

Progetto L2C – Modulo I

Prof. Pieper

Lez. 1.2 - BUSINESS MODELS IN A CIRCULAR ECONOMY



BUSINESS MODELS IN A CIRCULAR ECONOMY



Topics

- ▶ Introduction
- ▶ **Business Model**
- ▶ Circular inputs
- ▶ Sharing model /Sharing economy concept
- ▶ Product as a service /Retain product ownership



Topics

- ▶ Product use extension /Product life extension
- ▶ Resource recovery / Design for recycling
- ▶ Circularity Matrix
- ▶ Prospects



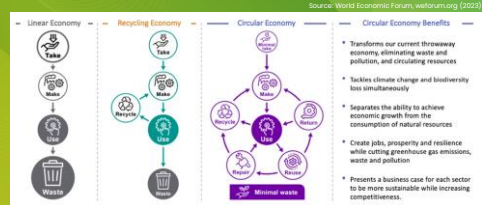
INTRODUCTION



- ▶ Surveys show that up to 80 % of the environmental impacts of products are determined in the design phase (European Commission, 2014)
- ▶ So far no general shift in product design has been made – away from “take-make-use-dispose”
- ▶ The reasons for this can be manifold



▶ How do we design products?



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Focus on sustainable design of resource-intensive products:

- ▶ On sustainability criteria such as durability, reparability or recyclability
- ▶ On strengthening consumer rights
- ▶ On fostering the closed-loop principle in production processes in all sectors

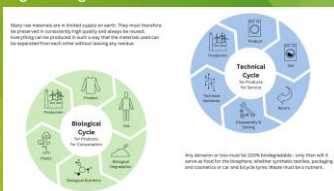
Review Question

According to the European Union's action plan, what is one of the main objectives of the circular economy?

BUSINESS MODEL 1: CIRCULAR INPUTS

- ▶ In a circular economy, renewable, recycled, or highly recyclable inputs are used in production processes – enabling partial or total elimination of waste and pollution
- ▶ Products do not become end of life, but end of current usage loop

- ▶ **The cradle to cradle concept.** There is not waste, because everything is designed to be useful, not less harmful.



Review Question

What does the term "cradle-to-cradle" refer to in the context of circular economy practices?

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BUSINESS MODEL 2: SHARING MODEL / SHARING ECONOMY CONCEPT



- ▶ The sharing economy literally means "economy of sharing"
- ▶ Circular businesses provide customers with affordable and convenient access to products and services
- ▶ They have a higher utilization percentage of their expensive assets
- ▶ Car-sharing is a well-known example

Review Question


Which other examples of sharing models do you know?



BUSINESS MODEL 3: PRODUCT AS A SERVICE / RETAIN PRODUCT OWNERSHIP



- ▶ The producer rents or leases a product to the customer rather than selling it. The producer is responsible for products when consumers have finished with them
- ▶ The provider remains incentivized for the product's ongoing maintenance, durability, upgrade, and treatment at the end of its use
- ▶ This shifts focus from volume to performance, thus maximizing the usage factor and useful life

- ▶ The producer or provider can:
 - ▶ Increase resilience by retaining control of products and materials
 - ▶ Gather good knowledge of how the products are used through constant consumer contact
- 

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- ▶ The provider has a responsibility and an economic incentive for safer disposal mechanisms, a responsibility previously on the end-user, often without a financial incentive



Review Question

How does the "Product as a Service" model shift focus?



BUSINESS MODEL 4: PRODUCT USE EXTENSION / PRODUCT LIFE EXTENSION



- ▶ Companies applying this strategy focus on designing products to last longer and to be used over several usage cycles
- ▶ Using this business model companies design their products for reparability, upgradability, reusability, ease of disassembly, reconditioning, and recyclability of all components
- ▶ The business models intends to provide a continuing income stream throughout the product's usage cycles

Review Question

- ▶ Please think of two companies in your country that have adopted the business model of product life extension and product use extension.
- ▶ What characteristics of the companies' philosophies and products stand out to you?



BUSINESS MODEL 5: RESOURCE RECOVERY / DESIGN FOR RECYCLING



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- ▶ The right strategy can be determined by how easily the manufacturer or supplier can get the product back and how easily value can be recovered from it

Harvard Business Review, July 2021

Access	Low embedded value Strategy: DFR + infrastructure/partnerships Example: Biodegradable packaging (BioPak)	Low embedded value Strategy: DFR + DPC Example: Servicing and repairing commercial tires (Michelin)	
	High embedded value Strategy: PLE + DFR Example: Industrial equipment (Caterpillar and Kierulff)	High embedded value Strategy: PLE Example: Wind turbines	
	Low embedded value Strategy: Incremental DFR Example: Commonly used materials (Red Alloy and Narak Hydro)	Low embedded value Strategy: DFR + partnerships Example: Carpets (Interface), mattresses (DSDM-Kings), footwear (Nike and Adidas)	
	High embedded value Strategy: PLE + DFR Example: Branded reusable and recyclable clothing (Patagonia)	High embedded value Strategy: DFR Example: Consumer electronics (Apple)	
	Easy	Hard	Process

Review Question

- ▶ Can you think of an example for each of the business models described in the matrix?
- ▶ Please describe them each in three sentences



PROSPECTS



- ▶ Key business models are already established
- ▶ No fixed number of business models yet
- ▶ The emerging circular economy needs to be empowered by creativity, entrepreneurship and courage to flourish
- ▶ Circular business models are important success factors for the future competitiveness of companies

SUMMARY REVIEW QUESTIONS

- ▶ According to the European Union's action plan, what is one of the main objectives of the circular economy?
- ▶ What does the term "cradle-to-cradle" refer to in the context of circular economy practices?
- ▶ Which other examples of sharing models do you know?

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- ▶ How does the "Product as a Service" model shift focus?
- ▶ Please think of two companies in your country that have adopted the business model of product life extension and product use extension

- ▶ What characteristics of the companies' philosophies and products stand out to you?
- ▶ Can you think of an example for each of the business models described in the matrix?
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