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**CIRCULAR DESIGN
GUIDEBOOK**

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DESIGN FORUM FINLAND

Design Forum Finland supports the growth, internationalization, and competitiveness of Finnish SMEs. Our purpose is to help Finnish companies grow and expand internationally in a sustainable way through design. We organize training programs, guide companies in the versatile use of design, provide information, and build cooperative networks.

As the world's second-oldest design organization, Design Forum Finland / The Finnish Society of Crafts and Design has, since 1875, supported Finnish industry and businesses in strengthening their international presence and competitiveness through design.

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DESIGN FORUM FINLAND & VILLE TIKKA

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Foreword

This is Design Forum Finland's guidebook on designing for the circular economy. Circular design is a developing field that brings together various design disciplines to help companies integrate circular practices into their businesses and day-to-day operations.

This guide is for decision-makers, product and service developers, and design professionals. We aim to help readers understand that transitioning to a circular economy isn't just vital for the environment but also offers a unique opportunity for innovation and business growth.

You'll find clear introductions to different areas of the circular economy, inspiring case studies, glossaries, and practical tips—all designed to help you apply circular design insights and principles within your own organization or professional design practice.

In this easy-to-read guide, we cover topics such as building capabilities, understanding systems, the core principles of the circular economy, material cycles, product modularity, and designing for easy repair and maintenance. We also delve into service models and other ways to extend a product's lifespan. Most of the decisions that enable a circular economy happen in the design phase, as part of developing products, services, and business models.

Adopting circular economy practices is crucial for achieving the green transition. With informed consumers demanding responsible products and services, and progressive EU regulations pushing businesses toward circularity, there's little reason not to join the pioneers in this field. Those who lead the way leave a lasting impression on consumers.

If, after reading this book, you appreciate the opportunities the circular economy brings to your customers, your business, the environment, and society at large, then we've succeeded in our goal for this guide.

Meanwhile, design itself continues to accelerate the transformation of our operating environment—namely, the green transition—toward a more sustainable future.

Joakim Karske
CEO, Design Forum Finland

Introduction

This Circular Design Guidebook has been created to meet the growing need for developing sustainable and resilient solutions in a world where climate change, resource scarcity, and unsustainable production practices challenge traditional business models. It compiles cutting-edge ideas, frameworks, and examples from the rapidly evolving field of circular design.

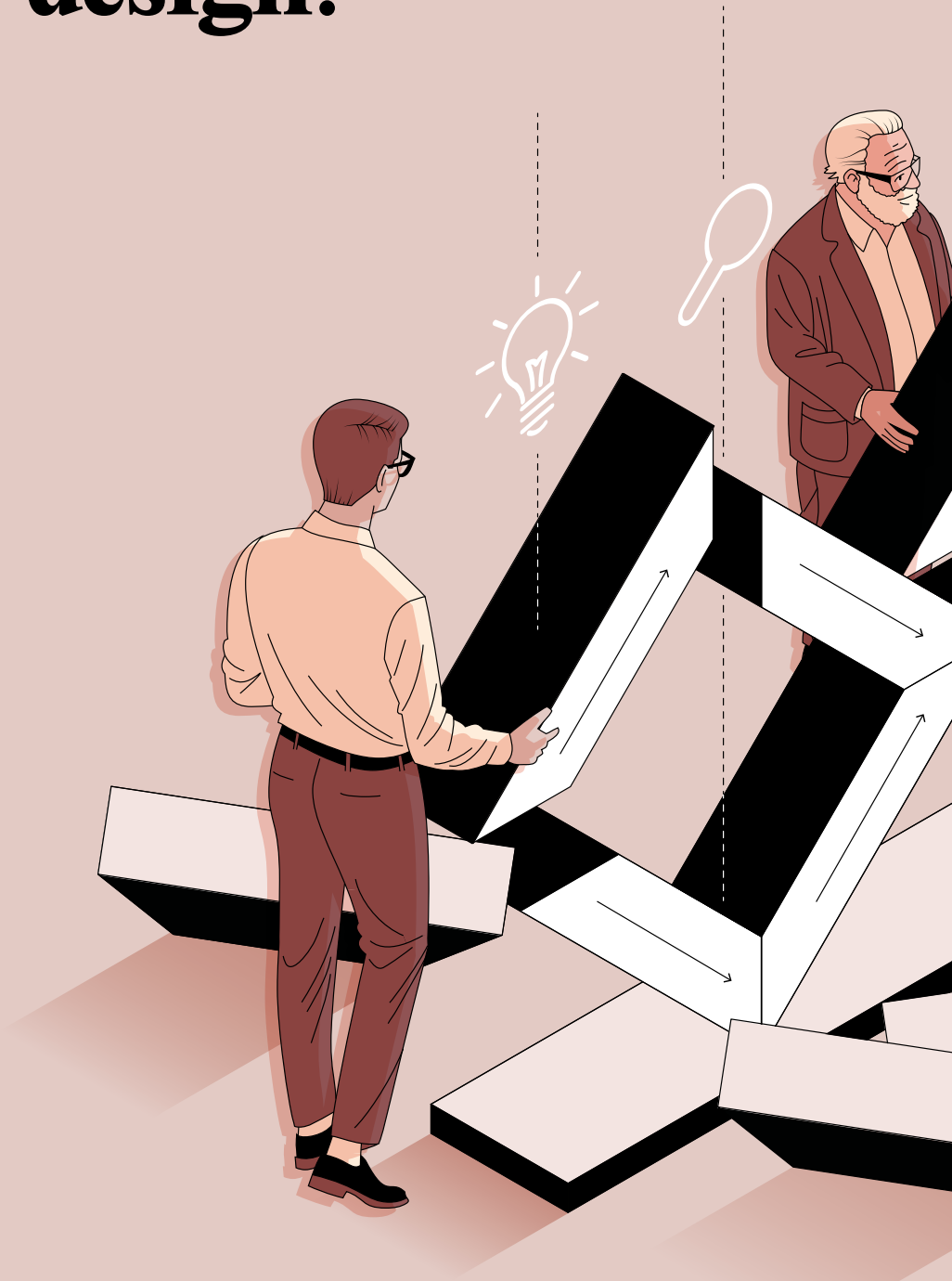
Circular design combines circular economy principles with design methods, providing tangible tools and inventive approaches that allow us to design the needed transition to a more sustainable future—one product, service, and business model at a time.

The objective of this guidebook is to lead you, step by step, into the world of circular design. We start with the fundamentals of circular design and then explore six components of circular design, which address systems, futures, product and service design, and the importance of storytelling and capabilities. At the end of the book, you will find a circular design process that will help you develop and drive the changes required by the circular economy.

You can read the book in any order you wish. You may pick out the chapters that are most relevant to you, read everything from cover to cover, or simply browse the brief summaries of each subchapter. The chapters also include business examples from a range of industries and practical tips to help you incorporate circular economy principles into your own business.

Circular design goes beyond technical solutions; it is a transformative approach that redefines the role of businesses in building sustainable futures. It points to a fundamental shift in thinking, practice, and culture, driving new ways of business development, innovation, and transformation. We hope to inspire you to take an active role in this circular transition and, through this easy-to-read guidebook, equip you with the tools needed to effectively advance the circular economy in your work.

What is circular design?





Circular economy builds a resilient and sustainable future

The circular economy is an economic model that prioritizes the more sustainable and efficient use of natural resources. Instead of extracting raw materials, producing goods, generating substantial emissions, and ultimately discarding those goods, the circular economy aims to use fewer resources, extend product lifespans, reuse materials, create value beyond physical products, and simultaneously regenerate nature.

Circular economy has been on the global agenda for quite some time, yet its share in the worldwide economy remains disappointingly small. According to the 2024 Circularity Gap Report, only about 7.2% of global economic activity can be classified as circular. In Finland, the share of the circular economy is thought to be even lower. This indicates that most resources are still consumed in a linear fashion, leading to both emissions and the depletion of natural resources. Despite its rising popularity, the global rate of circularity is actually declining as consumption continues to grow—a clear indication of the urgent need to further advance the circular economy and its practices.

Effort begins with changing our thinking. We can no longer treat natural resources as infinite or prioritize profit at the expense of other values. Nor is simply reducing our carbon footprint or recycling materials enough to tackle the major sustainability challenges ahead. We need wide-ranging changes in every part of business—from models and services to products, production, and the ways we work.

In the circular economy, we act in ways that align with the planet's limited resources and promote the well-being of all life. This means we address interconnected issues such as the climate crisis, biodiversity loss, and growing inequality, while reducing chemical pollution, ocean acidification, freshwater scarcity, and the harmful effects of land use—thus safeguarding most critical planetary boundaries that may soon be breached.

Within the circular economy, companies pursue two main objectives: reducing the harm they cause and increasing the benefits they provide.

Less harm means decoupling economic activity from finite resource use while effectively reducing greenhouse gas emissions, minimizing pollution and waste, preventing biodiversity loss, and avoiding harmful social impacts.

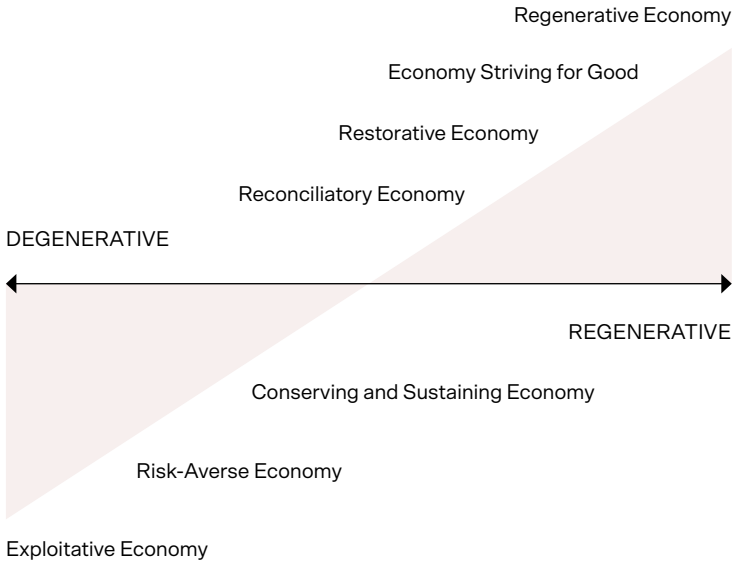
More benefits means repairing damage already done and regenerating ecosystems, supporting the health and well-being of people and nature, enhancing perceived meaning and quality of life, promoting equity, and ensuring favorable living conditions for everyone on the planet.

Achieving these goals requires companies to make far-reaching changes to their product and service offerings, production methods, business models, revenue logic, collaboration approaches, and customer relationships and experiences.

A completely circular economy is, of course, unattainable, as all activities inevitably create both positive and negative impacts. Any activity requires energy, and it will never be possible to eliminate all emissions or recycle all materials. Nonetheless, the objective should be forward-looking and innovative business practices that deliver as many benefits, as much meaning, and as much value as possible with minimal harm, resource use, and emissions.

We need wide-ranging changes in every part of business—from models and services to products, production, and the ways we work.

ECONOMIC THINKING ON THE REGENERATIVE SCALE



Adapted from Sitra, Kohti uusintavaa taloutta 2023, and Reed 2007.

Even among sustainable economic models, there are differences. Business activities can reduce or enhance the vitality of nature and humanity. In the circular economy, we should increasingly strive toward a regenerative economy that actively replenishes ecosystems, promotes social well-being, and ensures that resources are continually renewed over time.

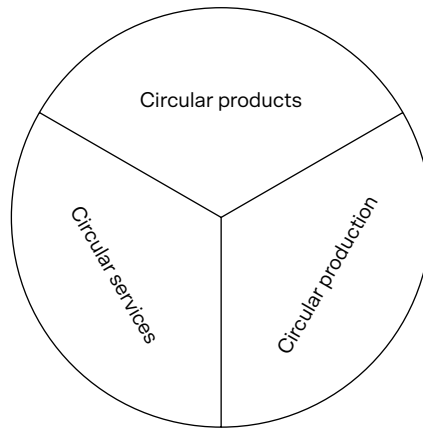
● IN BRIEF

A circular economy is an economic model founded on the more sustainable and efficient use of natural resources. It entails using fewer materials and reusing them, extending product lifespans, and creating value without depending on products. At its best, it simultaneously regenerates nature.

In the circular economy, businesses aim both to reduce the negative impacts of their operations and to increase the benefits they provide. Achieving this requires changes to product and service offerings, production processes, business models, revenue logic, collaboration methods, and customer relationships and experiences.

Circular economy business models: a path to sustainable growth

Circular economy business practices represent the future of sustainable and innovative commerce. Within the circular economy, the greatest opportunities for growth and impact lie primarily in product, service, and production-oriented businesses. According to some estimates, circular economy business models can increase returns up to sevenfold compared to linear models (Sitra, 2022).



In the circular economy, both growth and impact can be found in product, service, and production business models alike.

There are three key circular economy business models: circular products, circular services, and circular production.

Circular products are based on slower, longer-lasting product cycles that extend product lifespans, preserve value, and ensure more efficient use per user. This approach eliminates reliance on rapidly changing or quickly outdated products for manufacturing and sales. In these models, high-quality products are intentionally designed to retain their value. Customer experiences, branding, and marketing all encourage customers to choose durable products and to pay a premium for quality, longevity, and resale value compared to short-lived alternatives.

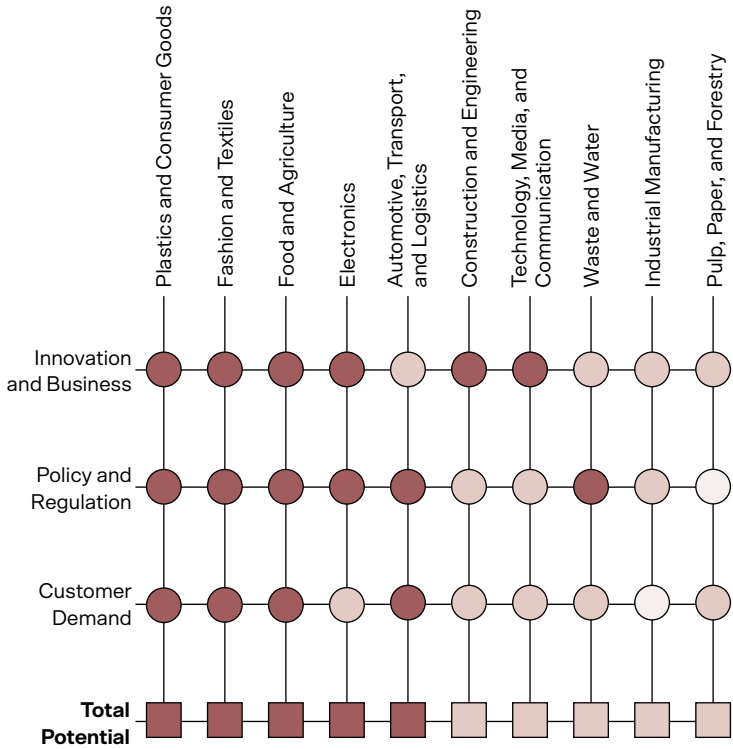
Few companies can create value through all three models at once. In practice, businesses entering the circular economy often integrate elements from different models in creative ways.

Circular services focus on further separating a company's activities from the resource use and emissions linked to physical products. Services enhance perceived value, meaning, and well-being for customers, while unlocking entirely new revenue models. Under circular service models, product lifespans can be lengthened through services. Products can be offered as a service—with customers paying only for the benefits the product provides—or physical products can be replaced entirely by services, delivering customer value via the service experience itself.

Circular production emphasizes redesigning and standardizing manufacturing and production processes to minimize resource consumption, emissions, and negative impacts, while simultaneously renewing and revitalizing natural ecosystems. Production-focused business models foster new types of value and revenue through innovative manufacturing processes and business ecosystems—for example, by remanufacturing products, reusing components, maintaining materials in circulation, or repurposing and selling byproducts as raw materials.

Few companies can create value through all three models at once. In practice, businesses entering the circular economy often integrate elements from different models in creative ways. For instance, by combining a high-quality product with durable materials and repair services, a clothing company can boost brand equity and user value while establishing new revenue streams related to material recycling and garment upkeep.

THERE IS GROWTH POTENTIAL IN EVERY SECTOR



Growth Potential in Short to Medium Term

● High ● Emerging ○ Developing / Limited

Adapted from Ellen MacArthur Foundation, 2020 and Sitra, 2022.

The table highlights growth potential for circular economy activities across various sectors, categorizing it as high, emerging, or developing over short to medium time horizons. The need for change is greatest in the manufacturing industry and the built environment sectors. However, opportunities and growth potential can be found across all business sectors.

Which methods work best depends on a company’s industry and the nature of its operations. From a product viewpoint, circular economy potential varies based on whether the item is intended for long- or short-term use, whether it can be easily reclaimed from the customer, repaired, or remanufactured. Still, there is abundant potential for all.

The benefits for companies are clear. Circular economy business models open new markets, establish fresh competitive advantages, enable higher profit margins, and create additional value through various revenue streams linked to innovative products, services, and production processes. These benefits also manifest in practical ways, such as higher customer loyalty, better use of customer and product data, and a broader customer base. Meanwhile, cost savings arise from improved resource efficiency and risk management—through optimized manufacturing and inventory control, for example.

The advantages for customers and wider stakeholders are just as compelling. By embracing circular economy business models, we can enrich people's sense of purpose and overall quality of life while preserving and regenerating natural ecosystems. At the same time, we reduce the use of critical resources, greenhouse gas emissions, and pollution, and help avert a dangerous decline in biodiversity.

● IN BRIEF

Circular economy business represents the future of sustainable and profitable commerce. Growth opportunities are particularly abundant in product, service, and production businesses. Circular economy business models often creatively combine all three.

The benefits are clear: for companies, circular economy models open new markets, create competitive advantages, and enable higher profit margins. Cost savings can be achieved through improved resource efficiency, for example. For customers, these models bring added meaning and enhanced quality of life. Additionally, natural ecosystems can be restored, and biodiversity loss can be mitigated.

Circular design: combining circular economy principles with design methods

Circular design is about systemically transforming and reimagining business through the application of diverse design methods and the principles of the circular economy. It enables us to create innovative business models, products, services, brands, and organizations that can thrive in a changing world and rise to the challenges of the circular economy.

For decades, design has played a central role in shaping current business practices, and it will continue to be a key factor in the transition to a circular economy. Most companies' existing business operations have been designed around the outdated linear take-make-waste model. The emissions, waste, and pollution we generate are not accidental—they are the result of countless design and decision-making processes.

For example, when designing consumer products, decisions made during the design phase determine product use, durability, materials, manufacturing methods, cost structures, and logistics. These decisions also influence what will happen, or can happen, to products when they are no longer needed or wanted. Once these choices are made, they are often difficult or even impossible to reverse or modify, especially when they cause unintended consequences.

To truly operate for the benefit of people and nature, nearly every aspect of business must be redesigned in accordance with circular economy principles. This involves rethinking the design of products, production methods, services, and business models. We can easily live meaningful lives without constantly buying new things, by using items for longer periods, and by sharing rather than owning—but this transition must be carefully and thoughtfully designed.

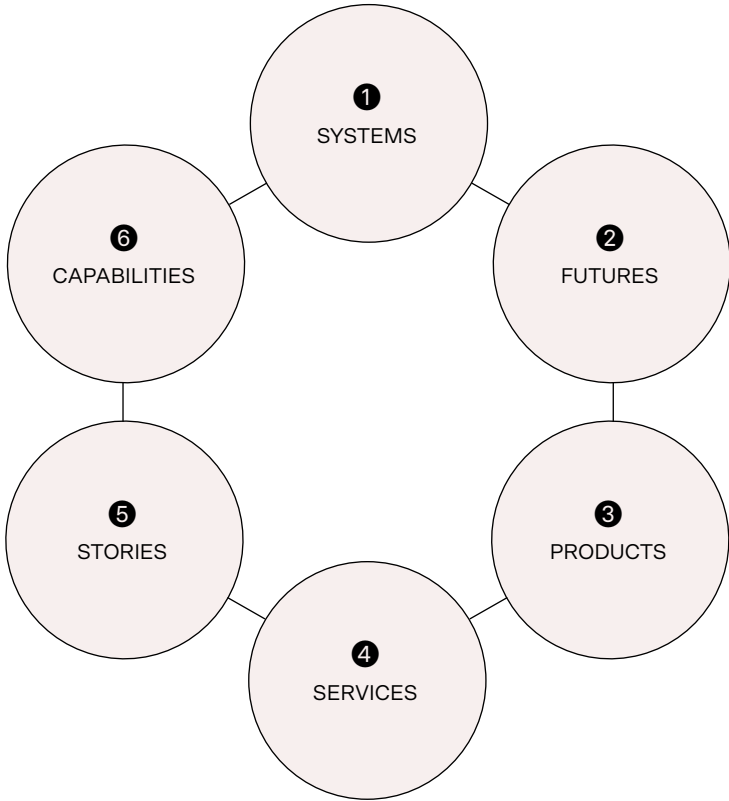
Circular design brings together creativity, strategic thinking, and a systemic approach to transforming business. Its superpower lies in its ability to comprehensively reimagine business thinking and practices to meet future needs. Design helps us envision new alternatives and make them exciting, functional, profitable, appealing, accessible, and meaningful.

This book describes six key areas of circular design that businesses should focus on to align their operations with the principles of the circular economy. These are: systems, futures, products, services, stories, and capabilities. Together,

they offer a comprehensive framework for businesses at any stage of the circular transition. This model builds on the Adaptive Strategy for Circular Design by the Ellen MacArthur Foundation. While these six areas do not cover all possible levers or opportunities, they provide several excellent starting points for driving the circular transition through design.

You can begin with any of these areas, taking small steps, experimenting, and learning as you go. The best outcomes and greatest impact are achieved by developing and transforming these components either simultaneously or sequentially, in relation to one another, as part of an ongoing journey.

To truly operate for the benefit of people and nature, nearly every aspect of business must be redesigned in accordance with circular economy principles.



The six areas of circular design through which business should be developed in alignment with circular economy principles. The model builds on the Adaptive Strategy for Circular Design developed by the Ellen MacArthur Foundation.

● **IN BRIEF**

The circular economy calls for a fundamental transformation and rethinking of business. Circular design merges creativity, strategic vision, and a systemic approach to business innovation. It empowers the development of groundbreaking business models, sustainable products, services, brands, and organizations that can adapt to a changing world and address the demands of the circular economy.

EXAMPLE

How the bicycle industry operates on linear vs. circular economy principles

This example compares two hypothetical companies manufacturing electric bicycles. LinearBike follows traditional linear principles, while CircularCycle operates according to circular economy principles. We examine how these two companies differ in business development, business models, products, and services. These differences illustrate how a company adhering to circular economy principles can create a more sustainable and long-lasting business model compared to one relying on conventional linear approaches.

BUSINESS VISION AND STRATEGY

LinearBike does not consider circular economy megatrends or adapt to changing market conditions, focusing instead on short-term financial results. The company lacks a clear vision for a circular future and allocates its resources primarily toward economic growth without an emphasis on sustainability.

CircularCycle identifies and leverages circular economy megatrends such as resource efficiency and sustainable development. The company develops multiple scenarios for transitioning to a circular economy and tests them through pilot projects, enabling long-term planning and preparedness for shifting market demands. It has a clear and ambitious vision for a circular future, emphasizing sustainability and environmental responsibility across all operations.

BUSINESS MODEL DESIGN

LinearBike's business model relies on rapid product turnover and continuous sales of new products. The company does not actively assess or address the impacts of its business on social or natural systems. Operating in isolation from broader ecosystems, it avoids collaboration with stakeholders and continues with minimal improvements year after year.

CircularCycle adopts a circular economy business model that maximizes product lifespan and unlocks new revenue streams from services. It analyzes its entire value chain and its ecological impacts, collaborating with a wide network of

partners to identify new opportunities for growth and sustainability. This allows the company to foster continuous improvement and adaptation to evolving conditions.

PRODUCT DESIGN

LinearBike focuses on aesthetics and functionality without considering the entire product lifecycle. New models are released annually to encourage consumers to replace old products with new ones. The company does not prioritize component interchangeability or repairability. It primarily uses virgin materials like aluminum and steel, paying little attention to energy efficiency in production. Its materials are difficult to recycle and often contain harmful chemicals.

CircularCycle applies circular design principles. Alongside appealing aesthetics, products are designed to be durable, modular, and easily repairable, allowing all components to be upgraded or replaced. The company uses recycled and renewable materials, such as recycled aluminum and bio-based composites, while focusing on energy-efficient production processes that minimize carbon emissions and waste. Materials are safe and easy to recycle, ensuring that the majority can be reused while the rest are efficiently recycled.

SERVICE DESIGN

LinearBike has not developed a service business and does not offer maintenance or repair services, leading to rapid product wear and the need for replacements. Discarded bikes often end up in landfills or incineration facilities. The company focuses solely on product sales and ownership, which drives increased consumption and waste.

CircularCycle has invested heavily in a diverse service business. It offers comprehensive maintenance and repair services, extending product lifespans and reducing the need for replacements. The company buys back used bikes from customers, remanufactures them for resale, and recycles materials from worn-out parts to create new bikes. Additionally, CircularCycle provides flexible rental options, enabling multiple users for the same product and reducing the need to produce new bikes.

1 Systems



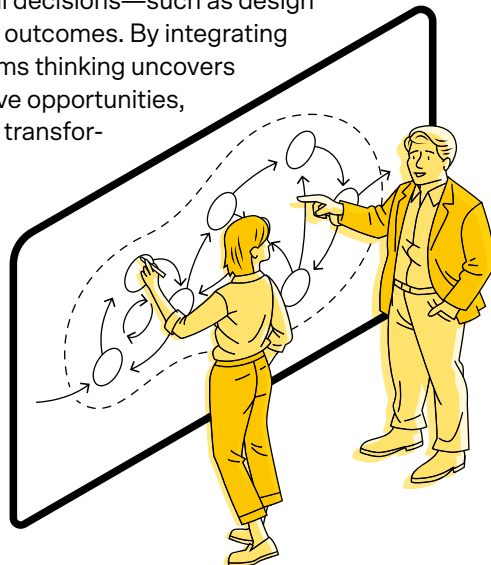


Circular design is built on systems thinking, which focuses on understanding how things are connected rather than looking at them in isolation. For example, trees are part of larger ecosystems, interacting with plants, animals, and microorganisms while influencing local cultures, regional industries, and global carbon storage systems.

In circular design, three types of systems are particularly important: natural systems (like forests), social systems (like organizations), and technical systems (like manufacturing). These systems are deeply interconnected, constantly changing, and often unpredictable due to their complex interactions. For instance, choosing a specific material for a product can have far-reaching effects—not only on the product’s quality and customer satisfaction but also on the manufacturing process, carbon emissions, and even the preservation of biodiversity.

Systems thinking gives us a better way to tackle today’s challenges. While it originated in the 1950s as a way to manage complex systems, its focus has since evolved. Today, systems thinking is less about control and more about learning to adapt and “dance” with systems—embracing their complexity, responding to their dynamics, and working with their interconnected flows to create meaningful change.

In practice, systems thinking enables businesses to design for sustainability and regeneration by addressing how natural, social, and technical systems interact. It allows organizations to evaluate operations from multiple perspectives and understand how small decisions—such as design choices—can drive larger outcomes. By integrating diverse knowledge, systems thinking uncovers new insights and innovative opportunities, laying the groundwork for transformational change.



Systems thinking allows businesses to evaluate operations from multiple perspectives and understand how small decisions—such as design choices—can drive larger outcomes.

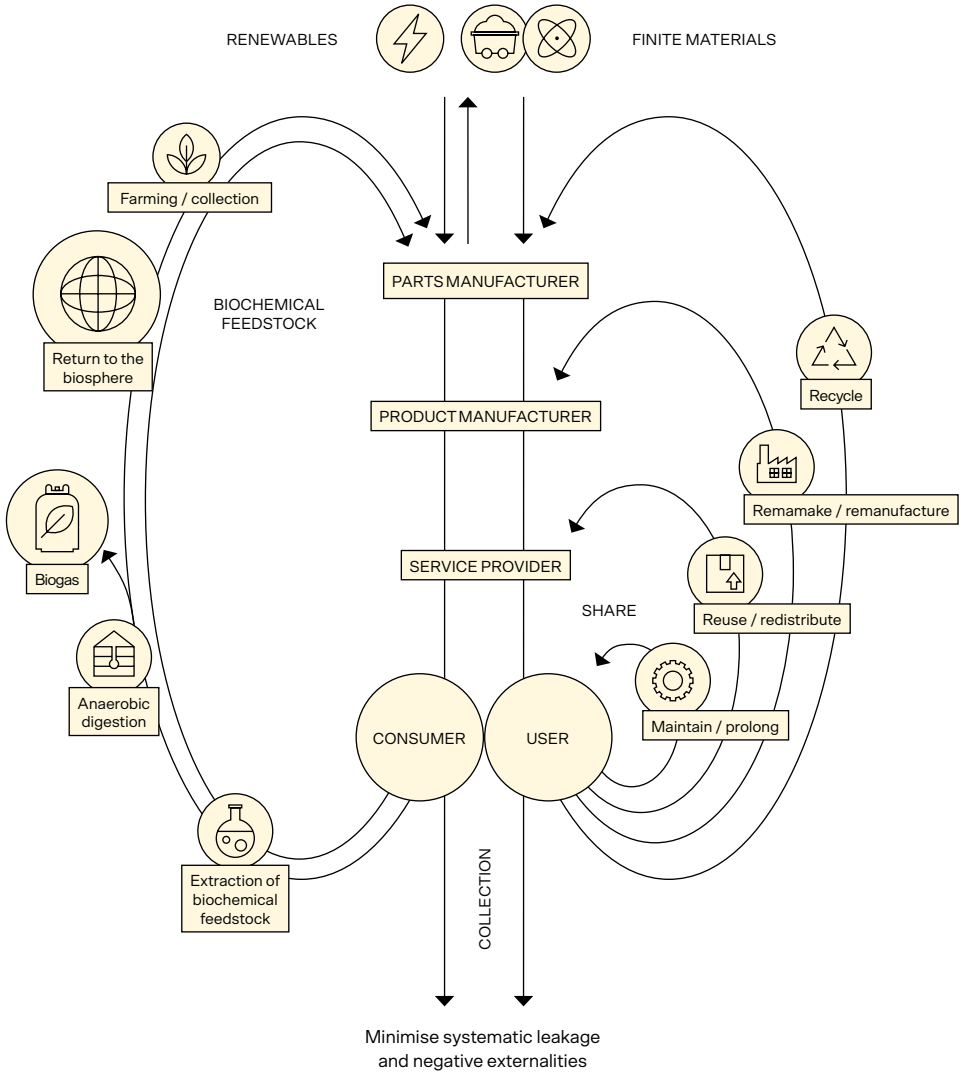
This chapter explores how businesses can adopt systems thinking to drive their circular economy goals. It starts by reexamining the foundational principles that guide business decisions and operations. Next, it provides methods for mapping the interdependent natural, social, and technical systems within and beyond your business. Finally, it shows how these insights can inspire bold opportunities for systemic transformation and sustainable innovation.



● IN BRIEF

The foundation of the circular economy is systems thinking, which focuses on viewing elements in relation to one another rather than in isolation. Systems thinking helps us understand and address complex business challenges. Transitioning to a circular economy requires a comprehensive, or systemic, transformation of traditional operating environments and business models. In circular design, systems thinking enables businesses to examine operations from multiple perspectives and understand how small choices and decisions impact broader outcomes.

BIOLOGICAL CYCLE **TECHNICAL CYCLE**
 Renewable Flow Management Stock Management



Adapted from Ellen MacArthur Foundation, 2019.

The butterfly model illustrates how materials flow in a circular economy. At its center are social systems, representing the actions of businesses, partners, and customers. On the right, technical systems keep products and technical materials in use through reuse, repair, refurbishment, and recycling. On the left, natural systems return nutrients from biodegradable materials to the environment, helping regenerate nature.

1.1 Redefine business principles for circularity

Circular design's systems thinking begins with revisiting and redefining the principles that guide business decisions and operations. These principles form the foundation for understanding both the individual elements of your business and how they interact within broader systems. Influenced by beliefs, values, and an understanding of business operations, these principles shape how challenges are identified, solutions selected, and resources allocated.

By adopting circular principles, businesses can embrace a more realistic worldview. This shift enables us to rethink strategies, integrate sustainability and regeneration into core operations, and position companies for resilience and success in an evolving circular economy.

Traditional business and design principles, rooted in linear models, often view systems as isolated and straightforward, focusing on individual parts without considering their relationships. They assume resources are limitless and waste unavoidable, neglecting the broader environmental and societal impacts of business activities. This narrow focus on short-term profits and efficiency fails to address the real-world issues and emerging opportunities, putting long-term growth, sustainability, and resilience at risk.

Circular business and design principles, by contrast, recognize systems as interdependent and dynamic, emphasizing sustainability, regeneration, and lasting value creation. These principles encourage businesses to assess ecological and social impacts, recognize the finite nature of resources, and treat waste as a solvable challenge. The focus shifts to understanding the complexity of real-world systems and continuously finding better ways to minimize harm and maximize benefits.



TIPS FOR UPDATING YOUR BUSINESS PRINCIPLES TO CIRCULAR ONES

Updating the principles that guide your business requires a new mindset across the organization. This means embracing continuous learning, openness to new ideas, and a commitment to long-term development. Start by assessing how well your current business principles align with the circular economy. Identify areas for improvement and reflect on how receptive your company culture is to change.

QUESTIONS TO CONSIDER:

- How well does your organization understand circular economy principles, such as reducing waste, extending product life, and regenerating natural systems?
- Are circular principles integrated into company culture, major business decisions, and/or strategies?
- How do circular principles influence day-to-day operations? Are they clearly reflected in goals, policies, and reward systems?
- Is your product development team still working within the old take-make-waste model, or have they adopted a circular approach that encourages the creation of durable, recyclable, and reusable products?
- Does your business offer services that extend product life, such as maintenance, repair, rental, or product-as-a-service models, to support the transition to a circular economy?
- Does your marketing focus solely on traditional customer benefits? Does it also address circular economy principles such as product durability, recyclability, and longevity?

EXAMPLE

Regenerative principles transform a plant-based protein company

A plant-based protein company undertook a major transformation to align its business principles with circular economy values. While it was financially successful and promoted climate-friendly protein alternatives, the company identified gaps in its production methods, which relied on conventional farming practices and energy-intensive processes that conflicted with its sustainability goals.

The first step was redefining its guiding principles. Leadership initiated discussions with farmers, policymakers, and environmental organizations to understand how regenerative practices could enhance its operations. This led to a shift to renewable energy in production and the adoption of carbon-sequestering farming techniques, enabling the company to improve raw material quality while reducing emissions and supporting biodiversity.

The company then integrated these updated principles into its supply chains and production processes. It introduced bio-based and recycled packaging, revamped sourcing strategies, and implemented systems to repurpose production byproducts into new materials or products. These steps demonstrated a commitment to minimizing waste and maximizing resource efficiency.



Circular economy principles prioritize sustainability, regeneration, and the creation of lasting value.

Embedding these principles in company culture was equally important. Employees participated in workshops and training to learn about circular economy practices and their role in daily operations. A reward system was introduced to motivate staff to contribute actively to the transition.

This example highlights how aligning business principles with circular economy goals can improve operations, build stakeholder trust, and unlock new opportunities for growth.



● IN BRIEF

Linear business models emphasize financial success, profit, and growth, driving companies to focus on competition, efficiency, and short-term results. In contrast, circular economy models prioritize sustainability and regeneration, guiding businesses to create value also over the long term while considering their ecological and social impacts.

1.2 Map your business's social, natural, and technical systems

Circular design views business as a network of interconnected social, natural, and technical systems. It involves examining elements such as markets, customers, organizations, products, production processes, and broader environmental and societal impacts through multiple, cross-disciplinary perspectives. Mapping and visualizing these systems enable businesses to uncover opportunities to transform their operations, moving toward more circular, sustainable, and positively impactful practices.

Working with systems requires an open mind and a willingness to adapt as new insights emerge. By exploring your business systems from both detailed and broader perspectives, and considering their current and future states, you can understand how different components interact with each other and larger systems, uncovering valuable insights into your business.

Social systems are networks of relationships, interactions, and structures that connect people, organizations, and communities. In circular design, these systems form the backbone of business operations, enabling collaboration across roles to meet customer needs. Circular design expands this perspective to include all stakeholders across multiple product life cycles or service journeys—supply chain partners, service providers, customers in diverse roles. By considering the experiences, perspectives, and needs of these groups, businesses can create innovative circular models, services, and products.

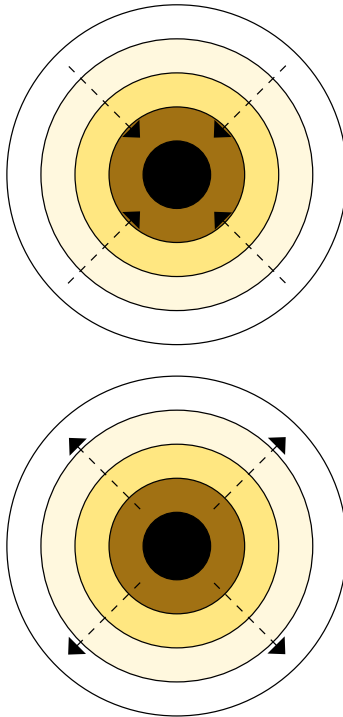
Natural systems set the boundaries for business operations. A forest, for instance, is a diverse ecosystem where plants, animals, microorganisms, and the environment depend on each other. Plants rely on sunlight, oxygen, minerals, microorganisms, and insects to thrive. No species exists in isolation; each contributes to maintaining the ecosystem's vitality and renewal. The circular economy is grounded in ensuring that business, products, and materials align with nature's cycles. Consumer goods like cosmetics, cleaning products, and medicines inevitably return to nature. Therefore, these items must



be safe, biodegradable, and non-toxic, ensuring they do not harm soil, air, water, or living beings.

Technical systems are human-made constructs. A solar energy system, for example, consists of solar panels, batteries, cables, and supporting structures. The materials and manufacturing methods used impact efficiency, durability, performance, and environmental footprint throughout its lifecycle. In the circular economy, technical materials must remain pure, safe, and separate from biological ones to enable reuse, repurposing, and recycling.

Mapping your company’s systems means identifying key elements and understanding their interactions. This process highlights actors, activities, resources, technologies, and information flows, helping to reveal inefficiencies and uncover opportunities for innovation.



Circular design involves zooming in and zooming out to effectively map the systems of your business. Zooming in allows for a detailed examination of every part of the business model, including its structures, interactions between its elements, and specific problem and opportunity areas. Zooming out offers a broader view, illustrating how the business elements interact with larger systems and broader contexts, such as partner ecosystems, material flows, or community impacts.



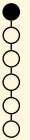
TIPS FOR MAPPING THE SYSTEMS OF YOUR BUSINESS

Understanding the systems your business operates within is key to designing circular strategies. Start by visually mapping the social, natural, and technical systems that shape your business. Identify key elements—actors, activities, resources, materials, technologies, and information flows—and explore how they interact. This helps uncover the connections and dynamics driving your operations. To deepen your insight, alternate between zooming in on details and zooming out for a broader perspective.

A good starting point is the social system, particularly your current and potential future customers. Zoom in to analyze their behaviors, preferences, and motivations in relation to your offerings and competitors. Then, zoom out to consider broader cultural shifts, societal trends, and emerging environmental and economic changes that may shape your market.

QUESTIONS TO CONSIDER:

-
- Who are the individuals and groups—customers, partners, employees, and stakeholders—who interact with or are influenced by the system, and what are their roles, needs, and expectations?
-
- What narratives or assumptions shape our understanding of the current system, how it operates, and its potential for transformation?
-
- What cultural trends, market shifts, and practices from competitors or partners are influencing people's behaviors, motivations, and decision-making?
-
- How do your customers engage with your products or services at each stage of their lifecycle—acquisition, usage, maintenance, and disposal?
-
- What are the broader environmental impacts of your business activities, processes, and models across different stages of the value chain?



EXAMPLE

Electric vehicle team maps product development systems with stakeholders

An electric vehicle design team embraced systems thinking to integrate circular principles, mapping the entire product lifecycle in collaboration with diverse stakeholders. The team recognized that cross-disciplinary collaboration was essential to understanding the complex life cycles of their products and advancing their development. This cooperation spanned the entire value chain, incorporating perspectives from raw material sourcing for batteries to product use, charging, repair, and recycling. For now, linear and circular models coexist at every stage.

The process started by building relationships and fostering mutual understanding with stakeholders, communities, and environmental organizations. A wide range of participants were involved, including representatives of customers, client companies, and partners. The foundation of this work was trust and shared understanding, which inspired new forms of collaboration between individuals and organizations. Designers acted as translators and facilitators, creating value for all parties involved.

By exploring your business systems from both detailed and broader perspectives, and considering their current and future states, you can uncover valuable insights into your business.

To map the systems comprehensively, the team employed a variety of participatory methods. Co-design workshops served as a platform to gather diverse inputs and insights, allowing stakeholders to contribute their expertise and priorities. System mapping exercises were used to identify key elements, such as actors, activities, resources, material flows, and interdependencies across the product lifecycle. Visual tools, like flowcharts and diagrams, helped participants collectively visualize how components interacted within and across stages like production, use, and disposal.

Thanks to this extensive cooperation, the team successfully mapped the systems involved in the design, production, use, repair, and recycling of their products more comprehensively than ever before. This work led to the formation of new partnerships and enabled the later development of innovative solutions aligned with circular economy principles while addressing the needs of diverse stakeholders.



● IN BRIEF

Circular design views business as interdependent social, technical, and natural systems. The social system includes all stakeholders, such as customers, partners, and employees within the company. Technical systems consist of human-made elements like materials, software, networks, sourcing processes, and transportation. Natural systems, including the environment we depend on, define the boundaries for sustainable business operations. These systems work together to shape how businesses function and interact with the world around them.

1.3 Explore opportunities for systemic transformation

The goal of circular design is to drive systemic transformation, fundamentally rethinking how a business operates. This requires identifying and understanding key cause-and-effect relationships to implement actions that promote desired changes while assessing their impacts on the overall system.

For example, reducing a product's carbon footprint and environmental impact might require switching to alternative materials. This change could necessitate rethinking supply chains, redesigning usage practices, improving maintenance strategies, and developing new recycling processes.

Opportunities for systemic change can be uncovered by closely exploring pain points, inefficiencies, or areas of high resource consumption within existing systems. Engaging diverse stakeholders, including customers, partners, and employees, in discussions and workshops often reveals fresh perspectives and untapped potential. These insights can be further validated by studying customer behavior, industry trends, and technological advancements, which may highlight areas ripe for innovation.

Given the complexity of systems, they cannot be fully understood through analysis or modeling alone. Circular design seeks opportunities for transformation by experimenting and learning from these trials. Continuous experimentation is a critical part of the innovation process, where different solutions are tested, and failures are viewed as opportunities to learn and adapt.

Experimentation is central to uncovering effective solutions and learning how to adapt systems in real-world contexts. Prototypes are preliminary versions of new products, services, or business models that are used to test not only finished ideas but also incomplete assumptions. They help to understand the complex dynamics of systems and anticipate unintended consequences.

By creating various prototypes and testing them in real-world contexts, businesses can gain immediate feedback on system performance, identify areas with potential for change, and uncover points of resistance.



TIPS FOR IDENTIFYING OPPORTUNITIES FOR SYSTEMIC CHANGE

After mapping your systems and identifying insights about opportunities for change, you can start testing assumptions about how systems can be transformed through experiments and prototypes. This could involve exploring new material properties, product concepts, or opportunities to refine business structures and processes.

QUESTIONS TO CONSIDER:

- What specific innovations or changes could alter the current system's structure or create a new system altogether?

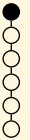
- What type of product prototype would enable us to learn most effectively and evaluate new business opportunities?

- What kind of service prototype could help us explore possibilities like rental models or repair services connected to our products?

- How can we improve organizational practices to support ongoing change efforts?

- What impacts might a new collaboration model, business model, or alternative organizational structure have on our transition to a circular economy?

- How can we use experiments to transform visions and ideas into reality, learning more about cause-and-effect relationships and identifying opportunities for systemic change in the process?



EXAMPLE

Life cycle assessment elevates sustainable design furniture

Design furniture is often associated with aesthetics and craftsmanship, but one successful European furniture brand has taken significant steps toward a more sustainable future. Known for its high-quality and timeless designs, the brand embraced systems thinking and life cycle assessment (LCA) to evaluate the environmental impact of its entire production chain and product portfolio, identifying areas for improvement and innovation.

The journey began with evaluating materials. The brand aimed to incorporate more biobased, recycled, and surplus materials with strict chemical guidelines, but this transition required extensive research and collaboration with suppliers to ensure that all materials met strict quality and durability standards while minimizing environmental impact. By testing and gradually implementing these materials in select designs, the company is now aiming to expand their use across the product range.

Supported by lifecycle assessment insights, the brand overhauled its design process to prioritize longevity and adaptability. LCA revealed that the most sustainable furniture is what stays in use for decades. This insight led to the development of modular designs, replaceable components, and timeless aesthetics that could adapt to changing user needs and interior trends.

Continuous experimentation is a critical part of the innovation process, where different solutions are tested, and failures are viewed as opportunities to learn and adapt.

Systems thinking also inspired new service concepts and enhanced the customer experience. The company introduced a furniture take-back and refurbishment program, enabling customers to return used items for repair, resale, or recycling. This initiative is likely to further extend product lifespans, reduce waste, and reinforce the brand's commitment to sustainability.

While environmental sustainability was the primary motivation for these changes, they also unlocked economic benefits. The lifecycle-driven approach improved customer satisfaction, strengthened the brand's market differentiation, and attracted a growing base of conscious buyers.

This example demonstrates that the design furniture industry can integrate sustainability without compromising quality or style. Though balancing competing priorities is complex, applying circular economy principles proves that the future of furniture can be both desirable and more sustainable.



● IN BRIEF

The goal of circular design is to transform business operations systemically. Opportunities for change emerge through systems mapping, exploration, and prototyping. Continuous experimentation is central to the process, enabling the generation of insights, testing of innovative solutions, and effective evaluation of their impacts.

2 Futures





The transition to a circular economy demands forward-looking, goal-oriented efforts from businesses to redefine operations based on new principles. By envisioning and imagining various possibilities, foresight, or futures thinking, it becomes a valuable tool to understand change, prepare for it, and embrace its uncertainties. Widely used in strategy and design, foresight incorporates trends, scenarios, and visions to drive necessary transformations. We cover three aspects of foresight here: trends, scenarios, and visions.

Trends reveal what is changing and why, showcasing patterns of systemic transformation or emerging dynamics that shape industries and cultures over time. Circular economy megatrends, such as shifts in societal structures, environmental conditions, and legislative frameworks, collectively drive this transition. Understanding these trends helps businesses adapt and thrive in a new economic model.

Scenarios are structured narratives exploring alternative futures shaped by trends, decisions, or uncertainties. They help businesses evaluate pathways to desired outcomes while identifying risks to avoid. Scenarios can depict desirable futures, such as a successful circular economy transition, or serve as warnings against neglecting sustainability. For instance, what would a future shaped by the necessary transition to a circular economy entail? Conversely, what would a business-as-usual future—one to avoid—look like?

● IN BRIEF

The transition to a circular economy requires a forward-looking, intentional, and long-term approach to reimagine business operations. Foresight, or futures thinking, provides valuable tools for innovation and transformation. Trends reveal why change is occurring, scenarios explore alternative futures, and visions clarify the desired direction, helping businesses act strategically.

Visions provide clarity and guidance by articulating the desired direction. They are aspirational, forward-looking statements or representations that define a future goal or state. A vision describes what successful transformation looks like, examining a company's operations on multiple levels. In the context of circular transformation, a vision could detail a company's shift to new ways of doing business, adopting innovative business models and developing circular products and services.

2.1 Understand future trends shaping the circular economy

The transition to a circular economy can seem daunting due to its complexity. However, understanding future trends clarifies why this shift is occurring and how it impacts your business. Trends reflect patterns of systemic change, emerging dynamics, behaviors, and phenomena that influence society, markets, industries, and culture. Megatrends, for instance, are long-term, large-scale shifts that evolve slowly but are deeply interconnected. While these changes often progress gradually, they can also trigger unexpected disruptions, underscoring the need for foresight and adaptability.

In the long term, the climate crisis and biodiversity loss will have far-reaching effects, threatening economic and societal structures and even the planet's habitability. The circular economy aims to safeguard well-being by adopting new models that maximize value from existing resources while regenerating the conditions necessary for life.

This transition will be comprehensive yet sometimes unpredictable. Political decisions may abruptly reshape business environments, or environmental disasters could disrupt global logistics and supply chains. As raw material shortages and global uncertainties grow, the circular economy becomes increasingly critical.

By exploring future trends driving circularity, businesses can develop diverse perspectives on change and create richer visions of the future along with resilient business models. Investigating trends involves reviewing trend reports, research, and expert insights or conducting targeted studies relevant to your business.



TIPS FOR EXPLORING FUTURE CIRCULAR TRENDS

Exploring circular trends requires analyzing forces shaping change. Use tools like the Futures Triangle to assess trends through the lenses of past barriers, future aspirations, and present drivers. The weight of the past focuses on barriers and limitations, such as deeply rooted business models and outdated worldviews, which slow progress. The pull of the future emphasizes visions of the circular economy and long-term shifts shaping the desired future. The push of the present looks at current circular economy practices and prevailing trends driving change. You can explore these aspects through political, economic, social, technological, environmental, and legislative lenses.

QUESTIONS TO CONSIDER:

- How do political factors, such as regulations and government policies, influence circular economy practices and promote sustainable approaches?

- What economic factors, including market trends and funding opportunities, shape the feasibility and attractiveness of circular economy investments?

- Which social factors, such as consumer attitudes and behavioral shifts, are critical to the acceptance and adoption of circular practices in your industry?

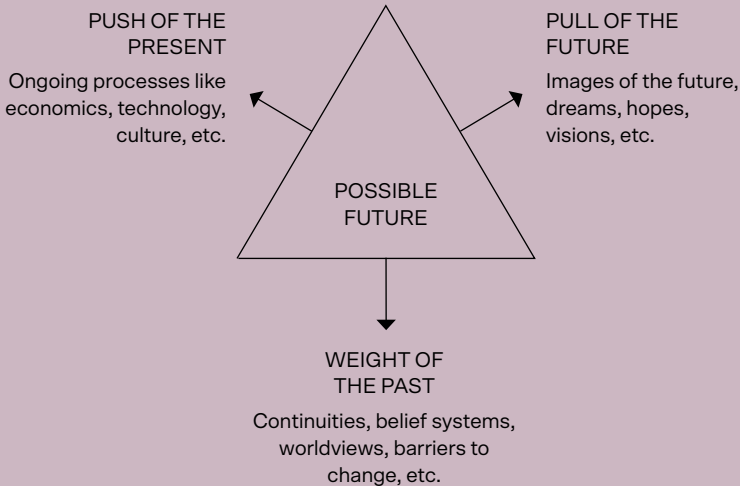
- What technological innovations, like advanced recycling methods and material technologies, could accelerate the shift toward more sustainable production and consumption?

- How do environmental factors, such as resource availability and climate change, impact the circular economy transition in your field?

- What legislative factors, including environmental regulations and waste management standards, directly affect circular economy implementation?

EXAMPLE

Fashion brand uses futures triangle to grasp circular trends



Adapted from Sohail Inayatullah and Sitra, 2022.

The Futures Triangle, created by futurist Sohail Inayatullah, is a powerful tool for identifying the key forces shaping the future of a specific topic or industry.

An international fashion brand utilized the Futures Triangle model to uncover new opportunities in the circular economy. Inspired by a circular design workshop, the company's leadership set goals to redefine fashion and become a pioneer in sustainable practices. In the first phase, they assembled a team of enthusiastic participants from within the organization and partner companies and conducted a futures mapping exercise structured around the three phases of the Futures Triangle: the weight of the past, the push of the present, and the pull of the future.

The Weight of the Past: In this phase, the brand explored elements from its past that posed barriers or restrictions to progress toward circularity. They identified major challenges in their current business model, which relied on mass production and disposable culture, resulting in significant waste. Additional obstacles included historically low customer interest in sustainable fashion and ethical challenges within traditional supply chains, including environmental issues.

The Pull of the Future: Next, the brand explored broader future possibilities and pathways aligned with circular economy principles. These included designing products with reuse and recycling as the primary focus, adopting modular designs that make clothing easy to modify or repair, and creating innovative service models. For instance, customers could play an active role in managing the lifecycle of garments through resale, repair, and recycling programs.

The Push of the Present: Finally, the brand examined current trends influencing the evolution of the fashion industry, many of which pointed toward more sustainable and conscientious consumption. These trends included growing interest in environmentally sound and ethically produced clothing, the rising popularity of second-hand fashion, latest advances in material innovation and lifecycle management solutions, and active consumer participation in clothing resale.

By deeply exploring these three perspectives, the fashion brand could develop a clearer strategic path toward circularity and sustainable fashion, identifying obstacles from the past, envisioning desired future directions, and leveraging present-day trends to get there as soon as possible.



● IN BRIEF

Future trends reveal patterns of systemic change or emerging dynamics that shape society, markets, industries, and culture over time. Megatrends, as large-scale and long-term phenomena, often evolve gradually but can have profound impacts. Exploring trends helps businesses understand why change is necessary and what the transition to a circular economy entails. By analyzing trends driving circularity, businesses can gain diverse perspectives, envision richer futures, and develop resilient circular economy models.

2.2 Develop alternative scenarios for the circular transition

Scenarios—alternative visions of the future—are an essential part of the circular design toolkit. Scenarios help identify both opportunities and challenges for change. They enable businesses to explore how near-future developments, such as shifts in raw material availability, successful business models, or customer behaviors, could significantly transform the trajectory of their industry’s circular economy transition.

Scenarios can range from hopeful utopias, where society has successfully embraced circular principles, to stark dystopias that highlight the risks of neglecting sustainability. Between these extremes, we can envision desirable futures that align with our values and goals, outlining the kind of world we want to build within the bounds of plausibility. Conversely, scenarios can also depict undesirable futures, serving as warnings of risks we aim to avoid and outcomes we wish to prevent.

Alternative futures described in scenarios are often categorized based on their likelihood:

Probable futures are direct continuations of the present and are rooted in prevailing trends.

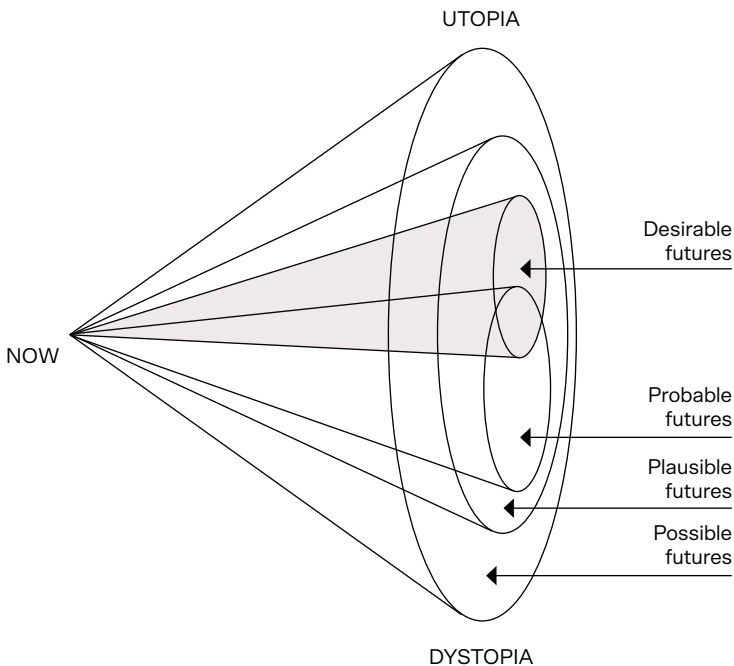
Plausible futures encompass a broader spectrum of outcomes, including unexpected changes or innovative developments that diverge significantly from the present.

The circular economy becomes increasingly critical in a world where raw material shortages and uncertainties in global supply chains are on the rise.



Possible futures are even less likely but, if realized, could have transformative impacts, fundamentally altering the course of change.

By developing scenarios, businesses can make more informed decisions and better prepare for a range of circular economy futures. The scenario-building process also naturally invites diverse stakeholders and individuals from various backgrounds to collaborate in envisioning and planning for a sustainable and regenerative future. It encourages a rethinking of our roles as active participants in driving change.



Adapted from Joseph Voros's Futures Cone Model.

The range of potential futures expands the further we look into the future. The Futures Cone model helps visualize and understand different types of futures and their relationships to one another. It provides a framework for exploring probable, plausible, and possible futures, and those we desire or wish to avoid.

TIPS FOR CREATING SCENARIOS FOR A CIRCULAR FUTURE

Choose a timeframe to explore the future and develop circular economy scenarios. This could range from a few years to a decade, depending on the focus of the work and the pace of change in your industry. Group circular economy megatrends and industry-specific trends into compelling themes. Select 4–6 key themes you believe will have the greatest impact on your field and use them to create 3–4 alternative future scenarios. Outline the key milestones of each scenario’s development and place them on a timeline. Bring the scenarios to life by crafting stories around these milestones from perspectives such as societal narratives, company journeys, or customer personas. Finally, compare the scenarios, consider their likelihood and desirability, and assess their implications for your business and stakeholders.

QUESTIONS TO CONSIDER:

-
- What are the key trends shaping the future of the circular economy in your industry?
-
- How can these trends be grouped? Which themes are most critical for change in your sector?
-
- What do we already know—and what remains uncertain—about these themes and the futures they might create?
-
- What are the key milestones or developments that would make these scenarios credible?
-
- What types of stories can we tell to make these futures understandable and engaging for the target audience?
-
- How can the scenarios be visualized and brought to life so they are both inspiring and believable?
-
- Which scenarios do we believe are most likely and which are most desirable?
-
- What insights emerge from these scenarios regarding your circular economy transition, and how can they be incorporated into business development?



EXAMPLE

Ready-meal company explores circular opportunities through scenarios

A ready-meal company developed scenarios for circular transition with its partner network, to better understand future markets, evolving consumption habits, and environmental requirements.

In the first phase, the company collaborated with an expert organization to identify key industry trends, such as shifts in consumer attitudes, technological innovations, and regulatory developments. Using these insights, the team developed three scenarios to explore potential futures for the company's circular economy transition and resource efficiency.

The first scenario, "The Green Food Revolution," outlines a likely future where consumers rapidly adopt sustainable eating habits, supported by government initiatives driving industry change. This leads to increased demand for ecologically produced products and circular practices. In this scenario, the company expands its product range to include more plant-based options, reduces food waste, and invests heavily in biodegradable packaging materials.

Scenarios can range from hopeful utopias, where society has successfully embraced circular principles, to stark dystopias that highlight the risks of neglecting sustainability.



The second scenario, “Artificial Delights,” is driven by the scaling of technological innovations. In this future, new plant-based proteins and lab-grown meat dominate the market, along with advanced biodegradable packaging materials. Here, the company prioritizes research and development, collaborating with technology firms to create innovative food products and packaging solutions.

The third scenario, “The Regulatory Diet,” envisions a future shaped by strict political decisions and regulations imposing tight restrictions on food production and emissions. In this context, the company focuses on developing local food production, shortening supply chains, redesigning packaging to minimize waste, and ensuring all production processes follow stricter legislation.

Each scenario provided valuable insights into key forces of change and potential strategies. By combining these learnings, the company developed a clearer understanding of the systemic shifts in food production and consumption, and crafted an initial roadmap for advancing circular economy practices.



● IN BRIEF

Designing scenarios, or alternative visions of the future, is a key part of circular design. Scenarios help identify both new opportunities and future challenges. It's valuable to involve diverse stakeholders in the process to bring fresh perspectives and ideas. The outcomes provide insights into both desirable and undesirable futures, and their likelihood, offering a solid foundation for further planning.

2.3 Craft a vision for circular success

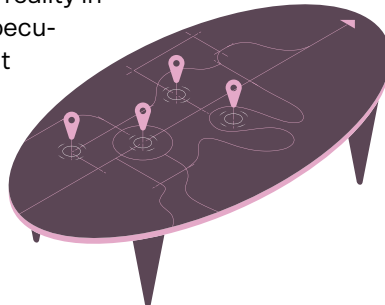
Circular design is about purposefully advancing toward a future shaped by circular economy principles. Once alternative futures are identified, a vision helps clarify the desired future and articulate a path forward. This vision can focus on the near or distant future and illustrate what success looks like for the entire business or specific areas such as a division, product, service, or technology.

Circular economy-aligned business models, products, and services often challenge traditional norms. Developing a clear vision is especially valuable when pursuing innovative approaches. A compelling vision transforms abstract ideas, strategic goals, and directions into something concrete, inspiring, and actionable. It reduces uncertainty, mitigates resistance to change, and provides clarity for overcoming potential barriers.

A strong vision also unites people, offering a shared direction for individuals and teams across diverse roles and backgrounds. It allows a company and its broader network of partners to align their efforts toward a circular economy transition, where even small steps contribute to achieving the collective goal.

A well-crafted vision goes beyond a brief statement about a company's future. It is a detailed and dynamic plan that outlines what the business and its products will become, the markets it will serve, the customer needs it will fulfill, and how it will differentiate itself from competitors. By leveraging storytelling, visual tools, and prototypes, a vision becomes a tangible and vivid representation of the future.

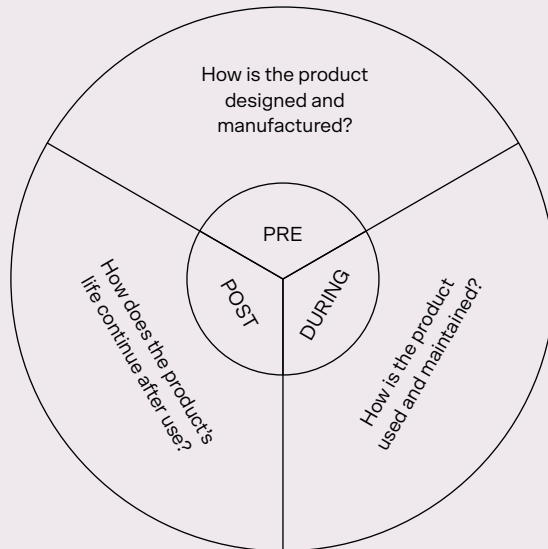
Because the future is unpredictable, visions are naturally imperfect—closer to reality in the short term and increasingly speculative over time. To remain relevant and effective, visions must be continuously updated and refined, incorporating lessons learned and adapting to new developments as you move toward achieving them.



TIPS FOR DESIGNING A CIRCULAR VISION

Based on the insights from trend and scenario work, the next step is to design a clear and inspiring vision for your circular economy transition. This vision should describe what your future business will look like. Bring together all key individuals responsible for shaping the company's future. Step by step, outline the business models, products, and services that will enable your company to find new growth and align with circular economy principles.

To make your vision practical, use tools such as storytelling, visual representations, and prototypes—tangible examples of potential future operations. These tools help make the vision clear, compelling, and actionable. They inspire change by engaging stakeholders, simplify implementation through experimentation, and support continuous improvement based on feedback and insights gained from testing.



Adapted from Danish Design Center.

Circular visions can be illustrated at various levels, and making them as concrete as possible is often beneficial. For instance, a product-level vision could outline future goals for how a product is designed and manufactured, how it serves users effectively during its lifecycle, and how its materials and components are reintegrated or reused after its primary use ends.

QUESTIONS TO CONSIDER:

- How will circular economy principles influence our business, and what new opportunities might they uncover?

- What new customers might emerge? What new needs or expectations could they have? Miten meidän tulee muuttaa organisaation kulttuuria, jotta voimme päästä visiossa kuvattuun uudenlaiseen tulevaisuuteen?

- What types of products or services can we offer to meet these emerging expectations?

- How must we transform our organizational culture to achieve the future described in our vision?

- What stories will support the desired changes? How can we effectively communicate them to different target audiences?

- How can we visualize complex ideas in accessible ways that best convey our vision to our stakeholders?

- What experiments can we conduct to bring our vision into practice? How can we integrate the lessons from these experiments into refining our vision?

EXAMPLE

Speaker company brings a circular vision to life through prototypes

A speaker manufacturing company aimed to gain a competitive edge in the circular economy by crafting an ambitious circular vision as part of its strategy work. At the heart of this vision is a business model focused on extending product life cycles and maximizing sustainability. Beyond manufacturing and selling products, the company plans to introduce a rental model, develop new maintenance and repair services for ongoing product upkeep, and implement an exchange program for reusing and recycling devices.

The vision outlines future service models and customer experiences that redefine how the company engages with its customers—both online and through innovative showroom-style stores. In addition to service and business models, the vision introduces a new value system created through broader collaboration with component suppliers, service partners, and material recycling stakeholders.

The vision development process was carried out through three workshops involving the company's leadership, product and service teams, and the design team, alongside key partners. The design team took the lead in conceptualizing future services and bringing these ideas to life through storytelling and visual examples. These were then used to create detailed service prototypes that made the vision more tangible and engaging, helping the company align its future direction with its circular economy goals.



● IN BRIEF

A strong vision defines the desired future, aligning business objectives with circular economy principles. It transforms abstract ideas, strategies, and goals into a clear, compelling, and aspirational framework. By serving as a unifying narrative, it brings together a company and its partner ecosystem, fostering collaborative efforts toward a circular economy transition. A well-crafted vision provides direction while remaining flexible to incorporate new insights and adapt to evolving circumstances.

3 Products





In the circular economy, products must be fewer in number, higher in quality, and crafted from materials that either return to biological cycles or remain in technical cycles. This requires a shift away from a throwaway culture, ensuring products retain value, stay in use longer, and support multiple life cycles. Circular design at the product level focuses particularly on materials, durability, and adaptability.

Circular material design operates on the principle that products and their materials are always part of nature's cycles. Products should be designed to remain within either a biological or technical cycle (see page 26).

Biological cycles: Materials in biological cycles return to ecosystems as nutrients through decomposition. For consumable goods like food, packaging or toiletries, the focus should be on biodegradable, renewable, plant-based, and safe materials that support ecosystem vitality and avoid harm to soil, air, water, or organisms.

Technical Cycles: For durable goods like electronics, industrial equipment, or furniture, materials must stay in continuous loops. This involves designing for durability, adaptability, and recyclability, keeping non-biodegradable materials in use for as long as possible.

For hybrid products that combine biological and technical materials, such as a chair made of wood and metal, design must prioritize easy separation to enable effective recycling or composting. This ensures that each material type can follow its appropriate cycle at the end of the product life, without contamination or loss of value.

Durability is a cornerstone of circular design, ensuring products belonging to the technical cycles can be used for long periods and in multiple cycles. Ideally, products stay products, rather than being dismantled for parts, and buildings remain buildings, not just recycled concrete. Longevity is critical in a circular economy. It involves both physical durability, to endure wear and tear, and cultural durability, to maintain emotional value and aesthetic relevance over time.

Examples of durable products include building materials, furniture, bicycles, and jewelry. These items can be designed to endure both time and use by employing high-quality, aesthetically appealing materials and timeless designs. Durable products are also well-suited for resale or rental services, enabling new circular business opportunities that enhance their value.



Circular design at the product level focuses particularly on materials, durability, and adaptability.

Adaptability ensures that when these products inevitably wear out or break, they can be restored to their original state or upgraded to better functionality. Products should be designed with reparability in mind, with detachable and replaceable parts, upgradable components, and convenient, affordable maintenance options—whether performed by the user or a professional. Adaptable designs enable products to evolve with changing needs, social contexts, and life stages.

For instance, the reparability and component replaceability of electronic devices are crucial for extending their lifespan and reducing e-waste. Similarly, adaptable furniture designs allow pieces to remain functional for decades. These adaptable, repairable, and maintainable products also create opportunities for new service-based circular business models.

While focusing on durability and adaptability, circular design also acknowledges the inherent trade-offs. Durable products can sometimes be harder to repair or recycle, while items designed for easy recycling or composting may lack the performance or longevity of multi-material alternatives. For example, in clothing, durability might require reinforced structures or blended materials, while mono-material designs are easier to recycle but may not offer the same functionality.

Despite these challenges, many companies are eagerly pursuing solutions, finding innovative ways to balance these requirements through circular design. With a deep understanding of both product use and material science, circular design enables informed choices that enhance product safety, reduce emissions, and improve durability and reparability.



While focusing on durability and adaptability, circular design also acknowledges the inherent trade-offs between them.



● IN BRIEF

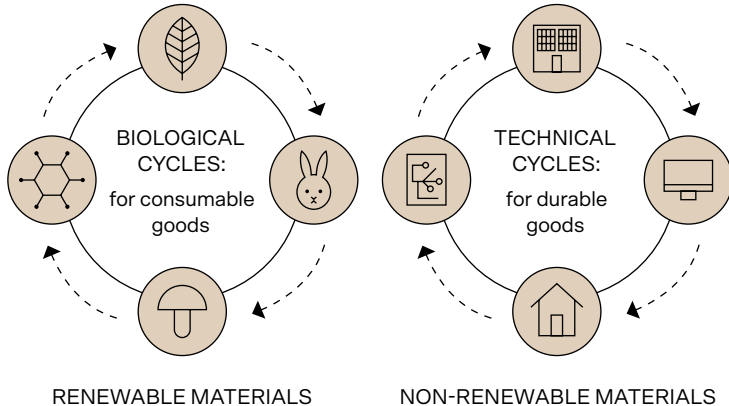
At the product level, key principles of circular design include enabling material cycles, ensuring durability for long-term use, and enhancing product adaptability. Material cycles can be biological or technical, and materials destined for different cycles should be separable. Durability may involve physical resistance to wear and non-physical aspects, such as retaining value, appearance, and meaning. Adaptability includes features like upgradability, reparability, and the ability to replace components. The challenge lies in balancing these principles simultaneously, which is not always straightforward but should remain the ultimate goal.

3.1 Design materials for technical loops or natural cycles

The overarching goal of circular product design is to reduce material consumption by extending the lifespan of resources, decreasing reliance on virgin materials (natural resources used for the first time in production), and eliminating waste during production, all while minimizing environmental harm and maximizing benefits through intentional and thoughtful design.

Products and their materials are inherently part of nature's cycles. Over time, all materials eventually return to natural systems, so they must be designed to restore and strengthen ecosystems rather than degrade them. This makes material selection and design critical, requiring a comprehensive understanding of their physical and chemical properties, production processes, and potential for reuse and recycling.

In the circular economy, materials flow through two main cycles: biological and technical.



Adapted from Design Forum Finland, 2023

Materials flow through two main cycles: biological and technical. For fast-moving consumable goods designed for quick use and frequent replacement, the focus should be on renewable, plant-based, and safe materials that actively regenerate nature. For durable goods intended for long-term use, the emphasis should be on maximizing the lifespan of technical materials by keeping them in use as products or recirculating them at their highest possible value.





Biological cycles are integral to natural ecosystems, where all substances eventually decompose into nutrients. Renewable materials within this cycle—such as plant-based options, now widely adopted in industries like packaging—are designed to biodegrade or compost at the end of their lifecycle. This process ensures they enrich the soil and promote new growth. The primary aim of biological cycles is to minimize waste and pollution by prioritizing materials that are clean, safe, and biodegradable, ideally contributing to ecosystem regeneration or, at the very least, having a neutral impact as they break down.

Technical cycles focus on non-biodegradable materials such as metals and specific plastics, commonly utilized in industries like electronics. The goal is to maintain these materials in a closed loop, ensuring they remain in use as products, components, or raw materials for as long as possible. This approach minimizes waste by preventing materials from ending up in landfills or being incinerated. Achieving this requires thoughtful design that emphasizes clean, recyclable materials and facilitates easy disassembly, repair, and replacement of components, extending the lifecycle of products and preserving their value.

It is essential to avoid combining biological and technical materials in ways that make them difficult to separate for reuse or recycling. Poorly designed combinations, such as glued-together electronics or products that mix biodegradable and non-biodegradable materials, degrade their value and complicate recycling or reuse. These unsustainable designs, often called “monster hybrids,” exemplify what to avoid in circular design.

Equally important is ensuring that all raw materials and chemicals used in products and production processes are well understood, safe for human and animal health, and environmentally sound. Substances known or suspected to be harmful should be strictly avoided.

TIPS FOR CHOOSING MATERIALS FOR CIRCULAR DESIGN

Material selection is a crucial aspect of circular product design, and the right choices can significantly impact a product's environmental footprint, durability, and potential for future reuse. Investigate the origin of your materials and the processes involved in their production. Opt for materials that minimize environmental impacts throughout their lifecycle. Design products and components using materials that belong exclusively to either the technical or biological cycle—avoiding combinations of both. Embrace innovative, sustainable materials and technologies with confidence.

QUESTIONS TO CONSIDER:

- Where do the materials come from, what is their origin, and what raw materials and chemicals are used in their production?
- What are the impacts of material production and use on local ecosystems?
- How can I ensure the materials are “positive,” meaning safe for health and the environment when evaluated at the molecular level?
- What is the carbon footprint of material transport and how can it be minimized?
- How can the durability, reparability, and longevity of materials be assessed? Which materials are the most durable?
- How can the recyclability and reuse of materials be ensured at the end of a product's lifecycle?
- How can materials or material mixtures in the product be separated for repair, reuse, or recycling?
- Is it possible to use a single material in the product to simplify recycling?
- What material innovations could help reduce environmental impacts while improving the durability of products?



EXAMPLE

Wood-based packaging offers biodegradable plastic alternative

A material technology company addressed the urgent issue of plastic pollution, spotlighted by the massive plastic waste patches in oceans and the presence of nanoplastics in the human body. At the same time, the company responded to increasing demand from brands committed to adopting more sustainable packaging solutions.

Their innovative response was a transparent, wood-based cellulose material, developed in collaboration with a research institute. Previously considered unfeasible, this material is now replacing traditional plastics in applications such as sandwich wraps, flower packaging, and textile covers.

The material's practicality and versatility have made it a compelling choice for brands aiming to lower their carbon footprint. A standout feature is its ability to manage moisture without additional perforations, which extends the shelf life of products like sandwiches and significantly reduces food waste. Customers have praised this unique benefit and it has positioned the company as a leader in a competitive market.



The overarching goal of circular design is to reduce material consumption, for example by extending the lifespan of resources, decreasing reliance on virgin materials, and eliminating waste during production.

The company supplies this biodegradable plastic alternative as a packaging feedstock. Delivered in the same pellet form as conventional plastics, the material is compatible with existing manufacturing equipment, allowing seamless integration into production processes. This compatibility enables consumer brands to adopt the material through the company's partners or transition their own suppliers to use it, helping them meet sustainability goals without requiring costly infrastructure upgrades.

Currently, the biodegradable material can be recycled alongside traditional plastic packaging. Ideally, it would have its own dedicated recycling stream, but current production volumes are not yet sufficient to justify this. Looking ahead, the company plans to scale production and increase the wood content in the material, working toward fully wood-based packaging soon.



● IN BRIEF

In the circular economy, products and materials should align with nature's cycles, strengthening and restoring ecosystems instead of generating waste and pollution. Biological cycles use renewable, biodegradable materials designed to nourish ecosystems as nutrients. Technical cycles focus on non-renewable, non-biodegradable materials, keeping them in continuous use to prevent waste. Mixing materials from different cycles is avoided to ensure effective reuse and recycling.

3.2 Enhance product durability and longevity

Durability is at the core of circular design, as more products need to remain in use for years or even decades. Longevity comes from physical and emotional durability. Physical durability refers to a product's ability to withstand wear and tear, while cultural durability relates to its emotional value and aesthetic relevance—ensuring that a product retains its desirability, meaning, and utility over time.

Physical durability can be enhanced through thoughtful material selection and structural design. These components must be tailored to the product's intended purpose, informed by a comprehensive understanding of the user and how the product will be utilized. For products subjected to significant wear and tear, robust materials and reinforcement in key areas are essential. To create truly durable designs, research should explore user behavior, a range of usage scenarios, and even extreme or unexpected conditions.

Take bicycles, for instance. Their design must prioritize physical durability. Material choices should be carefully selected to perform well across diverse use cases and withstand varying weather conditions. Critical joints and frequently stressed components should be reinforced. Rigorous testing in real-world conditions is crucial, as is collecting user feedback on durability-related needs and experiences. Clear maintenance guidelines should also be provided to help users extend the product's lifespan.

Cultural durability emphasizes the meanings and emotions tied to products, and their enduring style. Iconic designs elevate a product's appeal, differentiate it from competitors, and enhance its perceived value. To achieve this, design should aim for timelessness by avoiding fleeting trends or incorporating adaptability to accommodate evolving tastes. Products imbued with strong personal and cultural significance are more likely to be cherished, encouraging users to care for and retain them longer.

Outdoor and sportswear, for example, can foster emotional durability through distinctive, thoughtfully crafted designs and compelling storytelling. Personalization—whether by involving users in the design process or tailoring products



to their preferences—strengthens the personal connection. Broader cultural significance can also be integrated into the design, creating not just durable gear but a complete ecosystem of narratives, communities, and services that amplify the product’s cultural meaning, emotional value, and aesthetic relevance.

No product lasts forever, particularly items subject to active use, such as clothing, sports equipment, or everyday tools. This makes it essential to balance durability with recyclability. While achieving this balance can be challenging—durable products often incorporate materials or connections that complicate recycling—innovative solutions do exist. Designing even the most robust products to be recyclable is critical for reducing their environmental impact at the end of their lifecycle.

Striking this balance requires a comprehensive understanding of the product’s intended use and its evolving cultural significance. Designers must look beyond material properties to consider user behavior and the broader cultural context, enabling the creation of products that are both long-lasting and environmentally responsible.



Designing durable products starts with a thorough understanding of user needs and the various ways products are used.

TIPS FOR DESIGNING LONG-LASTING PRODUCTS

Designing durable products starts with a thorough understanding of user needs and the various ways products are used. For physical durability, choose materials and manufacturing processes that improve wear resistance while optimizing recyclability. For cultural durability, aim for iconic designs that retain cultural meaning, emotional value, and aesthetic relevance over time. Additionally, designing for recyclability and reuse ensures that products can eventually serve new purposes beyond their initial lifecycle.

QUESTIONS TO CONSIDER:

- What deep needs and enduring usage habits can we identify within our target audience?

- What level of durability do our products require to meet user expectations?

- Which features are most important to our users over time?

- Which materials and connections improve wear resistance?

- How can we ensure our products retain their cultural meaning and relevance over time?

- Which timeless qualities or styles suit our products, independent of trends?

- How can we maximize both durability and recyclability in our product design?

- How can we design products that can serve new purposes after their original lifespan?



EXAMPLE

Remanufacturing boosts machinery durability

A heavy machinery company has made durability and product longevity a cornerstone of its business strategy. Since launching its remanufacturing operations in the 1970s, the company has scaled this approach into a global business employing thousands of people. Their focus is on designing high-quality, durable, and modular products that can be reused multiple times, aligning perfectly with circular economy principles.

The foundation of their model lies in replacing machinery and components before they fail, then rebuilding them using a combination of new and reused parts. For example, their engine modules are engineered with easily replaceable components so the machines can be restored to like-new condition through simple maintenance or part replacements.

Digital technology is integral to this strategy. The company has introduced a service that enables real-time monitoring of equipment performance. This system tracks wear and tear, predicts risks, and provides actionable insights, helping customers maximize their equipment's lifespan while enhancing product management.



Physical durability refers to a product's ability to withstand wear over time. Cultural durability emphasizes the meanings and emotions tied to products, and their enduring style.

Remanufactured components are offered to customers at significantly reduced prices compared to new ones. A deposit system is central to their pricing strategy, incentivizing customers to return used parts. This ensures that valuable materials are recovered, lowers remanufacturing costs, and supports the circular process.

However, changing customer perceptions remains a challenge. Some still regard remanufactured products as less reliable or safe than new ones. To address these concerns, the company leverages its strong brand reputation and offers warranties on remanufactured products. While these efforts have helped build trust, ongoing education and communication are necessary to fully shift mindsets and drive acceptance.

● IN BRIEF

Durability is essential in circular design as products should remain in use for as long as possible. Longevity stems from both physical and cultural durability: products withstand wear and tear while maintaining their utility, significance, and value over time. However, durability should be balanced with recyclability, as durable products are not always easy to recycle.

3.3 Create adaptable products to extend their lifespan

Circular product design prioritizes adaptability, focusing on products that are versatile, upgradable, and easy to maintain and repair. Adaptable products can evolve with users' changing needs, preserving their value, functionality, and relevance over time. To achieve this, versatility, upgradability, maintainability, and repairability must be embedded into the product from the outset.

Versatility enables products to adapt to a variety of uses or conditions. One way to achieve this is through modularity, exemplified by bookshelves composed of individual units that can be rearranged into different configurations. Versatility also encompasses adjustability, such as office chairs with customizable seat heights, backrest angles, and armrest positions. Expandability offers another dimension, so products like cameras can gain new functionality through add-on accessories. Multipurpose design, such as a dining table that doubles as a work desk, further enhances a product's versatility and usefulness.

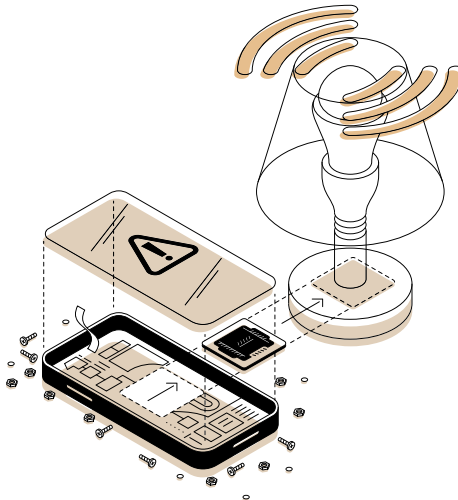
Upgradability enables products to be improved or enhanced with new features after their initial creation. This makes products last longer, improve over time, and help reduce environmental impact. This is particularly crucial for electronics like computers and smartphones but also valuable for clothing, furniture, and appliances. Standardized, easily replaceable components support upgradability, enabling users to swap outdated parts for newer ones. Software updates are equally vital, ensuring products remain functional and compatible.

Maintainability focuses on ensuring that a product can be easily serviced to retain its performance, reliability, and safety throughout its lifecycle. Products designed with maintainability in mind allow for quick and straightforward upkeep, such as household appliances with easily removable and clearly labeled components. Detailed, user-friendly maintenance guides are essential, along with training and support for more complex tasks. Digital tools, such as maintenance logs, sensor technology, and automated service reminders, further simplify



upkeep and encourage timely interventions, prolonging the product's life.

Repairability ensures that damaged or worn-out products can be restored to working condition or even improved. Anticipating repair needs during the design process makes the task more manageable and cost-effective for users. Repairability can be enhanced by designing products with easily detachable and replaceable parts that can be serviced using standard tools. Comprehensive repair manuals and accessible technical support are vital for both consumers and professionals. Additionally, ensuring the availability of affordable spare parts—long after a product is discontinued—further supports repairability.



TIPS FOR DESIGNING ADAPTABLE PRODUCTS

Enhancing product adaptability boosts versatility, upgradability, maintainability, and repairability. This is achieved by designing products with distinct, easy-to-detach, modify, and replace parts. Effective implementation requires meticulous planning of manufacturing processes, assembly methods, disassembly mechanisms, and component compatibility. The foundation should be a product's ability to adapt to evolving user needs, varied social contexts, and different life stages.

QUESTIONS TO CONSIDER:

- What are the key user needs and changing demands that our product should adapt to over time?
- Which modular structures could enhance a product's adaptability and flexibility for different uses?
- What design features would make product components easy to detach, modify, or replace?
- How can we ensure compatibility with future accessories and updates?
- How might we streamline regular maintenance to make it faster and more user-friendly?
- What steps can we take to keep spare parts affordable and accessible long after a product is discontinued?
- How can we proactively address potential repair needs that may arise in the future?
- What design strategies would allow products to take on new purposes after their original use has ended?



EXAMPLE

Modularity extends headphones' lifespan

An innovative electronics company has embraced circularity by extending product life cycles through adaptable design. This is exemplified in their modular headphones, designed for easy customization, upgrades, maintenance, and repair.

Headphones have standardized components that are simple to replace or upgrade. Thanks to the clever modular design, an impressive 85% of the components can be reused. The company also offers a subscription service that simplifies the return and recycling of headphones at the end of their use.

Customers enjoy a flexible subscription model where headphones are delivered as a kit. If damage occurs, the company quickly provides replacement parts, and customers can return the headphones for updates or complete replacements as needed.

To further enhance customer engagement, the company provides a lifetime repair service. Customers can order spares and access repair support whenever necessary. Shipments include a prepaid return envelope, enabling customers to send back damaged components for repair or recycling.



Adaptable products can evolve with users' changing needs, preserving their value, functionality, and relevance over time.

This innovative model offers dual benefits: reducing environmental impact and enhancing business performance. By pairing modular design with subscription services, the company maximizes product reuse, strengthens customer relationships, and increases revenue. Additionally, the approach secures a predictable material supply chain and appeals to a wider audience, including those who might not typically purchase premium headphones.

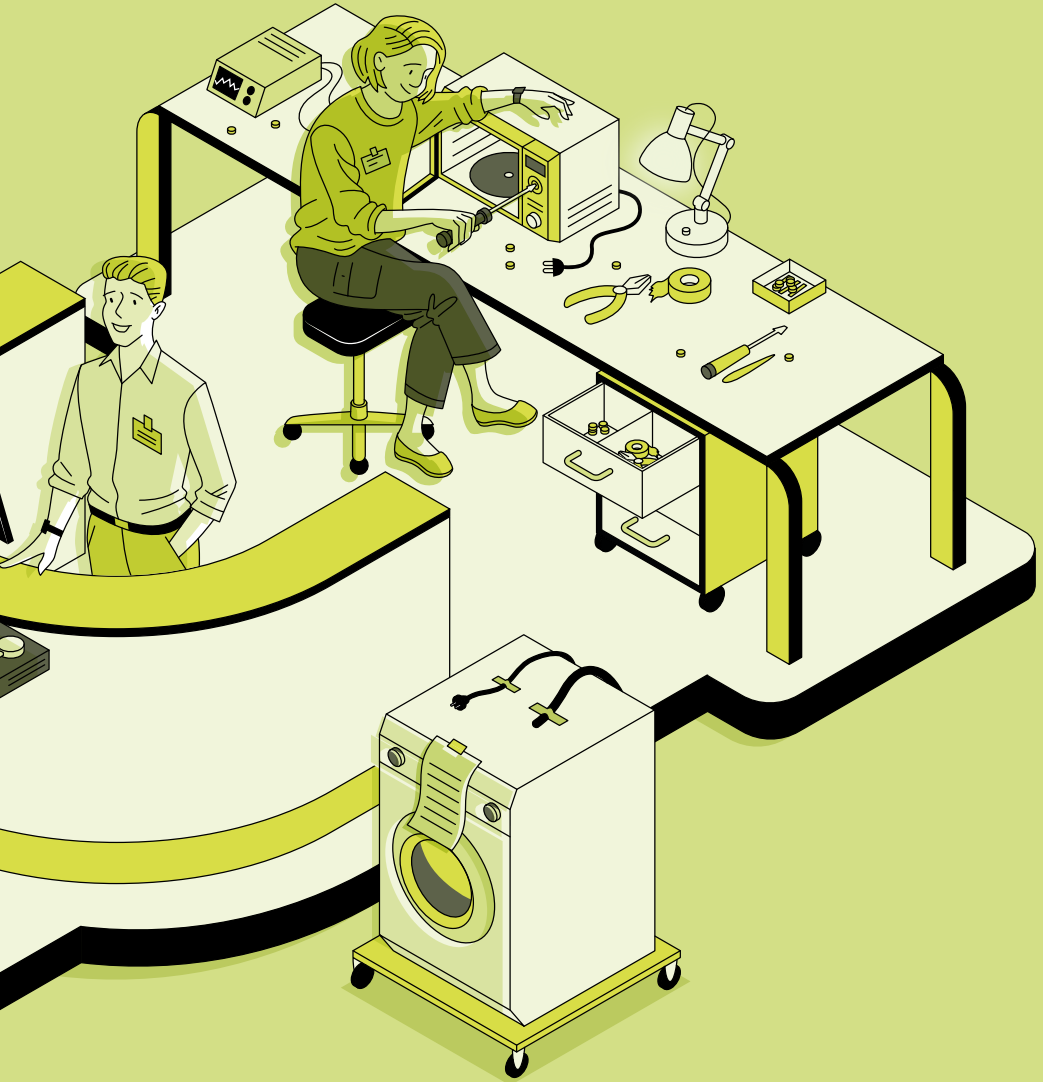


● IN BRIEF

Circular economy products are designed to be adaptable, meaning they are versatile, upgradable, and easy to maintain and repair. Versatility increases a product's flexibility and broadens its applications. Upgradability, maintainability, and repairability ensure products stay functional and valuable over time, extending their usability and preserving their long-term worth.

4 Services





Service models in the circular economy present compelling opportunities for businesses to innovate and grow while reducing reliance on new resource consumption. These models represent a fundamental shift in how value is created.

Instead of focusing solely on products, circular service design broadens the ways value can be generated: through repair and maintenance services that extend product lifespans, rental services that promote sharing among multiple users, and resale services that provide products with a second or even third life. Moreover, businesses can fully transition to service-based offerings, further advancing the decoupling of economic activity from material and resource use.

Repair and maintenance services are prime examples of circular business models. They extend the lifespan of products while strengthening customer relationships with both the products and the company. By focusing on the long-term, efficient use of existing products, businesses can reduce the need for constant production and consumption of new items.

Rental and sharing services transform traditional ownership models, offering flexibility to both individual and corporate customers. These services provide access to high-quality products without ownership responsibilities, reducing demand for new goods. Digital platforms play a pivotal role in facilitating seamless sharing and rental experiences, creating new business opportunities and enhancing resource efficiency.

Resale services further prolong the life cycle of products. Marketplaces for second-hand goods promote sustainable consumption while generating economic value from items that might otherwise become waste. These platforms provide customers with sustainable alternatives to buying new products, supporting the circular principle of keeping products and materials in use at their highest value.

Some businesses go a step further, moving entirely beyond physical products to offer services based on knowledge, expertise, or digital technologies. By delivering experiences or solutions rather than tangible goods, companies can significantly reduce their environmental impact while enhancing valuable interactions and long-term partnerships with customers.



While these service models offer exciting potential, their environmental benefits are not automatic. To ensure positive outcomes, companies must decouple revenue generation from resource use and emissions. Challenges often arise. For instance, many companies still measure success by sales volume, which can incentivize the promotion of new product purchases alongside repairs or returns. Additionally, not all products are suited to circular business models. For example, formalwear might not endure frequent rentals or cleanings without substantial design improvements.

Transitioning from product-focused to service-driven business models requires significant changes in how companies operate and how consumers behave. This cultural shift places greater value on services over products, emphasizing sustainability, community, and shared responsibility over traditional notions of ownership and consumption.

Within organizations, adopting service-centric strategies means rethinking traditional processes, values, and metrics. Success shifts from short-term sales volume to long-term customer relationships, continuous service enhancements, and maximizing customer value. This often requires upskilling employees who are accustomed to conventional business models.



**Circular service design
broadens the ways value can
be generated through repair,
rental, and resale services.**

For consumers, the shift involves creating awareness of the benefits of the circular economy and encouraging new consumption habits. Services must demonstrate that they can offer equal or greater satisfaction compared to buying new products. Service models can also promote social equity and accessibility by providing affordable alternatives and higher-quality experiences to a wider audience.

Shifting from product-based to service-based business models aligned with circular economy principles requires innovation and commitment. Success hinges on reimagining business models, revenue streams, and ensuring that associated products are designed for extended, multi-phase use cycles. Although this transition is complex and gradual, it holds immense potential for economic growth, sustainable development, and social progress.



● IN BRIEF

Service models in the circular economy present exciting opportunities for businesses to innovate and grow. By extending product lifespans, optimizing their use, and enabling sharing among multiple users, these models create value while reducing reliance on new resources. In some cases, value can even be generated entirely through service offerings. However, to ensure their sustainability, the revenue models for such services must be effectively decoupled from resource consumption and emissions.

The transition from a product-focused to a service-centered business model requires significant changes in both business operations and consumer behavior. Companies need to embrace new service-oriented strategies, processes, and values, which may involve reskilling their workforce. At the same time, consumers are encouraged to adopt new habits and embrace values aligned with a service-based economy.

4.1 Repair and maintenance services extend product lifespans

From an environmental perspective, the most sustainable products are those that already exist, as their continued use requires no new resources for production. Repair and maintenance services are pivotal to the circular economy, offering practical ways to extend the lifespan of consumer electronics, appliances, clothing, furniture, and many other product categories. These services enable more efficient resource use, reduce the demand for new product manufacturing, support responsible consumption, and deliver significant benefits to businesses, including cost savings, stronger customer relationships, and reduced environmental impacts.

Durable and valuable products—whether due to their physical robustness, emotional resonance, brand reputation, or environmental credentials—are particularly well-suited for repair and maintenance services. High-value products align with consumer expectations of longevity and quality, making them ideal candidates for integrating such services.

Repair and maintenance services take many forms, from local tailoring shops specializing in clothing repairs to advanced digital platforms offering remote maintenance and diagnostics. Technological innovations open up new possibilities, such as predictive maintenance and remote troubleshooting, which improve customer experience while making repairs faster and more sustainable. Businesses can explore various approaches to make these services effective and accessible.

For example, industrial machinery relies heavily on maintenance and repair services to ensure business continuity while preserving and enhancing functionality. In consumer electronics, the demand for repair services for devices like smartphones is growing rapidly, with repair kiosks now a common sight in shopping malls. These services reduce the need for new device purchases, save money for consumers, and significantly cut down on e-waste—one of the most pressing environmental challenges of our time. Similarly, repair and customization services in the fashion industry are gaining traction, providing ways to mend, update, and personalize garments. Extending the life of clothing supports sustainable fashion practices while encouraging consumers to value their



existing wardrobe. By sharing knowledge about repair techniques and materials, businesses can empower customers to take an active role in maintaining their garments.

Effective repair services must be easily accessible and convenient, or products should be designed for simple transport to service centers. For instance, repairing large appliances like washing machines can be challenging due to their size and location, necessitating innovative service models. Additionally, products need to retain sufficient value to make repairs appealing. Low-quality disposables like fast fashion rarely provide viable opportunities for repair services.

For businesses, developing repair and maintenance services offers numerous advantages. These services meet growing consumer demand for sustainable solutions, create new revenue streams, strengthen brand reputation for responsibility, and build lasting customer relationships. High-quality repair services also help businesses differentiate themselves from competitors and enhance trust with their customers.

For consumers, repair and maintenance services offer the chance to enjoy high-quality, meaningful products for extended periods. These services support a more sustainable lifestyle, build deeper emotional connections with products, and ease financial strain by reducing the frequency of replacements. As awareness of and interest in repairability increase, consumer demand is driving markets toward truly innovative service solutions.



Repair and maintenance services offer practical ways to extend the lifespan of consumer electronics, appliances, clothing, furniture, and many other product categories.

TIPS FOR CREATING EFFECTIVE REPAIR AND MAINTENANCE SERVICES

Creating effective repair and maintenance services begins with gaining a deep understanding of your customers' motivations throughout a product's lifecycle. Start by identifying how these services align with your product category and where they can create the most value. Use participatory and experimental methods, such as service design, to develop a robust business model, establish necessary partnerships, craft service pathways, and define product requirements to support the service.

QUESTIONS TO CONSIDER:

-
- How can we uncover deeper insights into customers' motivations and expectations for repair and maintenance?
-
- What repair services can provide the greatest environmental benefits and most financial value for both the company and the customer?
-
- In what ways can the services go beyond basic fixes to meet customers' broader needs for extending a product's lifespan and increasing its value?
-
- Which repair service model is best suited to our product category and customer base?
-
- How can we ensure during the design phase that products are inherently easy to repair and maintain?
-
- What elements are needed to make the repair service business model profitable and sustainable?
-
- What partnerships do we need to test, launch, and expand the repair services successfully?
-
- How can we actively involve customers and partners in the service development process to ensure it aligns with their real needs and expectations?



EXAMPLE

Repair services extend children's clothing longevity

A children's clothing company has fully embraced sustainability and circular economy principles by offering high-quality, long-lasting products. Recognizing two key barriers to sustainable practices—the difficulty of repairing clothing and a prevailing culture that often prioritizes buying new over repairing old—the company has taken proactive measures to address these challenges.

The company employs a holistic strategy to maximize product durability. By using high-quality, safe materials and designing for longevity, its garments are built to endure extended use. Repairability is integrated into the design process, making the clothing straightforward to maintain and fix. Partnering with a repair solutions provider, the company offers tailored textile repair patches that allow customers to easily restore worn or damaged garments at home.

Customer education and engagement are central to the company's approach. It hosts repair workshops to teach practical maintenance and repair skills, while also providing easy-to-follow guides and video tutorials to make self-repair more accessible. Additionally, the company offers warranty programs that cover garment repairs and maintenance.

Emphasis on repairability has provided a competitive advantage, attracting new customers and partnerships.



This strategy delivers significant benefits for both the company and the environment. The extended lifespan of its garments has substantially reduced the need for new production, lowering associated environmental impacts. Durable designs and repair solutions have also minimized textile waste, conserving valuable natural resources.

Customers value the company's dedication to sustainability and the quality of its products, which strengthens customer loyalty and enhances its brand reputation. Its emphasis on repairability has provided a competitive advantage, attracting new customers and partnerships that align with its sustainable vision.



● IN BRIEF

Repair and maintenance services are vital to the circular economy, offering solutions to extend product lifespans. These services generate financial savings, build stronger customer relationships, and lower environmental impacts. Ensuring their accessibility is key to their effectiveness.

4.2 Rental services extend product use across multiple users

Rental services provide products as a service rather than through traditional sales, reducing the need for new production and resource consumption. By offering access without ownership, rental models support continuous interactive customer relationships and promote the continued use of products across multiple users. These services are particularly effective for high-value product categories such as formal and luxury apparel, office technology, specialized tools, electronics, and recreational equipment.

In rental arrangements, the product owner retains ownership while customers can use the product for a specified period in exchange for a fee. Pricing models can also incorporate benefits derived from the product, often bundling additional features such as insurance or maintenance. Long-term leasing options allow customers to use a product without ownership, with the possibility of purchasing it at the end of the lease for a pre-agreed price.

Technology and electronics rentals are particularly valuable in industries characterized by rapid innovation and high upfront costs. Businesses can lease printers, specialized tools, and computers, often with maintenance and technical support included, alleviating the burden of upkeep. Similarly, individual consumers can lease cars, smartphones, cameras, and entertainment electronics, gaining flexible access to cutting-edge or purpose-specific devices.

Clothing and recreational product rentals offer a sustainable and cost-effective way for consumers to access high-quality items on a temporary or seasonal basis. Formal and luxury apparel rentals address short-term needs, providing stylish and environmentally conscious alternatives to purchasing. Similarly, renting recreational products such as sports equipment, bicycles, boats, or camper vans offers convenient access to premium items without the financial commitment or logistical challenges of ownership, such as storage or maintenance.

Digital platforms play a critical role in managing and facilitating rental services, enabling seamless user experiences and efficient service delivery. These platforms support both direct business-to-customer models and peer-to-peer marketplaces,



Rental services are effective for high-value products such as formal and luxury apparel, office technology, specialized tools, and recreational equipment.

while gathering valuable data on product usage. This information helps businesses optimize services and forecast demand, particularly important in sectors like office technology and electronics, where rapid advancements require frequent updates.

To ensure rental services are both efficient and sustainable, businesses must establish robust systems for maintaining, returning, and reusing products. This involves optimizing logistics and supply chains and investing in high-quality maintenance and repair services. For many categories, such as specialized tools and recreational products, the physical condition and functionality of items are crucial to customer satisfaction, making reliable upkeep a key component of success.

Strong customer support is essential for building trust and satisfaction in rental services. This includes clear terms and conditions, easy rental and return processes, accessible maintenance services, and flexible options for upgrades or replacements. A positive customer relationship encourages loyalty and supports sustainable consumption habits. Post-rental marketing strategies are also important, ensuring continued engagement and repeat use of services.

Rental services present a compelling and sustainable alternative to traditional ownership, offering businesses the opportunity to grow while reducing environmental impact. By focusing on quality, customer experience, and operational efficiency, rental services extend the use of products across multiple users, maximizing their value and supporting circular economy principles.



TIPS FOR DESIGNING SUCCESSFUL RENTAL SERVICES

The key to designing successful rental services lies in understanding how customers derive value from using a product rather than owning it. Begin with detailed customer and market research to evaluate the potential for rental services in your chosen product categories. Use this understanding to create compelling service concepts, develop prototypes of service journeys and customer experiences, and refine them through testing with customers and partners.

QUESTIONS TO CONSIDER:

- What are the specific rental-related needs, preferences, and behaviors of customers within the targeted product category?
- How can we gain richer customer insights about their existing and emerging needs and hopes for using products as a service?
- Which rental service models best match the product's different use cases and lifecycle stages?
- How can rental services be seamlessly integrated into the product lifecycle to deliver maximum value for both customers and the business?
- What opportunities do digital platforms offer to streamline management and promotion of rental services?
- How can we ensure rented products maintain their quality, safety, and longevity throughout their lifecycle?
- What additional support services, like maintenance or insurance, would enhance the rental offering?
- How can we develop strategies for customer relationship management and post-rental engagement to sustain loyalty and satisfaction?

EXAMPLE

Why buy lamps when you can rent light?

A lighting company committed to sustainability and the principles of the circular economy offers its customers the option to access lighting as a service rather than purchasing fixtures. The company identified that the cycle of buying and replacing lighting fixtures poses significant barriers to sustainable development and energy conservation.

To tackle these challenges, the company introduced “Lighting-as-a-Service” (LaaS). Through this model, the company installs, operates, and maintains lighting systems, while customers pay a monthly fee for the lighting they use. This eliminates the need for customers to make expensive investments in lighting equipment and transfers ownership to the company, while ensuring the offering is high-quality and long-lasting.

The company uses modular lighting fixtures and solutions that are easy to repair and replace during use. At the end of the contract, customers can choose to renew the agreement or return the lighting equipment to the company for reuse or recycling. The LaaS model extends the lifespan of lighting products, reduces waste, and improves energy efficiency. Professionally managed lighting systems also operate more effectively, leading to significant energy savings and lower carbon emissions.



With the rental model, customers avoid high upfront costs while accessing up-to-date, efficient lighting solutions.

The service model has delivered significant benefits to customers and the environment. Customers avoid high upfront costs and access always up-to-date, efficient lighting solutions. The company's modular lighting fixtures last 75% longer than traditional ones, reducing the need for new production and minimizing environmental impact. The energy savings are also substantial. For example, at one of Europe's busiest airports, implementing the LaaS model cut energy consumption by 50% compared to the previous system.



● IN BRIEF

Rental services provide access to products as a service instead of traditional sales, making them ideal for high-value categories like electronics and specialized tools. Digital platforms play a crucial role in managing rentals, streamlining transactions, and ensuring a seamless customer experience. These services help extend product lifespans, reduce resource use, and build stronger relationships with customers.

4.3 Resale services give products multiple lives

Resale services lie at the heart of the circular economy, giving used products the ability to have several new lives. By reducing waste, conserving resources, and addressing the growing demand for sustainable solutions, resale models align perfectly with circular economy principles. They also drive high-quality product design and introduce new ways to create value within communities, as products move from one user to the next.

These services provide businesses with diverse methods to extend the life cycle of their products, ensuring multiple owners use them. Common approaches include peer-to-peer marketplaces and proprietary resale or return systems developed by companies. Enhanced services, such as refurbishing items to near-new condition or offering personalized modifications, further increase the appeal and value of pre-owned products.

Resale models are especially effective for items with long lifespans and a high potential to retain value over time. This includes industrial machinery, construction materials, tools, designer apparel, jewelry, sports equipment, electronics, and furniture. For resale services to succeed, they must be reliable, user-friendly, and transparent, ensuring that both sellers and buyers see value in opting for pre-owned items.

Peer-to-peer marketplaces simplify the exchange of goods between users, making buying and selling used products straightforward. Businesses also leverage dedicated resale platforms, such as specialized websites or apps, to broaden their reach. These platforms often feature additional tools, such as authenticity checks, product condition verification, and maintenance services, enhancing trust and safety in the transaction process.

Brands are increasingly creating their own resale and return systems, gaining greater control over the process while offering a trusted and brand-consistent experience. For example, fashion companies have established programs for customers to sell or trade their pre-owned clothing, while electronics brands enable customers to return old devices for upgrades or refurbished alternatives.

A robust logistics and maintenance framework is essential for effective resale services. Streamlined transportation, storage, and handling processes reduce operational





expenses. For resale services, managing returns, inspections, refurbishments, and redistributions can be costly. A well-designed supply chain optimizes these processes, lowering costs and maintaining profitability. Customer service also plays a pivotal role, with clear return and warranty policies, swift return procedures, and responsive support contributing to a positive resale experience.

Resale services unlock significant opportunities for businesses. They help companies reach untapped customer segments, differentiate themselves from competitors, and build stronger, long-term customer relationships. These services exemplify the transformative potential of the circular economy, reshaping how both businesses and consumers perceive product ownership and value. By offering compelling benefits for both the environment and business growth, resale services represent a win-win for all stakeholders.

Resale is effective for items with high value retention, including machinery, construction materials, designer apparel, jewelry, electronics, and furniture.



TIPS FOR DESIGNING RESALE SERVICES

The market for used products differs significantly from that for new ones. Designing effective resale services requires a deep understanding of the factors influencing customers' buying and selling decisions, and the different stages in the life cycle of used products. Key considerations include ensuring smooth interactions between buyers and sellers, building trust in the process, and guaranteeing the quality of the products and the value added by the service.

QUESTIONS TO CONSIDER:

- Why do customers prefer used products over new ones, and what factors—like price, environmental values, or product uniqueness—influence their choice?
- What unique services or features can make resale services more attractive and competitive?
- How does purchasing behavior differ across categories like electronics, furniture, or clothing?
- What trust mechanisms or guarantees can make buying and selling used products feel secure?
- Why do people or businesses part with items? How can we address the needs in selling or exchanging?
- How do verification, authenticity checks, and return policies influence buyer confidence?
- How can we encourage and simplify the process of exchanging or selling used products?
- How can service journeys—from listing to showcasing, transactions, inspections, and returns—be streamlined for ease and efficiency?
- How can we ensure product condition is clear and establish consistent criteria for value assessment?



EXAMPLE

Algorithms optimize resale of used products

A company focused on the resale of books, clothing, and electronics operates with the philosophy that well-made items are “worth buying twice.” Its goal is to extend product lifespans by offering customers a comprehensive and dependable resale platform.

After finding initial success in the used book market, the company expanded into clothing and electronics. This diversification was informed by research into product categories that suited its C2B2C (consumer-to-business-to-consumer) model. Pilot projects helped it identify used clothing as its main area of focus, with additional offerings in consumer electronics like headphones and smartphones. Today, customers can purchase books and clothing online and in the company’s physical stores.

The platform serves both sellers and buyers, offering a trustworthy and user-friendly way to recycle products. Customers can use the company’s mobile app to scan product barcodes, check item quality, and receive price estimates. Quality assurance is a central aspect of the process, ensuring that all listed products meet high standards, with prices adjusted based on condition.



Resale services lie at the heart of the circular economy, giving used products the ability to have several new lives.

The company uses an advanced algorithm to analyze sales data, monitor demand, and evaluate the quality of incoming items. This technology automates the acceptance or rejection of products and dynamically sets pricing based on popularity and market trends. A complimentary courier service collects items from sellers, and once received at the warehouse, products are manually repaired, refurbished, and cleaned.

This streamlined approach has garnered the trust and loyalty of millions of customers. By blending convenience, quality, and sustainability, the company delivers seamless resale experiences while distinguishing itself in a competitive marketplace.



● IN BRIEF

Resale services form a crucial pillar of the circular economy, enabling used products to gain multiple new lives. Ideal for durable products with enduring value, these services can include peer-to-peer marketplaces or brand-operated resale platforms. Enhancing these models with features like authenticity verification, condition assessments, and maintenance can further boost their attractiveness and effectiveness.

5 Stories





In the transition to a circular economy, stories, along with the marketing and branding that shape them, play a pivotal role. These narratives provide holistic interpretations that align employees and partners with a shared mission, highlight the benefits of products and services in customers' lives, and communicate a company's commitment to sustainability.

A common challenge for circular economy-focused businesses is bridging the gap between their actions and the perceptions of stakeholders. When actions and solutions are not effectively communicated, successes remain limited, and opportunities are missed. Compelling stories engage all stakeholders, from customers to employees and partners, making the company more appealing and its mission more relatable. Circular brands and marketing strategies thrive on three types of stories, each with a specific role: corporate stories, customer stories, and impact stories.

Corporate stories capture a company's journey toward circularity. These narratives articulate what the company's vision means in practice and outline the shared mission that drives progress toward a desired future. Serving as tools for self-reflection and communication, corporate stories guide transformation and help clarify strategic direction.



Circular brands and marketing strategies thrive on three types of stories, each with a specific role: corporate stories, customer stories, and impact stories.

Customer stories, on the other hand, are shaped by customers themselves. They arise organically from interactions with the company's products, services, and customer experiences. These narratives showcase how customers engage with the company, the emotions tied to these interactions, and the tangible ways their lives are improved by the company's efforts.

Impact stories draw on data and research to convey the outcomes of a company's actions on the environment and society. These transparent accounts highlight both positive and negative effects, providing a nuanced view of the company's role within larger systems. Often emphasizing partnerships and collaboration, impact stories show how joint efforts create meaningful change.

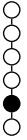
Authenticity and transparency are fundamental to all circular economy storytelling. These narratives must be truthful, avoiding any form of greenwashing—exaggerated claims about the environmental or sustainable benefits of actions, products, or services. Effective stories translate abstract concepts into tangible examples, such as improving product durability or reducing waste, making circular economy benefits easier to grasp and appreciate.

More than communication tools, stories are a source of inspiration and an essential component of a company's strategy, culture, and collaboration. By sharing visions of a future where circular principles dominate, companies can motivate stakeholders to work toward shared goals. Stories can encourage employees to adopt sustainable practices, inspire customers to choose responsible products and services, and deepen partnerships for long-term collaboration.

Stories also differentiate companies in the marketplace, positioning them as leaders in the circular economy. By effectively communicating vision, achievements, and impact, businesses inspire change and establish themselves as pioneers in sustainable practices. Meaningful and engaging stories become powerful tools for driving transformation, creating commitment, and building a competitive edge in a world increasingly focused on sustainability.



A corporate story serves as a vital tool for defining and communicating the direction of change while engaging stakeholders in the process.



● **IN BRIEF**

Successful circular economy brands and engaging marketing are built on corporate stories, customer stories, and impact stories. These narratives make a company compelling, helping its products, services, and solutions stand out in the market. Stories unite partners and employees around shared goals, communicate the company's commitment to sustainability, and translate abstract circular economy concepts into tangible successes. To be effective, stories must be truthful and free from misleading claims.

5.1 Corporate stories drive circular economy transition

A corporate story is a company's narrative about its transition to circular economy principles. These stories emphasize the ongoing journey toward adopting new business models, creating innovative products and services, and positioning the company as an active participant in solving ecological and societal challenges while contributing to a sustainable future.

Designing a corporate story can happen during strategy processes, rebranding, or even redesigning a company's online presence. It is often co-created with employees and partners, highlighting the collective effort behind the transformation. A corporate story serves as a vital tool for defining and communicating the direction of change while engaging stakeholders in the process.

Far from being a single tale, a corporate story comprises an interconnected set of narratives and messages that together paint a compelling picture of the company's evolution. It serves to inspire and engage employees, partners, and customers alike, ensuring consistent communication across all stakeholder groups.

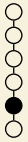
An engaging corporate story begins by addressing the need for change, explaining why the transition is essential and what challenges it aims to tackle. It highlights the benefits of circular economy principles for the company and society, then defines the vision and goals, illustrating the desired future. A clear roadmap follows, detailing the steps and milestones for the transition. Finally, it emphasizes collaboration by outlining how employees and partners can contribute, clarifying roles and increasing inclusion.

A well-designed corporate story is more than just a communication tool—it is a strategic asset. It helps align internal efforts with external messaging, motivates stakeholders by highlighting a shared purpose, and provides a clear framework for navigating the journey toward a more sustainable future. Through these narratives, businesses can effectively inspire, engage, and drive collective action, setting the foundation for a successful transition to the circular economy.



TIPS FOR CREATING COMPELLING CORPORATE STORIES

A compelling corporate story is essential for successful transition to a circular economy. It offers clarity, purpose, and inspiration, helping companies articulate their mission, connect with stakeholders, and catalyze meaningful change. Authentic, impactful, and well-crafted narratives build trust, increase alignment, and unite efforts around a shared vision, laying the foundation for transformative progress.



QUESTIONS TO CONSIDER:

- Why is the transition to a circular economy necessary? What problems or challenges can the company address through this transition?

- How does the company envision a future fully aligned with circular economy principles?

- What actions has the company taken? What concrete steps are planned to embed circular practices into its operations?

- What roles and responsibilities do various stakeholders have in this transformation? How are employees and partners actively involved in this?

- How can employees share their personal experiences and perspectives on the journey toward circularity?

- What stories can highlight small wins, the use of technology and innovation, and the impact of collaboration and partnerships?

EXAMPLE

Visionary story drives flooring manufacturer toward circularity

A flooring manufacturer has become a recognized leader in environmental responsibility, driven by a compelling corporate story that shaped its journey toward circular economy principles. The transformation was motivated by the need to reduce environmental impact and respond to growing consumer demand for sustainable products.

The corporate story, crafted during a strategy process, articulated a bold vision of achieving net-zero emissions by 2030. It outlined a clear roadmap focusing on sustainable material sourcing, energy-efficient production, and comprehensive product lifecycle management. This story became a unifying force, rallying employees, partners, and stakeholders around shared goals and establishing the company as a proactive agent of change.

The narrative emphasized the company's commitment to tackling the challenges of flooring production and landfill waste, setting measurable targets such as reducing its carbon footprint and optimizing water use. The story's influence extended to the company's action plan, which prioritized material recycling, product redesign for sustainability, and innovative modular flooring systems designed for reuse.

Internally, the corporate story inspired employees through strong communication and training, fostering widespread engagement. Externally, it became a cornerstone of the company's brand and marketing, distinguishing it in a competitive market as a pioneer in sustainability.



A well-designed corporate story is more than just a communication tool —it is a strategic asset.

The results have been transformative: recycled materials have significantly reduced resource extraction, energy-efficient processes have lowered emissions, and the modular flooring solutions have minimized waste while extending product lifespans. This journey illustrates how a well-crafted corporate story can drive alignment, action, and lasting impact in the transition to a circular economy.



● IN BRIEF

A corporate story describes a company's journey toward circular economy practices, emphasizing continuous transformation, the development of new business models, and the company's role in building a sustainable future. Often defined as part of the strategy process or brand renewal, the story is designed collaboratively with employees and partners. It helps communicate the direction of change and engage stakeholders. Key elements include the need for change, the vision, a concrete roadmap, and the roles and collaboration methods of all participants.

5.2 Customer stories showcase experiences in circularity

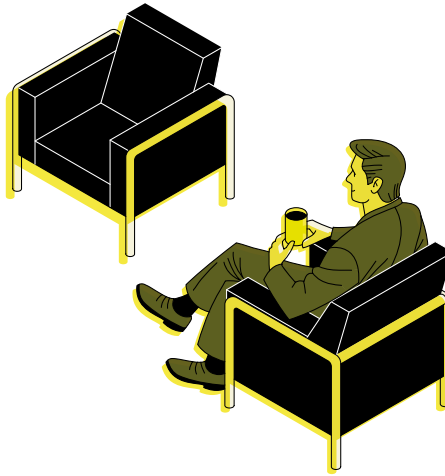
Customer stories are authentic narratives created by customers based on their real interactions with a company's circular economy initiatives. These accounts arise naturally from their experiences with the company's products, services, and customer touchpoints. Unlike traditional marketing, where narratives can be scripted, customers themselves shape authentic customer stories.

What makes these stories compelling is their connection to people's lives, often casting customers as protagonists in their own transformative journeys. Forward-thinking companies recognize this, shifting their focus from selling products or solutions to presenting customers with a role in a larger narrative: a vision of a better life, illustrated by real customer experiences. By incorporating these authentic stories into their broader corporate narrative, businesses can emphasize the positive changes their circular economy offerings and solutions bring to people's lives.

The strength of customer stories lies in their ability to forge emotional connections and establish credibility. When customers share how a company's sustainable solutions have genuinely impacted them, these narratives build trust in the company and its offerings. Seeing others' satisfaction creates a ripple effect, encouraging potential customers to explore and adopt similar products or services.



Forward-thinking companies present customers with a role in a larger narrative: a vision of a better life, illustrated by real experiences.



To unlock the value of customer stories, businesses should actively gather and utilize them, especially those linked to circular economy initiatives. This involves engaging with customers across various channels like social media, customer service, and feedback surveys. Analyzing these stories provides critical insights into customer needs and expectations, also helping businesses refine their offerings and enhance the overall customer experience.

In corporate communications and marketing, customer stories serve multiple purposes. They reinforce the company's brand and values by showcasing sustainability, innovation, and customer-centricity. These narratives are memorable and impactful, making them ideal for use in advertising campaigns, product presentations, and corporate events.

The versatility of customer stories allows them to be told from various perspectives. A customer might highlight how a circular service improved their quality of life, detail a collaborative effort with the company that led to success, or explain how the company's values inspired changes in their own life or business. These stories bring the principles of the circular economy to life, inspiring others and solidifying the company's reputation as a transformative force in circular business.



TIPS FOR GATHERING AND USING CUSTOMER STORIES

Customer stories are powerful tools that help build trust, strengthen brands, improve marketing, and enhance customer experiences. By actively gathering and leveraging these stories, you can foster stronger connections with your audience and promote circular economy practices. This involves listening to your customers across multiple channels, identifying and collecting their narratives, and integrating these stories into your marketing and communications.

QUESTIONS TO CONSIDER:

-
- How do customers perceive our products or services? How have these improved their lives or businesses?

 - In what ways have our products or services helped customers reduce their environmental impact, and what examples demonstrate this?

 - How have our actions and values inspired our customers?

 - What platforms and incentives can we offer customers to share their circular economy experiences?

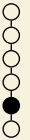
 - What steps can we take to encourage customers to provide feedback and share their stories?

 - How can we make sharing stories easy and rewarding for customers?

 - How can we enhance the customer experience by utilizing their stories?

 - What strategies can we use to integrate customer stories into our branding efforts?

 - How can we effectively incorporate customer stories into our marketing campaigns?



EXAMPLE

Customer trust in boat rentals grows through positive experiences

A boat rental service offers a sustainable and stress-free way to enjoy boating, with authentic customer stories forming the backbone of its brand. These stories are far more than marketing tools—they provide credibility, forge genuine connections, and highlight the real-world benefits of circular economy principles.

The company's origin itself is framed as a customer story. A family frustrated by the costs and underuse of their boat turned to rentals as a solution. "We started by solving our own problem," explained one of the founders. Their initial success with traditional rentals in 2016 inspired them to launch an online peer-to-peer platform the following year. This platform addressed their personal challenges and opened up opportunities for countless others to enjoy boating without ownership.

Customer stories have since become central to the company's success. Boat owners often share how renting their vessels helps offset ownership costs and increases their use, while renters recount how the service has made boating more accessible. These authentic experiences build trust, with one user summing it up perfectly: "Boating has been made so easy and accessible. I can finally enjoy the sea breeze and water adventures without owning a boat."

The strength of customer stories lies in their ability to forge emotional connections and establish credibility.

The company weaves these narratives into its brand, showcasing how it doesn't just provide boat rentals—it transforms lives by making boating attainable for more people. This storytelling approach strengthens customer confidence, reinforces the company's commitment to sustainability, and underscores the broader appeal and benefits of circular solutions.



● IN BRIEF

Customer stories, rooted in genuine experiences with a company's circular economy practices, emerge naturally from interactions with its products, services, and touchpoints. These authentic narratives cannot be fabricated by the company but hold significant power to foster trust and emotional connection. By incorporating customer stories into their branding and marketing efforts, businesses can effectively showcase their dedication to sustainability and customer-focused solutions.

5.3 Impact stories highlight transparent outcomes

Impact stories rely on data and research to clearly demonstrate the environmental and societal effects of a company's actions. They offer a transparent view into operations, exploring both positive and negative outcomes through a systems perspective. These stories may highlight circular solutions across supply chains, materials, and production processes, sharing detailed information on sourcing, handling, and environmental impacts. Collaborations and partnerships are often central, showcasing collective efforts toward achieving sustainable objectives.

Concrete examples and measurable outcomes enhance the credibility of impact stories. Companies build trust and accountability by sharing achievements, such as reductions in carbon emissions or virgin material use, and explaining the steps taken to reach these results. For instance, a business working toward carbon neutrality or positivity by 2030 might outline its progress and next steps, helping stakeholders understand its dedication and progress to circular economy goals.

Addressing challenges and solutions is equally critical. Acknowledging issues like supply chain disruptions or ethical dilemmas in material sourcing—and explaining how these were tackled—adds authenticity and demonstrates a company's resilience and willingness to learn.

Adding personal stories can make impact narratives even more compelling. For example, a community that benefited from better living conditions due to a company's environmental program offers a tangible and relatable example of positive change. Such stories transform data into meaningful narratives, helping stakeholders connect emotionally with the company's initiatives.

By presenting a balanced, evidence-based account of achievements, challenges, and collaborative efforts, impact stories effectively communicate a company's commitment to circular principles while inspiring confidence in its ability to drive lasting and meaningful change.

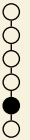


TIPS FOR DESIGNING TRANSPARENT IMPACT STORIES

Impact stories are vital for effectively communicating and branding a company's commitment to the circular economy. They offer a transparent and honest account of the company's environmental and societal effects, building trust with stakeholders. To be credible and meaningful, these stories must rely on measurable data and demonstrate tangible progress toward sustainability.

QUESTIONS TO CONSIDER:

-
- How do we identify and document the impacts of our operations?
-
- What concrete data and research support our claims about environmental and societal outcomes, and how can we present them effectively?
-
- How do we ensure our stories avoid greenwashing and accurately portray the sustainability of our actions?
-
- What measurable achievements have we made in advancing circularity or reducing carbon emissions? What actions led to these results?
-
- What are our long-term goals for the circular economy, such as reducing environmental impacts or achieving carbon neutrality, and how far have we progressed?
-
- How have collaborations with other companies, communities, or organizations contributed to our achievements, and what partnerships can we highlight?
-
- How can we craft these stories to maximize their impact, ensuring they are both compelling and accessible to diverse audiences?



EXAMPLE

Transparent communication strengthens clothing brand's commitment to responsibility

A fashion and outdoor clothing company, celebrated for its refined style and innovative materials, understands that transparency is essential for achieving sustainability goals and building brand trust.

The company's marketing and branding center on transparency and responsibility, offering open insights into its manufacturing processes, material choices, and the environmental impact of its production. These stories are shared across multiple channels, including its website, social media, and direct communications with customers.

This commitment to circular economy principles begins with careful material selection and sustainable product design. For example, its circular economy collection is certified as fully recyclable and safe for people and the environment. The certification evaluates critical factors such as material safety, recyclability, impact on natural resources, and social equity. This scientific validation enhances the credibility of the company's communication efforts.

The company also educates customers about its recycling process. It showcases how the collection is crafted exclusively from Econyl® fiber, a recycled nylon material derived from waste streams. This mono-material design simplifies

Impact stories offer a transparent view into a company's operations, exploring both positive and negative outcomes through a systems perspective.



recycling. Customers are invited to register their purchases in a take-back program and return products to the company no earlier than two years after use. The returned items are dismantled, and the materials are repurposed to create new garments.

These impact stories have proven highly effective. Customers appreciate the brand's transparency and commitment to sustainability, fostering increased loyalty and boosting its reputation. The company's forward-thinking approach and clear communication have provided a competitive edge, attracting new customers and collaborators while solidifying its status as a leader in sustainable fashion.



● IN BRIEF

Impact stories are narratives grounded in data and research that detail the environmental and societal effects of a company's actions. They provide transparent insights into operations, highlighting both positive and negative outcomes from a systems perspective. These stories can showcase concrete examples, such as circular solutions in supply chains, materials, and production processes, and progress toward environmental goals. By addressing challenges and solutions, they enhance authenticity and credibility.

6 Capabilities





Transitioning to a circular economy demands more than incremental adjustments—it requires companies to fundamentally rethink their operations, relationships, and impacts through a systems-based approach. Circular design provides the framework to develop the capabilities necessary for this transformation, embedding circular principles into organizational practices and the broader ecosystems in which businesses operate. The three foundational capabilities for this shift are adaptability, innovation, and collaboration.

Adaptability refers to a company's capacity to dynamically respond to the evolving conditions and demands of the circular economy. This capability entails fostering continuous learning, organizational flexibility, and rapid decision-making across all levels. It creates a culture that views uncertainty as an opportunity rather than a risk. Circular design supports adaptability by introducing participatory and iterative approaches that enable organizations to experiment, learn, and adjust in real time.

Innovation in a circular context extends beyond creating new products or services. It involves reimagining markets, business models, value systems, and stakeholder relationships. Circular innovation focuses on designing for regeneration, desirability, durability, and resource efficiency, with an emphasis on minimizing harm while maximizing benefits for all stakeholders. Circular design strengthens innovation by promoting research and development, nurturing a culture of experimentation, and identifying leverage points where consistent actions drive outsized positive systemic impacts.

The journey toward circular capabilities demands long-term commitment. This transformation begins with individual employees and scales across the organization.



Collaboration is critical in a circular economy, as no single organization can drive the transition alone. Building robust partnerships that span industries, communities, and ecosystems is essential to co-create value and tackle shared challenges. Circular design offers tools to establish trust, transparency, and collective problem-solving frameworks. By engaging diverse stakeholders, companies can align goals and actions to achieve systemic outcomes that are sustainable and equitable.

Building these capabilities requires a systemic approach that integrates organizational transformation with external collaboration. Circular design encourages organizations to cultivate a circular culture that extends beyond the company's boundaries, enabling shared learning and innovation across a network of stakeholders.

Developing circular capabilities involves intentional planning and continuous improvement. Organizations must first identify capability gaps and design targeted training and development programs. These initiatives can include workshops, hands-on exercises, and team collaborations that equip employees with the skills to apply circular principles in their roles. By doing so, companies enable their teams to adopt new methodologies and embrace circular practices in their daily operations.

The journey toward circular capabilities demands long-term commitment. Businesses must transcend traditional practices and structures to view their value chains and impacts through a regenerative lens. This transformation begins with individual employees and scales across the organization, requiring everyone to embrace ongoing learning and adapt to the changing demands of a circular economy.

● IN BRIEF

Transitioning to a circular economy requires businesses to develop new capabilities and strengthen existing ones. Adaptability involves responding to changing conditions and promoting continuous learning. Innovation drives solutions, products, and services that promote circularity. Collaboration enables effective partnerships with external stakeholders. Circular design offers practical tools and methods to build these capabilities and integrate circular principles into business operations.



6.1 Build adaptability to support organizational change

Transitioning to a circular economy is a profound transformation that requires organizations to adapt to shifting demands and evolve boldly across various domains. This transition depends on encouraging continuous learning, building flexible organizational structures, and enhancing decision-making processes. Circular design offers actionable tools and frameworks to build adaptability, empowering organizations to implement meaningful and sustainable changes with confidence.

Continuous learning is the cornerstone of adaptability. It reflects an organization's ability and willingness to acquire and apply new knowledge, skills, and approaches. Embracing new ideas often necessitates a cultural shift, coupled with a structured approach to developing employee competencies. Identifying skill gaps and addressing them through focused training and development programs ensures a workforce equipped for change. Circular design facilitates this process with actionable tools that help people translate learning into meaningful practice.

Equally crucial is creating a flexible organizational structure. Reducing hierarchies and enhancing cross-functional collaboration enable organizations to respond swiftly to shifting conditions and experiment with innovative approaches. Empowering employees with greater autonomy and decision-making responsibilities fosters creativity and operational efficiency. Circular design supports this evolution by providing methodologies to embed circular principles through iterative experimentation and interdisciplinary teamwork.

Effective decision-making is fundamental to steering resources toward impactful priorities. It requires a clear vision, dynamic leadership, and the ability to pivot when circumstances evolve. Core competencies such as strategic foresight, change management, and inclusive leadership are pivotal in enhancing decision-making processes. Establishing well-defined circular economy goals empowers leaders to articulate the value of change while leading by example.

Concrete mechanisms can further reinforce adaptability. Reward systems that recognize employee contributions and performance metrics tailored to circular principles and goals help monitor progress and maintain accountability. These measures sustain motivation and ensure that the transition to circular practices is continuous, deliberate, and well-supported.

TIPS FOR INCREASING ORGANIZATIONAL ADAPTABILITY

To design an adaptive organization, start by a culture of continuous learning through targeted training and development programs that address specific skill gaps related to circular economy demands. Streamline structures by reducing hierarchies and enabling cross-team collaboration to improve agility and responsiveness. Introduce iterative workflows to test and implement changes quickly, ensuring the organization can adapt to evolving conditions. Strengthen decision-making by establishing clear circular goals and using circular metrics to track progress. Support these efforts with transparent communication and engagement strategies that align teams and stakeholders around shared objectives.



QUESTIONS TO CONSIDER:

-
- What specific training and development initiatives will equip employees with the skills to thrive in a circular economy?
-
- What actionable steps can we take to break down silos, reduce hierarchies, and foster collaboration across teams?
-
- How can we empower employees by delegating more responsibility and involving them in decision-making processes?
-
- What change enablers, such as recognition programs or adaptive performance metrics, can we use to drive progress?
-
- How can we ensure transparency and actively involve employees in organizational transitions to build trust and commitment?

EXAMPLE

Design firm enhances adaptability through learning initiatives

An international design firm, self-described as “a global collective dedicated to sustainable development,” has committed to achieving carbon neutrality by 2030. This involves reducing its organizational emissions, integrating sustainability into client projects to address emissions at scale, and collaborating with stakeholders to drive systemic climate action. Recognizing that this ambitious vision required new internal capabilities, the firm set out to build expertise in sustainability and circular design.

The transformation began with a comprehensive change management program and a learning platform designed to embed sustainability and circular principles throughout the organization. This initiative prioritized developing the skills needed to execute impactful circular economy projects.

Central to the program was a people-focused approach that included tailored training sessions, service innovation workshops, regional communities of practice, customer engagement training, and the creation of “global skills networks.” These networks became discipline-specific hubs of expertise, fostering the practical sharing of knowledge and experience across the firm.



Transitioning to a circular economy depends on encouraging continuous learning, building flexible organizational structures, and enhancing decision-making processes.

Each skills network operated as a localized, skill-sharing program led by dedicated coordinators in individual offices. A central knowledge repository served as the backbone, housing shared resources, templates, tools, and best practices related to sustainability and circular design. By sharing success stories, project learnings, and client feedback, these networks helped accelerate enthusiasm and alignment across the organization.

Through these efforts, the firm enhanced its ability to deliver circular economy solutions and cultivated a culture of continuous learning and collaboration. This prepared teams to lead innovative projects that drive systemic change, reinforcing the organization's position as a leader in sustainable design.



● IN BRIEF

Adaptability is a key factor in transitioning to a circular economy, requiring organizations to adjust to new demands and evolve across multiple domains. Continuous learning, a flexible organizational structure, and effective decision-making are essential to this process. Circular design provides practical tools and methods to help organizations build adaptability and implement necessary changes efficiently and sustainably.

6.2 Drive innovation to build circular business futures

Transitioning to a circular economy requires rethinking value creation, shifting from linear practices to circular and regenerative models. This transformation demands systemic innovation that addresses the root causes of unsustainability.

A systems perspective is key, recognizing that circular economy challenges and solutions are deeply interconnected. Businesses must understand their roles within social, natural, and technological systems, identifying leverage points where small changes create significant ripple effects.

Circular innovation extends beyond product or process improvements. Companies must design entire new business models with service and product systems that prioritize regeneration, desirability, and durability while minimizing resource consumption.

Shifting from product sales to shared access systems, for example, turns transactions into ongoing relationships, ensuring sustainable resource flows. Innovation must encompass everything from internal operations to customer interactions.

A culture of experimentation drives circular innovation through real-world testing, rapid prototyping, and collaborative pilot projects across value chains and partner ecosystems. Circular design principles guide these efforts by prioritizing adaptability, continuous learning, and systemic collaboration during experimentation.



TIPS FOR DEVELOPING CIRCULAR INNOVATION CAPABILITIES

To build circular innovation capabilities, begin by mapping your business within broader value systems, identifying leverage points where circular solutions can replace linear practices and create positive ripple effects. Allocate resources to systems-focused research and development that explores circular business models, technologies, and production methods. Encourage a culture of experimentation by implementing frameworks for rapid prototyping, pilot testing, and iterative learning, involving stakeholders from across your value chain. Empower interdisciplinary teams to combine diverse expertise and ensure alignment with circular economy principles. Finally, redefine success by adopting metrics that measure environmental regeneration, social equity, and resilience alongside financial outcomes.

QUESTIONS TO CONSIDER:

-
- How can we map our business within larger ecosystems to identify leverage points for circular interventions?
-
- What investments in research and development can help us create impactful circular solutions?
-
- How can we continuously explore new business models, service models, and production models through real-world learning and iteration?
-
- In what ways can we promote systems-thinking across our organization to seize circular economy opportunities?
-
- What mechanisms can we create to integrate external partners and stakeholders into our innovation processes?
-
- What metrics should we adopt to measure the success of our innovation efforts in terms of ecosystem health, social equity, and long-term resilience?

EXAMPLE

Automation & robotics company innovates toward circularity

An industrial automation and robotics company has built its success on strong innovation capabilities, embedding circular principles into its mission, vision, and strategy. Research and development drive the company's efforts to create systems that extend product life cycles, improve energy efficiency, and optimize resource use, aligning with circular economy goals.

Systems thinking plays a central role in addressing the interconnected nature of industrial ecosystems. Employees leverage this perspective in a dedicated innovation lab, where teams collaboratively develop and test automation solutions aligned with circular principles, such as modular robotics designed for upgrades and repairability.

Building a culture of experimentation is another pillar of the company's approach. Teams are empowered to design and test concepts rapidly, launching pilot projects for smart automation systems that reduce waste and improve efficiency in manufacturing. This has significantly shortened time-to-market, illustrating how iterative processes drive impactful solutions while minimizing risk.

Collaboration across disciplines is integral to the company's success. Automation experts work alongside engineers, designers, and market strategists to align circular innovation with real-world needs. For example, the development of a modular robotics platform combined insights from engineering on functionality, designers on user experience, and sales teams on market demand.

● IN BRIEF

Innovation capability is a key enabler for transitioning to a circular economy through novel solutions and business models. It encompasses the ability to create, implement, and scale ideas that address changing market conditions and environmental demands. Innovation thrives on systems-focused research and development, systems thinking, and fostering a culture of experimentation.

6.3 Increase collaboration for broader impact and faster change

Collaboration is a foundational element of the circular economy, where diverse organizations and actors create dynamic ecosystems. Circularity demands collective expertise and shared responsibility across multiple fields to address complex challenges with creativity and efficiency. By working together, diverse actors can unlock circular opportunities at a scale unattainable by any single organization.

Partnerships between large corporations and small startups exemplify the value of collaboration, combining the agility and innovative potential of smaller entities with the scalability and resources of larger ones. Collaboration spans shared value systems, ecosystems, and industries, operating effectively at both local and global levels. The development of new circular business models and the optimized use of resources often rely on coordination among stakeholders, enabling the reuse, repurposing, or recycling of products and materials.

Circular design methods and tools actively enable collaboration by structuring shared innovation and design processes. Open innovation, for instance, harnesses external ideas, expertise, and resources while facilitating the exchange of internal knowledge. Partnerships with research institutions, universities, and startups illustrate how this model accelerates transformative breakthroughs, enabling solutions that might otherwise remain out of reach.

Participatory design enhances collaboration by engaging stakeholders—such as customers, partners, and employees—directly in the design process. Through co-creation



Empathy helps bridge perspectives and build trust, while expressing ideas and feedback transparently.

and dialogue, it integrates diverse perspectives to improve the quality of outcomes while strengthening stakeholder commitment and shared ownership of solutions.

Clear communication and strong interpersonal skills are vital for effective collaboration. Empathy helps bridge differing perspectives and build trust, while expressing ideas and feedback transparently fosters mutual understanding. Establishing common ground enables shared decision-making and ensures steady, productive progress.

Systems thinking, a central principle of circular design, provides valuable insights into stakeholder relationships and the potential impacts of collaborative efforts. Tools like life cycle assessment help evaluate the environmental and economic effects of collaborative models, enabling informed and strategic decisions. Systems perspective allows organizations to design partnerships with transformative potential while avoiding unintended consequences.



TIPS FOR IMPROVING COLLABORATION CAPABILITIES

To enhance your organization's collaborative capacity, establish structures and practices that support new partnerships, open communication, and trust. Develop processes that facilitate knowledge exchange and dialogue, align incentives to engage stakeholders, create shared ownership models, and apply systems thinking to structure and assess collaboration.

QUESTIONS TO CONSIDER:

- How can we tap into external expertise and viewpoints to enhance our projects?

- How can we ensure the fair and equitable distribution of ownership, benefits, and risks among project participants?

- How can we share knowledge and increase learning throughout our ecosystem?

- How can we establish and sustain an open innovation environment that encourages ongoing knowledge sharing and active engagement?

- What platforms or forums can we establish or participate in to streamline collaboration among various stakeholders?

- What processes and spaces can we design for dialogue and mutual understanding, ensuring that all stakeholders' perspectives and goals are considered?

- What innovative or unconventional partnerships could open new opportunities or reinforce our value chain?



EXAMPLE

Collaboration advances sustainability in the supplement industry

A food supplement brand has made substantial progress in enhancing its collaborative capabilities and adopting a circular economy business model. Early on, the company recognized that advancing sustainability required stronger partnerships with diverse stakeholders, including organizations from outside its traditional industry boundaries.

To address this, the company launched a collaboration program, forming strategic partnerships with agile startups and a larger manufacturer. This brought the flexibility needed to drive innovation and the scale required to expand operations. Collaborative efforts resulted in more sustainable production processes, improved resource efficiency, and a measurable reduction in environmental impact, all while ensuring compliance with increasingly stringent regulatory frameworks across global markets.

Central to this initiative was the mapping and co-development of value systems. The company organized a series of workshops to identify key ecosystem players—ranging from material suppliers to logistics providers—and visualize their interconnections. These sessions broke down barriers between sectors, industries, and traditional hierarchies, revealing overlooked opportunities for cooperation. The resulting maps

Collaboration spans shared value systems, ecosystems, and industries, operating effectively at both local and global levels.

provided a clear picture of the emerging ecosystem, enabling the company to focus its efforts on partnerships and initiatives that offered the highest potential for impact.

Besides external partnerships, the company also prioritized participatory design to engage stakeholders across its value chain. Employees, customers, and business partners were actively involved in ideation and development processes. One additional standout project, developed in collaboration with a leading research institution and design agency, co-created biodegradable packaging materials tailored for supplements. This innovation had the potential to drastically reduce packaging waste, improve product safety, and enhance the brand's appeal among consumers.



● IN BRIEF

Collaboration is a cornerstone of the circular economy, where experts and companies from diverse fields work together to address complex challenges and seize new opportunities flexibly. Partnerships often bridge large and small businesses, value system actors, and various sectors and ecosystems, enabling efficient resource use and shared costs. Circular design enhances collaborative capabilities by offering tools that streamline cooperation and drive innovative solutions.

Circular design process

W

hether developing a new business model, rethinking products, creating services, or transforming an organization, working systematically is essential. The circular design process offers a clear framework for embedding circular economy principles into your work.

This process aligns with established design methodologies, emphasizing the importance of identifying the right problems before addressing them. Inspired by the Design Council's well-known systemic design model, it follows a four-stage framework that emphasizes a systemic approach, interdisciplinarity, and iteration. While the process outlines distinct phases, these often overlap in practice, with steps revisited as new opportunities emerge or priorities shift.

Each stage incorporates systems thinking, futures thinking, design thinking, and human-centered design. The early stages focus on framing the guiding questions, building a comprehensive understanding of the subject, and setting a clear direction. Later stages emphasize creating solutions and catalyzing promising ideas. Organizations may adapt these stages to fit their unique workflows, but the underlying questions are relevant across contexts.

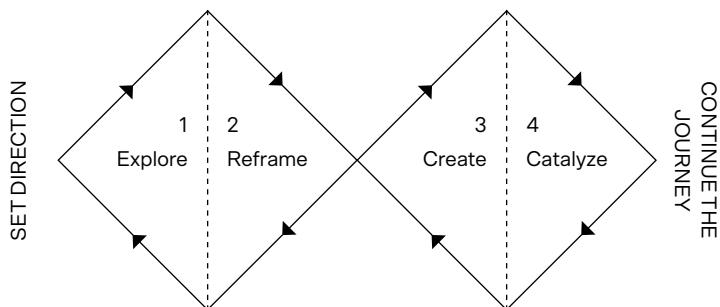
Circular design outputs can take many forms, depending on organizational needs. Outcomes might include new business models, digital services, sustainable products, engaging brands, or innovative organizational structures. Equally important are the “invisible” factors that drive success—partnerships, value chains, collaboration models, leadership practices, and storytelling. Devoting attention and resources to these elements is critical for creating lasting impact.

Circular design is grounded in action. For those grappling with the complexities of systemic challenges and transformative change, focusing on practical steps can make progress more attainable and impactful

Whether developing a new circular business model, rethinking products, creating services, or transforming an organization, the circular design process offers a clear framework for that.

● **IN BRIEF**

The circular design process emphasizes a systemic approach, interdisciplinarity, and continuity. It comprises four phases: exploring, reframing, creating, and catalyzing. Focus areas can range from sustainable products and business models to innovative partnership frameworks and beyond. Circular design highlights the importance of practical action in effectively addressing complex transformations.



Adapted from Design Council, 2021.

The circular design process is divided into four key phases: understanding, refining, creating, and advancing. These are bookended by an initial scoping phase to set direction and a continuation phase for iterative testing and improvement.

Set Direction

During the direction-setting phase, the focus is on creating a clear overview of the organization's starting point, defining the scope of the design effort, and articulating an initial vision for success.

1. Explore: Explore the lived experiences of customers and the needs of stakeholders while mapping social, technical, and natural systems that influence the design challenge.

2. Reframe: Identify opportunities, define the direction of the design effort, narrow the focus to key areas, and clarify objectives.

3. Create: Generate ideas, design, and develop as many variations of potential solutions as possible.

4. Catalyze: Bring promising solutions to life through experimentation and craft stories that strengthen engagement with customers and stakeholders.

Continue the Journey

The journey continues through the testing and improvement of plans and implementations, driven by insights into how things work in practice. The process rarely moves linearly—often requiring revisiting earlier steps to refine goals, deepen understanding, generate new ideas, or refine solutions further.

Set direction

The goals and objectives you define for your project play a pivotal role in shaping its outcome. Circular economy principles call for reimagining business practices to align with the planet's limited resources, promote fairness, and promote sustainable well-being for all. This shift requires a comprehensive rethink of operations, though the journey can begin with small, consistent steps taken at pace.

At the outset of a project, the full scope of challenges and opportunities may not yet be clear. However, crafting an aspirational vision of success—one that integrates the perspectives of customers, partners, the environment, and the business—provides a strong foundation. This vision helps outline an initial roadmap and establish preliminary goals, which will likely evolve and sharpen as the work progresses.

Defining shared values among team members and partners is equally important. Investing time in building trust within the group creates a strong foundation for addressing challenges collaboratively. Bringing in professional design expertise or a specialist facilitator can further enhance the process, particularly for tasks that may be difficult to manage internally.

TASKS:

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- Create a personal connection to the project: Ask yourself and the team, “Why are we here?” Use the answers to guide the project forward.
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- Understand the broader context: Explore the project's history, its assumptions, and its position within the larger framework.
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- Craft an aspirational vision: Clearly describe what success looks like and outline the steps needed to achieve that vision.
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- Define guiding values and principles: Ensure these align with circular economy goals, serving as a foundation for decision-making throughout the project.
-
- Include the environment as a stakeholder: Consider how natural systems are affected and determine how to represent these impacts in the project.

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- Set measurable goals: Identify objectives, metrics, and indicators to track progress and measure impact across environmental, social, and business dimensions.

1. Explore

The first phase of the circular design process emphasizes exploring the context, uncovering insights, and understanding the broader systems, challenges, and opportunities that shape your work. The goal is to develop a detailed, multi-dimensional understanding of the interconnected social, technical, and natural systems involved.

In circular design, shifting perspectives is key. This means zooming in on details and out to broader contexts, balancing present realities with future possibilities, and considering both individual experiences and structural dynamics. This approach helps uncover new opportunities for transformative change toward sustainable and regenerative outcomes. This phase can be approached through three core perspectives:

SYSTEMS RESEARCH: UNDERSTAND THE WORLD YOU ARE DESIGNING IN

Investigate the social, economic, technological, and environmental dimensions of your work and their interdependencies. Use tools like materiality analysis to identify leverage points where interventions can drive systemic change and assess the broader societal and environmental impacts of your efforts.

CUSTOMER RESEARCH: UNDERSTAND WHO YOU ARE DESIGNING FOR

Delve into customer groups, their changing needs, and their behaviors. Focus on understanding why and how people, businesses, and organizations acquire, use, and dispose of resources. These insights form the foundation for a design process that addresses real needs.

STAKEHOLDER RESEARCH: UNDERSTAND WHO YOU ARE DESIGNING WITH

Identify the stakeholders—customers, partners, and collaborators—who can contribute to creating and advancing solutions. Explore potential partnerships, examine stakeholder roles, and evaluate the benefits and challenges they may encounter in enabling success.

TASKS:

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- Map the current system: Investigate your project's approach, history, and underlying assumptions. What existing models and structures influence your work?
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- Map the emerging system: Explore future trends and their impacts: what is changing, why is the change happening, and how the system dynamics are changing as a result.
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- Map stakeholders: Identify all relevant actors, including people and ecosystems, and understand the value they might derive from your project. Engage with communities and partners to ensure their voices are heard and considered.
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- Collect diverse insights: Draw on customer feedback, expert opinions, interdisciplinary research, material data, and inspiration from natural systems. Uncover connections.
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- Identify dynamics: Describe relationships, dependencies, and invisible factors such as power dynamics and motivations.
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- Spot new opportunities: Look for emerging business and service models, innovative technologies and materials, and overlooked or underutilized possibilities.
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- Prototype and test ideas: Develop early, hypothetical concepts for business models, services, or products to evaluate how they function within broader systems. Understand the relationships, dynamics, and barriers they might encounter.

2. Reframe

Aligning business operations with the sustainable and regenerative principles of the circular economy calls for rethinking existing mindsets and old practices. This phase involves adopting fresh perspectives and building new competencies to uncover opportunities for transforming business models, services, production methods, product portfolios, and even consumer behaviors and mindsets. Change typically unfolds incrementally through iterative experiments and pilot projects.

In this stage, insights from the Explore phase are re-evaluated to refine the focus of the design work and sharpen project goals. Rather than tackling isolated problems, the aim is to address root causes and identify opportunities to align business practices with circular principles, increasing resilience and vitality within systems.

The goal is to lay a foundation for creating innovative solutions and exploring alternative approaches that drive meaningful systemic change. Achieving this requires openness to diverse system-wide impacts and flexibility to envision and embrace transformative futures for the business.

TASKS:

- Synthesize learnings: Review insights gained during the first phase with your team and participants. Combine and align ideas and findings from the research phase.

- Define alternative opportunities: Explore possibilities through different goals or values. These could include designing a new business model, achieving carbon-negative operations, or creating a regenerative product line.

- Assess short- and long-term impacts: Evaluate the potential societal, environmental, and economic impacts of alternative opportunities. Consider their business potential and alignment with the organization's adaptability.

- Develop preliminary concepts: Create high-level concepts or detailed prototypes for the most promising opportunities, whether related to business models, supply

chains, or service systems. Collaborate with partners and stakeholders to test and refine these concepts, learning about their feasibility and impact.

- Choose a direction: Based on what you've learned, select a direction (or multiple directions) that balances impact, business potential, and adaptability over the long term.

- Craft a strategic journey: Consider how to comprehensively transform the business in the chosen direction. Ask questions like: "If this is the future, what steps were taken to get here?" Work backward to identify necessary actions and measures to take today to realize this vision.

3. Create

The third phase focuses on generating multiple alternative solutions based on insights from the Explore phase and the refined direction established in the Reframe phase. This involves ideating, developing concepts, and designing prototypes to test various pathways for implementation.

Ideas are potential solutions, concepts provide high-level preliminary plans, and prototypes are tangible, practical iterations of those plans. Progressing from broad ideas to specific prototypes allows for testing and evaluating alternatives in practice, helping to identify the most viable options.

These ideas, concepts, and prototypes can span diverse areas, including business models, production methods, services, or products. They might range from incremental improvements to bold, visionary approaches that stretch the boundaries of what is possible. Even if not immediately feasible, radical ideas can inspire innovative thinking and new directions.

Integrated solutions are key to systemic change. For example, a new business model might include reimagined services, products, and compelling narratives to engage stakeholders. Every solution should be considered in the context of the broader business system, ensuring alignment with circular economy principles and understanding its impacts across the organization.

TASKS:

- Engage key stakeholders: Involve all relevant stakeholders in idea generation and co-creation. A diverse group brings richer perspectives and more varied ideas. Use methods such as co-design, co-production, and open dialogue to facilitate collaboration.

- Generate a wide range of ideas: Brainstorm as many ideas as possible to transform the business in line with the directions identified in the previous phase. Consider innovations in business models, services, production methods, or products.

- Pursue bold and provocative ideas: Include radical and even provocative ideas that challenge norms. While these may not be directly implementable, they can spark new questions and inspire transformative change. If you cannot execute them yourself, consider forming partnerships with organizations that can.

- Develop promising ideas into concepts: Turn the most promising ideas into concepts by outlining their implementation at a high level. Include elements like the value proposition for customers and potential environmental and societal impacts.

- Evaluate and prioritize concepts: Use prioritization exercises to assess and rank concepts based on criteria like customer value and environmental impact. Stay open to new opportunities, as even seemingly minor changes can have significant effects.

- Design prototypes: Create practical prototypes from the selected concepts. These should clearly demonstrate the functionality or value proposition of the new model, method, service, or product.

- Test and iterate: Test prototypes with various customers and partners. Collect observations over a sufficient period to understand their broader business impacts. Refine and improve prototypes based on insights gained during testing.

4. Catalyze

The fourth phase focuses on transforming the most promising prototype—or prototypes—into real-world experiments. This might involve launching the first functional version of a new business model, bringing an initial service or product to market, or implementing an innovative production method.

Experiments are powerful tools for advancing change, offering opportunities to learn what works and what doesn't. It is crucial at this stage to evaluate the societal and environmental impacts of the implementation. Setting appropriate metrics helps gain insights and guides continuous improvement toward more meaningful and impactful outcomes.

Experiments should go beyond technical and operational testing to create inspiring and engaging experiences. Designing customer experience touchpoints, brand narratives, and marketing communications as part of the experiment brings the solution to life. This holistic approach strengthens the connection with employees, customers, and stakeholders, creating deeper engagement and support for the transformation.

The ultimate goal of experiments is to identify scalable transformation strategies that can be integrated across the organization and its partner networks. This phase also involves building the necessary capabilities, cultivating an adaptive work culture, and establishing operational methods that will embed systemic change into practice.

TASKS:

- Define objectives: Identify what you still need to learn and plan how testing can provide answers. Formulate testable hypotheses, such as, "If we do X, we believe Y will happen."

- Determine the scope: Decide whether you are aiming for a lightweight experiment, a medium-sized project, or a large development initiative. The scale should match the nature of the hypotheses and the resources available.

- Plan the execution: Develop a detailed description of the experiment, including its steps, required resources, and the people responsible for implementation. Ensure

the plans are actionable so teams can begin work effectively.

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- Design functional and experiential elements: Incorporate storytelling and visual elements to make the experiment engaging, even if it's not yet fully polished. This helps customers and partners understand the concept and see its potential.
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- Create evaluation metrics: Develop both qualitative and quantitative measures to assess your hypotheses and broader impacts on society and the environment. Evaluate how the experiment influences the overall business system, supply chains, and stakeholders.
-
- Plan for scaling: Consider how successful elements of the experiment can be expanded and integrated more broadly. Identify the skills and new practices required for scaling and incorporate them into the experiment to facilitate smooth transitions.

Continue the journey

The circular design process is ongoing, evolving with each new experiment and the insights it generates. After an experiment, it's crucial to reflect on the outcomes—assessing how well they align with the vision, evaluating progress toward goals, and identifying clear next steps.

Building on what works is key. Successful elements can be refined, expanded, and scaled to achieve greater impact. Equally, it's important to candidly analyze mistakes and unintended consequences, using these lessons to improve future efforts and avoid repeating errors.

Transparency is essential. Sharing results openly with participants and stakeholders builds trust and strengthens collaboration. Celebrating successes and reviewing outcomes collectively offers a valuable moment to energize the team and set the stage for the next phase of transformative action.

TASKS:

- Celebrate successes and learn from mistakes: Analyze both desired and undesired outcomes to understand where to advance and what to avoid in future efforts.

- Assess broader impacts: Evaluate how the experiment has influenced other parts of the business and its wider effects on partners and stakeholders. Use these insights to identify opportunities for scaling change.

- Share insights openly: Even if specific intellectual property cannot be shared, ensure that general successes, principles, and practices are accessible to others to build upon.

- Strengthen partnerships: Reinforce the relationships and collaboration models developed during the experiment. Explore ways to further advance the tested solution together.

Thank you for delving into the world of circular design with us. We hope this book has offered valuable insights and practical tools to guide your transformative journey. The road ahead is rich with opportunities, learning, and collaboration—embrace it with an open mind and the courage to take meaningful action!

Glossary

ADAPTABILITY

The ability of an organization, system, or process to adjust to new conditions, demands, or changes. Adaptability is essential for transitioning to a circular economy.

BIOLOGICAL CYCLE

A process in which renewable materials of biological origin, such as plant-based raw materials, cellulose, and natural fibers, cycle through natural systems. At the end of their lifecycle, these materials decompose naturally through microbial, fungal, or other biological processes.

CIRCULAR DESIGN

The practice of designing products, services, business models, and organizations in accordance with circular economy principles to foster sustainable growth.

CIRCULAR ECONOMY

An economic model focused on keeping materials and resources in use for as long as possible, minimizing waste, and optimizing resource use.

CIRCULAR INNOVATION

The process of rethinking and redesigning systems, products, and services to align with circular economy principles, emphasizing regeneration, resource efficiency, and waste minimization.

CO-DESIGN

A participatory approach to design that actively involves stakeholders—such as users, employees, and partners—in the design process to ensure diverse perspectives are incorporated.

COLLABORATIVE CAPABILITIES

The ability of an organization to effectively work with diverse stakeholders, such as customers, partners, and regulators, to co-create value and solve complex problems.

CULTURAL DURABILITY

The capacity of a product to retain emotional and aesthetic relevance over time through timeless design, personal significance, and enduring value.

DESIGN THINKING

A human-centered approach to problem-solving that emphasizes creativity, empathy, and iterative testing to develop innovative solutions.

ECOSYSTEM

In business, a network of actors—including companies, organizations, customers, suppliers, regulators, and other stakeholders—working together to create mutual value. The term originates from natural sciences, where it describes interactions between organisms and their environment.

EFFECTIVE RESOURCE USE

The strategic use of materials, energy, and resources to achieve desired outcomes with minimal waste and maximum utility, supporting sustainable practices.

FORESIGHT

A process of understanding and preparing for future changes and opportunities by analyzing trends, uncertainties, and possible scenarios to support better decision-making and planning.

LIFE CYCLE ASSESSMENT (LCA)

A method for evaluating the environmental impact and resource use of products, services, or processes throughout their lifecycle—from raw material extraction to disposal or reuse.

LINEAR BUSINESS

A traditional business model where value is created through a one-way process: sourcing raw materials, producing goods, and disposing of them after use. This model typically lacks consideration for resource reuse or circularity.

LINEAR ECONOMY

A traditional economic model where production follows a linear path from resource extraction to product creation, use, and disposal, often leading to significant environmental strain.

MATERIALITY ANALYSIS

A process used to identify and prioritize the most significant environmental, social, and economic impacts of an organization or project.

MEGATRENDS

Large-scale, long-term changes that significantly impact society, the economy, and the environment. Examples include climate crisis, global extinction, and digitalization.

MODULARITY

The design principle of creating products with components or modules that can be independently replaced, upgraded, or reconfigured. Modularity extends product lifespans by simplifying maintenance and recycling.

MULTIDISCIPLINARITY

Integrating expertise from different fields or disciplines to address complex challenges, a cornerstone of circular design processes.

OPEN INNOVATION

An approach to innovation that leverages external ideas, expertise, and resources while sharing internal knowledge with outside partners to drive progress.

PARTICIPATORY DESIGN

A collaborative method where stakeholders—such as users, employees, and partners—actively contribute to the design process to ensure diverse needs and perspectives are addressed.

PHYSICAL DURABILITY

The ability of a product to withstand wear and tear, achieved through robust materials, reinforced design, and clear maintenance guidelines to ensure long-term use.

REFRAMING

The act of reassessing and redefining challenges or opportunities to uncover deeper insights and identify transformative solutions.

REGENERATIVE BUSINESS

Business models and practices that actively enhance environmental and societal well-being, supporting biodiversity, community resilience, and ecosystem health.

REGENERATIVE ECONOMY

An economic model that not only minimizes environmental harm but also actively improves and restores the health of ecosystems.

RESILIENCE

The capacity of a system, organization, or community to withstand disruptions and adapt to changing conditions while maintaining functionality.

RESOURCE EFFICIENCY

The practice of using materials, energy, and resources in a way that minimizes waste and maximizes utility, contributing to sustainability.

SCENARIOS

Narratives about potential futures, based on trends and assumptions, to explore how different decisions and events might shape outcomes.

SYSTEMIC CHANGE

Simultaneous transformation of practices, structures, and interactions within a system to create conditions for future well-being and sustainable development.

SYSTEMS THINKING

An approach that views problems, phenomena, or issues as part of broader, complex adaptive systems where various components, agents and their interactions influence outcomes.

TECHNICAL CYCLE

A process in which durable, non-biodegradable materials—such as metals and plastics—are kept in use through reuse, repair, and recycling, avoiding landfill or incineration.

VALUE CHAIN

The full range of activities required to create and deliver a product or service, from sourcing raw materials to end-of-life management.

VISION

An organization's long-term goal or aspiration that defines its desired future state, guiding its strategies and efforts.

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CIRCULAR DESIGN is an emerging discipline that unites various design fields to help businesses integrate circular economy principles into their strategies and everyday practices.

This guidebook is intended for business leaders and innovators, product and service developers, and design professionals. It highlights how transitioning to a circular economy is not only an environmental imperative but also a unique opportunity for business transformation and good growth.

With practical frameworks, tips, and real-world examples, this guide equips you to design a more sustainable future—one product, service, and business model at a time.

