

Developed in collaboration with:



CIRCULAR BUSINESS MODEL DESIGN GUIDE

A practical guide to help business leaders identify circular opportunities and design business models that create, deliver and capture value

Bringing Ingenuity to Life
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Creating value in new ways with the circular economy



The circular economy (CE) is a key enabler of the shift to sustainable business practices, represented in the UN Sustainable Development Goals as SDG12: responsible production and consumption. It has an important role in protecting life on water and on land (SDGs 14 and 15) and contributing to climate action (SDG13).

Circular businesses have an important role in the transition to the circular economy, and there is commercial opportunity to recover, generate and maximise value within production and consumption systems. This is delivered through product life extension, re-use, remanufacturing, up and downcycling, and recycling. New business models, the use of new disruptive technologies and new mindsets, particularly around technology, are also key.



ABOUT THIS GUIDE



Purpose of the guide

The case for moving to the CE is compelling and necessary. It offers a way of improving resource and economic efficiency while reducing the impact on the natural environment, biodiversity and climate, and it's an opportunity worth \$1.8 trillion in value in Europe alone by 2030.²

While technology, policy and regulation have critical roles to play, the transition to a CE will be powered by businesses of all sizes finding new, circular ways of creating, delivering and capturing value.

This guide helps businesses explore and design circular business models. It provides practical steps and templates to navigate an area of enormous opportunity.



Authors

The guide has been created through an EMF CE collaboration project, led and developed by experienced business design, sustainability and CE experts at **PA Consulting** and **Exeter Business School**. Progress was informed by regular testing and feedback from large and small businesses, across sectors and regions, from early stage start-ups to established multi-nationals.



Who is it for?

The guide is for any business wanting to understand how they can create, deliver and capture value from circular practices. Regardless of sector, region, business activity, size or maturity, it can be used to:

- **identify new 'greenfield' circular business opportunities and define the business and operating models required**
- **explore and define how existing linear businesses can become circular**
- **refine existing circular business concepts and pilots.**

The guide explores how to create, deliver and capture value in its different forms, recognising that this is critical to investable and scalable circular business models.



How to use it

The guide can be used in two ways:

- **sequentially, working step by step in a structured way to identify and define new opportunities in an area of business you are interested in**
- **or with a focus on particular areas to test and refine for those with an existing circular business concept.**

Circular business design is an innovative process, so be prepared to test key assumptions, test and learn, and iterate your business model with experience.

The steps and tools can be used independently or in a workshop setting.

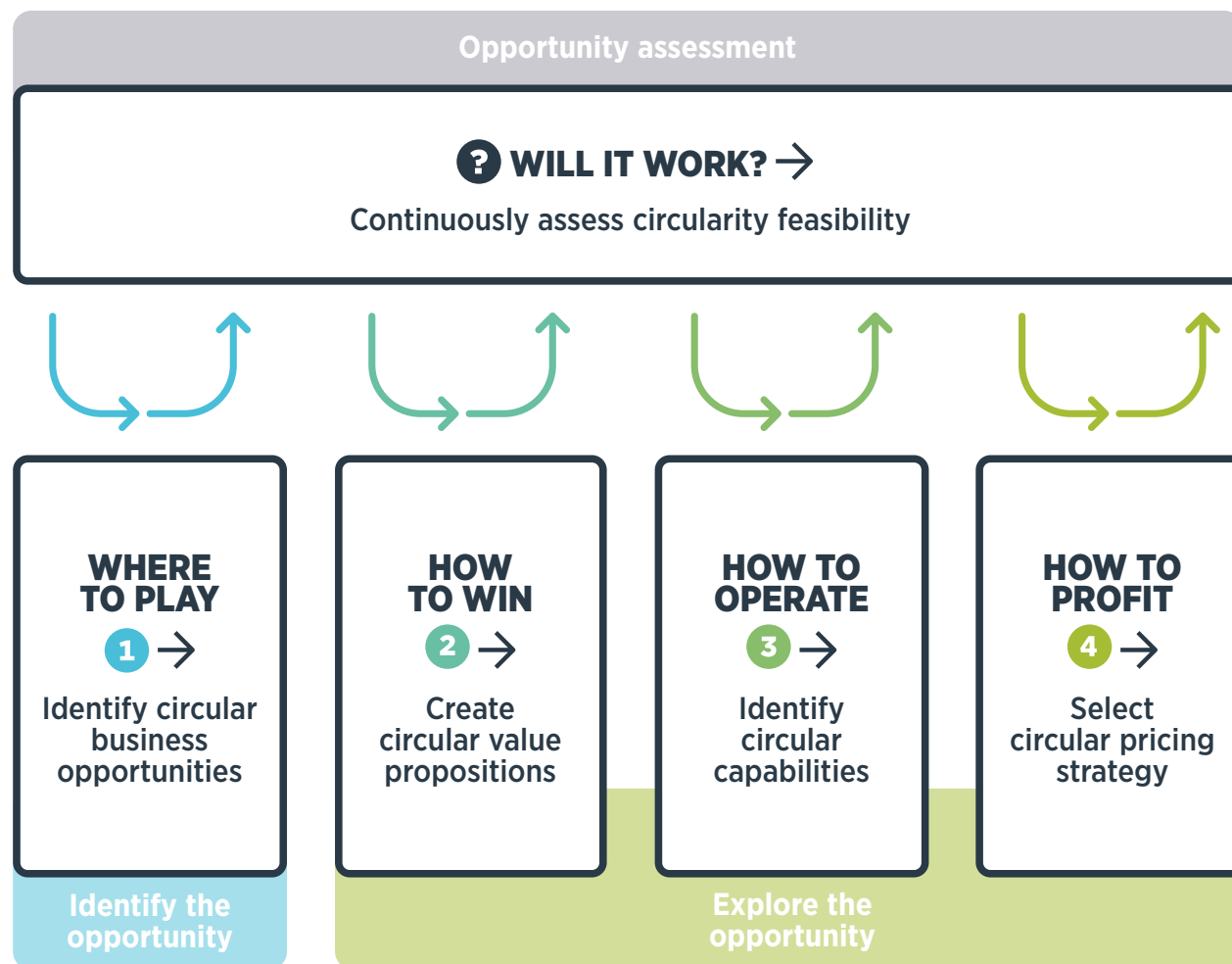


Four steps to seize the CE opportunity

This guide will help you identify and define the opportunities for circular business models for your business. The following four steps will help you make decisions about:

- 1 WHERE TO PLAY** – identify circular business opportunities, using the circular value system mapping tool
- 2 HOW TO WIN** – create win-win circular value propositions, using the partner mapping tool and circular value proposition template
- 3 HOW TO OPERATE** – identify the circular capabilities your business will need, using the circular capability checklist
- 4 HOW TO PROFIT** – select the right circular pricing strategy, using the pricing strategy checklist.

Throughout these four steps, the opportunity assessment tool will help you assess and refine the feasibility of the opportunity. And our completed examples, using a fictional organisation called 'FashionCo', offer further support.



▲ Click graphic to navigate to a section.

? OPPORTUNITY ASSESSMENT: WILL IT WORK?

Use this template as you work through each step of the guide to assess and refine the choices you make. Scoring is subjective.



WHERE TO PLAY 1 →	How much potential value could this opportunity provide? Think about: • how long it will take to realise that value • how well does the opportunity align with organisational strategy.	0 1 2 3 4 5 Little to no perceived value Very high perceived value
HOW TO WIN 2 →	To what extent is there potential in the value exchange between the business, customers and partners? Think about: • if there is a market for the value exchange • whether customers and partners want to be part of the opportunity.	0 1 2 3 4 5 No value exchange opportunity High value exchange opportunity
HOW TO OPERATE 3 →	How great is the gap between existing capabilities and the capabilities you require? Think about: • the cost associated with closing the capability gap • how much effort it will require to close the capability gap.	0 1 2 3 4 5 Current capability not compatible Current capability highly compatible
HOW TO PROFIT 4 →	To what extent will the pricing strategy enable financial sustainability? Think about: • if the pricing strategy will enable flexibility • if the pricing strategy is right for your current and new customers now and in the future.	0 1 2 3 4 5 Not financially sustainable Very financially sustainable
BUSINESS IMPACT →	How will this impact the business and its staff due to the amount of change required (including the emotional cost)? Think about: • what it will require to launch the opportunity • how the opportunity identified will affect the company's culture, processes, structure and staff.	0 1 2 3 4 5 Negative impact Positive impact
RISK →	What is the level of risk associated with pursuing or not pursuing this opportunity? Think about: • how this opportunity could create or prevent financial and organisational risks • the extent to which the opportunity will affect new and existing customers.	0 1 2 3 4 5 High risk Low risk
TOTAL		/30



1 WHERE TO PLAY

Identify circular business opportunities



This section has three tools:

The aim of this step is to identify circular business opportunities

There are three parts to this step. It considers the existing value in the business system, where value is lost and at risk, and opportunities to recover lost value and maximise existing values.

Two circular concepts will help you complete this step:

- the power of circularity – which describes how to create economic value through looping of resources and products
- a categorisation of typical circular business models that put these looping approaches into practice.

These are detailed further in the supporting material.

1 A: MAP EXISTING VALUE FLOW

Objective

Identify the existing flow of value within your system, what kind of value it is and how it is measured

Think about:

- What value do I provide?
- What part of the value chain do I manage?

1 B: CONSIDER LOST VALUE AND VALUE AT RISK

Objective

Identify where value is lost within your system and what value is potentially at future risk

Think about:

- Where is this value being lost? Where are there broken or incomplete loops? Why is it not being captured?
- What future customer, supply or policy changes may put current value creation at risk?

1 C: IDENTIFY CIRCULAR VALUE OPPORTUNITIES

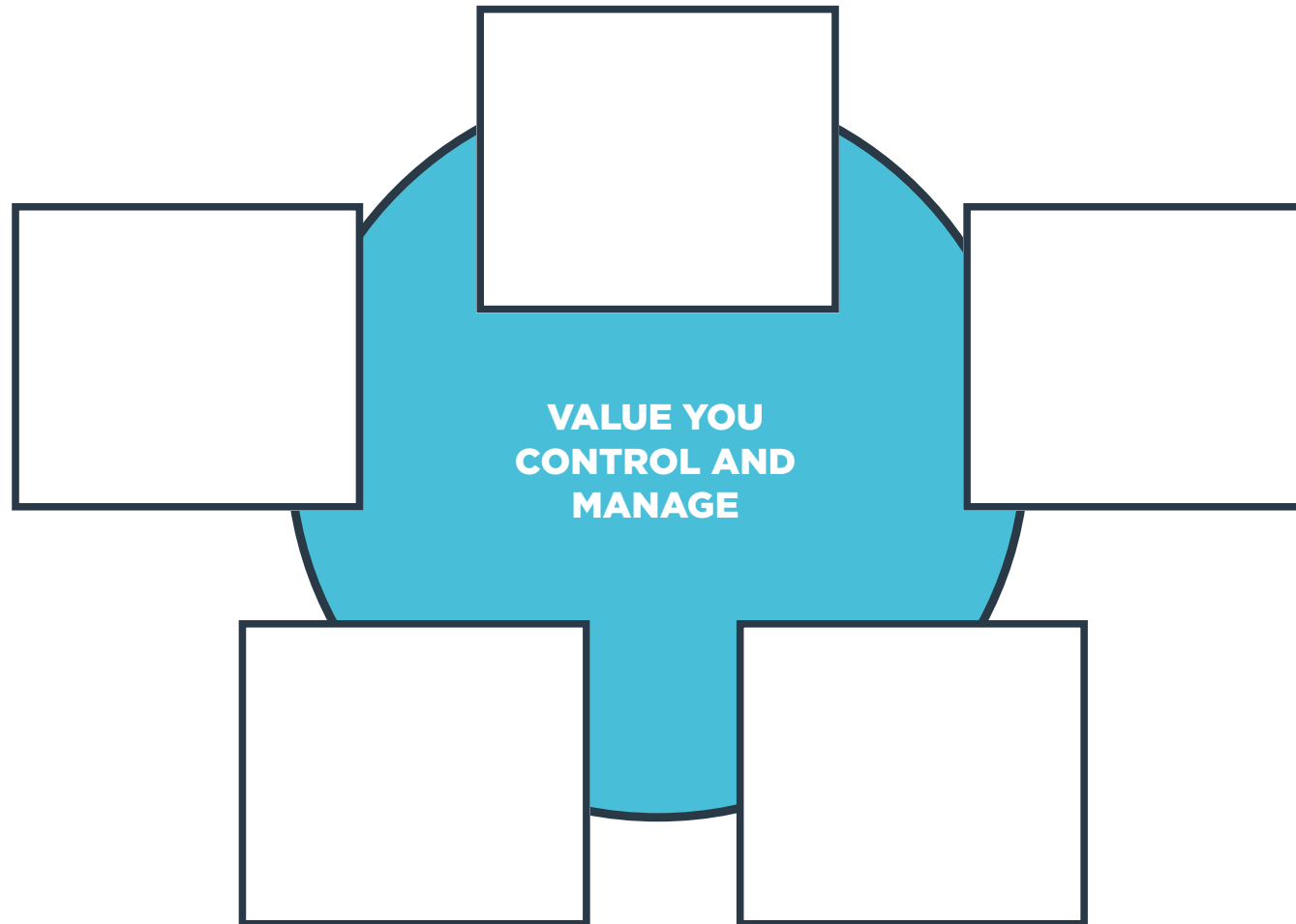
Objective

Based on the insights from 1A and 1B, identify ways of creating and/or closing loops to recover lost value, maximise existing value or conserve value at risk

Think about:

- What opportunities are there to recover or create new value? Could any of the typical circular business models help?
- Who benefits from this value?

1 A: Map existing value flow



USE POST-IT
NOTES TO
ADD MORE
BOXES
OR USE OUR
LARGE-FORM
TEMPLATE



VALUE YOU
DON'T MANAGE



1 A: Map existing value flow – notes



BACK TO
TEMPLATE

Objective:

Identify the existing flow of value within your system.

Think about:

- What value do I provide? What type of value?
- What part of the value chain do I manage?

Instructions:

- 1 Use post-its to identify the key stages of the value system you are considering (e.g. from resource extraction, manufacturing, distribution, sales, use, end of life disposal). Place these in a circle and annotate with any critical aspects of the value creation process
- 2 Map how value flows across the chain at each of these stages. Separate the value you control and manage on the inside of the circle, and value you don't manage on the outside, such as value that is managed by a supplier or partner
- 3 Consider the four types of tangible value and how these exist within your system (see supporting concept, right)

Supporting concept: four types of value³

Resource value

Product, materials, energy, people, space, processes, waste streams

Consumer value

Benefits provided to the change to consumer through the product or service

Data value

Data collected from your product or services, patents innovation

Relationship value

Value of networks and partnerships, consumer loyalty, consumer lifetime value

Within CE and sustainability systems, it is also important that a multi-stakeholder perspective is considered, i.e. that value is provided to:

- environment
- society
- economy.



SUPPORTING
MATERIAL (P27-28) →

1 B: Consider lost value and value at risk



NAVIGATION



MENU



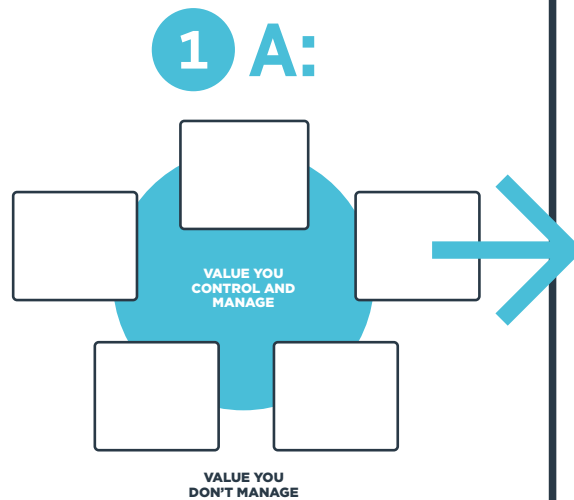
OBJECTIVE →



THINK ABOUT →



INSTRUCTIONS →



Value that is lost or at risk:

1

2

3

4

5

6

7

8

9

10

11

12



SEE COMPLETED
EXAMPLE (P39) →



1 B: Consider lost value and value at risk – notes



BACK TO
TEMPLATE

Objective:

Identify where value is lost within your system and what value is potentially at future risk.

Think about:

- Where is this value being lost? Where are there broken or incomplete loops? Why is it not being captured?
- What future customer, supply or policy changes may put current value creation at risk?

Instructions:

- 1 Looking at your system map from [1A](#), identify where any types of value might be lost because of linear flows or broken loops (see supporting concept, right)
- 2 Identify what value within the system might be a risk due to future changes such as resource security, climate change, regulation etc.
- 3 Consider how much value is being lost or is at risk, and why (e.g. existing industry structure, competitive forces and technical barriers)
- 4 List out and prioritise value risk areas based on the importance and impact to your business

Supporting concept: **the power of circularity**

The power of the inner circle

Materials and resources are reused, refurbished or remanufactured through concepts such as modularity and second hand markets

The power of circling longer

The products, components or materials are designed to last longer, be more durable and easier to repair

The power of cascaded use

Product and materials have secondary and tertiary uses rather than disposal

The power of pure circles

Closed loops are created where waste materials and disassembled products and components can be used as feedstock for new products⁴



SUPPORTING
MATERIAL (P29) →

1 C: Identify circular value opportunities


OBJECTIVE →


THINK ABOUT →


INSTRUCTIONS →

Value that is lost or at risk:

1 _____

2 _____

3 _____

4 _____

5 **1 B:** _____

6 _____

7 _____

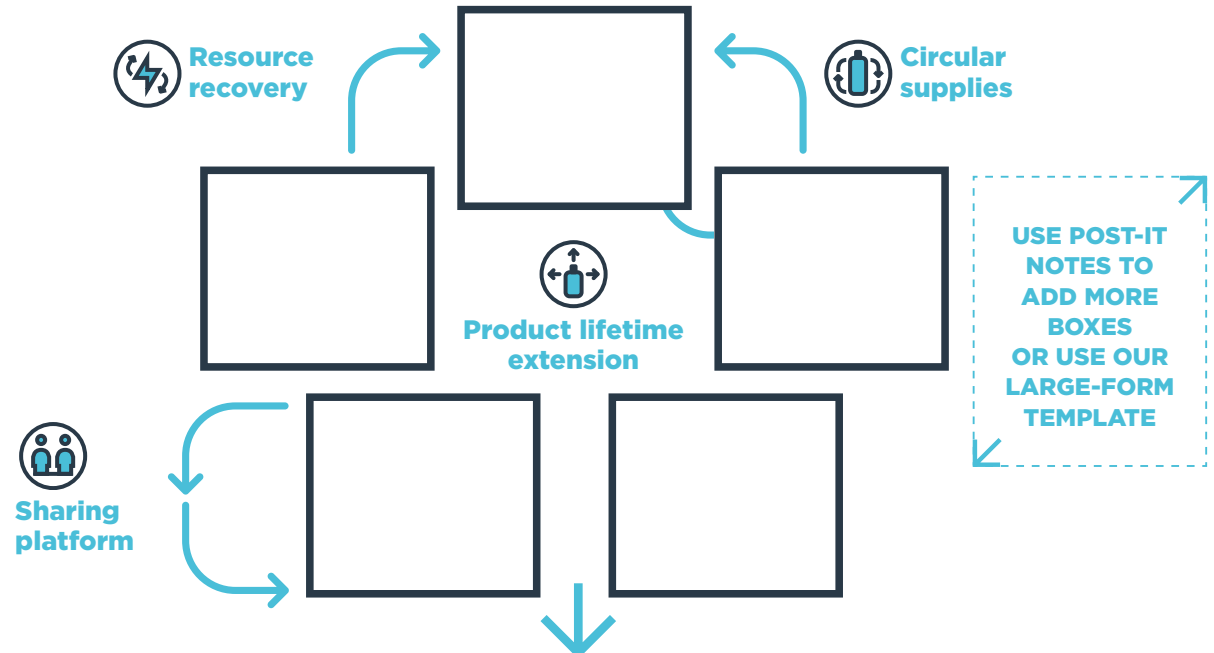
8 _____

9 _____

10 _____

11 _____

12 _____



CAPTURE
CIRCULAR IDEAS

Idea description:	Idea description:	Idea description:	Idea description:
Type of value generated & who benefits:	Type of value generated & who benefits:	Type of value generated & who benefits:	Type of value generated & who benefits:

USE POST-IT NOTES TO ADD MORE BOXES



SEE COMPLETED EXAMPLE (P40) →

1 C: Identify circular value opportunities – notes



BACK TO
TEMPLATE

Objective:

Identify opportunities to create or close loops to recover lost value, maximise existing value or conserve value at risk.

Think about:

- What opportunities are there to close loops? Where could you deploy typical circular business models?
- Who benefits from this value?

Instructions:

- 1 Create a new version of your [1A existing value flow map](#)
- 2 From [1B](#), utilise the list of value lost or at risk
- 3 Using the looping concepts and circular business models as inspiration, consider for each item how to create and close loops to recover or conserve value. On the worksheet, draw arrows between stages to illustrate where this happens
- 4 Capture your ideas to identify what kind of value is generated and who benefits from it

Supporting concept: **types of circular business models**⁵

Sharing platforms

Enable increased utilisation of a product by enabling shared use/access/ownership, often allowing consumers to access products more cheaply



Product-as-a-service

Products are no longer owned but accessed by one or many customers through lease or pay-for-use agreement



Product life extension

Extending the working life of a product to ensure it can be valuable in its current form for as long as possible



Resource recovery

Recovering energy and materials used in the creation and use of products to ensure they can be used again



Circular supplies

Minimising the natural and renewable resources used, and designing these to be re-used or recycled



SUPPORTING
MATERIAL (P30–31) →

2 HOW TO WIN

Create circular value propositions



NAVIGATION



MENU

This step identifies how you can create value for customers and key partners

There are two parts to this step. First, to identify which customers and key partners will be critical to a successful business model, and secondly to define win-win propositions that create value for both parties.



This section has two tools:

2 A: IDENTIFY CUSTOMERS AND KEY PARTNERSHIPS NEEDED

Objective

To gain an understanding of the value exchange required for the opportunity you have selected, you will need to identify the types of partners who will be critical to your business and the circular opportunity identified.

2 B: DEFINE MUTUALLY BENEFICIAL CIRCULAR VALUE PROPOSITIONS

Objective

Identify the needs of customers and key partners, and define what a mutually beneficial circular value proposition is.

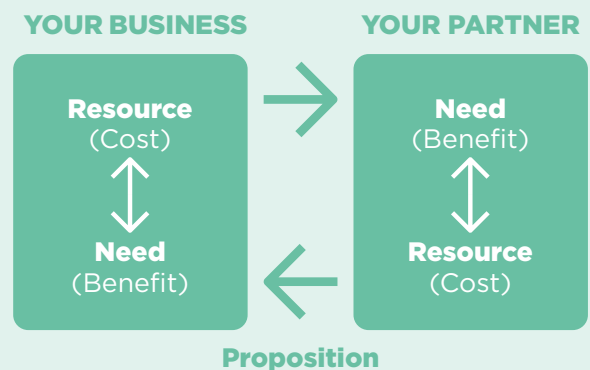


Supporting concept:

Linear models and traditional customer value propositions are based on exchanging money for products or services.

In a CE, a richer relationship that creates mutual benefits is often required. Much of the value being recovered or created is enabled by a relationship sustained over time, with an exchange of information. For example, mechanisms to recover products and materials from customers after use, or to know details about the condition and use of these products and materials.

Rather than thinking purely about a customer/supplier relationship, we think about a two-way partnership where the costs incurred are outweighed by the benefits each party receives in relation to their needs.



2A: Identify customers and key partners

What type of organisations are required to make the opportunity possible?	How critical will they be to your success? (High / Medium / Low)



OBJECTIVE →



THINK ABOUT →



INSTRUCTIONS →



SEE COMPLETED
EXAMPLE (P41) →

2A: Identify customers and key partners – notes



BACK TO
TEMPLATE

Objective:

To identify the key customer and partner groups critical to your success.

Think about:

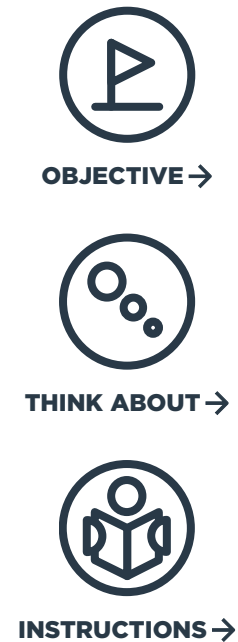
- customers
- suppliers
- go-to-market partners
- infrastructure providers
- the whole lifecycle of products and materials.

Instructions:

- 1 Review the value system you created and ideas you generated in steps [template 1A](#), [template 1B](#), [template 1C](#) and pick an idea to explore
- 2 List out in the [2A template](#) (see previous page) the types of organisations you will need to interact with or will be dependent on to make the opportunity you identified in the previous section possible
- 3 Consider different types of value exchanges with organisations across the whole value system
- 4 Assess how critical they will be in delivering your idea and how much power they will have in capturing value

2 B: Define mutually beneficial circular value propositions

Now you understand who you need to partner with, use the value exchange template below to understand their needs and develop the offer.



Opportunity			
		Customer or partner	Your organisation
Needs	Outcome	What outcomes are they pursuing that you can help with?	What goals are you pursuing that require a partner?
	Needs	What are their specific needs?	What are your specific needs?
	Why exchange?	Why would your potential partner exchange value with you?	Why would you exchange value with the potential partner?
Proposition	The offer	What is our offer to each of those needs? How does this address the partner goal?	What do you need the partner to offer to meet your needs?
	Benefits	What are the unique and additional benefits that differentiate you from competitors' offers?	What benefits will you receive from the partner?
	Exchange model	How would the exchange work?	
		Through what channels will it be delivered?	
	Trade-offs	What will the partner NOT get from you (that may be available from competitors)?	What will you NOT get from the partner?

USE SEPARATE
LARGE-FORMAT
TEMPLATE

SEE COMPLETED
EXAMPLE (P42) →



2 B: Define mutually beneficial circular value propositions – notes



BACK TO
TEMPLATE

Objective:

Define a win-win value proposition for customers and each critical partner.

Think about:

- exchange of products and materials, data and services, not just money
- exchanges over time, not just at purchase point
- customer pain points that exist today and that could be barriers to a circular proposition.

Instructions:

- 1 Complete [template 2B](#) for each critical partner you identify
- 2 Start with the outcome and specific needs you and the partner have
- 3 It may help to consider different segments, or use personas of customer journey maps to understand your partner's perspective
- 4 Develop mutual win-win propositions, and define how these will work in practice
- 5 Engage with partner organisations and consider collaborating with them on this exercise

3 HOW TO OPERATE

Identify circular capabilities



NAVIGATION



MENU



This section has one tool:

This step identifies the key circular capabilities your organisation will need in order to be successful.

It explores both operating and support capabilities, organised by typical circular business models. These are prompts to inspire you to identify the circular capabilities your business will need, and should not constrain your thinking.

The section focuses on circular specific capabilities which may be new or have critical differences.

3 A: IDENTIFY KEY CIRCULAR CAPABILITIES

Objective

Identify the capabilities needed to successfully operate your new circular business.



Supporting concept:

Business capabilities are a helpful way to think about what your business will need to do and what tasks it will need to perform. They are a way of defining the 'what' of the operating model.

To deliver capabilities successfully, businesses need a combination of resources (such as people, information, applications and facilities) organised in the right way (processes and structure, for example).

The operating and support capabilities required will differ between the various circular business models.

3 A: Circular capability tool

Now that you understand who you need to partner with and their needs, use the circular capability tool to define the capabilities to operate successfully



OBJECTIVE →



THINK ABOUT →



INSTRUCTIONS →

Key activity steps	Step 1	○	Step 2	○	Step 3	○	Step 4	○
Capability								
Capability								
Capability								
Capability								
Capability								
Critical resources needed:								

USE SEPARATE LARGE-FORMAT TEMPLATE FOR MORE SPACE



SEE COMPLETED EXAMPLE (P43) →

3 A: Circular capability tool – notes



BACK TO
TEMPLATE

Objective:

To identify specific circular capabilities that your business will need.

Think about:

- operating and supporting capabilities. You can use the next two pages as a prompt.

Instructions:

- 1 Identify the key value-adding activity steps for your circular initiative and add these to the top of the table (see page 19)
- 2 Break down each step into the capabilities required to perform it (use the capability prompter list in the supporting concept box, right)
- 3 Identify any critical resources you will need for these capabilities. Consider key and scarce skills, facilities or equipment, information, technology and relationships
- 4 Colour code the maturity of each capability to guide where you will need to focus development activity:
 - **Red** – capability does not exist and cannot be easily acquired
 - **Amber** – capability exists or can be acquired but will need to be developed
 - **Green** – capability exists or can be easily acquired

Supporting concept: **circular capabilities**

- **operating circular capabilities** (p32)
- **circular supporting capabilities** (p33).



**SUPPORTING
MATERIAL (P34) →**

4 HOW TO PROFIT

Identifying the pricing strategies required to develop financially sustainable business model(s)



This step identifies pricing strategies that will help your business monetise the value it creates, making it viable and able to scale.

It includes prompter material on different pricing strategies and how they can apply in the CE.

The pricing strategy tool helps you choose a suitable strategy and evaluate the implications.



This section has one tool:

4 A: PRICING STRATEGY TOOL



Objective

To understand the potential pricing strategies that can be employed to help achieve your CE goals.



Supporting concept:

Previous steps have focused on a broad concept of value, recognising the important contribution the CE can make to the environment and society.

To be successful, your business needs to capture enough of the value it creates for customer and partners as income, in order to finance itself.

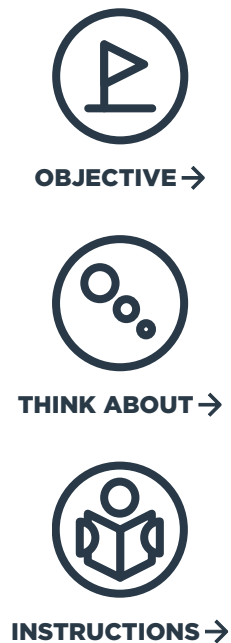
To attract investment capital, cover costs, invest in the future and scale, the business must be financially viable, not just creating value in the value system.

This can be a challenge in the CE, given it often necessitates understanding and maximising value over the whole life of products and materials, potentially through multiple owners.

4 A: Pricing strategy tool



Now that you understand the value exchange propositions, use the pricing strategy tool to define the right pricing model(s) for your opportunity



Opportunity name:		Implications:	
Which pricing model fits best with the opportunity? (Pay for ownership or access)		What are the benefits of your chosen pricing strategy over linear competitors? (Identifying value)	
		How will you capture and report non-financial value that would otherwise have been lost? (For instance, the social and environmental impact)	
		How will your customers benefit from this pricing strategy? (i.e. meeting needs)	
		How much are your customers willing to pay? (Consider different pricing for different segments)	
		What are the organisational implications for your business?	
		How will this pricing strategy impact your revenue and costs?	



SEE COMPLETED EXAMPLE (P44) →

4 A: Pricing strategy tool – notes



BACK TO
TEMPLATE

Objective:

To understand the potential pricing strategies that can be employed to help achieve your CE goals.

Think about:

- Which pricing model fits best with the circular opportunity identified?
- What are the implications of the chosen pricing strategy in terms of impact and benefits?
- Who are the beneficiaries and what is their willingness to pay?

Instructions:

- 1 Identify which pricing model (see supporting concept, right) fits best with the opportunity identified
- 2 Consider the questions in the pricing strategies (see supporting material) and how these will align to your business model
- 3 Once you have identified a pricing model that works with your business model, use the pricing strategy tool template to think through the implications for your business

Supporting concept:

- **paying for ownership** – pay for the right to own the product indefinitely
- **paying for access** – pay for the right to access the product on agreed terms.



**SUPPORTING
MATERIAL (P35) →**

FINAL OPPORTUNITY ASSESSMENT

Assess and review the potential of your opportunity



NAVIGATION



MENU

WHERE TO PLAY

1 →

How much potential value could this opportunity provide? Think about:

- how long it will take to realise that value
- how well does the opportunity align with organisational strategy.



Little to no perceived value

Very high perceived value

HOW TO WIN

2 →

To what extent is there potential in the value exchange between the business, customers and partners? Think about:

- if there is a market for the value exchange
- whether customers and partners want to be part of the opportunity.



No value exchange opportunity

High value exchange opportunity

HOW TO OPERATE

3 →

How great is the gap between existing capabilities and the capabilities you require? Think about:

- the cost associated with closing the capability gap
- how much effort it will require to close the capability gap.



Current capability not compatible

Current capability highly compatible

HOW TO PROFIT

4 →

To what extent will the pricing strategy enable financial sustainability? Think about:

- if the pricing strategy will enable flexibility
- if the pricing strategy is right for your current and new customers now and in the future.



Not financially sustainable

Very financially sustainable

BUSINESS IMPACT

→

How will this impact the business and its staff due to the amount of change required (including the emotional cost)? Think about:

- what it will require to launch the opportunity
- how the opportunity identified will affect the company's culture, processes, structure and staff.



Negative impact

Positive impact

RISK

→

What is the level of risk associated with pursuing or not pursuing this opportunity? Think about:

- how this opportunity could create or prevent financial and organisational risks
- the extent to which the opportunity will affect new and existing customers.



High risk

Low risk

TOTAL

/30



CONCLUSION AND NEXT STEPS



Making your circular opportunities a reality

Next steps

This guide is a starting point for your journey into creating, delivering and realising value through circular business models.

Circular business design is an innovative process, so be prepared to test key assumptions, test and learn, and iterate your business model with experience.

We would love to connect with you to hear your experiences and help you along your journey. Your feedback will also shape the guide's ongoing development.

Complete our questionnaire or get in touch directly.



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Developed in collaboration with:



SUPPORTING MATERIAL



This section is divided into six key topics:

The aim of this section:

The aim of this section is to provide further information on the supporting concepts for the steps and tools in the main section.

This information is to help guide you through your exercises and provide inspiration when identifying your circular opportunity. It will also help set which circular business model will best fit and is most relevant for your organisation.



1A: Value taxonomy



Objective

Identifies types of tangible and intangible value and organisation can achieve within their CE system.



1B: The power of circularity



Objective

Provide insight on how circularity can create value in four ways.



1C: Circular business models in practice



Objective

Describes five various circular business models, how they work in practice, their benefits and how they can create value in relation to the power of circularity.



3A: Operating circular capabilities



Objective

Use this list of operating capabilities to help identify the circular capabilities your business will need. See also: **3A: Circular capabilities list.**



3A: Circular supporting capabilities



Objective

Use this list of supporting capabilities to help identify the circular capabilities your business will need. See also: **3A: Circular capabilities list.**



4A: Innovative pricing strategies



Objective

Examples of pricing strategies within 'pay for ownership' and 'pay for access' for your chosen circular business model.

1A: Value taxonomy

The value taxonomy framework identifies different types of value available within the circular system, and will help in completing step 1A.



**SUPPORTING
MENU**



**BACK TO
NOTES**

The Taxonomy of Value framework, developed by Haines-Gadd and Charnley, helps to identify and understand the different types of value available within the CE system.⁶ Through literature review and case study analysis they propose there is tangible/explicit and intangible/implicit value within the CE.

Tangible/explicit value is value that can be capitalised upon:

Resource value, customer value, relationship value, data/knowledge value.

Intangible/implicit value is value that is generated as a result of circular systems:

Stability and control, symbiosis, positive social impact, altruism, behaviour change.

TYPES OF TANGIBLE/EXPLICIT VALUE



Resource value

Product, materials, energy, people, space, processes, waste streams



Consumer value

Benefits provided to the consumer through the product or service



Data/knowledge value

Data collected from your product or service, patents, innovations



Relationship value

Value of networks and partnerships, consumer loyalty, consumer lifetime value

TYPES OF INTANGIBLE/IMPLICIT VALUE

**Stability
and
control**

**Positive
social
impact**

Altruism

**Behaviour
change**

1B: The power of circularity

Circularity can create value in four ways.⁷ Read the descriptions about the four different ways circularity can create value to assess whether it inspires any new ideas about opportunities for your business when completing step 1B. Pages 30–33 outline five business models linked to these circular values.



**SUPPORTING
MENU**



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THE POWER OF THE INNER CIRCLE	THE POWER OF CIRCLING LONGER	THE POWER OF CASCADED USE	THE POWER OF PURE CIRCLES
This involves minimising the materials and resources required for reusing, refurbishing or remanufacturing. For example, the modular design of Nike Zvezdochka shoes replaces worn parts rather than the whole shoe.	This looks at ways to extend the life of products through innovation and technology, minimising the resources required for full product or component creation. For example, Caterpillar has an engine block with a removable sleeve. When the component is recovered, this material can be removed and replaced to return the engine to as-new performance.	This business model optimises the use of the product from delivering its primary purpose, to secondary use after this, and then tertiary use etc. For example, H&M sell first-hand clothing as a primary purpose, may re-sell to different markets as second-hand, then turn the clothing into other products such as cleaning cloths, followed by use as textile fibres for insulation material.	Products within this concept of value creation are created from pure, raw materials. When they are redistributed, the quality is maintained, extending product longevity. For example, Desso carpet use pure nylon because products made from pure components are easier to disassemble to create new products in both the biological and technical cycles.

1C: Circular business models in practice

Circular business models use loops to create and retain value within the system. Below are examples of typical circular business models and describes what benefits they offer, to help complete step 1C.⁸



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**SHARING
PLATFORMS**



**PRODUCT AS
A SERVICE**



**PRODUCT-LIFE-
EXTENSION**



**RESOURCE
RECOVERY**



**CIRCULAR
SUPPLIES**

BUSINESS MODEL	THE NEED	CIRCULAR SOLUTION	THE BENEFIT
Creating a sharing platform Example: Fat Llama	A lot of equipment owned by individuals is used only a few hours in its lifetime. An effective sharing economy model would help realise underutilised potential	A peer-to-peer sharing platform for technical equipment; a thriving marketplace for lenders and borrowers with insurance covered by Fat Llama	Access to a wide range of high-end equipment at an affordable rate for the consumer, extra revenue from idle assets for asset owners and a strong incentive to create equipment that lasts for the manufacturers
Products are used by one or many customers by means of a lease or pay-for-use arrangement. Example: Hewlett-Packard	Plastic printing cartridges are expensive to the customer, often single use, and rarely recycled	An IoT subscription model that increases cartridge recovery and recycling by using connected printers to send customers replacement cartridges, with pre-paid envelopes for returning used cartridges	Reduced packaging eliminates up to 57% of waste. Ink costs for consumers reduced by up to 50%. Data helps inform system designs for manufacturers to minimise waste, improve serviceability, durability, and customer satisfaction
Extending products' lifecycle through initial product design and refurbishment or remanufacture enabling the resale of products Example: Apple	Electronic products are very difficult to recycle, expensive to produce, and use up a lot of resource in both manufacturing and recycling	Trade-ins allows users to trade in their phones or laptops for an Apple gift voucher. The product is then refurbished and made available for resale or reuse	Fewer devices are being thrown away or recycled while still useable. The full value of the materials and resources is being gained before they are effectively recycled and the parts used in new devices, benefitting the organisation
Upcycling or recycling products Example: Rede Asta	An enormous amount of material value is lost in landfill sites. For example, everyday in Brazil around 200,000 tons of solid waste is collected and only around 3% is recycled	Rede Asta has partnerships with hundreds of companies in Brazil to collect waste or unused equipment. They then offer bespoke designs using these discarded materials to suit specific marketing purposes	Impact at scale: wide network means discarded materials can be recovered nationwide, creating value and reducing liabilities for companies. Over 80% of the products for consumers are made from recovered materials
Redesigning products and supporting operations Example: Google Data Centres	High utilisation of resources and energy efficiency required in all hardware, software and all infrastructure across Google Data Centres	Google is the primary manufacturer of all its server parts and tests all components every quarter. This helps it maintain/prolong, refurbish/remanufacture, reuse/redistribute or recycle as needed for the longest lifecycle product possible	Active transition to a CE for Google that combined with a circular approach to optimise the end of life of servers have resulted in hundreds of millions per year in cost avoidance for the organisation



1C: What value can business model strategies create?⁹

Below is a mapping that shows how the typical circular business models can create value, using the value taxonomy described on page 28.

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RESOURCE VALUE	CUSTOMER VALUE	KNOWLEDGE/DATA VALUE	RELATIONSHIP VALUE
- revenue from selling access to a product for a specific period of time or 'uses', and retaining material ownership - revenue from increased utilisation rate of products, enabling shared use/access/ownership - reduction in the resources used and wasted due to shared rather than individual ownership of products	- can reduce reliance on individuals to invest in paying for the product - more flexibility by providing functions/products only when needed - provides increased access to variety of products	improved understanding of when customers require goods and what they need them for	- longer customer and company relationship - relationships with customers who could not afford product outright - ability to develop supply chain or partner goals to deliver the platform
- ability to create new services as unique value propositions - more consistent and predictable income streams from service subscriptions - potential for reduced resource usage and waste creation through delivering as a service	- can be more cost effective for consumer as reduces upfront costs on high value items - provides flexibility, less commitment - increased product value from repairs - provides more options for how to pay for the service	delivering products as a service can facilitate improvements in the ability to collect data particularly where the service is digital	- reach more consumers at a lower price point and lower cost to the organisation - ability to develop supply chain or partner goals to deliver the service
- revenue from providing after-sales maintenance or upgrading services on longer life products - revenue from sales of refurbished, remanufactured or repaired units and components - reduced resources used instead of replacing items, consumers maintain existing products	- reduces the amount that individuals have to pay to replace items - extended use of products that are long lasting and reliable - allows consumers to trust they are making sustainable purchases	maintaining products gives exposure to how consumers are using products, which is valuable in future marketing and design activities	- longer customer/company relationship - relationships with contractors/suppliers - ability to develop supply chain or partner goals to enable the extension of product-life
- revenue from recovering resources out of disposed products or by-products/ resourcing end-of-life and end-of-use - resources recovered can be used to save money in other areas e.g. capture of heat or light during manufacturing - reduced waste as valuable materials are extracted for re-use/reducing waste and production waste by reproducing materials	- cost-efficient option from using pre-used materials and resources. - the ability to make eco-conscious purchasing decisions of products that have a lower environment burden	greater knowledge about resource properties and infrastructure can support understanding of opportunities for new product development	- creates the potential for longer customer relationships as it provides a reason for customers to come to you at the end of use. This also allows stronger and longer relationships with contractors/suppliers - ability to develop supply chain or partner goals to enable the recovery of resources
- reduced waste and pollution from intentionally using resources and materials designed to be used and re-used - potential cost reductions from minimising resources used	knowledge that products used will be properly and appropriately managed and disposed	can be more transparent in data about the products to be used as a product differentiator	- longer lasting relationships with partners - ability to develop supply chain or partner goals to enable the use of circular supplies.

3A: Operating circular capabilities

Use this list of operating capabilities to help identify the circular capabilities your business will need.



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Circular business model types →	Circular business model type				
	 Sharing platforms	 Product as a service	 Product-life extension	 Resource recovery	 Circular supplies
Operating circular capabilities ↓					
Clean material flows	Effectively ensure material and component flows are clean so they can be reused by customers, partners etc. or reused in manufacturing of new products				
Product maintenance and repair	Repair and collect products, and provide maintenance for longer term use by the customers			Repair and re-use products and components through your own manufacturing process to produce new products	
Circular redesign and upgrades	Redesign products for circularity in order to provide upgrades for longer term use by the customers			Upgrade and redesign re-used products and materials to develop a new product	
Take back schemes / manage returned products and materials	Effectively manage return and collection of used products from customers			Effectively collect and manage returned used products and byproducts from other organisations, stakeholders, suppliers and from potential customers	
Re-market products	Re-market upgraded or repaired products for further use by customers			N/A	Re-market upgraded or repaired products for further use by customers

3A: Circular supporting capabilities

Use this list of supporting capabilities to help identify the circular capabilities your business will need.



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Circular business model type					
Circular business model types →					
Circular supporting capabilities ↓	Sharing platforms	Product as a service	Product-life extension	Resource recovery	Circular supplies
Data analytics management	Get insight on customer need, demand, product information and usage, and identify market trends. Manage the data collection and analysis. Use this information to improve the circularity of your product or offering				
Manage flexible pricing models/ reprice products/ manage pricing services	Enable short- and long-term contracts with pricing options for customers. Consider platforms, memberships and different pricing levels for first buys, services, repairs, collection/delivery and refills			N/A	N/A
Manage quality standard processes	Assess quality of products, and ensure that the reused products and refilled products are in good condition to be further used by existing or new customers			Assess quality of materials and re-used materials to be used in the manufacturing of new products and assess quality of finished products to be sold to customers	

3A: Circular capabilities list

Providing a list of operating and supporting circular capabilities that will help identify what capabilities your business needs.
Operating capabilities directly create value for customers, whilst support capabilities do this indirectly, enabling the operating capabilities.



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CIRCULAR CAPABILITIES LIST	
OPERATING CAPABILITIES	SUPPORTING CAPABILITIES
Supporting capabilities	Management of distribution channels
Assessment and/or inspection of materials	Effective platform management
Inventory management	Service subscription and/or service contract management
Management of innovative packaging/repacking products	Matching supply/demand real time assessment
Asset management and tracking/remote monitoring	Supplier management
Management of product cleaning and refill processes	Customer relationship management
Management of remanufacturing, refurbishment and recondition of products	Circular supply chain management
Understanding new product uses and applications	Circular lifecycle planning
Management of circular production processes	Forecasting and monitoring market prices
Understand utilisation of products	Management of circular procurement processes
Manage R&D processes	Management of partnerships
Management of sustainable sourcing	Conducting market analysis
Design of products for disassembly, recovery, end of life and life extension	Management of legal processes
Product condition assessment/inspection of products/ conducting product fault analysis	Contract management including outsourcing contracts
Collection of waste	Management of financial incentives schemes for recovered parts

£ 4A: Innovative pricing strategies

Examples of pricing strategies within 'pay for ownership' and 'pay for access' for your chosen circular business model.



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WHAT PRICING OPTIONS DO I HAVE?

If I offer my customers ownership of a product

	What are the pricing strategy options?	Pricing implications	Number of transactions
Sell and buy-back for re-sale and reuse	The customer owns the product until another buys it	Separate price strategies required for primary markets and secondary "used" markets - e.g. eBay, Depop, Gumtree	MANY FEW
Sell and refurbish for re-sale	The customer owns product and receives a deposit/incentive on return of product or core component	Flexible pricing strategies as it needs to include refurbishments and resale of products and components - e.g. Caterpillar REMAN, The Real Real, Patagonia	
Sell and take-back for recycle	Customer owns until manufacturer takes back for recycling	Pricing strategies may be closest to traditional models - e.g. reGain, H&M, Zara, C&A	



Supporting concept: Paying for ownership -
pay for the right to own the product indefinitely

If I offer my customers access to a service

	What are the pricing strategy options?	Pricing implications	Number of transactions
Pay for one-off usage	Consumer has access to an asset for a period of time	Pricing based on one-off access based on the length of usage- e.g. Airbnb, Rent the Runway (occasion), Filippa K	MANY
Pay for sub- scription	Pricing based on expected uses over lifetime and timing	Access to a service on a subscription basis - e.g. Netflix, Rent the Runway (monthly)	



Supporting concept: Paying for access -
pay for the right to access the product on agreed terms



COMPLETED EXAMPLES



COMPLETED EXAMPLES



Inspiration examples to help you complete the exercises...

The organisation

We will be using fictional organisation called 'FashionCo' to demonstrate how you can go about completing these exercises.

FashionCo is a fashion brand that currently operates in a linear manner. The business is run in a traditional sense; it sources raw materials, designs styles and manufactures the clothes into these styles using these raw materials. It then packages and brings the clothes to retail stores to sell on to customers.

Until now, FashionCo has made certain attempts to instil circularity into its present operations, however it is looking to progress this significantly and introduce circularity as a fundamental concept.

Where to find the examples

Each exercise template links to a completed version from FashionCo's perspective.

How to use the examples

Use FashionCo's examples as a guidance when you are struggling to get started or are in need of inspiration.



This section includes examples to the tools provided throughout the guide:

'FASHIONCO' COMPLETED EXAMPLE



FashionCo objective

Provide examples to the exercises throughout the guide to help and provide inspiration when using the CE Design Guide.

1 A: Map existing value flow [completed example]

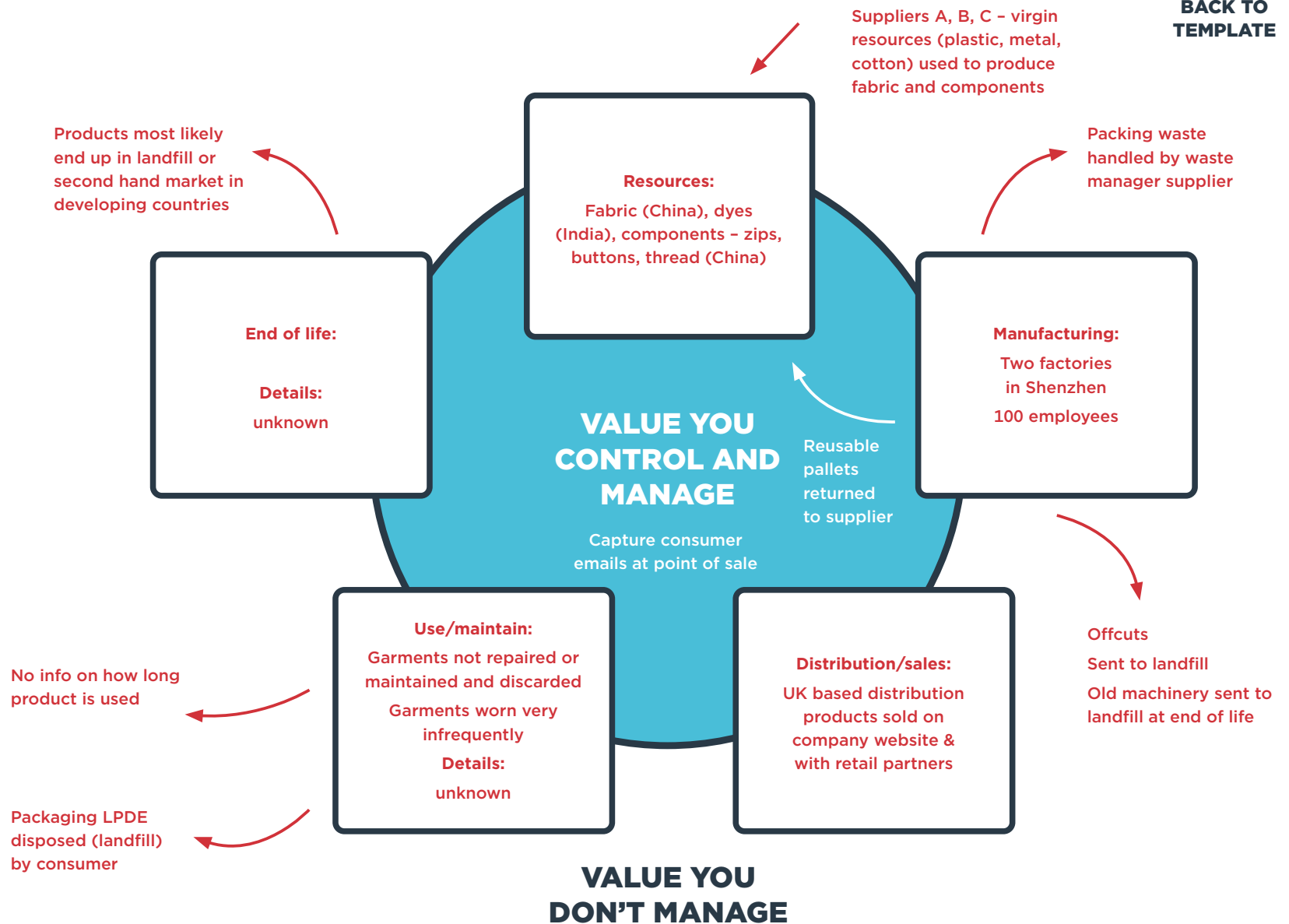


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 **FashionCo**

FashionCo manufactures and sells clothing in the UK and EU.

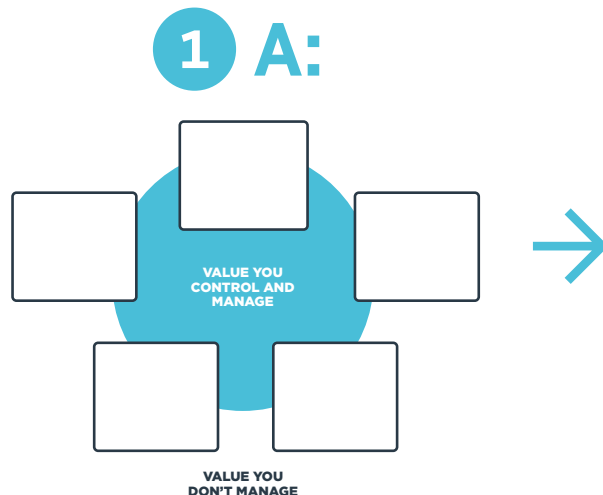
They mapped the lifecycle of one of their product lines (seasonal wear) and tracked how and where value flowed across the key stages of their system.



1 B: Consider lost value and value at risk [completed example]

FashionCo

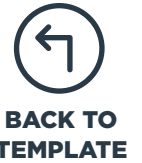
Looking at the map from 1A, FashionCo identified where they are losing value across their system and where value might be at risk in the future due to external factors.



Value that is lost or at risk:

- 1 **Input/resources:** Virgin materials at risk due to climate change and resource scarcity
- 2 **Manufacturing:** Do not reuse or repurpose waste products of manufacturing process (e.g. unsellable pieces, offcuts)
- 3 **Manufacturing:** Equipment ending up in landfill once it becomes obsolete
- 4 **Distribution/sales:** Having issues with unsold seasonal stock that ends up incinerated or recycled
- 5 **Use/maintain:** No data or insights are collected about the product in use, i.e lifespan, how often worn or used, or where it ends up at end of life
- 6 **Use/maintain:** No value is captured from the product during the use phase
- 7 **Use/maintain:** Seasonal stock (coats etc.) have low utilisation rates of 3-4 months per year
- 8 **Use/maintain:** Garments not used when out of favour, don't fit or fall out of fashion
- 9 **Use/maintain:** The packaging only protects the product inside and yet it comprises a significant proportion of the costs
- 10 **End of life:** Many of our products are not getting repaired or refurbished so end up in landfill
- 11 **End of life:** Products not designed for disassembly, material recovery
- 12 **End of life:** Consumers unsure of how to dispose of unwanted products so end up in landfill

1 C: Identify circular value opportunities risk [completed example]



FashionCo

Utilising the list of lost and value at risk, FashionCo generated ideas for how to recover the lost and at-risk value, as well as how to create new value within their network.

They used the typical circular business models as inspiration.

Value that is lost or at risk:

1

2

3

4

5

6

7

8

9

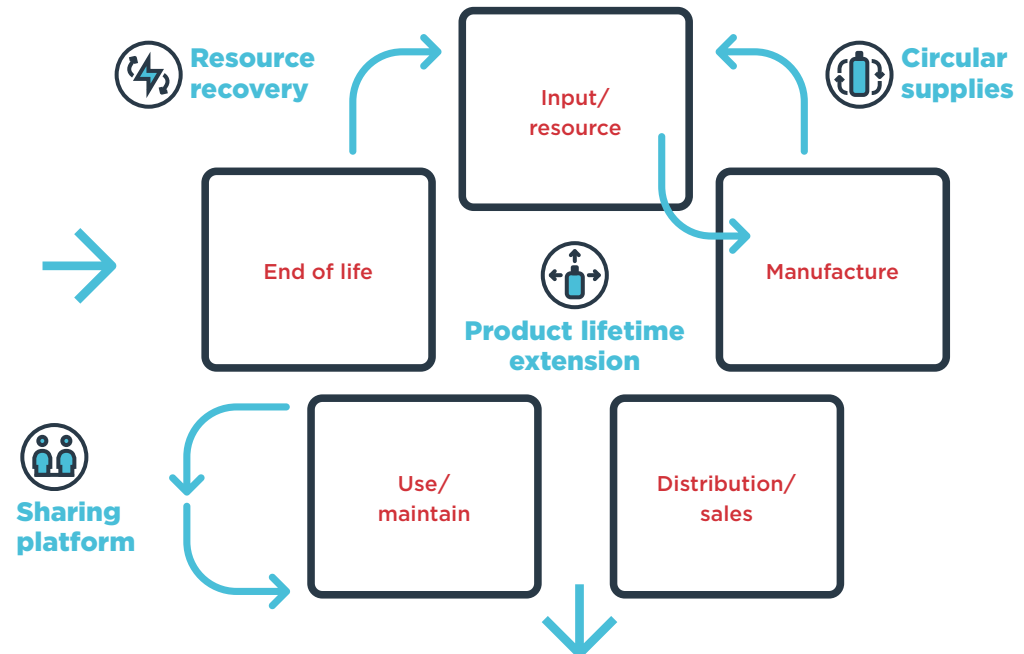
10

11

12

1 B:

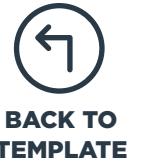
[Completed example]



CAPTURE CIRCULAR IDEAS	Idea description: Use recycled materials such as pre-worn cotton as inputs to reduce risk and burden of virgin resources	Idea description: Repurpose unusable materials – sell unwearable clothes as dish cloths	Idea description: Create an initiative for customers to share, swap or sell unwanted clothes	Idea description: Set up rental scheme of seasonal clothes such as coats, gloves etc	Idea description: Organise take-back scheme of unwanted clothes for upcycling or material recovery
	Type of value generated & who benefits: Reduces overall carbon footprint, benefiting the environment	Type of value generated & who benefits: New revenue stream, better perception of the company's ethics	Type of value generated & who benefits: Extends the use of the products, creates community between consumers	Type of value generated & who benefits: Increase utilisation of the products, creates a new revenue stream, opens up to a different customer segment	Type of value generated & who benefits: Diverts resources from landfill, creates potential new resource stream for manufacture



2 A: Identify customers and key partners [completed example]



FashionCo

Picking ideas from stage 1C, FashionCo decided to explore the rental of seasonal clothing (coats etc.) as a new circular initiative. They decided to incorporate data capture as part of their activities to track product usage and improve their knowledge about their customers and products.

They listed all the partners they need to make this idea happen.

What type of organisations are required to make the opportunity possible?	How critical will they be to your success? (High / Medium / Low)
Logistics partner to manage distribution and take back of clothing	High
Existing customers	High
Technology partner to manage online platform and collect data	Medium
Analytics partner to manage and interpret data captured	Medium
Partner to clean, repair and inspect clothing	High

2 B: Value exchange template [completed example]



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After listing all the potential partners in the previous step, FashionCo picked their customer as the first partner to fill in the value exchange template.

This allowed them to refine what the consumer value proposition would be for their initiative.

They would then repeat this step with another partner, such as a potential repairing and cleaning partner.

Opportunity			
		Customer or partner	Your organisation (FashionCo)
Needs	Outcome	Clothing that provides comfort, warmth and style at the time of year I need it	Increase our customer base and capture value from a products during the use phase
	Needs	Coats for different occasions (work, casual, outdoor), varying sizes and styles	Continuous and reliable revenue stream, increased knowledge of products
	Why exchange?	Saves space in wardrobe, reduce environmental impact, gives consumer ability to have new coat each season, can get different sizes if needed	They will pay to access to clothes and facilitate data capture on our products
Proposition	The offer	We will provide customer focused, data-driven on-demand access to seasonal clothing. The service will stock the latest designs, provide style suggestions, as well as cleaning, repairing and storing services	Customers will provide economic value and a willingness to engage with data capture aspect of the service
	Benefits	No other seasonal coat service currently available, consumer and data focus of the initiative	Diversify our customer base, customer loyalty, data on utilisation and lifespan of products, maximise the value of our assets
	Exchange model	Using an online platform, customer will pay a subscription for coats for a season. Data will be captured on coat in use through RFID and then will be taken back when no longer needed	
		Delivered by courier or through local dry cleaning network	
	Trade-offs	Won't have the ability to own and keep their coat all year round. Would need to re-order every year	Lack of certainty that the coats will be cared for while in use



3 A: Circular capability tool [completed example]

Now that you understand who you need to partner with and their needs, use the circular capability tool to develop your offer.



FashionCo

FashionCo had to gain a clear view on what capabilities are critical for the success of their rental of seasonal clothing (coats etc.) as a new circular initiative at each activity step of their value flow. This includes what capabilities are needed to make this opportunity successful at each step, identify capabilities FashionCo currently have (green) and identify critical capability gaps (red). In addition, FashionCo had to assess what resources are needed to make this happen.

Key activity steps	Source clothing	○	Matching clothing to customer needs	○	Distribution and take back clothes	○	Refurbish and re-pack clothes	○
Capability	Ability to understand sustainability impact for clothing	●	Manage flexible pricing models and setting the right pricing strategy	●	Manage distribution and network channels	●	Re-pack products	●
Capability	Effective collection of materials and products	●	Analytics to understand customer needs	●	Monitor item usage	●	Add materials	●
Capability	Stock management	●	Conduct customer research and feedback	●	Take-back schemes/ scheduling of return and repairs	●	Check quality	●
Capability	Manage customer insight	●	Provide options and help customer 'select'	●	Inventory management/ track quantity	●	Product maintenance and repair/refurbish	●
Capability	Manage sustainable sourcing	●	Manage data usage and privacy	●	Effective platform management	●	Inspect materials and products	●
Capability	Communicate and engage with customers to promote 'give back'	●	Manage ethical marketing	●	Subscription management	●	Product redesign and upgrade	●
Critical resources needed:	- collection points - trained staff - analytics software - storage/warehouse space.		- trained staff - customer segments statistics and trends - robust data platforms and security software.		- trained staff - sales statistics - distribution platform.		- packaging solutions - trained staff - cleaning/upkeep equipment.	



4 A: Pricing strategy tool [completed example]



FashionCo needs to set a pricing strategy for their new rental of seasonal clothing (coats etc.) circular initiative and assess the benefits and implications for this chosen pricing strategy.

Opportunity name: Rental of seasonal clothing (coats etc.)		Implications:	
Which pricing model fits best with the opportunity? (Pay for ownership or access)	Pay for access	What are the benefits of your chosen pricing strategy over linear competitors? (Identifying value)	Avoids upfront cost, enables access to new garments, easy to budget for, and avoids hassle of storage or disposal
		How will you capture and report non-financial value that would otherwise have been lost? (For instance, the social and environmental impact)	Track multiple use of garments and repairs to extend life. This can be compared to a baseline of 'normal' garment use to calculate potential avoidance of landfill, and natural resource usage from new production
		How will your customers benefit from this pricing strategy? (i.e. meeting needs)	Two key segments: 1. FashionCo consumers and new consumers who are environmentally conscious 2. Consumers who are looking for an easy and affordable way to change their garments
		How much are your customers willing to pay? (Consider different pricing for different segments)	Segment 1: £20 p/month for 12 month subscription service Segment 2: £15 p/month for 24 month subscription service
		What are the organisational implications for your business?	Financial management is critical – pricing and profit management over customer contracts and garment lifetime. Management of stock will be critical, including refreshing range with new/retiring items
		How will this pricing strategy impact your revenue and costs?	Steady revenues from subscription need to be balanced against stock depreciation; capital investment in garment stock required; management of financial risk

? Opportunity assessment [completed example]



WHERE TO PLAY 1 →	How much potential value could this opportunity provide? Think about: • how long it will take to realise that value • how well does the opportunity align with organisational strategy.	0 — 1 — 2 — 3 — 4 — 5 Little to no perceived value Very high perceived value
HOW TO WIN 2 →	To what extent is there potential in the value exchange between the business, customers and partners? Think about: • if there is a market for the value exchange • whether customers and partners want to be part of the opportunity.	0 — 1 — 2 — 3 — 4 — 5 No value exchange opportunity High Value exchange opportunity
HOW TO OPERATE 3 →	How great is the gap between existing capabilities and the capabilities you require? Think about: • the cost associated with closing the capability gap • how much effort will it require to close the capability gap.	0 — 1 — 2 — 3 — 4 — 5 Current capability not compatible Current capability highly compatible
HOW TO PROFIT 4 →	To what extent will the pricing strategy enable financial sustainability? Think about: • if the pricing strategy will enable flexibility • if the pricing strategy is right for your current and new customers now and in the future.	0 — 1 — 2 — 3 — 4 — 5 Not financially sustainable Very financially sustainable
BUSINESS IMPACT →	How will this impact the business and its staff due to amount of change required (including the emotional cost)? Think about: • what it will require to launch the opportunity • will the opportunity identified will affect the company's culture, processes, structure and staff.	0 — 1 — 2 — 3 — 4 — 5 Negative impact Positive impact
RISK →	What is the level of risk associated with doing or not doing this opportunity? Think about: • how this opportunity could create or prevent financial and organisational risks • the extent to which the opportunity will affect new and existing customers.	0 — 1 — 2 — 3 — 4 — 5 High risk Low risk

TOTAL

16 POINTS /30



ENDNOTES



No. Reference

- 1 ← ***Towards a circular economy:
business rationale for an accelerated transition***
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- 2 ← As above
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- 6 ← **‘Creating a taxonomy of value for a circular economy’**
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- 9 ← As above

▲ Click reference number to navigate back to context.



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