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Second-degree frugal innovation in the Belgian healthcare system

Maertens, Marieke, De Schepper, Katrien, De Couvreur, Lieven, Hoveskog, Maya, Norris, Nicole and Ostuzzi, Francesca

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Frugal Innovation in Healthcare

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SYSTEMIC DESIGN ASSOCIATION

UNIVERSITEIT GENT CAMPUS KORTRIJK

howest hogeschool

HALMSTAD UNIVERSITY

Experience Georgian

Marieke Maertens

industrial designer

Project Makerhealth - University of Ghent

Frugal innovation

Timelab: non profit artistic fablab organisation

Gamification, commons, participation

Entrepreneur

Game development

MAKERHEALTH

AGENTSCHAP
INNOVEREN &
ONDERNEMEN

Vlaanderen
is ondernemen

D4E1

in4care

howest
we develop people

UNIVERSITEIT GENT
CAMPUS KORTRIJK

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4 Provisional results & next steps

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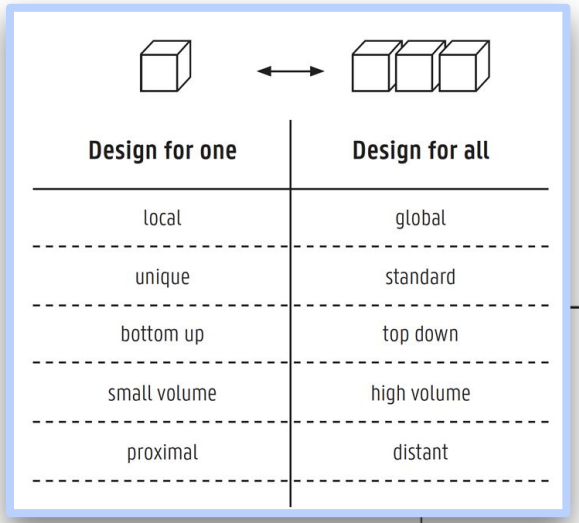
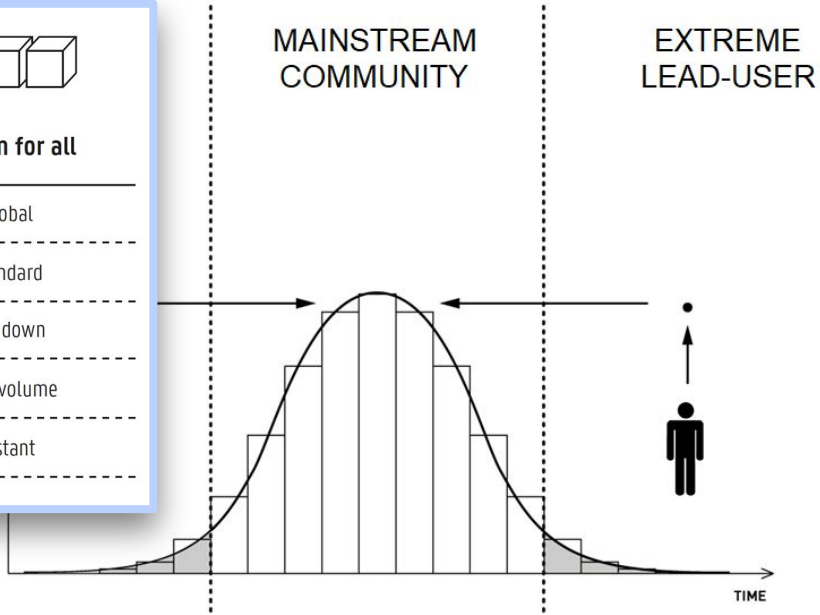
Innovation by designers in healthcare



Design for one	Design for all
local	global
unique	standard
bottom up	top down
small volume	high volume
proximal	distant



Project Makerhealth

Designed by Felix Hoog and Jellert Devos with zorggroep Heilig Hart & Pili Pili design Agency.

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Frugal production and innovation

Core functionalities

Optimized performances

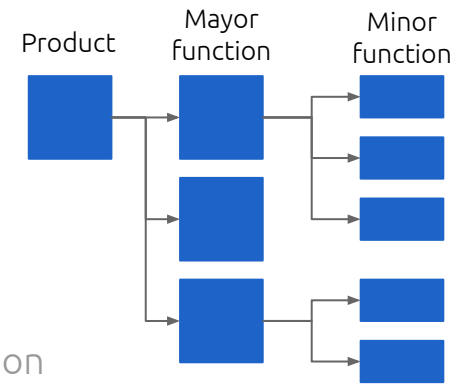
Fundamental cost reduction

Frugal production and innovation

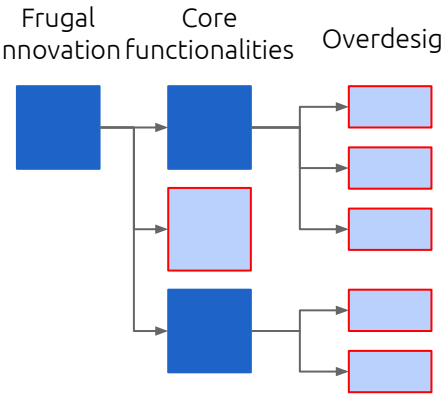
Core functionalities

Optimized performances

Fundamental cost reduction



Regular product design



Frugal Innovation

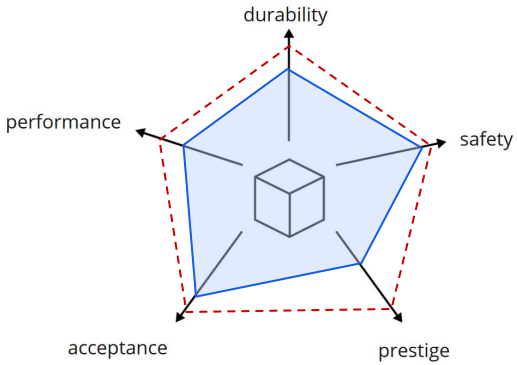
Adapted images based on: Winkler, T., et al. Frugal innovation in developed markets – Adaption of a criteria-based evaluation model. Journal of Innovation & Knowledge (2019). https://doi.org/10.1016/j.jik.2019.11.004

Frugal production and innovation

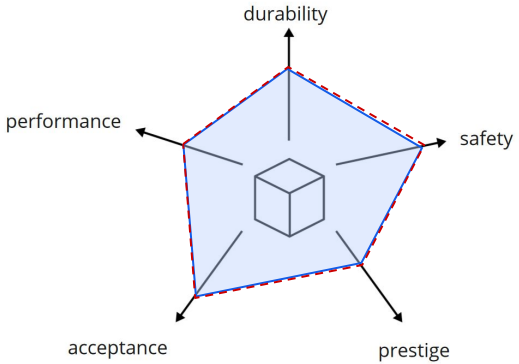
Core functionalities

Optimized performances

Fundamental cost reduction



Regular product design



Frugal Innovation

Desired level
Realised level

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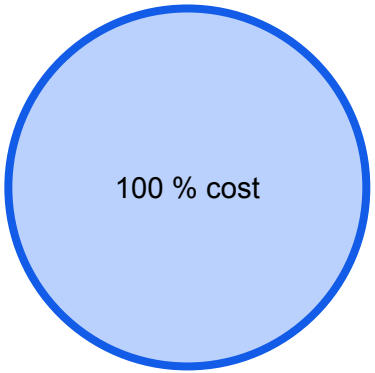
Frugal production and innovation

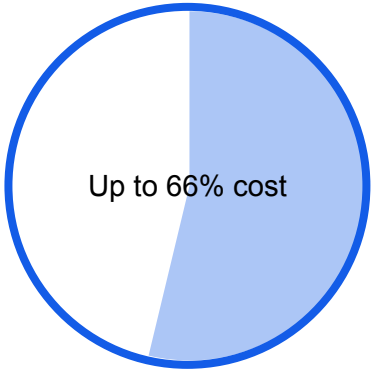
Core functionalities

Optimized performances

Fundamental cost reduction



Regular product design



Frugal Innovation

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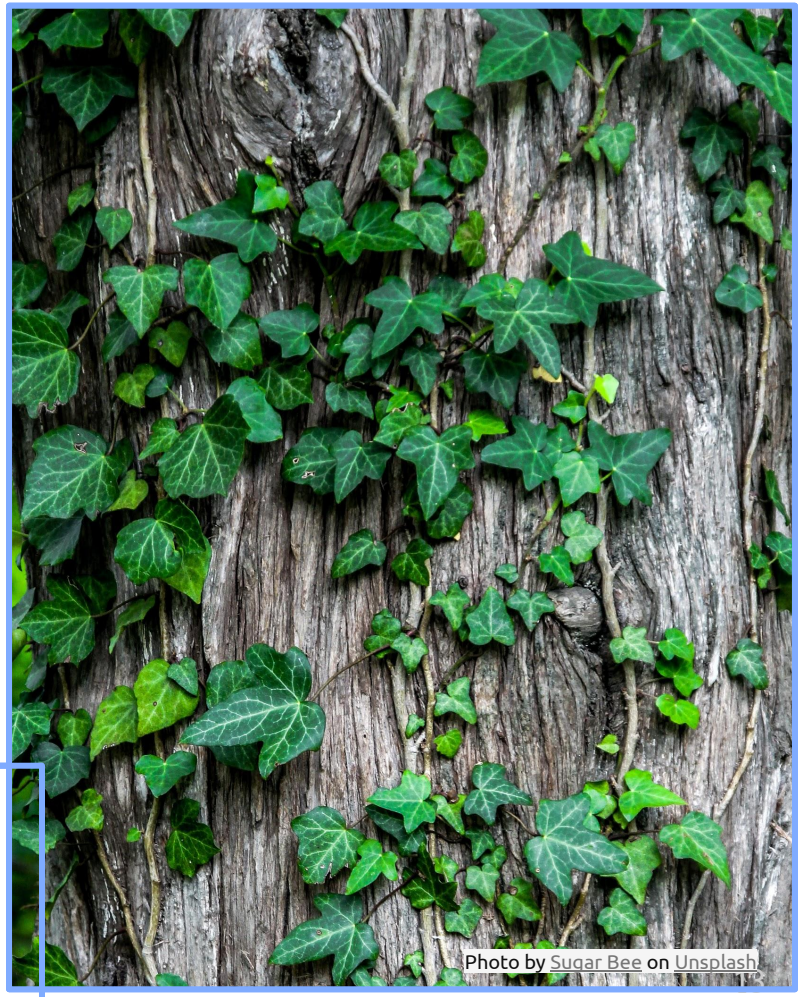
Sustainability-
-as-flourishing

Sustainability-as-flourishing is an emergent outcome of a dynamic systems construct of a future state which goes well beyond mere survival.

Key ideas from sustainability-as-flourishing are that profit is a result rather than the purpose of a viable enterprise.

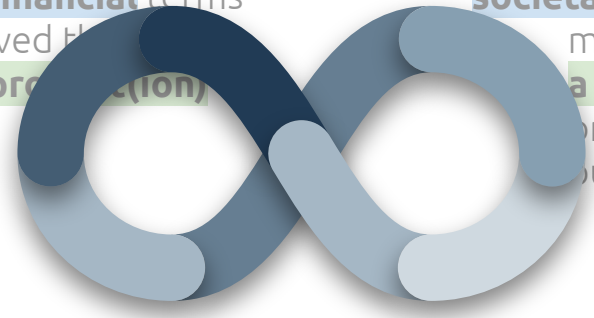
(Schaefer et al., 2015; CEL, 2017; Laszlo et al., 2012; Drucker, 1974)



Bridging the two concepts

Frugal innovation

- Focus on **local product design (low tech, high impact)**
- Cost reduction in **financial** terms
  - mainly achieved th **changes in pro (ion)**



Sustainability-as-flourishing

- Focus on **business model**
- Cost reduction in **financial, societal and environmental** terms
  - mainly achieved by **adopting a systemic view** of the product-service-system / business model

Bridging the two concepts

Frugal innovation **Sustainability-as-flourishing**

Why?

Our aim is to co-create frugal innovations and make them accessible to healthcare organisations. In this process, we specifically focus on respecting the needs for flourishing and we do that by striving for an overall cost reduction.

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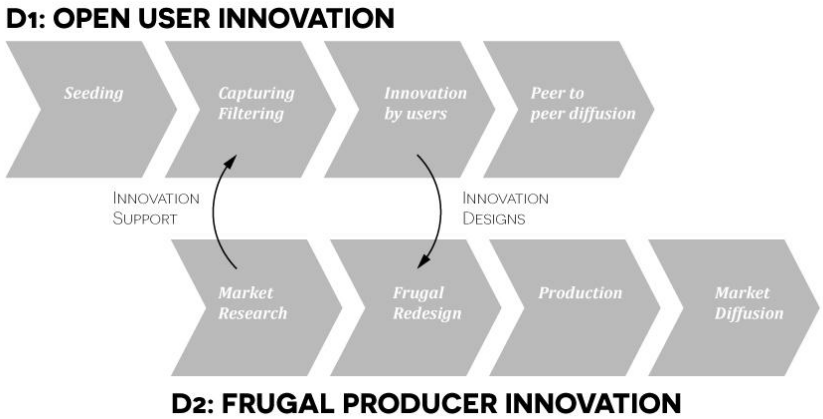
Overall trajectory

Hack → Frugal Business Plan

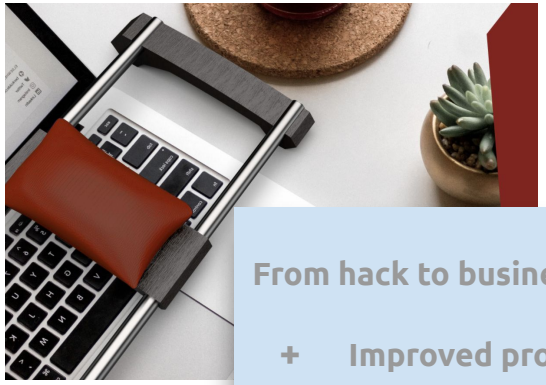
D1: Hack or “design for one”

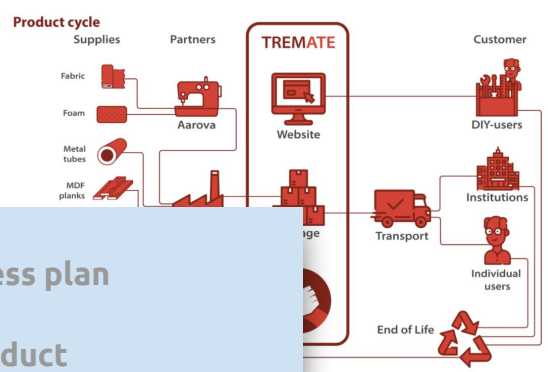
D2: Design of business model



Adapted from
Von Hippel E. Free Innovation (2017): How citizens create and share innovations, Mit Press

Example 1st iteration: from hack to business model





From hack to business plan

+ Improved product
+ Ready for market
- Lost a lot of time redesigning
- Tendency to overdesign

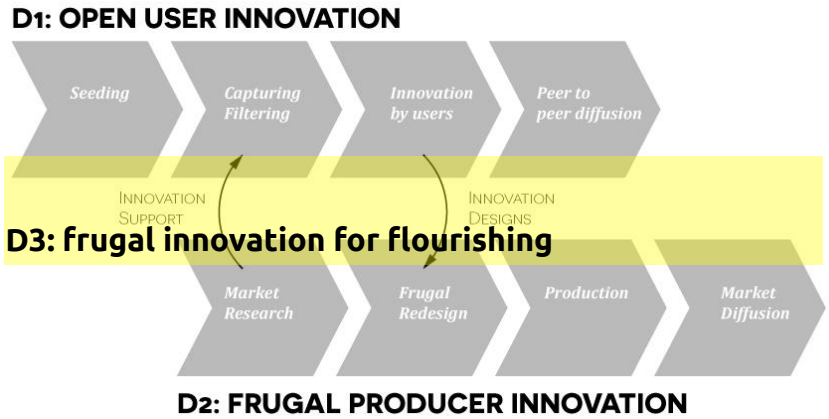
Overall trajectory

Hack → Frugal Business Plan (MVP)

D1: Hack

D2: Design of business model

D3: Frugal innovation for flourishing



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Experiment setup 1/2

Who?

- 10 teams (= 40 students)
- 5 teachers / coaches
- Health care centra
- Design agencies

When?

- 12 weeks
- Oct. to Dec. 2020
- *...in progress!*

What?

- Translating a ‘hack’ into a Frugal innovation for Flourishing.
- Experimenting with specific tools (= radar).

Experiment setup 2/2

How?

- Weekly interviews with students
- **Case study** / through design
- Observations of usability of the tools (= *radars*)
- Possible survey at the end of the course

Input

- Lessons on
  - Frugal innovation
  - Flourishing business canvas
- Tools (= *radars*)

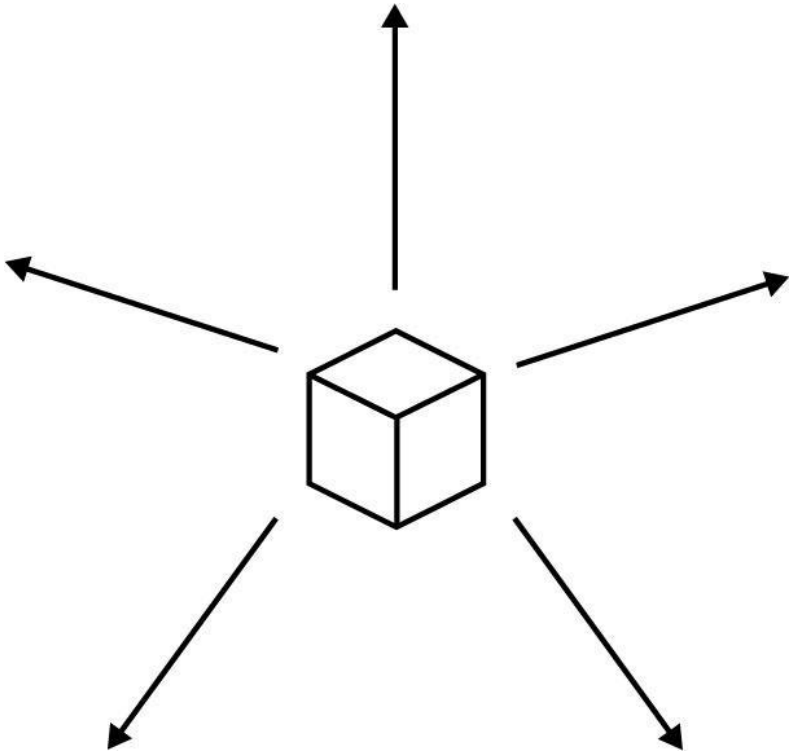
Output

- Business plan
  - Financial, marketing & production plan
- Used tools (= *radars*)

The radar as tool & method

The radar is a tool (and methodology) we designed in order to help designers identifying and focusing only on the core functionalities.

Furthermore, it helps you in optimizing the performance level of the core functionalities which, in the end, will lead to fundamental cost reduction.



Step 0

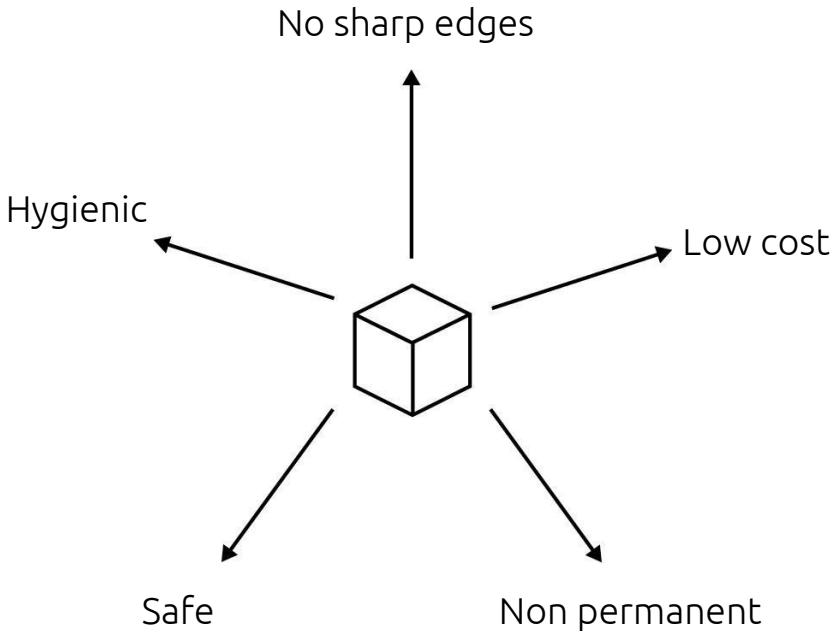
Step 0.1 | Step 0.2 | Step 0.3 | Step 0.4

Define & Refine requirements

Focus on core functionalities

Step 0.1

Plot requirements based on hack and info stakeholders

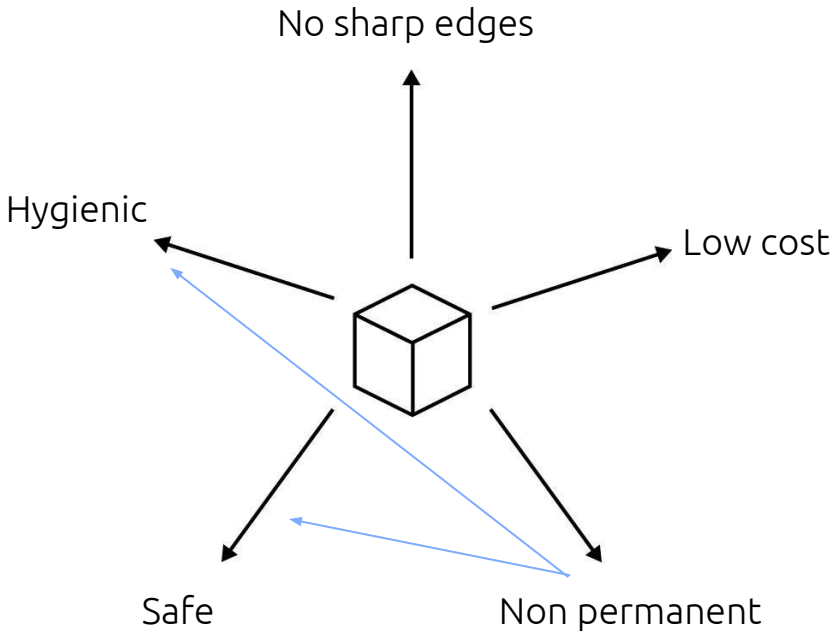


Step 0.2

Analyse requirements

What does it mean?

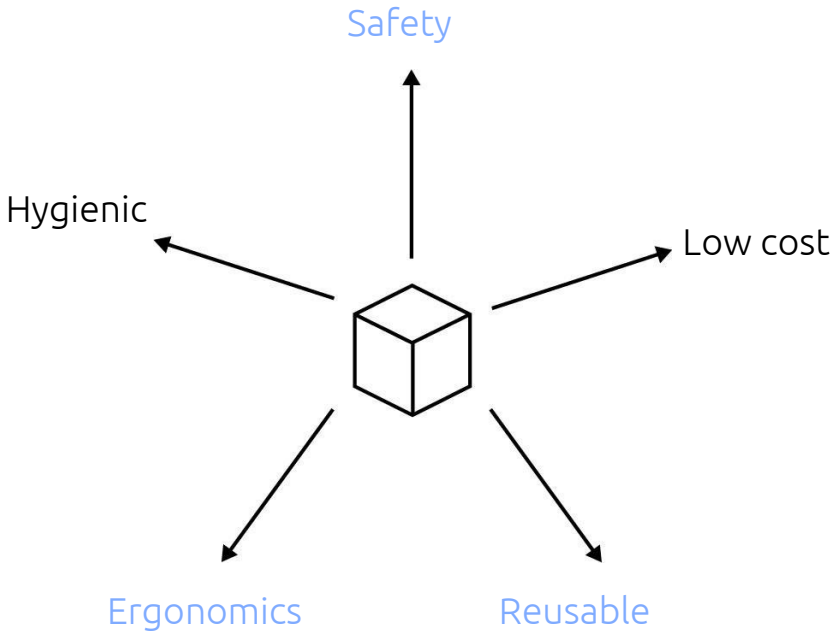
- How is it implemented in the existing hack?
- Why is it important?
- For who?
- Rephrase
- Are some requirements connected?



Step 0.3

Redefine requirements

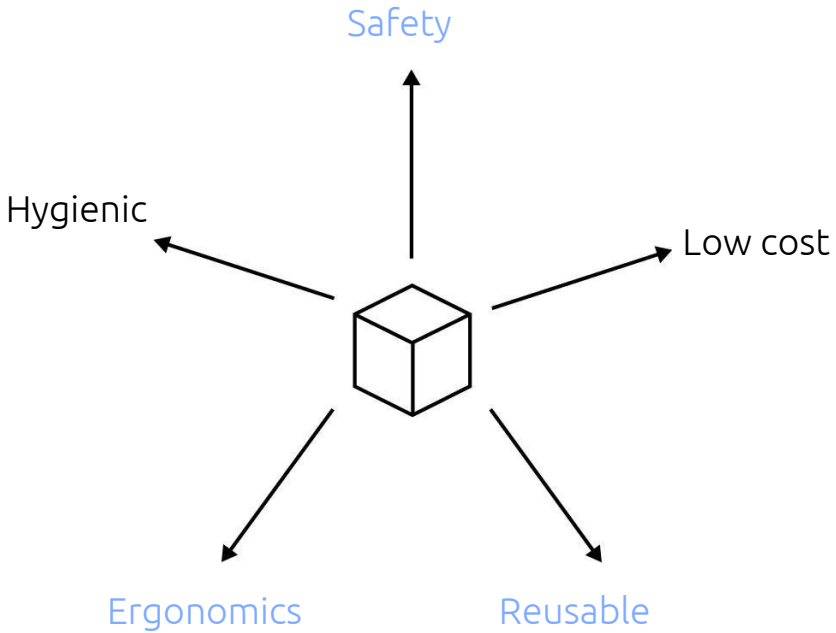
- Select & redefine most important ones
- Add the ones that might be missing
- Give a specific definition



Step 0.4

Contact stakeholders

Inform your stakeholders & ask if they agree with your changes?
If needed, make a second iteration.



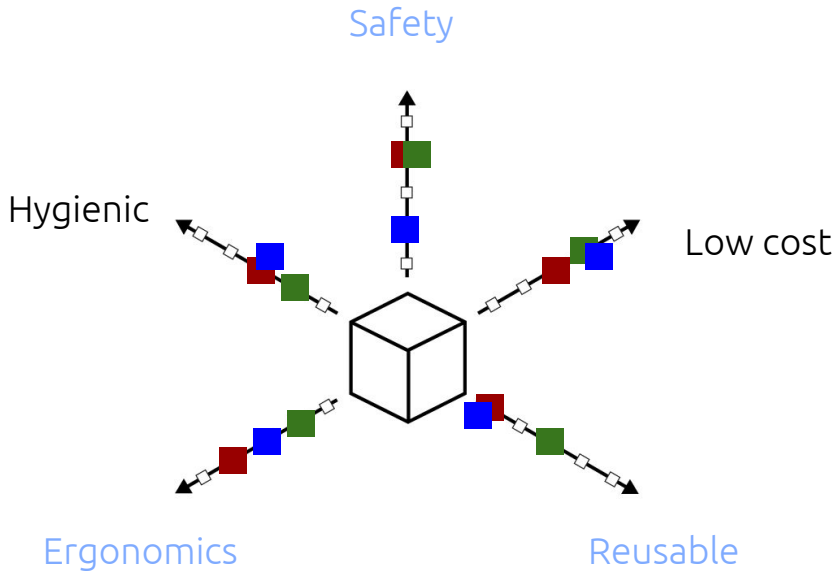
In progress

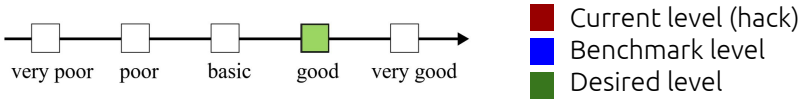
Step 1

Describe in a qualitative manner how to evaluate the top 5 requirements of their design, **evaluate the difference between the hack, benchmarks** (in ordinal manner: better, worse, same), **identify your desired level** (in ordinal manner: better, worse, same). This for each requirement, for each 'score'.

Focus on optimised performance level

"hygienic is **good** when happens fast and with good a outcome (little bacteria left)"
"hygienic is **poor** when happens slow and has a poor outcome (bacteria left)"





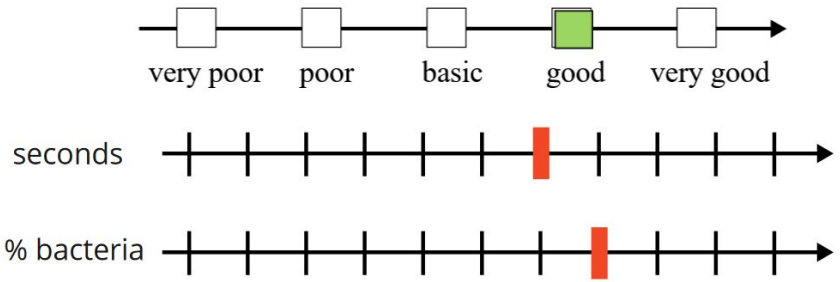
In progress

Step 2

Describe in ***quantitative*** *manner* how to **evaluate top 5 requirements** of their design, with the three layers of the FBMC: economy, society, environment. Evaluate difference with IPO and benchmark.

Focus on optimised performance level

"hygienic is **good** when happens in 10 seconds and with 20% bacteria left"
"hygienic is **poor** when happens in 30 seconds and 80%bacteria left"



In progress

Step 3.1

Use the **Flourishing Business Model Canvas.** While designing your BM keep on exploring the three layers (economy, society, environment) and keep on checking if your desired level is reached.

↓

Focus on fundamental cost reduction

In progress

Step 3.2

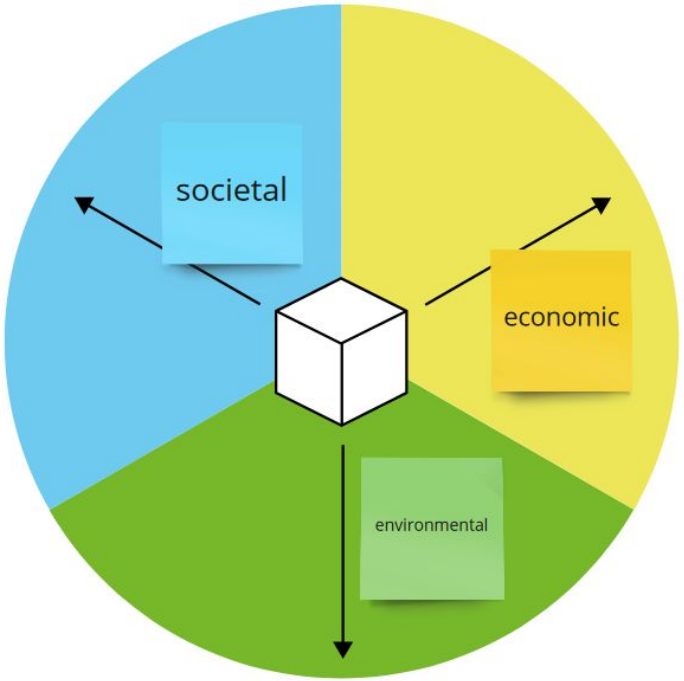
Check on the actual cost reduction, on three aspects:

economy, society and environment.

This means: try to define qualitatively how to evaluate your requirement on each aspect.

↓

Focus on fundamental cost reduction



Mona: Reflux Pants

Eliminate

Risk of children sliding down in their beds.

Danger of children being incorrectly fixed to their beds.

Raise

Functional and aesthetical

Warm, comfortable

Not necessarily medical

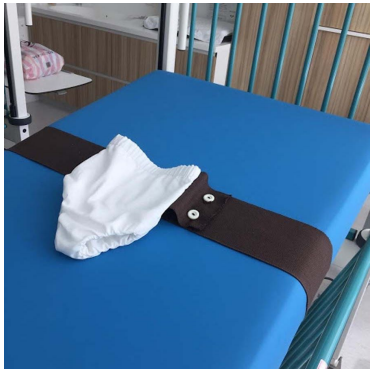
Reduce

Complexity to keep the baby well positioned in its bed

Create

Easy-to-use product

Aesthetic added value



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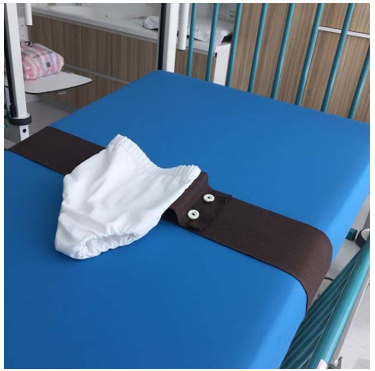

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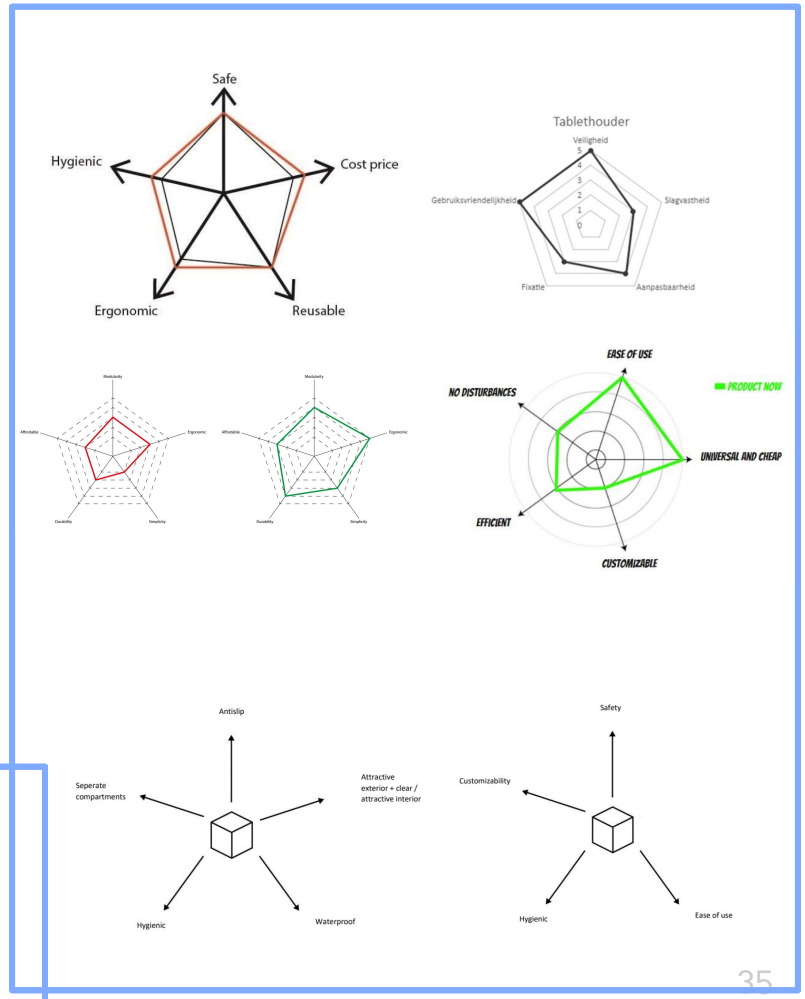
Example step 0

Radar plotting

- Plot fundamental criteria / core functionalities
- **Observation: desired level vs current level**



Next steps

(1) Proceed with data collection till Dec. 2020

(2) Conduct data analysis (which is already in progress)

(3) Report back on our main goal:

to co-create frugal innovations and make them accessible to healthcare organisations. In this process, we specifically focus on respecting the needs for flourishing and we do that by striving for an overall cost reduction.

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