CirBES
Your partner to grow circular

Optimization of end-of-life design strategies

What do we offer?

With the help of advanced simulation tools the CirBES team is able to identify the best fitting design strategy per component for a selected circular business model and a particular supply chain setting.

What is in it for you?

- You identify the cost minimum and/or CO_2 minimum end-of-life strategy per component out of multiple possible options.
- You get a quantitative reference point to what extent an investment into circular product design may pay-off from a material cost perspective.
- You can use the result to investigate suitable pay-off periods for setting up necessary operational infrastructure, such as reverse supply chains and reuse or remanufacturing facilities.

Our approach

Step 1: Data collection & preparation
You as a client decide on the relevant business and supply chain scenarios and also provide required data. We convert your data into a our required format. Depending on how detailed your data sets are we may need to collect additional data.

Step 2: Optimization run
With our advanced tool we identify the best fitting (cost or CO_2-minimum) end-of-life strategy for each component based on a design invest and a business and supply chain setting of your choice.

Step 3: Presentation of results
We present the results of the optimization run in an appropriate form and discuss various feasible next steps towards circular system implementation depending on the value of the component materials.

Information

Feel free to contact us if you need further details. We provide individual offers.

Contact

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Case example

Initial situation

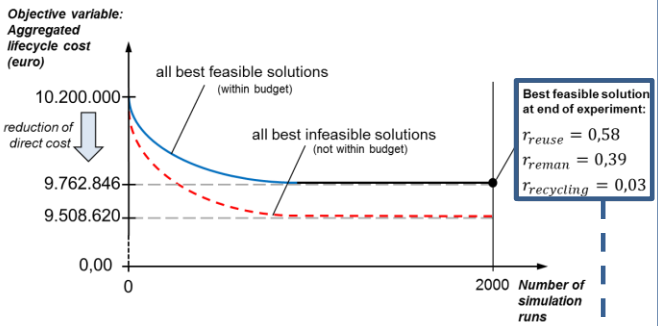
- A washing machine manufacturer has decided to investigate direct cost savings in a pay-per-use setting through practices of reuse, remanufacturing and recycling
- Given a fixed design invest the washing machine's design (>30 components) is going to be updated for reuse, remanufacturing and recycling (3R)
- Which component should receive what 3R-strategy to maximize cost savings?

Objective

Optimization of end-of-life strategies on component level to minimize lifecycle cost while considering

→ Design investment for multiple lifecycles
→ Component manufacturing/purchasing cost
→ Forward/reverse supply chain activities
→ Product reverse flows

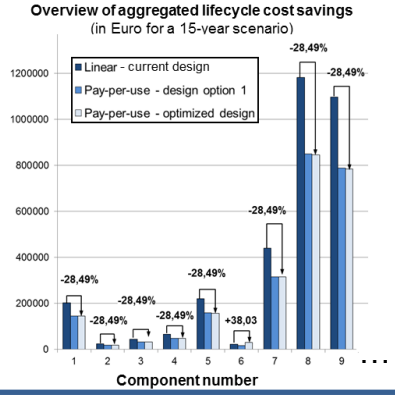
Result 1



Result 2

Component number	Material name	Manufacturing cost (euro)	Optimized end-of-life design strategies for Pay-per-use setting
1	Material A	12,76	Reuse
2	Material B	1,53	Reman
3	Material C	2,77	Reman
4	Material D	4,16	Reuse
5	Material D	13,87	Reuse
6	Material B	1,39	Recycle
...	...	...	...

Result 3



Compare to other design and business settings