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Plastik in der Umwelt
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i|ö|w INSTITUT FÜR ÖKOLOGISCHE WIRTSCHAFTSFORSCHUNG
ifeu INSTITUT FÜR ENERGIE- UND UMWELTFORSCHUNG HEIDELBERG

Business models for reducing plastic waste along the value chain

Towards innovative trends in retailing

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Interdisciplinary Circular Economy Conference

December 3, 2020

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Packaging poses an environmental burden.

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Packaging (39.7 %) and building/construction (19.8 %) are the largest end-use markets for plastics.

Strong increase in consumption of plastic and paper/board packaging

Packaging has a short lifetime (~ 0.5 years on average).

24% of plastic waste is incinerated, 18% recycled.

Entry of plastic waste into rivers and oceans. Exposure to wind, waves and sunlight turns it into microplastic.

Less (plastic) packaging as preventive measure

(PlasticsEurope, 2019; Schüler, 2019; Geyer, Jambeck & Law, 2017)

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Innoredux proposes proactive and strategic organizational solutions.

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- **Project duration:** 01.02.2019 – 31.1.2022 (36 months)
- **Ideas and aims:**
  - Aim is to **collaboratively develop, implement and evaluate technical, organizational and social innovations** in the retail sector
  - Focus: **packaging** of various product groups (food, textiles, office supplies, cosmetics and detergents/cleaning agents)
  - Developing and implementing **municipal measures** in Heidelberg (real-world laboratory approach)
  - Identifying potentials for **upscaling**
- Project partners are retailers, NGOs and an administration of a German city

ALNATURA
Annas Unverpacktes
avocadostore
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Heidelberg
dm
unverpackt e.V. Verband der Unverpackt-Läden
memo
zalando

We link packaging with business model innovation.

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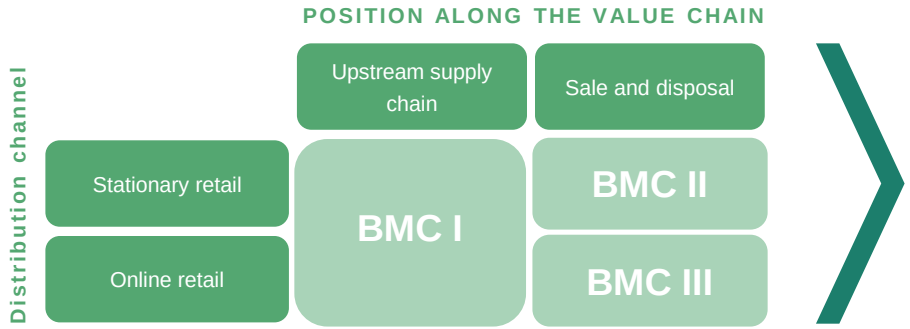
Business model innovation is …

→ 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

Focus on innovations in **retail companies** and **packaging**, and how this influences business models.



- Classification of packaging solutions in the value chain
- Application of the Business Model Canvas (BMC) framework
- Analysis of changes in business model components

(Schallmo, 2013; Geissdoerfer, Vladimirova & Evans, 2018, Osterwalder & Pigneur, 2010)

Previous work linking BM and BMI with measures to reduce packaging...

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- … is heterogeneous in
  - its approach
  - in the BM concepts used
  - the methodology employed
- Reduction of packaging or plastic is rather a secondary issue
- Usually no indication of concrete BM elements that change or BM types that would be adequate, but if so circular economy and Circular Business Models are referenced

(Heyes et al., 2018; Kortmann & Piller, 2016; Frishammar & Parida, 2019)

Sustainability-oriented packaging improvements (SOPI taxonomy)

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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) without return system, *e.g. reusable bags and coffee cups*
2) with return system, *e.g. deposit bottles, cups and glass jars*

3 Reduced use of materials

The goods remain the same, but the packaging material used is reduced by an adjustment…

1) for a more efficient material use, *e.g. thinner packaging and lids*
2) on the product side, *e.g. concentrates*
3) of the packaging volume

4 Substitution of materials

The packaging material is replaced by…

1) an alternative material, *e.g. paper/cardboard instead of plastic*
2) materials that are easier to recycle, *e.g. no black plastic*
3) recycled material, *e.g. rPET*

5 Revised packaging design

A completely different packaging solution is used…

1) without 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** in e-commerce such as *detailed product descriptions or product videos*

Further approaches:

Integrated strategy: sufficiency-oriented marketing, *e.g. repair services, encouragement to reflect on consumption needs*

Supplementary strategy: reuse of previously used packaging such as *cardboard boxes for shipping*

Changes in packaging are reflected in business model building blocks.

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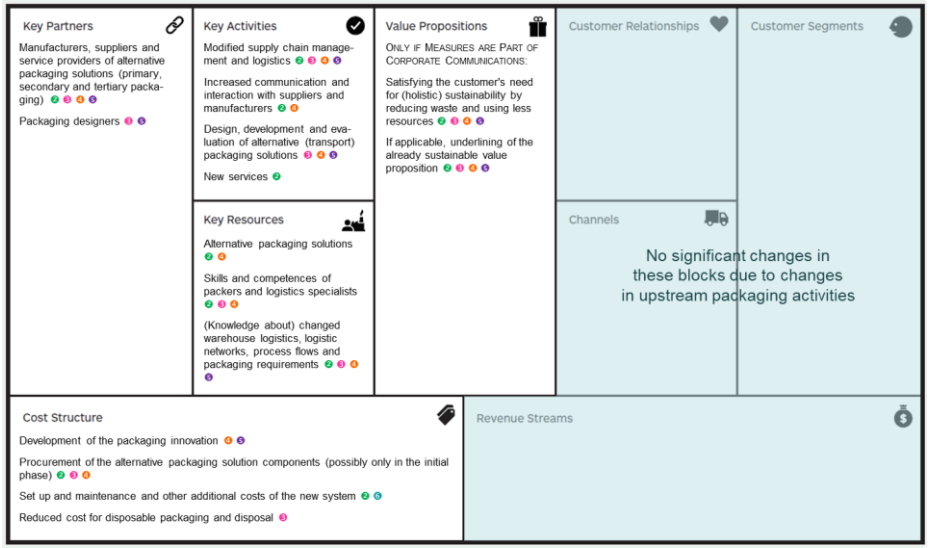
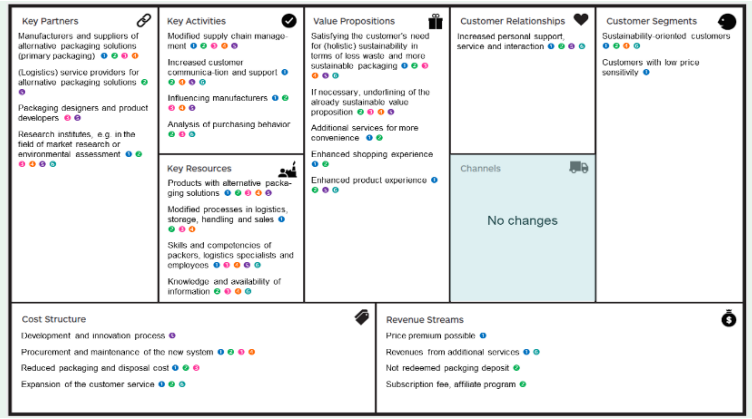
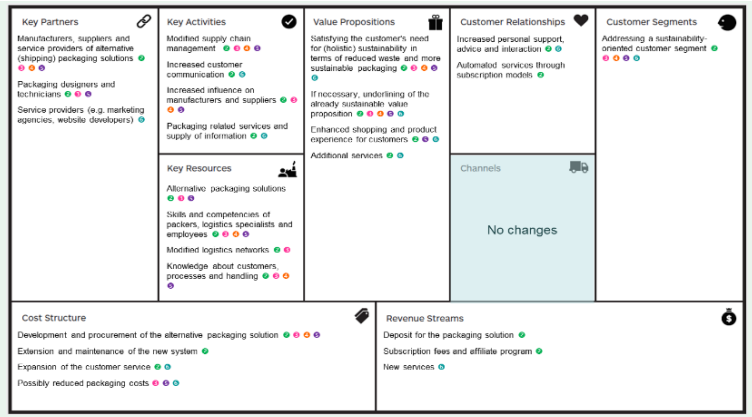
Distribution channel	Position along the value chain: Upstream supply chain	Position along the value chain: Sale and disposal
Bricks and mortar	**Mainly changes in transport packaging**	**Mainly changes in product packaging**
E-commerce		**Mainly changes in (product &) shipping packaging**







BMC template by Strategyzer (2014)

Stationary retail – sale and disposal

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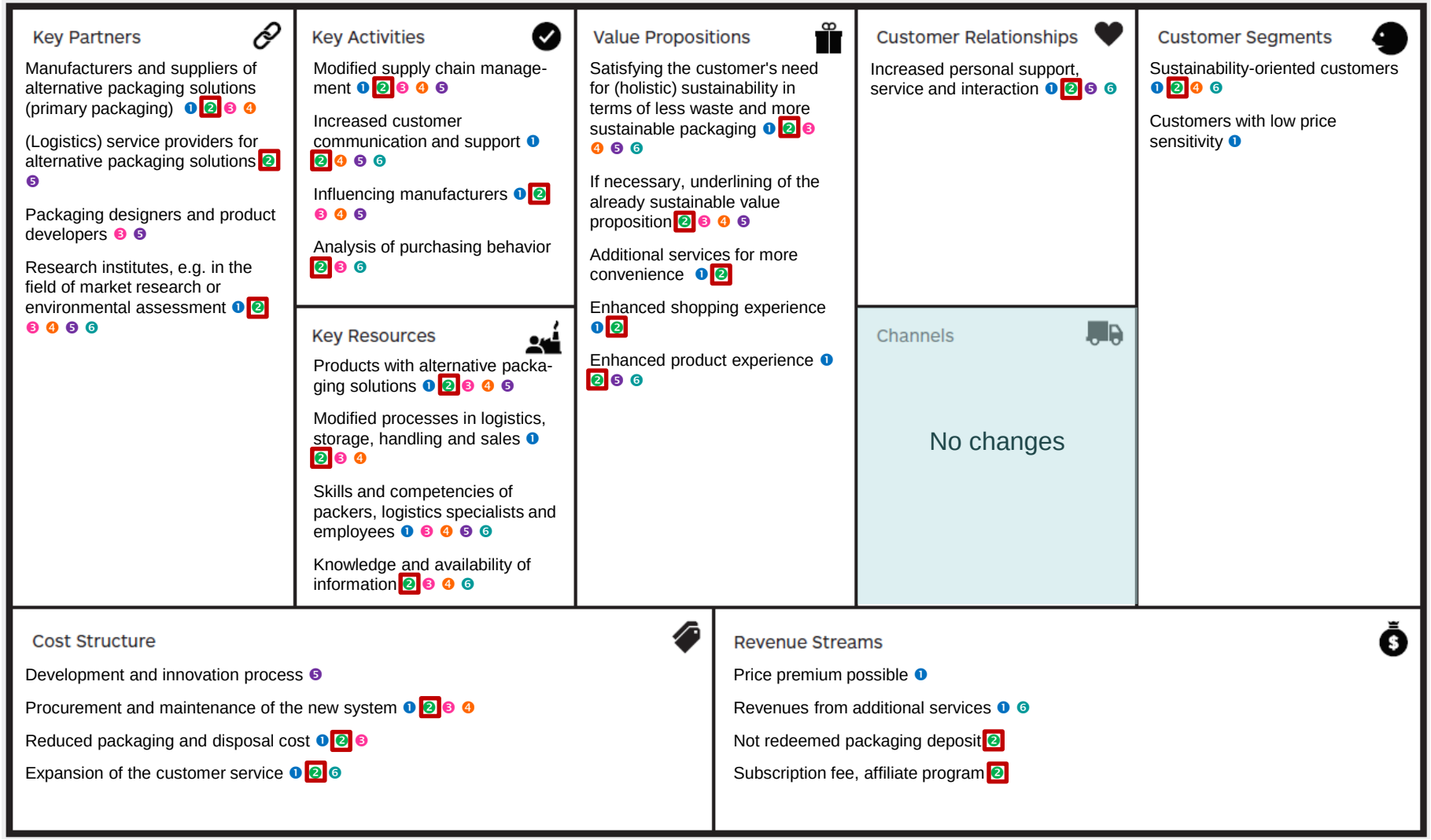

1 Packaging free
2 Reusable packaging
3 Reduced use of materials
4 Substitution of materials
5 Revised packaging design
6 Retailer services

BMC template by Strategyzer (2014)

Stationary retail – sale and disposal

❷ Reusable systems

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Key Partners

Manufacturers and suppliers of alternative packaging solutions (primary packaging)

(Logistics) service providers for alternative packaging solutions

Research institutes, e.g. in the field of market research or environmental assessment

Key Activities

Modified supply chain management

If necessary, implementation and maintenance of a take-back-system

Increased customer communication and support

Influencing manufacturers to use reusable packaging

Key Resources

Products with alternative packaging solutions

Modified processes in logistics, storage, handling and sales

Knowledge and availability of information

Value Propositions

Satisfying the customer's need for (holistic) sustainability in terms of less waste and more sustainable packaging

If necessary, underlining of the already sustainable value proposition

Additional services for more convenience

Enhanced shopping and product experience

Possibly subscription models

Customer Relationships

Increased personal support, service and interaction

Changed shopping experience, e.g. due to the necessity to return empty packaging to acceptance points or to bring your own packaging to the store

Channels

No changes

Customer Segments

Sustainability-oriented customers

[In Germany:] Similar segments as before, as deposit systems are already known, widely accepted and do not generate additional costs for customers

Cost Structure

Development and innovation process

Procurement and maintenance of the new system

Reduced packaging and disposal cost

Expansion of the customer service

Revenue Streams

Price premium possible

Revenues from additional services

Not redeemed packaging deposit

Subscription fee, affiliate program

BMC template by Strategyzer (2014)

Take home message

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- Sustainable and trustworthy strategies for retailers
  - Looking at the value chain
    (horizontal and vertical cooperation, not only include „visible“ packaging but also transport packaging, talk to product/packaging designers and manufacturers and waste management companies)
  - Looking at the whole product range (comprehensive solutions, step by step)
  - Looking at customers (participation, acceptance)

So far: **SHORT-SIGHTED ACTING**

Single measures → change of no / few business model components

Impulsive / reactive business strategy

Business model innovation

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

Frishammar, Johan, und Vinit Parida. „Circular Business Model Transformation: A Roadmap for Incumbent Firms“. *California Management Review* 61, Nr. 2 (2019): 5–29. https://doi.org/10.1177/0008125618811926.

Geissdoerfer, Martin, Doroteya Vladimirova, und Steve Evans. „Sustainable Business Model Innovation: A Review“. *Journal of Cleaner Production* 198 (2018): 401–16. https://doi.org/10.1016/j.jclepro.2018.06.240.

Geyer, Roland, Jenna R. Jambeck, und Kara Lavender Law. „Production, Use, and Fate of All Plastics Ever Made“. *Science Advances* 3, Nr. 7 (2017): 1–5. https://doi.org/10.1126/sciadv.1700782.

Heyes, Graeme, et al. „Developing and Implementing Circular Economy Business Models in Service-Oriented Technology Companies“. *Journal of Cleaner Production* 177 (2018): 621–32. https://doi.org/10.1016/j.jclepro.2017.12.168.

Kortmann, Sebastian, und Frank Piller. „Open Business Models and Closed-Loop Value Chains: Redefining the Firm-Consumer Relationship“. *California Management Review* 58, Nr. 3 (2016): 88–108. https://doi.org/10.1525/cmr.2016.58.3.88.

Osterwalder, Alexander, und Yves Pigneur. *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. Toronto: Flash Reproductions, 2010.

PlasticsEurope. “Plastics – the facts 2019. An analysis of European plastics production, demand and waste data”, 2019. https://www.plasticseurope.org/download_file/force/3183/319.

Schallmo, Daniel R. A. *Geschäftsmodell-Innovation: Grundlagen, bestehende Ansätze, methodische Vorgehen und B2B- Geschäftsmodell.* Wiesbaden: Springer Fachmedien Wiesbaden, 2013.

Schmidt, Sabrina, Carola Bick, und Frieder Rubik. „Ansätze einer nachhaltigkeitsorientierten Verpackungsoptimierung. Implikationen für Geschäftsmodelle im Einzelhandel“. Arbeitsbericht des Forschungsprojekts Innoredux. Berlin, Heidelberg: Institut für ökologische Wirtschaftsforschung (IÖW), Institut für Energie- und Umweltforschung (ifeu), 2020.

Schüler, Kurt. „Aufkommen und Verwertung von Verpackungsabfällen in Deutschland im Jahr 2017“. TEXTE 139/2019. Dessau-Roßlau: Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (BMU), 2019.

Strategyzer. „The Business Model Canvas“, 2014. https://www.strategyzer.com/canvas/business-model-canvas . Available under: CC BY-SA 3.0. https://creativecommons.org/licenses/by-sa/3.0/deed.en.