Managing Circular Economy

Week 3 – Strategies and business models for CE

13.3.2023

Aalto University
School of Business

Today’s session

The business model view

Strategies and business models for circularity

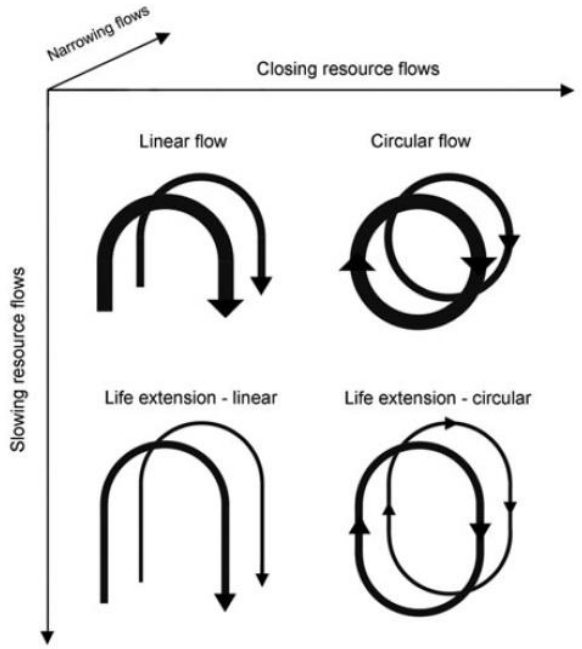
CE business models and the innovation process

Case example

https://www.youtube.com/watch?v=hDOHExtc7WY

Approaches for reducing resource use

Slowing, closing and narrowing resource flows



Business models and value chains

Business model thinking

“All it really meant was how you planned to make money” (Lewis 2000)

Joan Magretta: ‘Who is the customer? And what does the customer value?’ It also answers the fundamental questions every manager must ask: How do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost?” referencing to Peter Drucker (1909-2005)

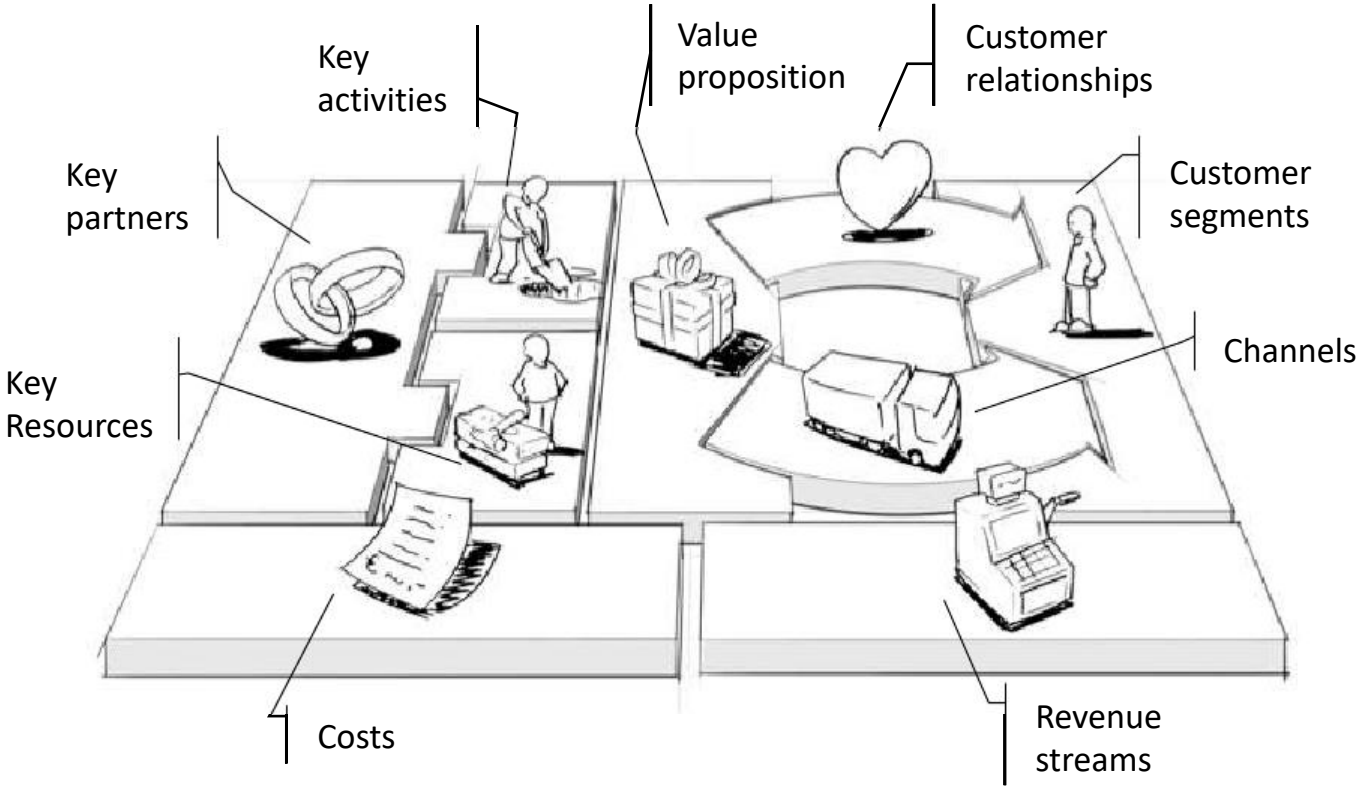
Lewis, M. 2000. *The new new thing: a Silicon Valley story*. 1st ed. New York: W. W. Norton.

Business model thinking

The essence of a business model is in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit (Teece 2010)

“the rationale of how an organization creates, delivers, and captures value” (Osterwalder, Pigneur 2009)

Business model canvas



https://www.youtube.com/watch?v=QoAOzMTLP5s

The Sustainable Business Model Canvas

Project:	Owner:	Version:

Positive Impact (Maximise)

*What are positive 2nd and 3rd order effects of your product on planet, society, the economy or your organisation (e.g. brand)? How can these effects be **maximised** along the complete product life cycle?*

You can use the left side of the Threebility Sustainability Impact Canvas to generate the input for this section

Negative Impact (Minimise)

*What are negative 1st, 2nd and 3rd order effects, and how can these be **minimised**? Is harmful waste generated that requires expensive disposal? Are there **rebound effects** or new **technological risks**?*

You can use the right side of the Threebility Sustainability Impact Canvas to generate the input for this section

Sustainable Partners

*Who are possible **partners** in becoming more sustainable?*

*How can we make the whole supply chain sustainable, transparent and **circular**?*

*Can we **cooperate** with partners form other industries to form an industrial symbiosis?*

*Can we shape anticipated environmental regulations by partnering and cooperating with **relevant regulatory bodies**?*

Sustainable Value Creation

*Which are our **key activities**? How can we adjust them (e.g. **manufacturing**) to ensure sustainability?*

*Which **enabling sustainable technologies** can be used?*

Sustainable Tech & Resources

*Which 1) **natural**, 2) **energy** and 3) **technical** resources do we need?*

*Can we **substitute** any for more sustainable resources?*

Sustainable Value Proposition

*Which **problem** do we solve, which **value** do we create?*

*What are **function** & **form** of our product or service?*

Can we solve our customers' problems more sustainably?

Can we transform sustainability into customer value?

Is ownership necessary or is the product as a service model applicable?

*Can we extend the **product life cycle**?*

Sustainable Customer Relation

*Which customer relationships satisfy customer expectations **and are sustainable**?*

*How can we make **current relationships** more sustainable?*

Sust. Channels

*How can we make our distribution channel more sustainable and **circular**?*

How do we best communicate the sustainable aspect of our product / service?

Responsible customers

*Who are our customers? How can we **enable** them to act sustainably?*

*Which target customers may help to **promote our sustainable solution**?*

End of Life

*What happens at the end of the **product life cycle**?*

*Can the product be **profitably recycled**, upcycled, reused, refurbished?*

Cost Structure & Additional Costs

What are the required costs and investments for my endeavour?

*Which resources / activities are the least sustainable? Do **sustainable alternatives exist**? Is switching economically reasonable?*

Subsidisation

*Do **tax bonuses & subsidies** or 3rd **party funding** exist for my endeavour?*

Revenue & Sustainability Premium

Which are existing and possible revenue sources?

*Are customers willing to pay a **premium for sustainability**?*

*Can we create a **unique advantage** due to sustainable proposition elements?*

*Do **price structures exist that incentivize** sustainable customer behaviour?*

Aalto School

Threebility
threebility.com

View the instructions for this canvas and download our free Sustainable Business Model Innovation Game

Why is business model thinking important?

- **A valuable tool for analysis and management in research and practice**
- **For industries undergoing fundamental changes.**
- **The business model concept enables the examination and comparison of markets and companies in a structured way, thus, providing the basis for the identification of critical success factors.**
- **The business model helps managers to capture, visualize, understand, communicate and share the business logic.**
- **Appropriately designed model is important opportunity to overcome some of the key barriers to the market diffusion of sustainable energy technologies.**

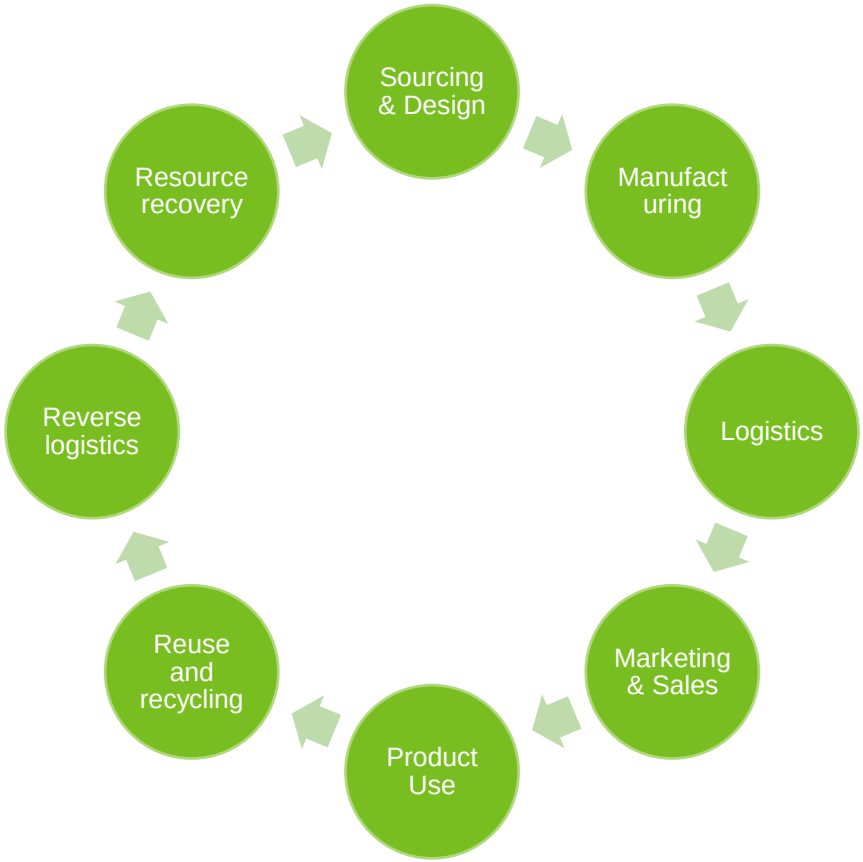
Value chains

Linear value chain

Adapted from Sitra, 2022

Value chains

Towards a circular value chain



Aalto University
School of Business

Adapted from Sitra, 2022

Business model for circularity

Circular business models

(Bocken et al. 2016)

Slowing loops:

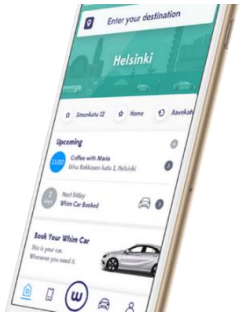
1. Access and performance model
2. Extending product value
3. Classic long-life model
4. Encourage sufficiency

Closing loops:

5. Extending resource value
6. Industrial symbiosis

Access and performance model

Providing the capability or services to satisfy user needs without needing to own physical products



Aalto University
School of Business

Extending product value

Exploiting the residual value of products

- Remanufacturing
- Refurbishing
- Collecting used products

Classic long-life model

Business models focused on delivering long-product life, e.g. by design for durability or repair services

Encourage sufficiency

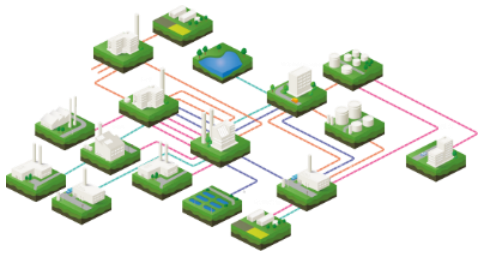
Solutions that actively seek to reduce end-user consumption through principles such as durability, upgradability, service, warrantees and reparability and a non-consumerist approach to marketing and sales (e.g. no sales commissions)

Extending resource value

Exploiting the residual value of resources and sourcing materials that would be wasted otherwise

Industrial symbiosis

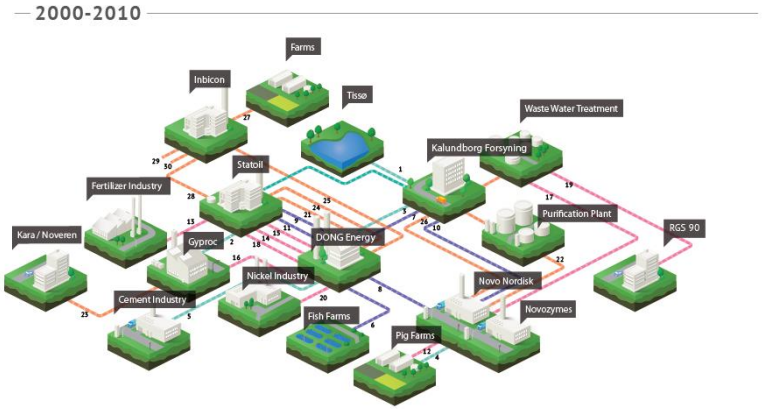
Process-oriented solutions, focused on utilizing residual outputs (e.g. wastes or byproducts) as inputs for new industrial processes.



Case: Kalundborg

https://www.youtube.com/watch?v=ZCdf-TbB0hI

Industrial symbiosis network developed in the Kalundborg area ir Denmark over several decades starting from 1960s



Examples from Finland

- **EnviGrow Park, Forssa**
- **HSY Ekomo**

https://www.sitra.fi/en/articles/nine-steps-to-establish-an-eco-industrial-park/

Exercise

Read through the following three short case studies:

1. Soilfood processes fertilisers from industrial side streams: “Processed products turns agricultural fields into carbon sinks” – Sitra
2. Varusteleka buys used goods and puts them back on sale: “We train our customers to move from being consumers to users” – Sitra
3. Combi Works takes advantage of factories’ surplus capacity: “We offer factory production as a service” - Sitra

Exercise

Discuss in groups which business model elements for each case:

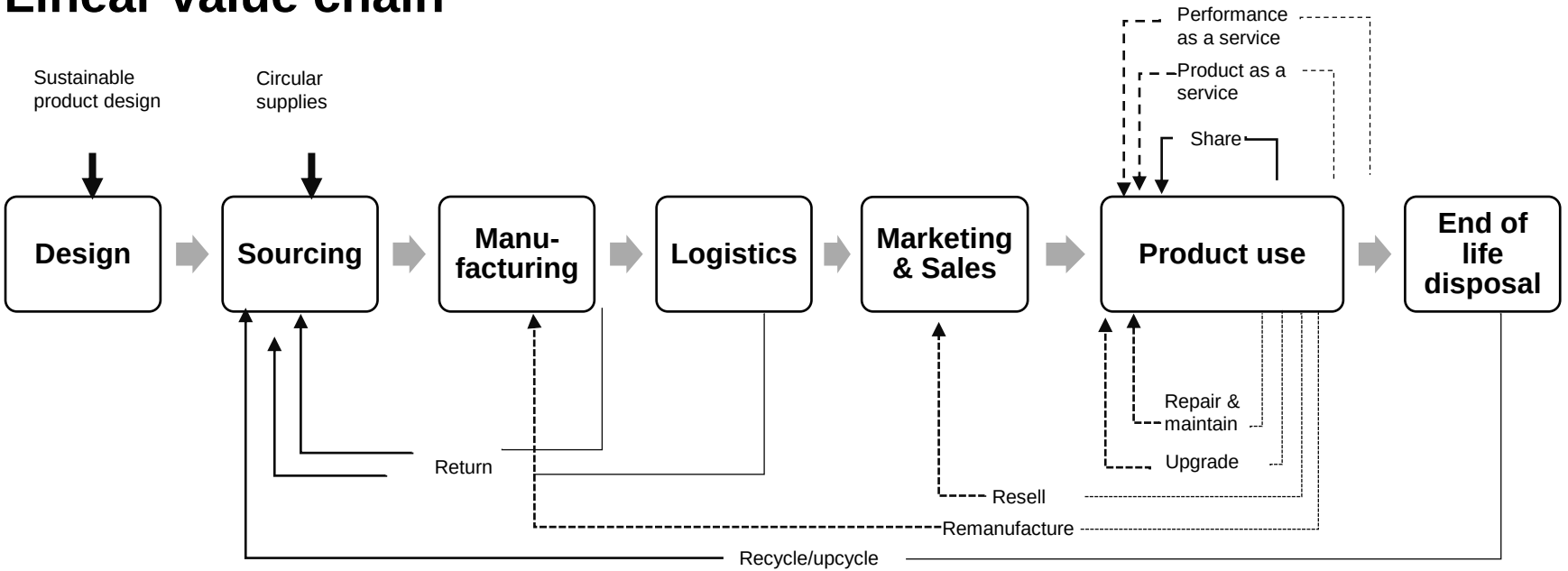
1. **Value proposition**
2. **Value creation (resources, activities, partners)**
3. **Value delivery (customer segments, relationships, channels)**
4. **Revenue model**
5. **Key environmental/social benefits**

(~15 minutes working time)

Note: no need to list all the elements for each case, focus on prominent ones from the case description

Value chains

Linear value chain



Aalto University
School of Business

Adapted from Sitra, 2022

CE business models and innovation process

Design strategies for slowing loops

Designing for long-life products

- **Design for attachment and trust**
- **Design for reliability and durability**

Design for product-life extension

- **Design for ease of maintenance and repair**
- **Design for upgradability and adaptability**
- **Design for standardization and compatibility**
- **Design for dis- and reassembly**

Bocken et al. 2016

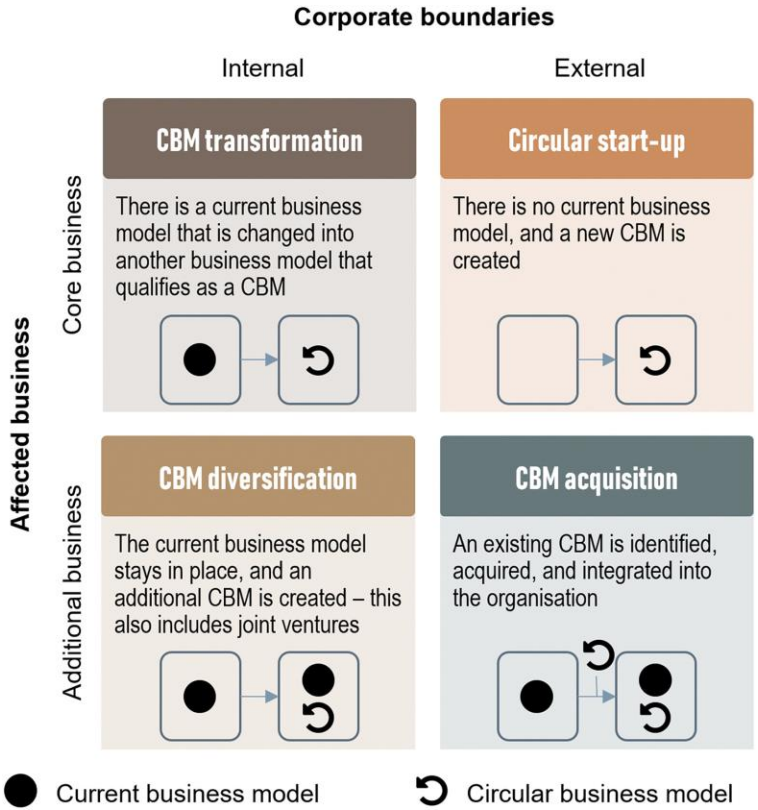
Design strategies for losing loops

Design strategies to close loops

- **Design for a technological cycle**
- **Design for a biological assembly**
- **Design for dis- and reassembly**

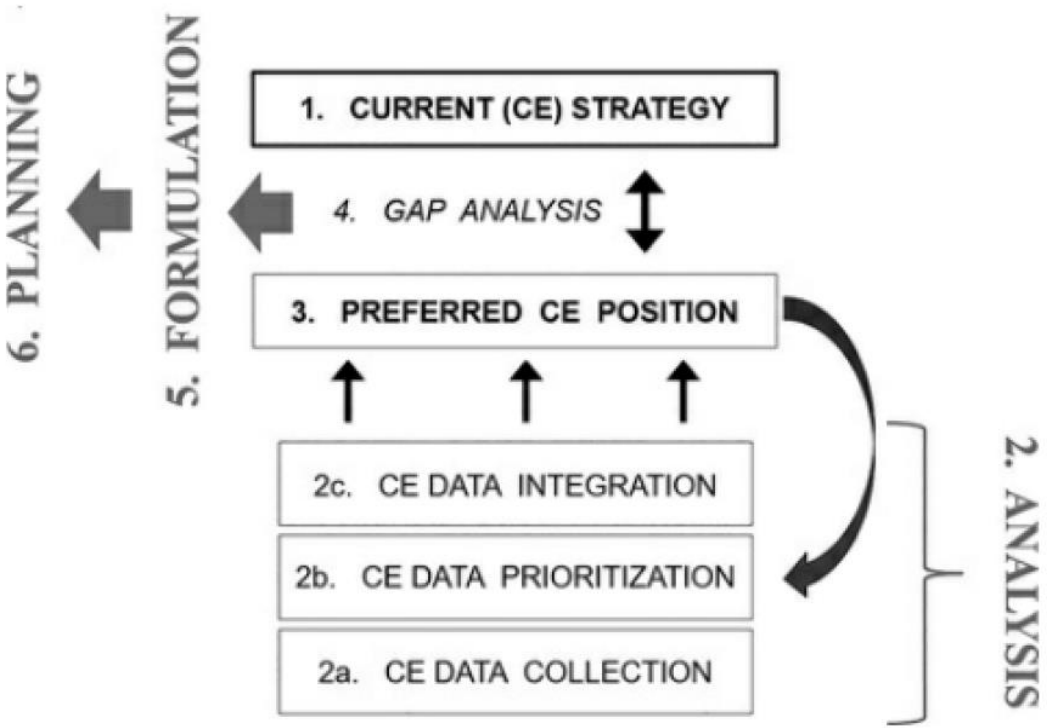
Bocken et al. 2016

CE business model innovation



Geissdoerfer et al. 2020

CE and strategic change



Open vs closed CE innovation

Innovation strategy	Narrowing loops	Slowing loops	Closing loops
	Resource strategy		
Open	*Open-narrowing* **Value proposition (example):** Reduce waste and resources in design and production processes **Value creation and delivery:** Reduce cost and negative impact through new technologies and processes in collaboration with suppliers, customers and others **Value capture logic:** Save cost and resources **Case examples:** industry collaboration on cleaner refrigeration technology; Sony and Samsung collaboration on LCD efficiency	*Open-slowing* **Value proposition (example):** Reuse resources to broaden the offerings to the customer (e.g. vintage, second-hand) **Value creation and delivery:** Create value by connecting internal and external resource flows via generative models **Value capture logic:** Increase the number of transactions in an ecosystem via reuse of products **Case examples:** H&M – Sellpy collaboration on second-hand clothes market; iFixit repair platform; ResQ Club excess food sales model	*Open-closing* **Value proposition (example):** A circular offering which involves lower environmental footprint and resource burden **Value creation and delivery:** Combine resource flows from external ecosystem into customer offerings **Value capture logic:** Lower the cost of resources used in customer offerings, improve brand and corporate image **Case examples:** Interface Networks for 'circular carpets' with ZSL, Aquafil and fishery communities; JLR and Novelis closing the aluminum loop
Closed	*Closed-narrowing* **Value proposition (example):** Reduce waste and resources in design and production processes **Value creation and delivery :** Reduce cost and negative impact through internal technology, process and design innovations **Value capture logic:** Save cost and resources **Case examples:** Companies like Apple minimising packaging and using recycled materials; McDonald's' "fried for fuel"	*Closed-slowing* **Value proposition (example):** High quality products with high customer value **Value creation and delivery :** Long lasting design, repair services; Create more value from less resources **Value capture logic:** Price premium through achieving quality leadership and customer loyalty; create value from same product multiple times **Case examples:** Long-life warrantees; hotel linen rental services focused on product longevity	*Closed-closing* **Value proposition (example):** Connect with customers by using, recovering, and maintaining post-consumer materials **Value creation and delivery :** Increase customer retention and repurchases via take-back plans **Value capture logic:** Resource efficiency, improve brand and reputation, reduce cost for materials **Case example:** Take-back, rental and lease models to recover the company's own materials such as MUD Jeans Lease and Philips pay per lux

Figure 1 Circular business model strategy framework

Bocken & Ritala, 2021

Aalto Uni
School of

Summary

Thank you!

Aalto University
School of Business