

# Business models for reducing plastic waste along the value chain

**Towards innovative trends in production and retail**

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# Background

# The context of “Innoredux”

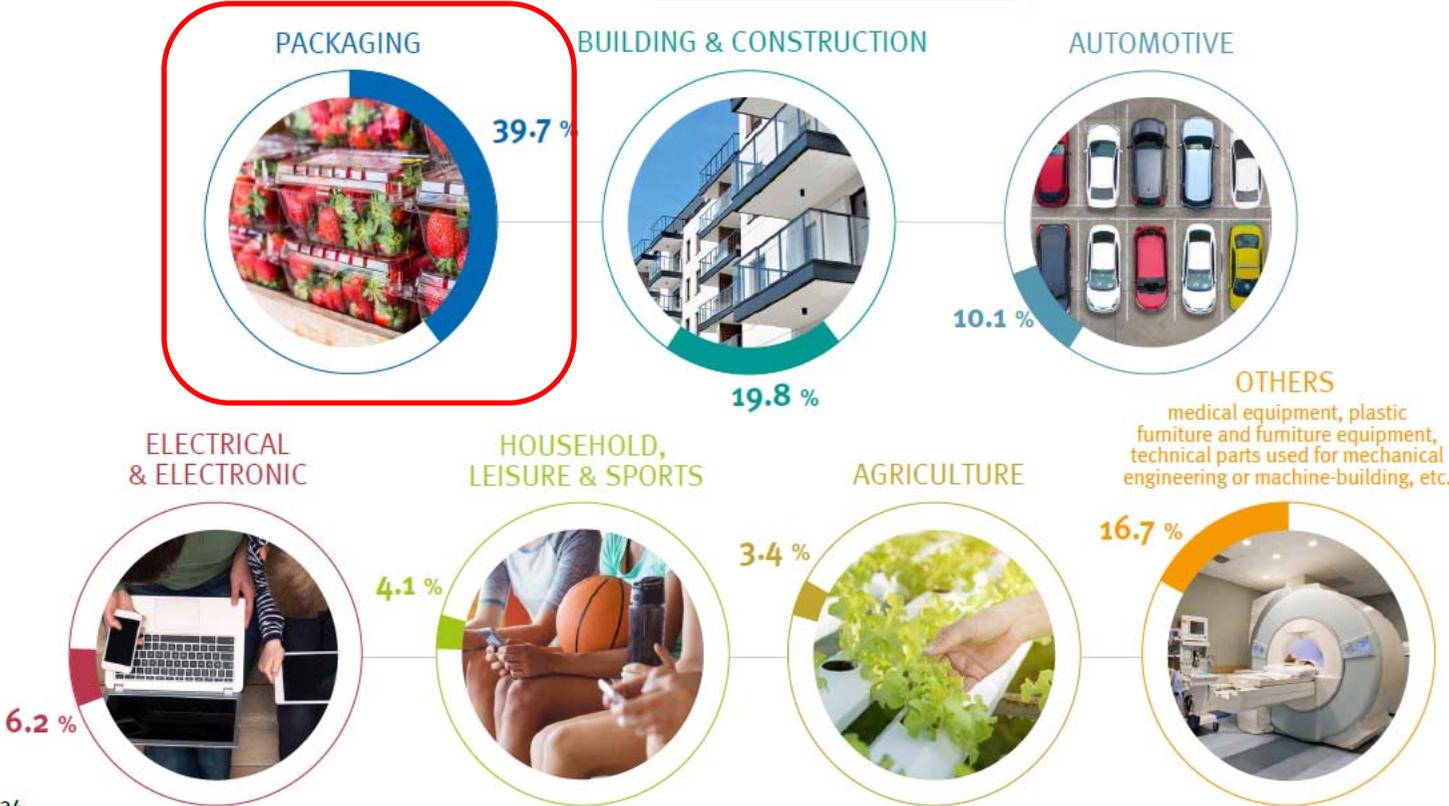


- **Project title:** Business models for reducing plastic waste along the value chain - Towards innovative trends in retailing (Innoredux)
- **Project duration:** 01.02.2019 – 31.1.2022 (36 months)
- **Funded** by the German Federal Ministry of Education and Research (BMBF) within the research focus “Plastics in the Environment – Sources • Sinks • Solutions“, funding volume: 1,457,808 Euro
- **Ideas and aims:**
  - **collaborative development, implementation and evaluation of technical and social innovations** in the retail sector along the value chain
  - Focus: packaging of various product groups (food, textiles, office supplies, cosmetics/detergents and cleaning agents)
  - Development and implementation of activities in Heidelberg/DE (**real-world laboratory** approach)
  - Identifying potentials for **upscaling** → **transfer and dissemination of promising sustainable BM innovations**
- **Associated partners** are retailers (e.g. Zalando), NGOs and a city administration (Heidelberg)



# Plastic converter demand (EU 28) (2017)

Total converter demand **51.2 m t**





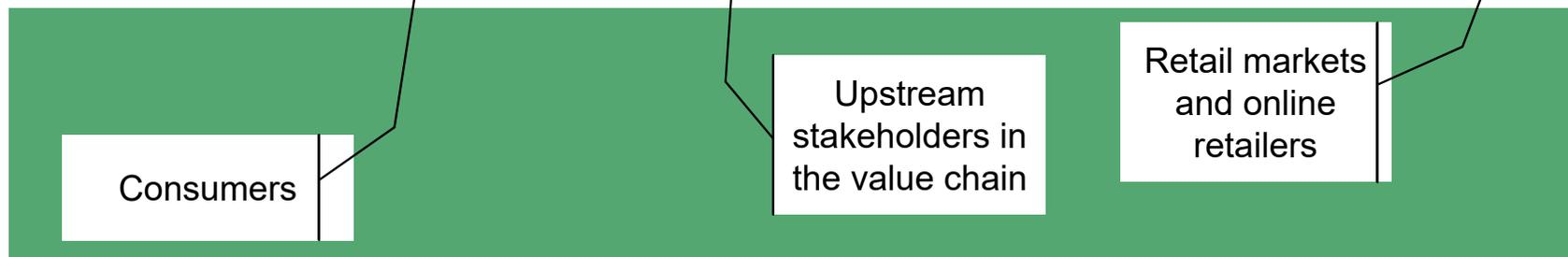
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# Business models?

## What is a business model?

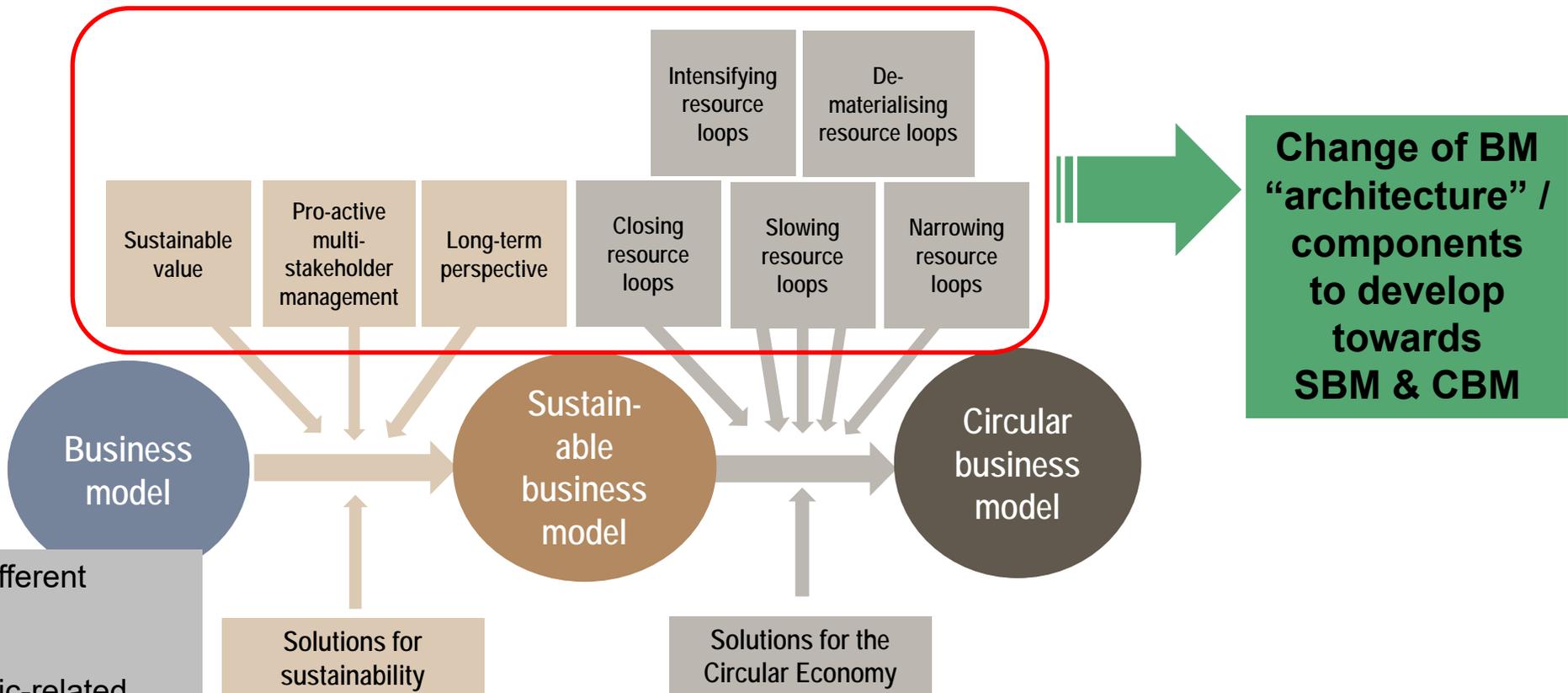
"A business model is the **basic logic** of a company that describes what **value** is created for **customers and partners** and in what way. A business model answers the question of how the generated **value flows back to the company** in the form of **revenues**. The value created enables a **differentiation towards competitors, the consolidation of customer relations and obtaining of a competition advantage**"



# BM – SBM – CBM



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consists of different components:  
CANVAS:

- 2 economic-related
- 4 marketing-related
- 3 cooperation-oriented

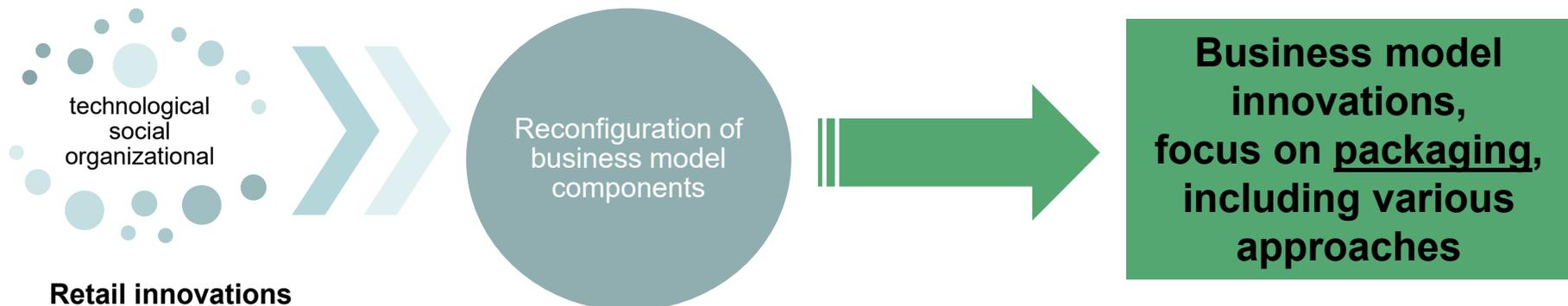
Source: Geissdoerfer et al. (2018)

# Business model innovation

Business model innovation is the ***planned*** process of developing, implementing and marketing a novel business model.

This includes

- the ***creation of completely new*** business models, or
- the ***modification of at least two or more*** business model building blocks and/or their relationship to each other.



## What does this mean for our context

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- Application of the CANVAS-business model → three types
- Analysis of empirical packaging approaches in the value chain  
→ six approaches
- Analysis of change (innovation) of business model components

# Overview of the three types



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## Position along the value chain

### Delivery and storage

### Sale

Stationary retail

Online retail

### Type I: Incoming deliveries and storage in retail

<b>Key Partners</b> Hersteller von Produkten mit plastikarmen oder freich Transport- / Lager sind Verkaufverpackungen Logistikdienstleister	<b>Key Activities</b> Verändertes Supply Chain Management (Unterhaltung eines Rücknahmesystems) Weitere Services (Verteilung, Abholung, Reinigung der VP) Verstärkte Kundenkommunikation (Anzahl/zeitliche Flexibilität für Anrufe über Wochenpausen)	<b>Value Propositions</b> NUR WENN KOMMUNIKATION DER MAßNAHME ERFOLGT! Befriedigung des KundInnen Bedürfnis nach (anzahllicher) Nachhaltigkeit im Sinne eines teilweisen Müllaufkommens Ggf. Unterstreichung des sowieso bereits nachhaltigen Wertungsgebots	<b>Customer Relationships</b>	<b>Customer Segments</b>
<b>Key Resources</b> Alternative Verpackungsmaterialien Fähigkeiten der Verpackungsmen Veränderte Lagerlogistik Veränderte Transportlogistik		<div style="background-color: #00a651; color: white; padding: 20px; border-radius: 10px; display: inline-block;">                     No considerable changes                 </div>		
<b>Cost Structure</b> Herstellung/Kauf der Mehrwegflaschen, Ausbau eines Rücknahmesystems, In spezialisierten für bewerk. Lager-/Transportverpackungen Beschaffung der alternativen Verpackungsmaterialien Verringerte Kosten für Verpackungsmaterial				
<b>Revenue Streams</b>		<b>Revenue Streams</b>		

<b>Schlüsselfaktoren</b> Hersteller von Produkten mit plastikarmen. Freich sind Transport- / Lager sind Verkaufverpackungen Hersteller von innovativen Produkten, die weniger Verpackungsmaterialien benötigen Logistikdienstleister	<b>Schlüsselfaktoren</b> Ressourcen-Angebot durch Management (Unterhaltung eines Rücknahmesystems) Zeitlich Nachhaltige Kundenkommunikation Weitere Services (Verteilung der VP) Verstärkte Kundenkommunikation (Anzahl/zeitliche Flexibilität für Anrufe über Wochenpausen) Nachhaltige Kundenkommunikation	<b>Wettbewerbsvorteile</b> Abhängigkeit der KundInnen Bedürfnisse nach (anzahllicher) Nachhaltigkeit im Sinne eines reduzierten Müllaufkommens Ggf. Unterstreichung des sowieso bereits nachhaltigen Wertungsgebots Verändertes Kundeninteresse für mehr Bequemlichkeit trotz neuer Prozesse	<b>Kundenbeziehungen</b> Vermehrte persönliche Interaktion und Beratung Vermehrte Interaktion Automatische Dienstleistungen (Abbestellen) (Personalisierte Produktempfehlungen)	<b>Kundensegmente</b> Kund: diverse Ausrichtungen
<b>Kostenstruktur</b> Herstellung/Kauf der Mehrwegflaschen, Ausbau eines Rücknahmesystems, In spezialisierten für bewerk. Lager-/Transportverpackungen Beschaffung der alternativen Verpackungsmaterialien Ausbau des Kundennetzes Einflüsse Logistikdienstleister Verringerte Kosten für Lager-Verpackungsmaterialien	<b>Einzelverpackungen</b> Nutzung: kein Mitgliedsgebühren Vermietung/Leasing (Pfand)	<b>Revenue Streams</b> Nutzung: kein Mitgliedsgebühren Vermietung/Leasing (Pfand) Verringerte Versand- und Entsorgungskosten		

Type II: Stationary retail

<b>Key Partners</b> Hersteller von Produkten mit plastikarmen oder freich Transport- / Lager sind Verkaufverpackungen Logistikdienstleister	<b>Key Activities</b> Verändertes Supply Chain Management (Unterhaltung eines Rücknahmesystems) Verstärkte Kundenkommunikation Weitere Services (Verteilung, Abholung, Reinigung der VP) Verstärkte Kundenkommunikation (Anzahl/zeitliche Flexibilität für Anrufe über Wochenpausen)	<b>Value Propositions</b> Befriedigung des KundInnen Bedürfnis nach (anzahllicher) Nachhaltigkeit im Sinne eines reduzierten Müllaufkommens Ggf. Unterstreichung des sowieso bereits nachhaltigen Wertungsgebots Verändertes Kundeninteresse für mehr Bequemlichkeit trotz neuer Prozesse	<b>Customer Relationships</b> Vermehrte persönliche Unterstützung und Beratung Vermehrte Interaktion Automatische Dienstleistungen (Abbestellen) (Personalisierte Produktempfehlungen)	<b>Customer Segments</b> Massenmarkt ODER Segmentiert
<b>Key Resources</b> Alternative Verpackungsmaterialien Fähigkeiten der Verpackungsmen Veränderte Lagerlogistik Veränderte Transportlogistik	<b>Key Resources</b> Alternative Verpackungsmaterialien Fähigkeiten der Verpackungsmen Veränderte Lagerlogistik Veränderte Transportlogistik	<b>Zusätzliche Serviceleistungen</b> für mehr Bequemlichkeit trotz neuer Prozesse	<b>Channels</b> Online-Verkauf - Direkter Handel - Online-Marktplatz	<b>Revenue Streams</b> Nutzung: kein Mitgliedsgebühren Vermietung/Leasing (Pfand) Verringerte Versand- und Entsorgungskosten

Type III: Online retail

Retail differentiated by place of trade

# Approaches in the value chain

# Approaches of sustainability-oriented (plastic) packaging optimization



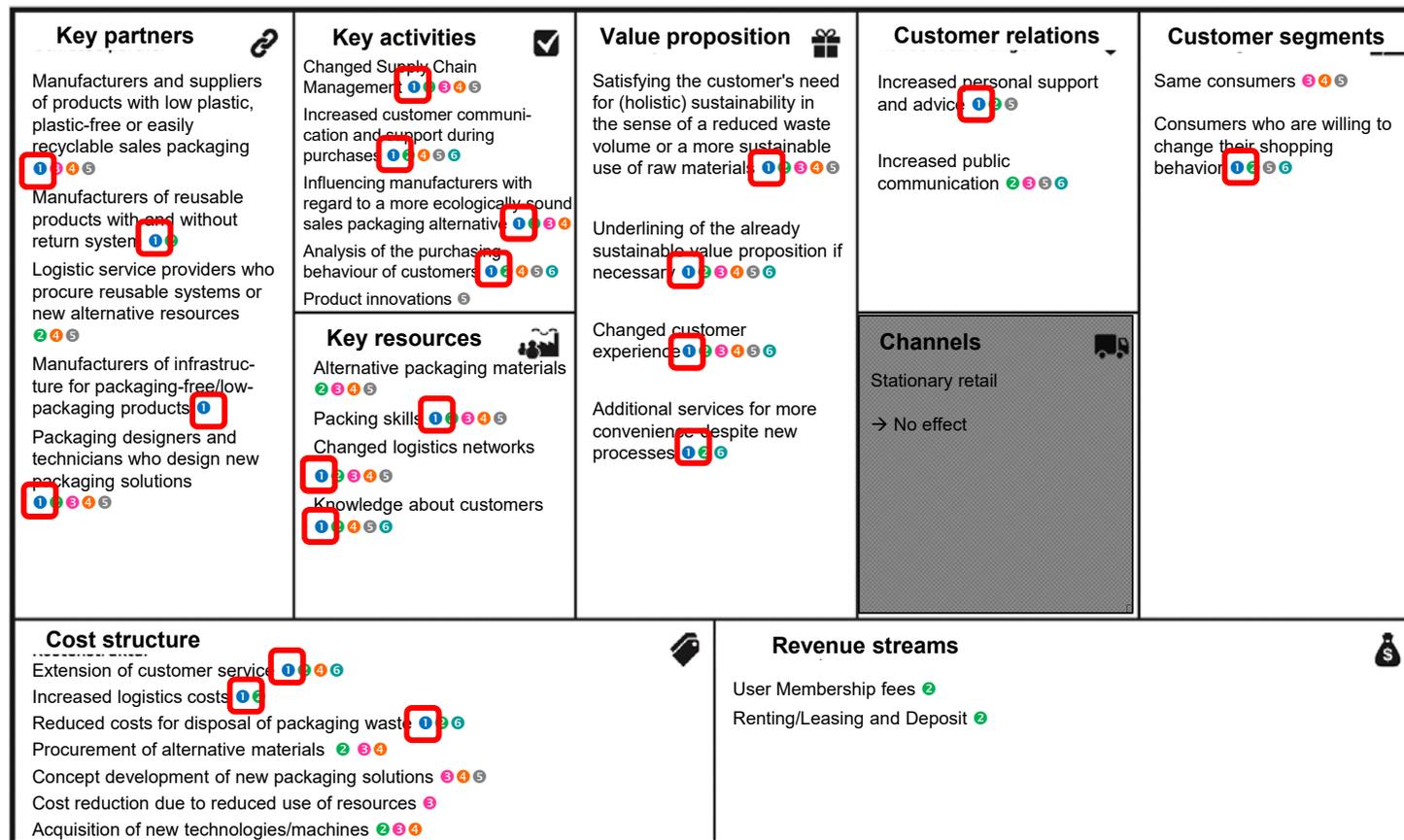
- 1. Packaging free:** Omission of sales packaging of goods; e.g. sale of bulk goods, refill stations
- 2. Returnable and reusable packaging:** Packaging is designed in such a way that it can and should be used several times, 1) with return system, e.g. refillable (deposit) bottles, returnable e-commerce packaging; 2) w/o return system, e.g. reusable bags
- 3. Reduced use of materials:** The goods remain the same, but the packaging material used is reduced by adjustments, 1) on the product side, e.g. concentrates; 2) of the packaging volume; 3) for a more efficient material use, e.g. thinner packaging and lids
- 4. Substitution of materials:** The packaging material is replaced by 1) an alternative material, e.g. paper/cardboard instead of plastic; 2) recycled material, e.g. rPET; 3) materials that are easier to recycle, e.g. no black plastic, single material packaging, biodegradable materials
- 5. Revised packaging design:** A completely different packaging solution is used, 1) w/o product modification, e.g. refill packages, flexible instead of rigid packaging such as plastic pouches; 2) with product modification, e.g. solid shampoo bars and toothpaste
- 6. Retailer services:** e.g. **customer information** on proper disposal and ecological impact of packaging alternatives, measures to **prevent returns** such as detailed product descriptions or product videos

## Further approaches:

- 1. Integrated strategy:** Sufficiency-oriented marketing, e.g. repair services, encouragement to reflect on consumption needs
- 2. Supplementary strategy:** Reuse of previously used packaging such as cardboard boxes for shipping



# Type II: Stationary Retail - Sale



**1 Packaging free**

**2 Reusable systems**

**3 Reduced use of materials**

**4 Substitution of materials**

**5 Revised packaging design**

**6 Retailer services**

# Type II: Stationary retail - Sale

## ① Approach: packaging free



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<p><b>Key partners</b> </p> <p>Manufacturers and suppliers of bulk goods</p> <p>Manufacturers of bulk bins and refill stations</p> <p>Manufacturers of reusable transport packaging without return system. These can be purchased by customers in addition to the purchase of unpackaged food</p>	<p><b>Key activities</b> </p> <p>Modified supply chain management</p> <p>Increased customer communication about the reasons for and effects of no packaging</p> <p>Increased customer support during purchasing</p> <p>Negotiations with suppliers of heavily packaged products</p> <hr/> <p><b>Key resources</b> </p> <p>Changed logistics networks</p> <p>Dealing with unpacked goods (storage and handling)</p>	<p><b>Value proposition</b> </p> <p>Satisfying the customer's need for (holistic) sustainability in terms of reduced waste volume</p> <p>Underlining of the already sustainable value proposition if necessary</p> <p>Changed customer experience (e.g. purchase procedure is slowed down)</p> <p>Additional services for more convenience despite new processes</p>	<p><b>Customer relations</b> </p> <p>Increased personal support and advice when selling goods</p> <hr/> <p><b>Channels</b> </p> <p>No changes</p>	<p><b>Customer segments</b> </p> <p>Consumers who are willing to plan their purchases in advance and bring their own containers with them to the shop</p> <p>Consumers who are willing and capable to pay a price premium</p>
<p><b>Cost structure</b> </p> <p>Increased logistics costs</p> <p>Reduced disposal costs</p> <p>Expansion of customer service</p> <p>Purchase of bulk bins and refill stations</p>		<p><b>Revenue streams</b> </p> <p>Frequently: Higher selling prices necessary</p>		



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# Conclusions



## Approaches & business model innovations

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- Sustainable and trustworthy strategies of business
  - Looking at the value chain (avoidance of misallocations, horizontal and vertical cooperation, material symbioses)
  - Looking at the whole product range (comprehensive solutions, step by step)
  - Looking at customers (participation, offers)
- So far – **doing by acting**: Single measure → change of some components of business models:
  - Impulsive / reactive business strategy
- Future: **Strategic acting** → reconfiguration of business model components
  - Active / proactive business strategy



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Thank you for your attention!

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# Sources



- Bocken, N., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*, 65, 42–56. <https://doi.org/10.1016/j.jclepro.2013.11.039>
- Geissdoerfer, M., Vladimirova, D., & Evans, S. (2018). Sustainable business model innovation: A review. *Journal of Cleaner Production*, 198, 401–416. <https://doi.org/10.1016/j.jclepro.2018.06.240>
- Lüdeke-Freund, F., Massa, L., Bocken, N., Brent, A., & Musango, J. (2016). *Business Models for Shared Value - Main Report*. Cape Town: Network for Business Sustainability South Africa
- Osterwalder, A., & Pigneur, Y. (2011). *Business Model Generation: Ein Handbuch für Visionäre, Spielveränderer und Herausforderer* (1. Aufl.; J. T. A. Wegberg, Übers.). Frankfurt am Main: Campus Verlag.
- PlasticsEurope (2018): *Plastics – the facts 2018. An analysis of European plastics production, demand and waste data*. Brussels/Wemmel: [https://www.plasticseurope.org/application/files/6315/4510/9658/Plastics\\_the\\_facts\\_2018\\_AF\\_web.pdf](https://www.plasticseurope.org/application/files/6315/4510/9658/Plastics_the_facts_2018_AF_web.pdf)
- Schallmo, D. R. A. (2013). *Geschäftsmodell-Innovation: Grundlagen, bestehende Ansätze, methodische Vorgehen und B2B-Geschäftsmodell*: <http://link.springer.com/10.1007/978-3-658-00245-9>