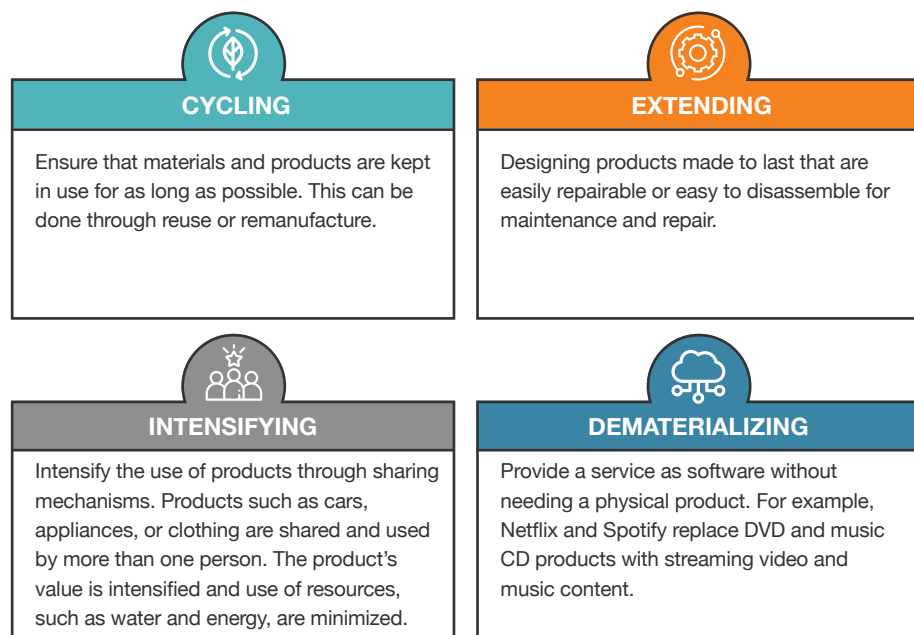
Apple's new self-service repair provides customers and independent repair providers with repair kits, tools, and manuals so that they can repair their Apple devices. Products are used for longer, and waste is reduced. Repairing electrical products diminishes the need to extract new raw materials and reduces waste and pollution. By designing products for durability and increased reparability, products and materials can stay in close circles, extending their life for the longest time possible.

Business Models for the Circular Economy

A business model is a plan and strategy for a company to generate value and make a profit. It identifies products or services, target markets, channels, and anticipated expenses. In contrast, a circular business model articulates the logic of how an organization creates, delivers, and captures value while minimizing environmental and social impact. The value proposition should provide environmental, social, and economic benefits. For example, using materials that can be recycled or reused in design and production minimizes raw materials extraction, reducing CO2 emissions. Other examples are implementing sharing business models where items can be used between multiple users, intensifying their value. In delivering social value, job creation and skills development should be considered by introducing repair facilities and remanufacturing with repair technicians or recycling and waste management businesses. These business models do not work in silos and require collaboration across suppliers, manufacturers, distributors, and customers along the value chain. This section will explore the type of circular economy business models that businesses can consider.

Types of Circular Economy Business Models

Circular economy business models can generate a healthy profit for a venture while benefiting nature and people. As described in previous sections, circular economy business models can create customer loyalty, reduce materials costs, and generate alternative revenue streams. Several strategies and business models can be incorporated into a value proposition depending on sector and circumstances. The four business models below describe the potential approaches businesses might adopt.



PATAGONIA: RECYCLING & REPAIRING GARMENTS

Patagonia is an excellent example of an enterprise that has succeeded in implementing circular economy business models.¹⁰ The company has applied sustainable methods to its production and operations to better use resources and has generated brand loyalty and profit while delivering and creating environmental value. It became a leader in recycling garments, “helping customers consume less and consume better.” Patagonia creates durable, innovative, and easy-to-repair products (extending). It provides a repair service so customers can return their items to be reconditioned (cycling), keeping products in use for as long as possible. Patagonia engages with the broader ecosystem—with other brands, retailers, and farmers—to educate them on the environmental benefits of using more sustainable materials (extending).

10 RamArchana, A. (2021, November 18). Our Quest for Circularity. Patagonia. Retrieved May 21, 2022, from: <https://eu.patagonia.com/es/en/stories/our-quest-for-circularity/story-96496.html>

The next section describes how business models can be classified by value proposition, value creation, and value capture.¹¹ Value proposition refers to the products or services offered and to whom. It includes, for example, access over ownership of household electrical products for consumers. Value creation refers to how value is provided through activities, such as product design or after-sales service for repair. Value creation refers to revenue generated from business, environmental, and social benefits, such as job creation, eliminating waste, and reducing pollution. The framework poses some questions to consider when designing a strategy to implement CE business models and provides examples of potential solutions.

TABLE 1. CIRCULAR ECONOMY BUSINESS MODELS¹²

	VALUE PROPOSITION	VALUE CREATION	VALUE CAPTURE
	<ul style="list-style-type: none"> • What products are you delivering? • Who are your customers? • What does your customer need? • How do you address their need? 	<ul style="list-style-type: none"> • What are the value chain elements? • What are your competencies? • What resources and capabilities do you need? 	<ul style="list-style-type: none"> • Where does the revenue come from? • What are the costs involved? • What is your revenue model?
CYCLING <ul style="list-style-type: none"> • Reuse • Repair • Remanufacture/refurbish • Design for modularity • Reverse logistics • Incentives to return products 	<ul style="list-style-type: none"> • Used, repaired, remanufactured, refurbished, or recycled products/materials/organic feedstock • Existing or new customers who want affordable green products • Taking back products/materials/organic feedstock and transforming them into new resources (e.g., products, materials) 	<ul style="list-style-type: none"> • Repair, remanufacture, refurbish, recycle/sell waste by-products for profit • Help suppliers by returning waste elements for recycling in their product manufacture • Take back products after customer use through incentives and sustainability awareness • Reverse supply chain 	<ul style="list-style-type: none"> • Revenues from high-quality products (premium margins) or high-level servicing, customer loyalty • Revenue model based on service packages or tailored contracts (payment for functions or results) • Payment for service (e.g., upgradability and repairs)

¹¹ Geissdoerfer, M., Pieroni, M. P. P., Pigosso, D. C. A., & Soufiani, K. (2020). Circular Business Models: A Review. *Journal of Cleaner Production*, 277, 123741. Retrieved May 19, 2022, from: <https://doi.org/10.1016/j.jclepro.2020.123741>

¹² Ibid.

	VALUE PROPOSITION	VALUE CREATION	VALUE CAPTURE
EXTENDING <ul style="list-style-type: none"> Long-lasting products Upgradability Designed to last Marketing/customer who wants long product life Education to promote long life of product Maintenance/product support 	<ul style="list-style-type: none"> Long-lasting products/product with timeless design/upgrading/warranties and support/maintenance/repair/retrofit services Existing or new customers who want reliability, savings by extending the use of expensive products Providing premium/superior quality products and high levels of service 	<ul style="list-style-type: none"> Services (e.g., maintenance, repair, upgrade, refurbishing/retrofitting) Long-lasting/repairable product design Digital capabilities (e.g., predicting maintenance) Service network collaboration Marketing/consumer education promoting long product life Long-term customer relationship 	<ul style="list-style-type: none"> Continued revenue from temporary service contracts/buy-in from long-term customer relationships Increased long-term profits through savings from using products longer (multiple recycling process) and potential efficiency rewards in operations (e.g., energy savings) Pricing per unit of service (e.g., time, number of uses), rental or leasing fees
INTENSIFYING <ul style="list-style-type: none"> Sharing models Rental/leasing models User cooperatives Pooling models 	<ul style="list-style-type: none"> Products as service/sharing products Existing or new customers who want to share the cost of products and/or convenience Providing the temporary availability of products instead of ownership 	<ul style="list-style-type: none"> Ability to manage demand and supply of products Digital capabilities (e.g., tracking) Transportation and logistics Reselling or redistributing products Designing product-service systems Managing suppliers (e.g., service providers) Managing customer relationship 	<ul style="list-style-type: none"> Recurrent revenues from service subscriptions or contracts, long-term customer relationships Increased profit margins due to additional value from uniqueness, savings from using products for longer, and efficiency gains in operations (e.g., energy consumption, transportation, least amount of products possible)

	VALUE PROPOSITION	VALUE CREATION	VALUE CAPTURE
DEMATERIALIZING <ul style="list-style-type: none"> • Software instead of hardware • Service instead of product • Consumer education rationalizing demand 	<ul style="list-style-type: none"> • Services replacing or reducing the need for hardware • Existing or new customers who want expertise/convenience without paying the full price of ownership • Providing turn-key solutions for the customers' need 	<ul style="list-style-type: none"> • Technology design for digitalization • Designing product-service systems • Educating the customer 	<ul style="list-style-type: none"> • Recurrent revenues pricing based on agreed results (e.g., pay-per-light instead of light bulb)

Examples of Circular Economy Business Models



CYCLING

The **Cyclon** is a brand that makes running shoes with beans, a less water-intensive crop, and more sustainable material. Their design uses less material, which helps reduce CO2 emissions. The company offers customers a subscription model for a monthly fee. The customer returns worn-out shoes every six months and receives a new pair. The company then recycles and remanufactures the old shoes to keep them cycling in the system.



EXTENDING

ClearCycle sells refurbished homeware through data-driven stock liquidation and re-commerce solutions. The company has integrated a circular business model to extend the life of products, reducing environmental impact by avoiding waste in landfills. ClearCycle has the objective of providing products that can be reused over and over again.



INTENSIFYING

Sharetribe is an online platform that has streamlined the creation of peer-to-peer marketplaces. It allows anyone to build a customized website that can be used as a marketplace or a platform for peer-to-peer sharing. Their value proposition enables entrepreneurs worldwide to create and run their online marketplace.



DEMATERIALIZING

Netflix developed a business model to deliver video content through digitization, replacing physical products, such as DVDs, which reduces materials use, inventory, manufacturing, and negative environmental impacts. Their value proposition is a product as a service instead of physical product ownership, maximizing resource effectiveness.

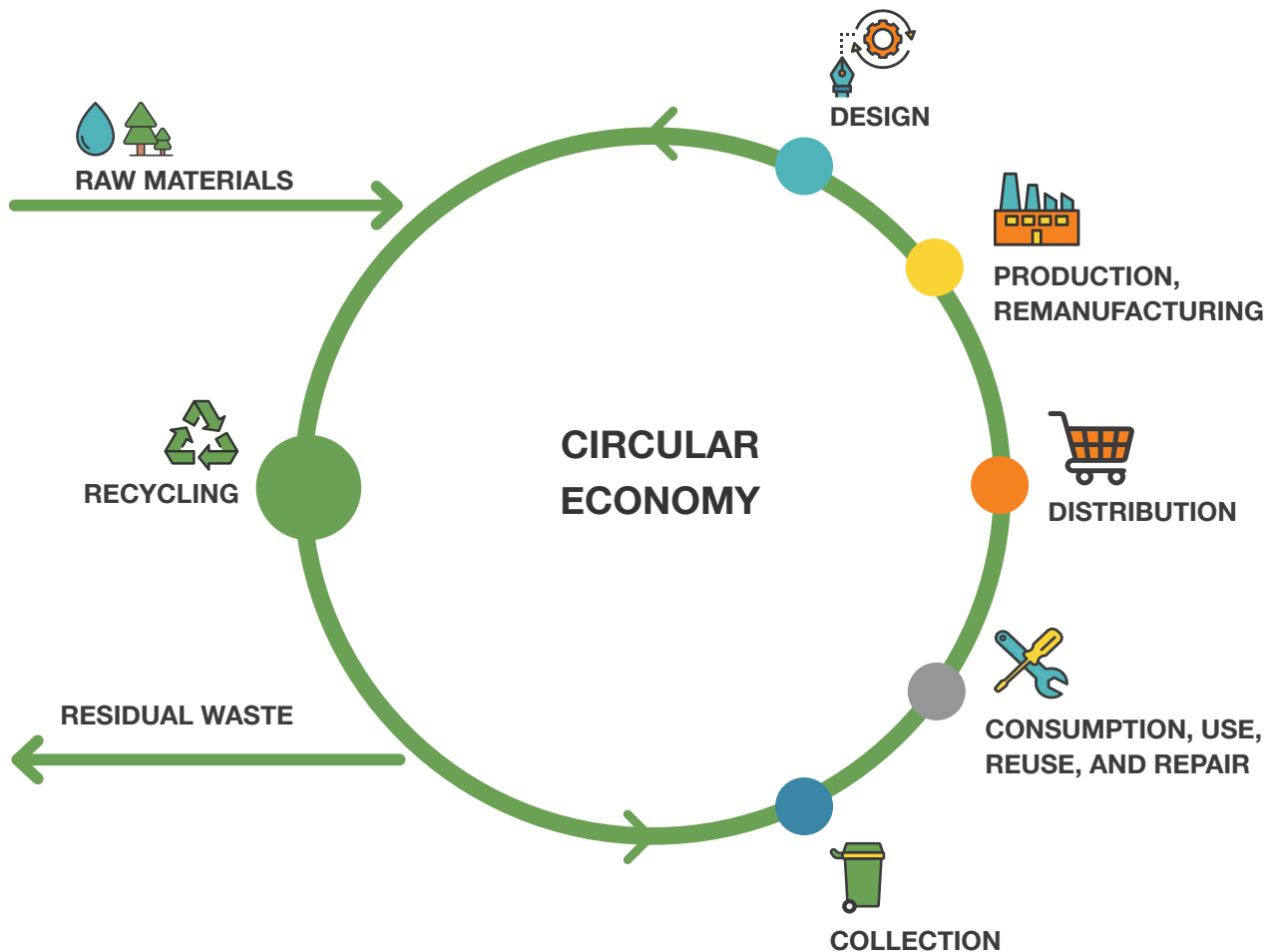
BUNDLES: SUBSCRIPTION CIRCULAR BUSINESS MODEL

Large amounts of materials, resources, and energy are used to produce household items. These products are often discarded at the end of their lifecycle, resulting in waste, as well as product value and material loss. Based in The Netherlands, **Bundles** saw the opportunity to partner with manufacturer Miele. They launched a product as a service business initiative, where customers pay a subscription for washing machines, dishwashers, and coffee machines without needing ownership. Bundles takes care of the repair and maintenance so that products can be used longer. Through Internet of Things technology, they also track usage of products, which helps them predict maintenance, thus increasing usage and performance of the appliances.

Designing a Path to Sustainability With Circularity in Mind

Product design is vital for moving from a linear model toward a more circular business production model. It will determine how products can be repaired at the end of life or disassembled for remanufacturing or recycling. Imagine the exciting impact of designing every product so it could be kept circulating in the system without losing value or generating waste!

Designing with circularity will serve as a blueprint to help increase material efficiency and extract the maximum value of resources while reducing inefficiencies. At this stage of the product cycle, the customer's needs should be considered, along with how products will be used, managed, and recovered. Increasingly consumer behavior is moving away from ownership to service, i.e., is it necessary to drill a hole in the wall? Is a car or travel from one place to another required? Asking questions like these will help us understand customers' needs and will inform our decisions when designing our products, services, or business models to meet those needs while also reducing inefficiencies and waste. It is also critical to think through the lifecycle analysis of a product from material extraction to end of life and the role of the business in the value chain to increase material and product life as well as material efficiency.



Principles of Circular Design

The following table outlines the considerations and guidelines to help design products and services to prevent waste by extending the life of products and materials for the longest time possible.

TABLE 2: CIRCULAR DESIGN PRINCIPLES¹³

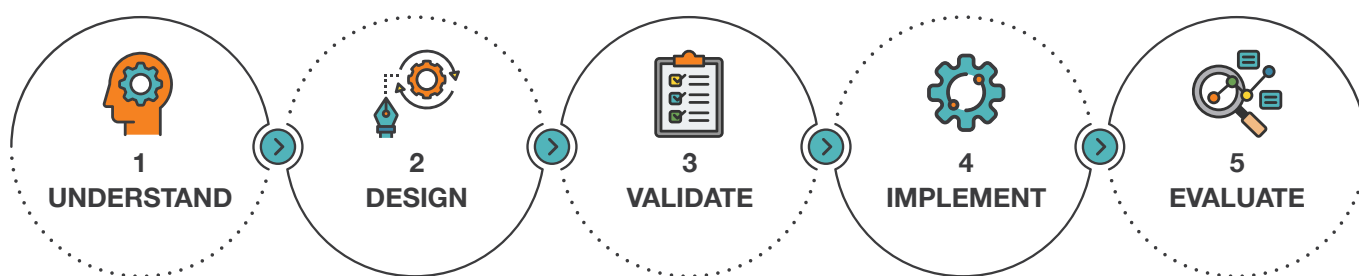
TARGET	GUIDELINES
<p>How do I manufacture circular products?</p> <p>The materials used in the products will be critical to lower environmental impacts.</p>	<p>What should I think about?</p> <ul style="list-style-type: none"> • Reduce or eliminate packaging • Use recycled materials • Optimize forecasting to reduce purchasing or producing excess product stock
<p>How do I design for circularity?</p> <p>It's essential to design products with longevity in mind to be used for the longest time possible using durable and robust products and materials that are easy to repair, maintain, or recycle.</p>	<p>How can my products avoid landfills?</p> <ul style="list-style-type: none"> • Design products so they can be easily taken apart for repair or upgrade • Implement circular business models such as leasing or sharing so that products can be used multiple times • Use technology or build partnerships for traceability of products so that they can be recovered
<p>How do I recover materials?</p> <p>Ensure materials, product parts, and components can be recovered so that nothing is wasted.</p>	<p>How can my products be recovered effectively?</p> <ul style="list-style-type: none"> • Take-back schemes (reverse logistics) provide incentives to consumers to return products • Choose materials and components that can be reused and recycled

¹³ Chart adapted from Lacy, P., Long, J., & Spindler, W. (2021). Circular Economy Handbook: Realizing the Circular Advantage. Palgrave.

Five Steps to Creating, Delivering, and Capturing Value

This Toolkit proposes five steps to guide and support the journey toward a more resilient and profitable business. Each step delivers tools and frameworks to identify and assess where and how to create, deliver, and capture greater value for a business, society, and the environment.

By combining the various tools, an end-to-end circular innovative business model can be developed and implemented, from strategic analysis and decision-making to practical implementation. Each step will be explored to understand, design, validate, implement, and evaluate the business initiative.



It is important to see the broader picture of where the business or idea is today and the challenges and opportunities faced as a business in the broader ecosystem, such as trends, customer needs, and outside market forces. It will also help set a vision to implement more sustainable processes and operations.

Define and choose the most appropriate value proposition and circular business model to develop and integrate into a strategy. It may be possible to choose two or three options that you can narrow down at a later stage into the most viable choice.

Assess assumptions and expectations and whether all the necessary capabilities and resources are available to deliver a strong business proposition.

Build a roadmap and set targets based on a vision to achieve goals and objectives. The roadmap should include the milestones to launch the business or initiative. Remember, this is a journey, and it cannot all be done overnight; small, impactful steps are just as valid.

Analyze costs and benefits through an evaluation to assess whether the business idea or initiative will deliver the intended outcomes and benefits for people, the planet, and profit.

Remember that these steps are designed to provide a blueprint for innovation. However, as interaction and engagement increase with customers, suppliers, and investors across the value chain, businesses will learn what is most important to them and how to adapt to the broader ecosystem, so flexibility and adaptation will be fundamental. At the end of the process, a clear focus and strategic plan will support innovation and build a robust, sustainable business to create, deliver, and capture value.

FIVE STEPS TOWARD A CIRCULAR BUSINESS



UNDERSTAND	DESIGN	VALIDATE	IMPLEMENT	EVALUATE
What is your vision for circularity? Tool: Values and Vision Tool	What is your value proposition? Tool: Value Proposition Canvas	What are your expectations/assumptions? Tool: Circular Business Validation Tool	How do you set up your roadmap? Tool: Circular Business Model Roadmap	How do you measure impact? Tool: Cost and Benefit Analysis Tool
What is your business model? Tool: Circular Business Model Canvas	What circular business model can you choose? Tool: Circular Economy Business Model Framework			
How are you positioned on the wider ecosystem? Tool: PESTEL Analysis	What partnerships do you need? Tool: Value Chain Product Tool			
Where is your waste? Tool: The Big Five Structural Wastes				



Step 1: Understand

The first step to integrating circular economy models in a business is to reflect on the vision for circularity and understand the capabilities and resources needed to take the idea forward. What is your motivation? What are your strengths and opportunities? Answering these questions will help you develop your plan and set the relevant goals to lay solid foundations for a sustainable business. You will also need to understand the external factors that can affect your business, both now and in the future. These could be, for example, consumer demand, access to financing, inflation, or regulations.

Another essential element to understand is identifying where your waste is generated to formulate a plan to eliminate or reduce it. The following diagram summarizes the objectives, outcomes, and tools to answer the following questions:

What is the vision for circularity?	What is the business model?	What is the position within the wider ecosystem?	Where is the waste?
OBJECTIVE Understand where you are today as a business to identify opportunities and how outside forces might influence your sustainability strategies.	INSTRUCTIONS <ul style="list-style-type: none">• Use sticky notes to fit in each box through the exercises• When working through the exercises, keep the concepts of delivering and creating social, environmental, and economic value	TOOLS <ul style="list-style-type: none">• Values and Vision Tool• Circular Business Model Canvas• PESTEL Analysis Tool• Big Five Structural Wastes	
OUTCOMES Develop a foundation for implementing circular economy initiatives in your business based on your business context, challenges, and opportunities driven from outside forces.			

Establishing a Vision for Circularity

As a first step, assessing and defining values and a vision for circularity is necessary. It is essential to set ambitions and aspirations to define the vision of a viable circular enterprise. For example, the vision could be to create a product to reduce environmental pressures and deliver social value through recycling post-consumer waste into other valuable products. Setting a vision will help develop a value proposition that includes more sustainable processes and practices. The Value and Vision Tool helps set the context for a business.

How to Use the Values and Vision Tool

STEP 1

Circular Ambition: What is the vision and ambition to deliver and create long-term shared value?

STEP 2

Key Supporters: Who will be the key people to help you deliver your ambition? These could be suppliers of materials or resources, lending institutions to fund your project, or partners with technical expertise.

STEP 3

Key Goals: What are your main objectives to drive your initiative forward?

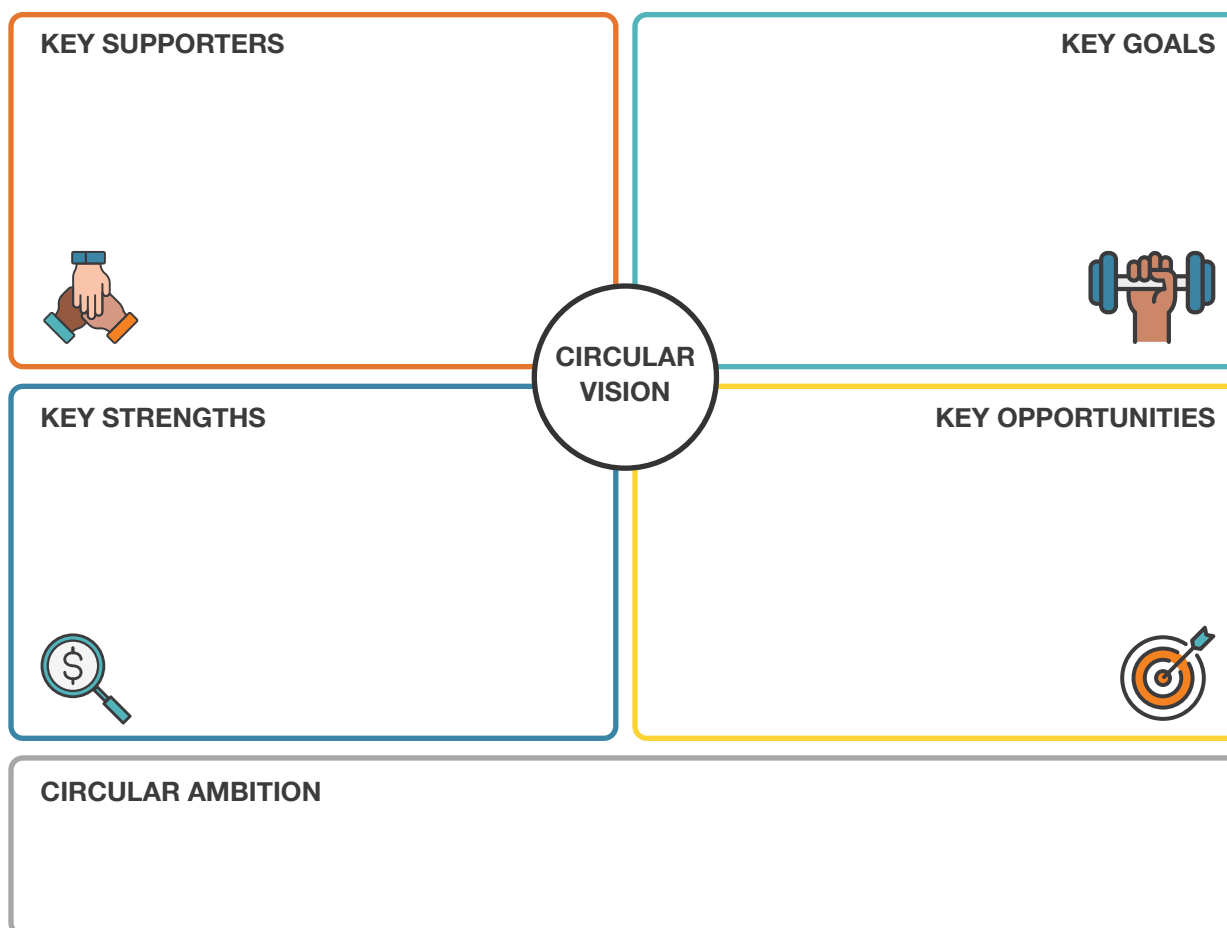
STEP 4

Key Strengths: What key strengths will help you deliver value? For example, access to certain materials, markets, and expertise in your sector.

STEP 5

Key Opportunities: What are the opportunities in your current situation? For example, is there high customer demand for sustainable products or government support for green enterprises?

VALUES AND VISION TOOL¹⁴



¹⁴ Adapted from the R2PI Project. (n.d.). Retrieved May 21, 2022, from: <http://www.r2piproject.eu/wp-content/uploads/2019/08/4-Starting-your-Innovation-Journey.pdf>

What Is the Business Model?

The Circular Business Model Canvas is a strategic tool to describe, design, and define the main challenges to improve processes and find new sources of value. It is necessary to understand the value creation of an initiative, how to create it, and for whom. The Circular Business Model Canvas will be used to generate a holistic overview of a business idea. This tool has nine blocks and provides a framework to analyze, reflect, and plan the business proposition. It also outlines the elements to identify partnerships, customers, benefits, costs, and resources. Overall, this tool helps design a solution that meets customer needs while identifying positive impacts on the environment and society.

After completing this step, identify the business logic and how it aligns across all elements of the business. It should facilitate internal discussions and determine the areas that can be adapted, improved, or transformed.

How to Use the Circular Business Model Canvas

Fill in the boxes in the table below, answering the questions in every box to identify the proposition's social, environmental, and economic impacts.

- 1. KEY PARTNERS:** List the key business partnerships.
- 2. KEY ACTIVITIES:** What activities are used to implement the business model?
- 3. KEY RESOURCES:** Make a list of all resources needed to run the business, from employees, to skills, capital, physical stores, and website.
- 4. VALUE PROPOSITIONS:** What products and services are being delivered to the customers?
- 5. CUSTOMER RELATIONSHIPS:** How does this manifest, and how does the business maintain the relationship, communication, and engagement with a customer?
- 6. CHANNELS:** What are the communication channels with customers? How is the value proposition delivered?
- 7. CUSTOMER SEGMENTS:** Who are the customers? Make a list of at least the three top customer segments. Include those that are likely to generate the highest revenue. When thinking of customers, consider all stakeholders that benefit from the proposition, including citizens.
- 8. COST STRUCTURE:** List the top three costs to run the business, for example, logistics, sourcing of materials, and manufacturing. This section should also list the potential social and environmental costs, i.e., is the business generating high levels of CO2 emissions and waste?
- 9. REVENUES:** List the revenue streams, such as direct sales, subscriptions, and rental fees. Also, under this section, list the social and environmental benefits, i.e., what are the benefits to the environment and society the business is currently creating?

CIRCULAR BUSINESS MODEL CANVAS¹⁵



1. KEY PARTNERS

What are your key partnerships across the value chain (from materials, information, financing)?



2. KEY ACTIVITIES

What activities do you perform that create your value proposition benefiting human, natural, and financial capital?



4. VALUE PROPOSITIONS

What are the needs your products or services meet for your customers? Is your proposition serving a current need that is easily adaptable to the needs of the future?



5. CUSTOMER RELATIONSHIPS

What feedback loops will you build in with your customers to become more nimble and adaptable to their feedback? How might you connect customers with other parts of the journey of your product/service or materials?



7. CUSTOMER SEGMENTS

Who is the main customer or user of your product or service? Are there any other beneficiaries beyond your immediate value chain?



3. KEY RESOURCES

What capabilities do you need to run your business in the short and long term? Employees, skills, capital, materials, infrastructure?



6. CHANNELS

1. How do you deliver your product?
2. Are you able to recover resources to close the loop?
3. What is your role in the reverse logistic chain?



8. COST STRUCTURE

1. What are the financial costs, i.e., logistics, packaging, materials, customer acquisition, sales, and marketing?
2. What is the environmental cost, i.e., CO2 emissions from transportation, wastewater, etc.?



9. REVENUE SOURCES

1. How do you generate financial value, i.e., direct sale, e-commerce, subscription?
2. How do you generate environmental value, i.e., waste avoidance, emissions reduction, water stewardship?
3. How do you generate social value, i.e., helping grow the local economy, job creation, diversity, and inclusion?

¹⁵ Adapted from Circular Business Model. The Circular Design Guide. (n.d.). Retrieved May 20, 2022, from: <https://www.circulardesignguide.com/post/circular-business-model-canvas>

How Is the Business Positioned in the Broader Ecosystem?

Outside forces, such as regulations, climate change, or consumer behavior, might affect the business, either now or in the future. To understand how the company might be affected by these outside forces and fit in the broader ecosystem, analyze how these trends can be either opportunities or barriers. This process will also help identify new growth opportunities, set objectives, and determine the right strategy to implement them. The factors to consider are:

FACTORS	CONSIDERATIONS
POLITICAL	Regulations and legislation affecting your business, i.e., Extended Producer Responsibility (EPR), taxes, trade tariffs.
ECONOMIC	From a local to a global perspective, economic factors include GDP inflation, exchange rate, ease of access to loans, and customer spending strength.
SOCIAL	Social factors, demographics, lifestyle, social mobility, media perceptions, and consumer behavior affect your business.
TECHNOLOGICAL	Technology innovation might be crucial to your business, such as how customers make purchases or how you can trace materials.
LEGAL	Legislation in employment, health, safety, trading policies, and regulatory bodies.
ENVIRONMENTAL	Your product's level of emissions or environmental footprint, recycling considerations, environmental policies, and consumer demand for sustainable practices and products.

How to Use the PESTEL Framework

According to the potential factors that might impact the business, follow the steps and complete the boxes in the table. The guiding questions outline the main motivations and barriers that might affect the business.

- 1. POLITICAL:** Who are the main stakeholders in the political context (i.e., local government, municipality, regulatory bodies)? Are any pending or upcoming legislation likely to affect the business, for example, a ban on plastic bags or taxes on CO2 emissions? Are there any government incentives available?
- 2. ECONOMIC:** How stable is the current economic environment? What is the customer purchasing power? How is the economy likely to change over the next few years? Is there higher or lower demand for products?
- 3. SOCIOCULTURAL:** Has there been a shift in consumer preferences or buying behavior? What is the level of awareness and demand for sustainable products?

4. **TECHNOLOGICAL:** Considering customers and the supply chain, does the business have access to the right technology to deliver optimal business models? Can data be collected to maximize efficiencies with products, services, and customers? What other technologies could be implemented?
5. **ENVIRONMENTAL:** Consider whether climate-related events can affect the business from a physical perspective, including floods, droughts, and wildfires. How can assets be protected from risk? How can sourcing and trade be more sustainable? How can business objectives be aligned to meet the demand for more sustainable choices (i.e., changes to packaging and more sustainable materials)?
6. **LEGAL:** Consider whether changes to legislation and regulation might impact the business. What are the applicable export regulations, and how may the business be affected by them? How does the company monitor compliance?
7. **BARRIERS & MOTIVATIONS:** Consider the motivations for implementing the business or initiative and the perceived barriers according to the analysis.

PESTEL ANALYSIS

<p>POLITICAL</p> <p>What are your main motivations?</p> <p>What are your main barriers?</p>	<p>ECONOMIC</p> <p>What are your main motivations?</p> <p>What are your main barriers?</p>	<p>SOCIOCULTURAL</p> <p>What are your main motivations?</p> <p>What are your main barriers?</p>
<p>TECHNOLOGICAL</p> <p>What are your main motivations?</p> <p>What are your main barriers?</p>	<p>ENVIRONMENTAL</p> <p>What are your main motivations?</p> <p>What are your main barriers?</p>	<p>LEGAL</p> <p>What are your main motivations?</p> <p>What are your main barriers?</p>

Identifying Sources of Waste With the Big Five Structural Wastes Tool

Whether the business is being transformed to make it more sustainable or a new business is being launched, it will be essential to understand where waste is present or is likely to be created. Once the waste has been identified, finding suitable solutions to eliminate or reduce it will be easier.

The Big Five Structural Wastes Tool can help pinpoint manufacturing or production and consumption waste. This is structured in two ways: for waste particles (substances, elements, or materials) and products. It is also structured as both lack of resource renewal and resource consumption, meaning materials and products that are not recycled

or reused or products that are idle or underused. Once we identify where waste occurs, we can implement strategies to prevent that waste, for example, by reusing, refurbishing, or recycling materials. The third type of waste to assess is the use of chemicals or harmful substances. Once potential toxic substances or chemicals have been identified, strategies to replace them with non-harmful or non-hazardous options can be applied.

Below, the Big Five Waste Structural Tool is arranged by product use and capacity, materials use and capacity, and reduction of harmful substances used.

TABLE 3: STRATEGIES TO ELIMINATE WASTE

	CIRCULAR STRATEGY	BUSINESS MODEL
Premature end of the use of the product: Avoiding planned obsolescence, for example, mobile phones that become obsolete before they break.	Keep products in use and circulating at their highest level of performance	<ul style="list-style-type: none"> • Repair • Refurbish • Remanufacture • Upgrade • Consider designing for durability
Underused product capacity: A car that is estimated to be parked and not in use 95% of the time is a wasted resource.	Maximize the use of products to extract the highest value	<ul style="list-style-type: none"> • Sharing • Rental • Leasing • Pooling
Premature end of life of materials: Most materials are valuable, and value can be created from waste, such as fertilizers for compost or 3D lamps made from orange peels.	Materials are restored or preserved to quality levels	<ul style="list-style-type: none"> • Recycling for technical materials • Composting for biological materials
Underused material capacity: Someone's rubbish can be someone else's treasure. Think of agriculture waste that can be used to produce green energy sources.	Extend the use of substances	<ul style="list-style-type: none"> • Downcycling • Waste to energy
Excess or harmful use of resources: Use natural, non-toxic materials for manufacturing a product, for example, sustainable paint low in volatile organic compounds. Hemp can yield 250% more fiber than cotton with 50% less water use and is recyclable.	Eliminate toxins and harmful substances	<ul style="list-style-type: none"> • Use lean manufacturing (avoid overproduction, waiting, transport, overprocessing, inventory excess, motion, defects) • Use smart materials choices

How to Use the Big Five Structural Wastes Tool

STEP 1: Think through the production systems and use of materials and products. For example, where is the waste if the business is a chip manufacturer? Wastewater, potato peels, cooking oil, packaging.

STEP 2: Use the guiding questions listed in each box to help find alternative strategies to minimize or eliminate waste, focusing on particles or products where appropriate.

STEP 3: Assess what that new strategy might be. It might be a repair or remanufacture process for products thrown away when broken that could be repaired or reconditioned for further use. Or perhaps food waste that can be used as compost or to make other products, for example, craft beer out of potato peels. Refer to the previous table (Strategies to Eliminate Waste) to identify possible solutions.

THE BIG FIVE STRUCTURAL WASTES¹⁶



¹⁶ Ibid.



Step 2: Design

Now that the vision, motivation, opportunities, and barriers for a circular business idea have been developed, it is time to design the value proposition and identify value creation and capture for people, the planet, and profit.

This section identifies the steps and tools needed to design a circular business model. The solutions, opportunities, and business models to meet customers' expectations will be explored. The critical partnerships required across the value chain to deliver and capture value will be mapped. The following diagram summarizes the objectives, outcomes, and tools that help answer the key questions in this process.

What value proposition can you integrate?

What circular business model can you choose?

What partnerships do you need?

OBJECTIVE	INSTRUCTIONS	TOOLS
<ul style="list-style-type: none">• Design your value proposition to integrate in your strategy• Choose a circular business model• Consider the value chain and interconnectivity of all stakeholders	<ul style="list-style-type: none">• Fill the boxes in each tool or use sticky notes to fit in each box through the exercises• When working through each section, keep the concepts of delivering and creating social, environmental, and economic value	<ul style="list-style-type: none">• Value Proposition Canvas• Circular Economy Business Models Tool• Value Chain Product Tool
OUTCOMES		
<ul style="list-style-type: none">• Develop your value proposition• Understand the value chain and stakeholder engagement required for your circular economy business model		

Identifying the Value Proposition

The Value Proposition Tool¹⁷ will help identify the ideal customer and how to meet their requirements and needs with specific products and services. The tool's objective is to identify the core elements of the process to deliver the product or service. This means thinking through what the customer wants to accomplish. What is the job to be done? For example, a farmer must clean the land to cultivate crops and feed livestock, among other tasks. This does not necessarily mean acquiring a tractor but certainly means gaining access to one to perform those activities. Therefore, a sharing model, leasing, or rental can be more cost-effective for the farmer. [Hello Tractor](#)¹⁸ is an excellent example of such a service. The company runs a tractor contracting platform in emerging markets by connecting farmers to fleet owners through a mobile application. It delivers value to farmers by providing access to tractors and other equipment without paying high prices for machinery ownership. It also delivers value to the tractor owners as they can maximize profit by sharing assets and generating recurrent revenue.

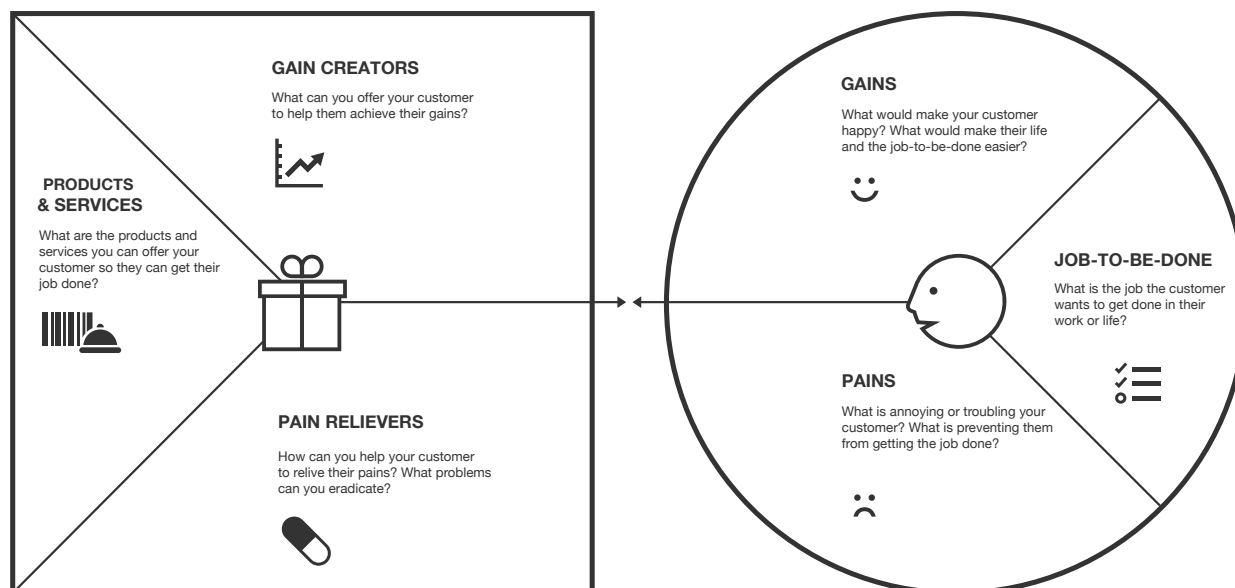
¹⁷ Strategyzer.com. (2017). Strategyzer | Value Proposition Canvas. Retrieved May 20, 2022, from: <https://strategyzer.com/canvas/value-proposition-canvas>

¹⁸ Hello Tractor. (n.d.). Don't Take Our Word For It. Retrieved May 21, 2022, from: <https://hellotractor.com/>

How to Use the Value Proposition Canvas

Begin by thinking about the ideal customer profile, including age and profession. Follow each step and come up with as many ideas as possible to fill in the diagram below.

VALUE PROPOSITION CANVAS¹⁹



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How to Select a Circular Business Model

The Circular Economy Business Tool helps identify a business model apt for the business and value proposition. The framework will help outline the value creation: the problem or needs being addressed; value delivery: how the customer's needs are met; and value capture—how the business retains value and engages with partners and collaborators across the value chain.

Some questions for a business to consider include: Will the company choose to provide a product as a service promoting the sharing economy through rental or leasing? Would the business consider setting up a recycling business to recover and recycle materials creating new products from waste? Or would it perhaps recover waste oil from restaurants to make by-products, such as soap? Or, maybe a business can establish a repair facility for household appliances or clothing repair? Whatever circular model is chosen, consider how it benefits the business, society, and the environment.

How to Use the Circular Business Model Tool

STEP 1

Value Proposition: Guided by the questions posed, identify the value proposition and what model is more suitable to the business: cycling, extending, intensifying, or dematerializing. Refer to the Circular Economy Business Models chart on page 13.

¹⁹ Adapted from original by Alex Osterwalder at Strategyzer.com. (2017). Strategyzer | Value Proposition Canvas. Retrieved May 20, 2022, from: <https://strategyzer.com/canvas/value-proposition-canvas>

STEP 2

Value Creation: Guided by the questions posed, identify value creation.

STEP 3

Value Capture: Guided by the questions posed, identify value capture. When thinking of value capture, remember to list environmental, social, and financial value capture. The bullet points under each business model are potential propositions that can be implemented, for instance, sharing models of clothing under intensifying or a take-back scheme for toys that can be recycled or repurposed under cycling.

In the table below, follow the steps:

CIRCULAR ECONOMY BUSINESS TOOL²⁰

	STEP 1 CONSIDERATIONS	STEP 2 VALUE CREATION	STEP 3 VALUE CAPTURE
	<ul style="list-style-type: none">• What products are you delivering?• Who are your customers?• What does your customer need?• How do you address this?	<ul style="list-style-type: none">• What are the value chain elements?• What are your competences?• What resources and capabilities do you need?	<ul style="list-style-type: none">• Where does the revenue come from?• What are the costs involved?• What is your revenue model?
CYCLING			
EXTENDING			
INTENSIFYING			
DEMATERIALIZING			

Partnerships Needed Across the Value Chain

Collaboration across the value chain is essential for implementing circular business models and initiatives. The circular economy is a systems-thinking approach and requires cooperation for the system to work effectively. For example, consider a business that wants to implement a take-back scheme for products so that they can be recovered and made into new items that can be resold. In this instance, it would need the collaboration of a

²⁰ Model adapted from Geissdoerfer, M., Pieroni, M., Pigosso, D., & Soufani, K. (n.d.). Circular Business Models: A Review. Journal of Cleaner Production.

partner to recover the product through reverse logistics from customers. Coordination with recycling and remanufacturing facilities may also be required. Cooperation with each other is needed to establish agreements on benefits and costs.

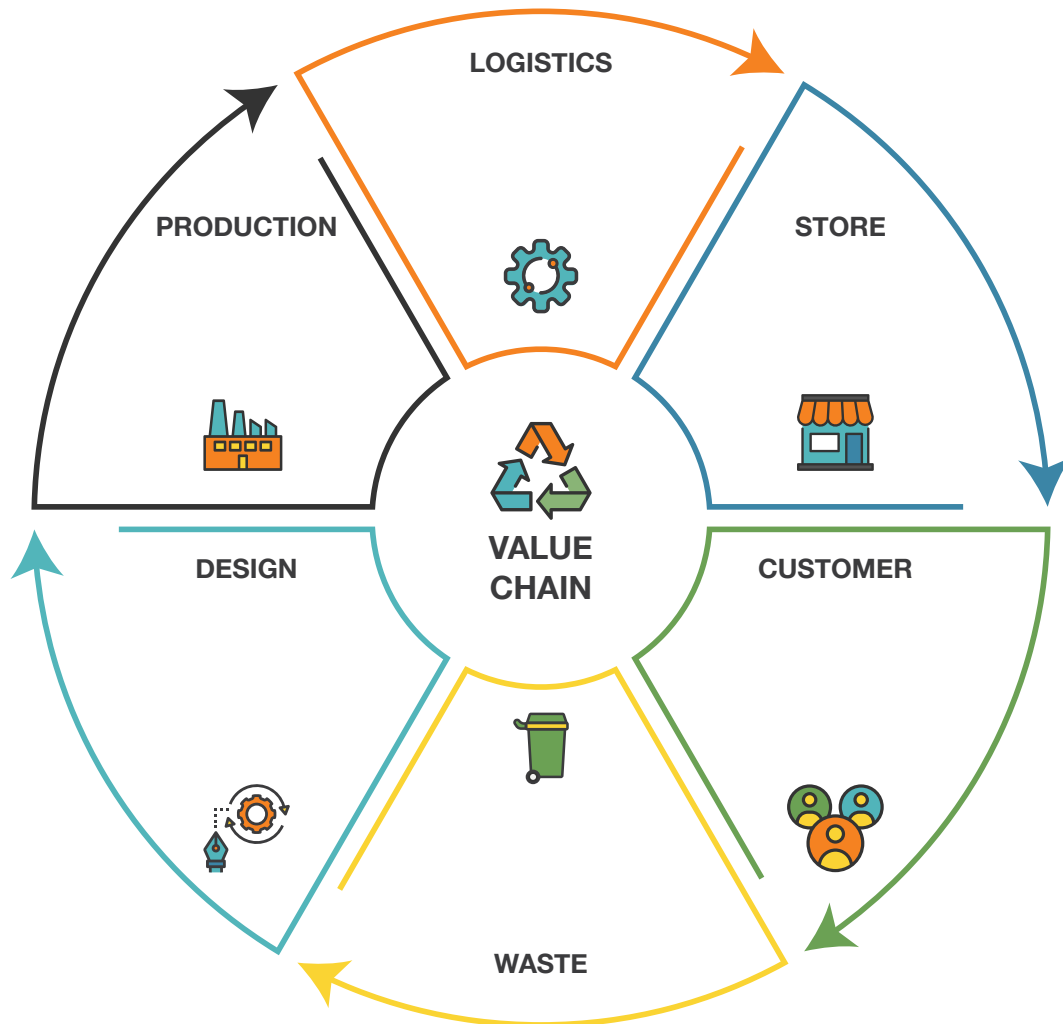
Most importantly, the materials will be traced through the product's lifecycle. Another example is industrial symbiosis, where reciprocal wastes are shared between companies. This means the waste of one company becomes the resource of another. An example is a textile manufacturer that generates textile waste from trimmings. Another company could use the excess textile or trimmings to make small items, such as pouches or cloths made from the waste. These initiatives can help reduce waste and create value where it otherwise would have been lost. To assess the value chain, map out the process and flows of the materials used in products or services. The Value Chain Product Tool will help identify how the product flows in the system. The tool will also help determine the key partnerships, stakeholders, and collaborators essential to business success.

How to Use the Value Chain Product Tool

Before beginning, think through the product's journey and how materials flow throughout the system. Then proceed to the next steps and fill out the boxes in the diagram. Use sticky notes to expand the list. When completing the exercise, identify circular value opportunities across the value chain. Think about the value lost at every stage and how to retain value by adopting circular economy principles.

- **DESIGN:** Consider how the product is designed by referring to the design for circularity table. Is the product easy to repair or disassemble? Is it made with many different materials that make it hard to recycle? Can the products be made with less toxic substances and substitute materials for more sustainable options? Which suppliers are needed? What is the value lost at this stage?
- **PRODUCTION:** Can the products be made with renewable energy inputs and use less water? What is the value lost at this stage?
- **DISTRIBUTION:** Can products be distributed more sustainably? Can logistics be optimized? Can packaging be reduced or substituted by more sustainable packaging materials? Can the packaging be recovered to be reused? What is the value lost at this stage?
- **CONSUMER:** Can products be recovered from the consumer through take-back schemes and incentives? What is the value lost at this stage?
- **DISPOSAL:** Can the products and materials be recycled or upcycled? Can energy be recovered? What is the value lost at this stage?

VALUE CHAIN PRODUCT TOOL²¹



²¹ Author's design.



Step 3: Validate

Businesses are built on hypotheses and assumptions, but a solid go-to-market strategy will require validating these assumptions. To do this, ideas must be validated and solutions must be tested to ensure they solve problems—and that customers will be willing to pay for and use the products or services. The following diagram summarizes the objectives, outcomes, and tools we will use to answer the next question:

What are your expectations and assumptions?

OBJECTIVE	INSTRUCTIONS	TOOLS
<ul style="list-style-type: none">• Validate your value proposition and ensure your assumptions are valid• Consider the partnerships you will need and whether they are ready to jump on board with you	<ul style="list-style-type: none">• Fill the boxes in each tool or use sticky notes to fit in each box through the exercises• When working through each section, keep the concepts of delivering and creating social, environmental, and economic value	<ul style="list-style-type: none">• Circular Business Validation Tool
OUTCOMES		
<ul style="list-style-type: none">• Validate that there is a market for your product• Validate that customers are willing to pay for your services• Validate that you have the skills and partnerships to develop your business		

Identifying Expectations and Assumptions

The Circular Business Validation Tool will help assess and test the hypothesis before launching the circular business. This tool focuses on the three critical elements of the business: 1. The product, 2. The benefits and costs, and 3. Resources and partnerships. It also provides questions to guide the assessment and validate the idea.

How to Use the Circular Business Validation Tool

Begin by thinking through the questions noted in the form below and give a score to each question from 1 (low probability) to 5 (high probability).

STEP 1

Validate the value proposition: What needs to be true of the initiative that we are launching?
Is it a guess, a true statement, or a known fact?




STEP 2

Validate the value capture: Is it true that the initiative is proven to capture social, environmental, and economic value?

STEP 3

Validate the value delivery: Do I have everything needed to launch the idea?
What does success look like?

CIRCULAR BUSINESS VALIDATION TOOL²²

WHY	WHAT	HOW	SCORE
VALUE PROPOSITION 	Product or Service	How long will it take me to deliver the value?	
		Is there a market for my product or service?	
		Are customers willing to pay for my products?	
VALUE CAPTURE 	Benefits and Costs	Are the environmental, social, and economic benefits higher than the costs?	
		Is my initiative generating value across the value chain?	
		Is my initiative capturing value for society and the environment as well as increasing revenue?	
VALUE DELIVERY 	Resources and Partnerships	Do I have the resources to deliver value? (e.g., skills, financing, access to materials, infrastructure, permits, etc.)	
		Is the value chain willing to engage?	
		Are the external factors from the wider ecosystem favorable for my new initiative?	

²² Author's design.



Step 4: Implement

As part of the journey toward a circular economy business, clear goals must be set up to align with a circular vision and mission to allow for the initiative to develop and grow. With an end target in mind, focus on smaller steps to help reach the overall objective. Remember that goals and targets need to have a degree of flexibility so that they can be adapted and modified as required. In addition, before implementing a business idea, cost and benefits need to be analyzed for viability and to assess whether there is a favorable balance of impact toward social, environmental, and financial benefits. This section will examine a tool to guide the development of a business initiative roadmap, evaluate benefits, and make a cost assessment. The following diagram summarizes the objectives, outcomes, and tools that will be used to answer the question:

How do you set up your roadmap?

OBJECTIVE	INSTRUCTIONS	TOOLS
<ul style="list-style-type: none"> Develop a roadmap to implement your idea with clear goals and targets Consider your strategy, business model, resources, and enablers 	<ul style="list-style-type: none"> Fill the boxes in each tool or use sticky notes to fit in each box through the exercises When working through each section, keep the concepts of delivering and creating social, environmental, and economic value 	<ul style="list-style-type: none"> Roadmap Tool
OUTCOMES		
<ul style="list-style-type: none"> Design a clear plan of action with short, medium, and long-term goals to achieve your vision 		

How to Design a Business Roadmap

Now that this Toolkit has demonstrated the steps to validate the circular economy business model, there is a need to organize the ideas and draw a plan to launch the business or project. The Circular Business Roadmap²³ can help set an overall objective and define the steps and activities for the short, medium, and long term. Remember to take small steps toward being more sustainable and implementing initiatives that deliver quick wins and impact. For small businesses, consider steps for the short term such as reducing waste in operations before considering long-term changes to the business model.

How to Use the Roadmap Tool

In the table below, follow the steps, fill in the boxes, or use sticky notes to add more items. Think about the strategy, business model, and the resources and enablers for the business. Think of the end objective first, and then make a list of the activities, roles, and responsibilities needed for the short, medium, and long term to achieve the end goal.

STEP 1

Start by focusing on the strategy's end objective or goal. Remember to focus on positive outcomes considering people, the planet, and profit. This is the “why,” or reason for the business to exist.

23 Pieroni, M. P. P., Jensen, T. H., Pigosso, D. C. A., & McAloone, T. C. (2020). Circular Economy Business Modelling: CIRCit Workbook 2. Technical University of Denmark.

STEP 2

Note the objective or goal for the business model. This is the “what,” or the value being created. Using the tractor sharing platform as an example, what activities will be needed to launch a sharing platform to connect farmers to tractor owners?

STEP 3

Note the objectives or goals needed to deliver value and identify enablers and resources, such as long-term partnerships with suppliers to help deliver the proposition or capital investment to back the idea. This is the “how,” or what is needed to capture value.

STEP 4

Repeat the process through the strategy, business model, and resources and enablers sections to identify the key activities needed to achieve the end goal. Identify what needs to happen in the short, medium, and long term for activities that only need to occur in the future. Fill in the box to assign roles and responsibilities to complete the activities.

CIRCULAR BUSINESS MODEL ROADMAP²⁴

	Short-Term Economic, Social, and Environmental	Medium-Term Economic, Social, and Environmental	Long-Term Economic, Social, and Environmental	Overall Objective
STRATEGY	1. 2. 3.	1. 2. 3.	1. 2. 3.	1. 2. 3.
	Roles and Responsibilities	Roles and Responsibilities	Roles and Responsibilities	
BUSINESS MODEL PROPOSITION ACTIVITIES	1. 2. 3.	1. 2. 3.	1. 2. 3.	1. 2. 3.
	Roles and Responsibilities	Roles and Responsibilities	Roles and Responsibilities	
RESOURCES AND ENABLERS	1. 2. 3.	1. 2. 3.	1. 2. 3.	1. 2. 3.
	Roles and Responsibilities	Roles and Responsibilities	Roles and Responsibilities	

²⁴ Ibid.



Step 5: Evaluate

Measuring financial, social, and environmental impact will be crucial to evaluating the proposed initiatives based on the cost and benefits they generate. The goal is to demonstrate the relationship between the cost of implementing the new business model versus the benefits it yields for the community, the environment, and the business. Benefits need to outweigh the costs across the three elements. This section specifies the steps to assess impact to help better evaluate and adapt the initiatives that will create higher value and are worth pursuing as a viable, sustainable business. The following diagram summarizes the objectives, outcomes, and tools we will use to answer the question:

How is impact measured?

OBJECTIVE	INSTRUCTIONS	TOOLS
<ul style="list-style-type: none">• Evaluate the cost and benefits of your business venture• Evaluate the viability of implementing your business	<ul style="list-style-type: none">• Fill the boxes in each section through the exercises• When working through each section, keep the concepts of delivering and creating social, environmental, and economic value	<ul style="list-style-type: none">• Cost and Benefits Analysis Tool
OUTCOMES		
<ul style="list-style-type: none">• Develop a clear understanding of the economic value that you are creating as well as the benefits to society and the environment		

How to Measure Impact

From a broad perspective, assessing benefits versus impacts of financial, environmental, and social outcomes will allow the evaluation and development of a solid go-to-market proposition. The social, environmental, and financial benefits of a solid circular economy proposition will outweigh the costs across the three elements. This assessment will identify where to adapt and adjust costs higher than the benefit by finding alternative solutions or adapting to more viable models or propositions. The illustrated example on the next page guides the process.

How to Use the Cost and Benefits Analysis Tool

Follow the steps to fill in the table below.

STEP 1

Make a list of the activity or circular economy business model proposition.

STEP 2

List all the social, economic, and environmental benefits the initiatives intend to deliver.

STEP 3

Give a score to assess the impact of the listed benefits from 1 (low impact) to 5 (high impact)

STEP 4

List the social, economic, and environmental costs that the initiatives are likely to generate

STEP 5

Give a score to assess the costs of the listed initiatives from 1 (low cost) to 5 (high cost)

STEP 6

Note the cost and benefits assessment column and the cost versus benefit to see the ratio

Before starting, see the illustrated example of the process below.

COST AND BENEFITS ANALYSIS TOOL²⁵

EXAMPLE

CIRCULAR ECONOMY PROPOSITION	FINANCIAL, SOCIAL, AND ENVIRONMENTAL BENEFITS	IMPACT 1-5	FINANCIAL, SOCIAL, AND ENVIRONMENTAL COST	IMPACT 1-5	BENEFIT/COST ASSESSMENT
Sharing-economy business model integrating technology to solve farmers' problems of accessing farming machinery (tractors) through leasing or rental.	• Financial: Commissions from sharing services and selling data collected to third parties	5	• Financial: App development and service infrastructure/ marketing	2	Financial B=5/C=2
	• Social: Affordable equipment for farmers	5	• Social: No negative associated social costs	0	Social B=5/C=0
	• Environmental: Maximizes the use of equipment reducing material and energy consumption	5	• Environmental: Emissions generated through data storage	1	Environmental B=5/C=1
					Total Benefits: 15 Total Costs: 3

²⁵ Adapted from R2PI Transition from Linear to Circular Project. R2PI Project. (n.d.). Retrieved May 21, 2022, from: <http://www.r2piproject.eu/>. <http://www.r2piproject.eu/wp->

CIRCULAR ECONOMY PROPOSITION	FINANCIAL, SOCIAL, AND ENVIRONMENTAL BENEFITS	IMPACT 1-5	FINANCIAL, SOCIAL, AND ENVIRONMENTAL COST	IMPACT 1-5	BENEFIT/COST ASSESSMENT
					Financial B=/C= Social B=/C= Environmental B=/C=
					Financial B=/C= Social B=/C= Environmental B=/C=
					Financial B=/C= Social B=/C= Environmental B=/C=
					Financial B=/C= Social B=/C= Environmental B=/C=

Additional Resources

Circular Economy Glossary: Finding a Common Language

<https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/glossary>

Official UN SDGs Website

<https://sustainabledevelopment.un.org/sdgs>

SDGs Compass: Guidance for companies on how to align their strategies to the SDGs

<https://sdgcompass.org>

The Circular Economy Design Guide

<https://www.circulardesignguide.com/>

The Ellen MacArthur Foundation: Case studies and further circular economy resources

<https://ellenmacarthurfoundation.org/>

PACE: Public-private collaboration platform where leaders come together to develop collective action for a circular economy

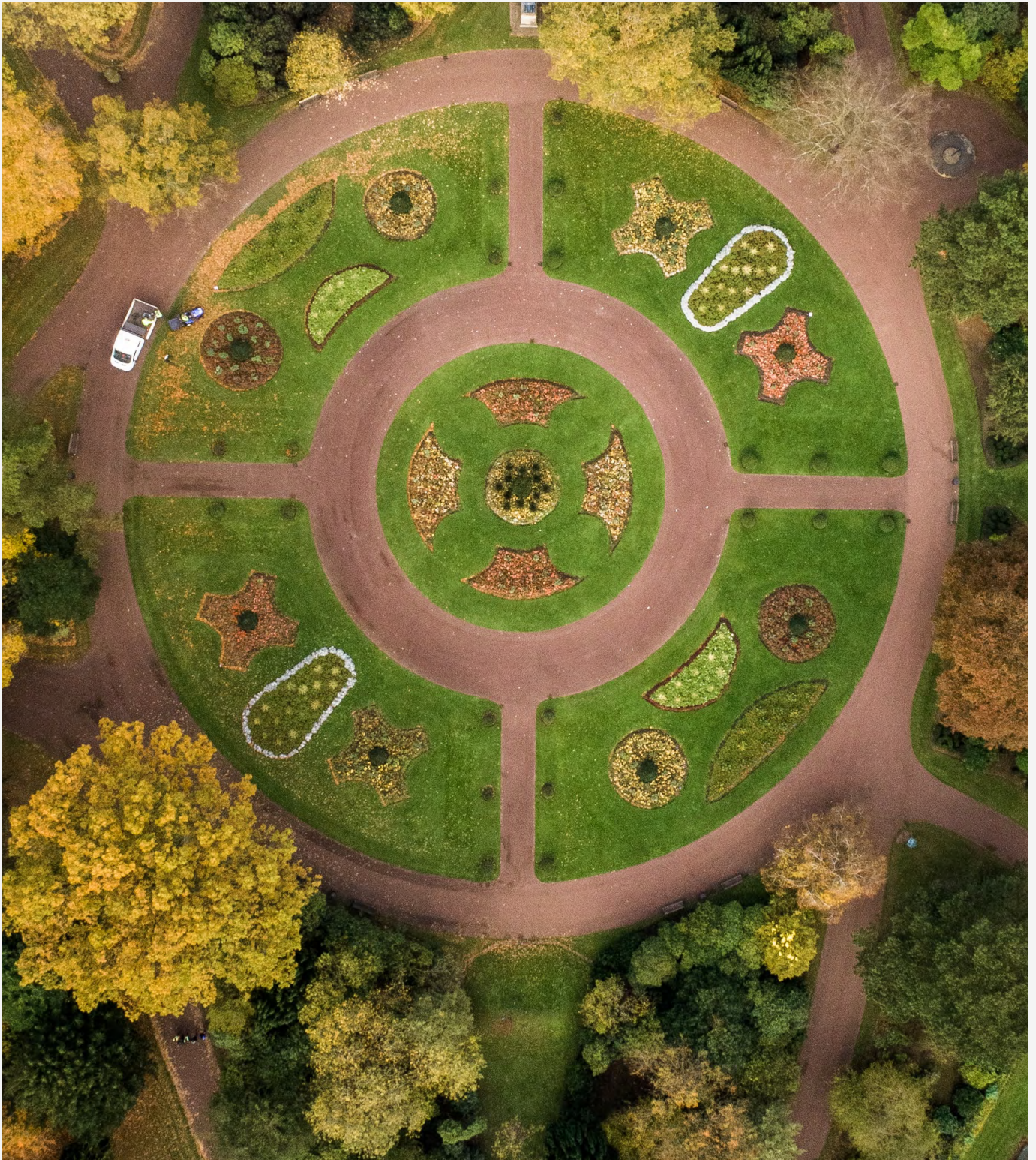
<https://pacecircular.org/>

Repair Monitor: Run by the Repair Café International Foundation to help volunteers around the world to organize their Repair Café

<https://www.repairmonitor.org/en>

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