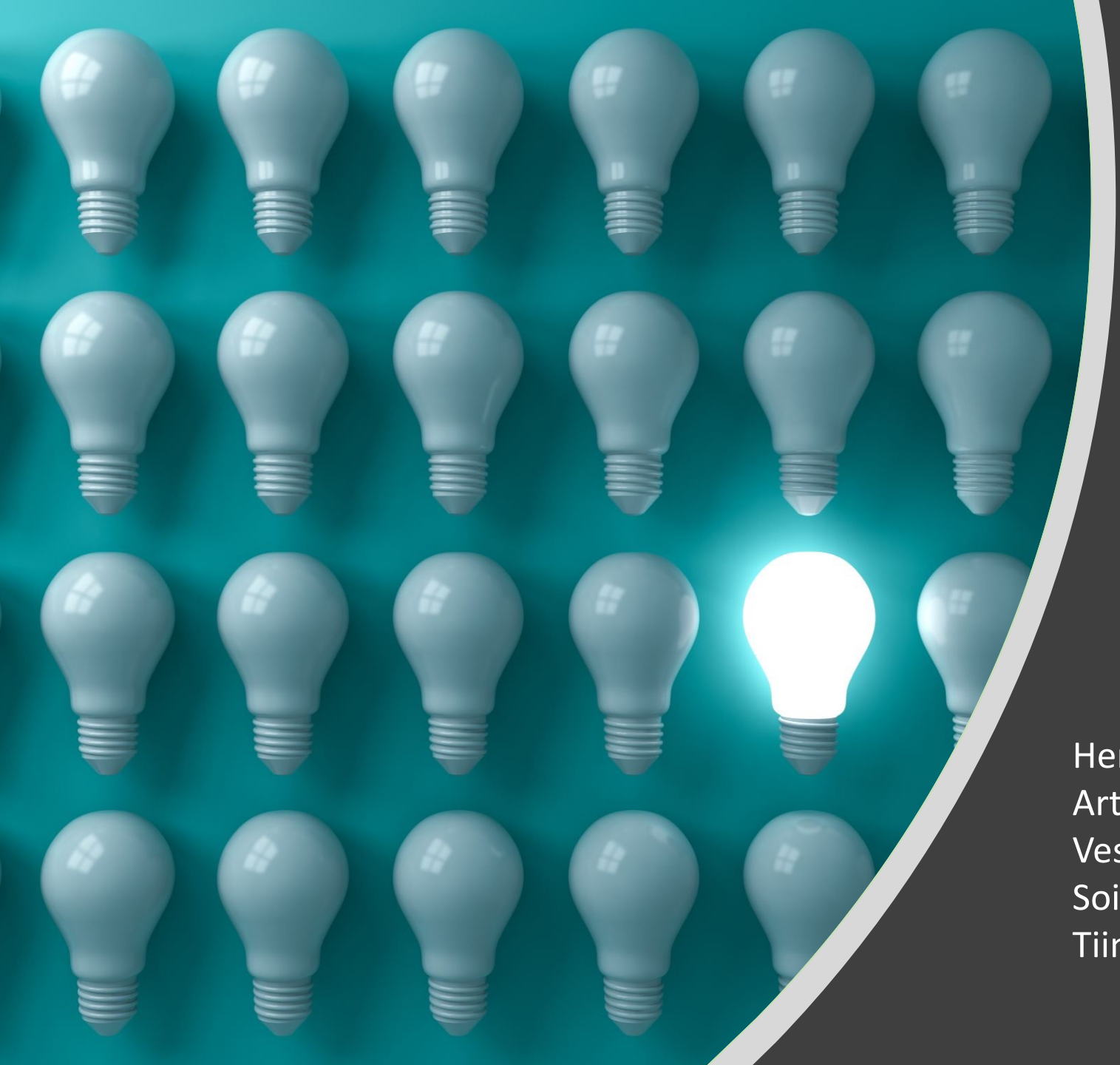


CHALLENGE:

How to comply with SUP directives' target of decreasing the amount of single-use packaging?

Henna Nevala
Artem Yunakovskiy
Vesa Taitto
Soile Kallinen
Tiina Mustonen

Rationale for the challenge

Photo: Shutterstock

EU plastics strategy / vision for circular economy

25 million tons of packaging waste generated in EU annually

Food packaging is one of the major sources of packaging waste (60 %)

Food waste, e.g. meat is also a major environmental issue








Reducing single-use packaging for minced meat

Challenge: reducing single use packaging of meat

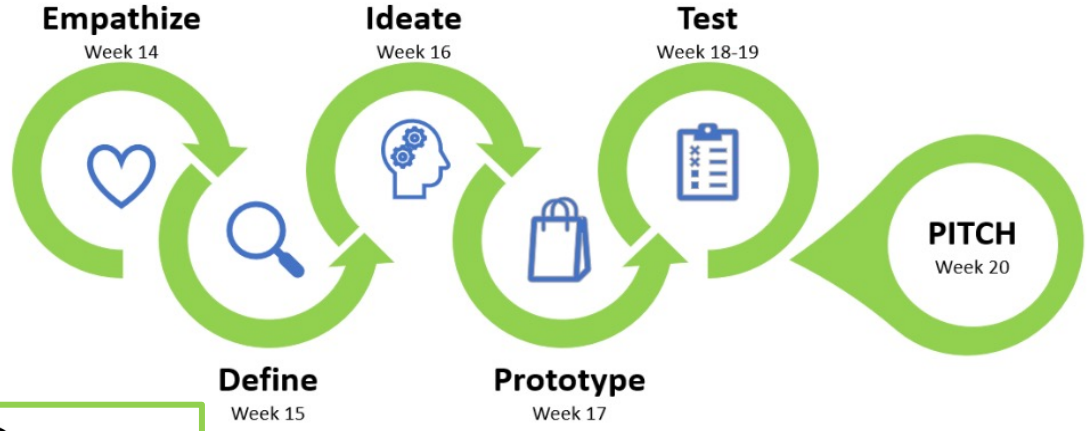
Most used meat in many countries, e.g. Nordic and UK

Only in Finland about 30 million tons consumed

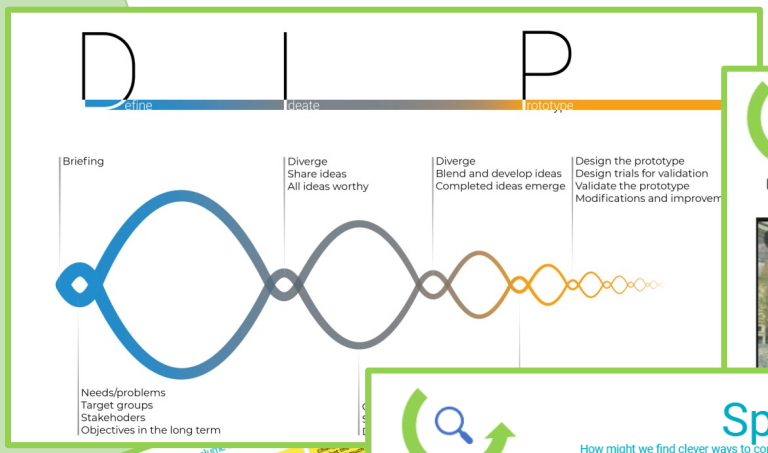
Packaging single use and not recyclable -> typically multimaterial semirigid or flexible bottom

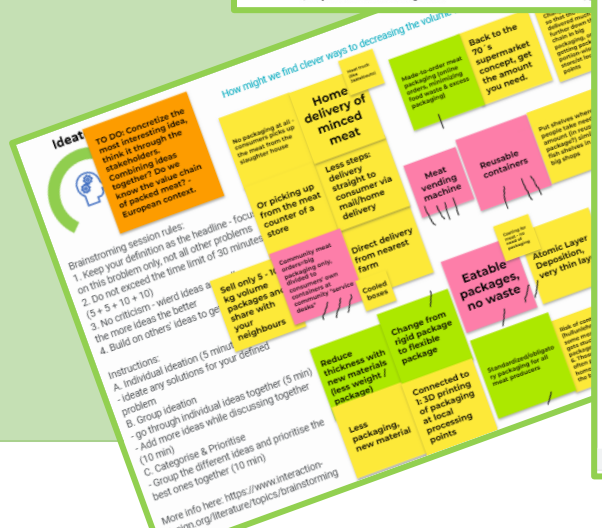
In Finland about 700 tons of packaging waste of minced meat packages annually

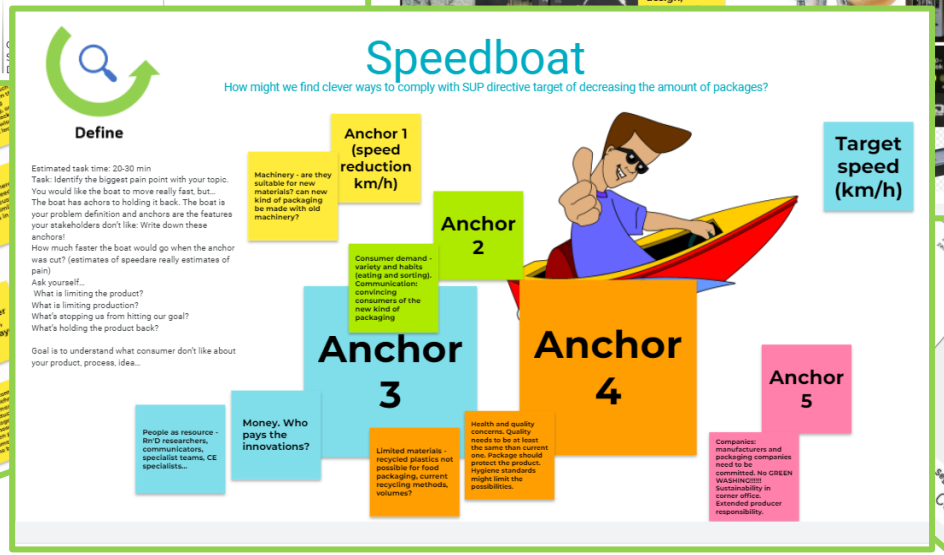
The innovation process



- Steps of ideation in development
- Loving the problem
- Getting to know the stakeholders and consumers
- Consumers and experts interviews

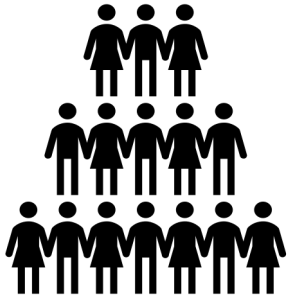




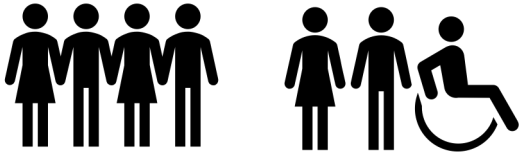


Consumers would like:

EXPERTS INTERVIEWED:
RETAIL,
GAME MANAGER (hunting),
PACKAGING INDUSTRY SPECIALISTS,
RECYCLABLE PACKAGING EXPERT



FAMILIES



DIVERSITY,
AGES 25 – 67 y.

DINK
(double income no kids)

SINGLE HOUSEHOLDS

SWOT of idea of vending machine and reusable food container for minced meat

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
• Reducing single-use non-recyclable meat packaging • Reducing food waste (customizable size, meat types)	• Vending machine technology not existing yet • Short shelf life of meat (48h)	• Global scalability • Scalability to other product categories	• Food hygiene regulations • Not suitable partners • Customers not engaged

Introduction of solution

Meat vending machine with **reusable smart packaging!** (QR code / RFID tag)

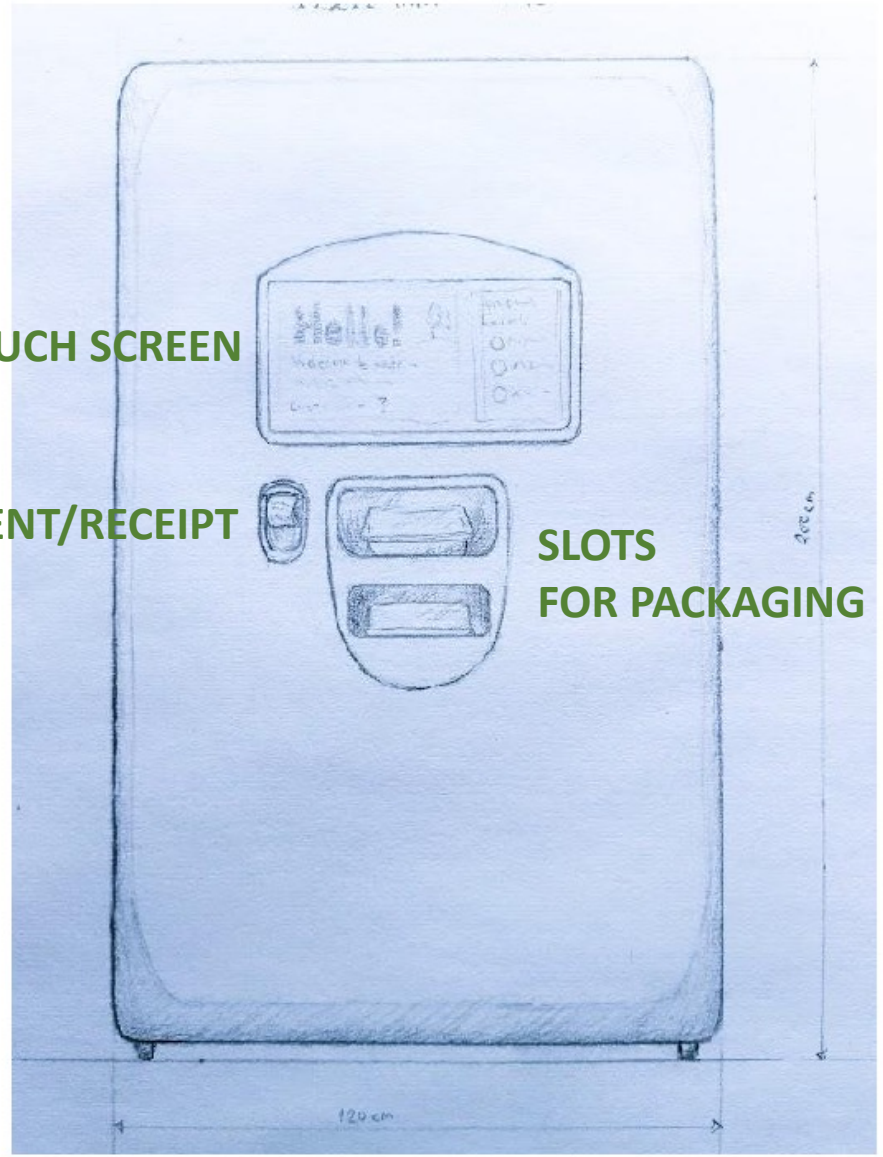
Choice of amount and sort of minced meat, working in all hours, hygienic, easy to use

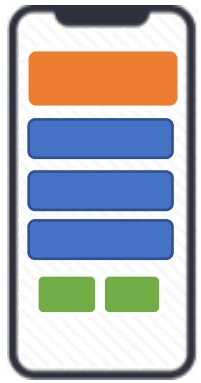
Deposit/refund system and app – engaging and informing consumer of the packaging)

Machine keeps the meat in right **temperature, < +6 °C**

Less printing chemicals

Shorter supply chain





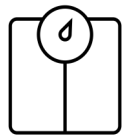
Steps of ordering

Customer gets access to vending machine

Customer returns used container if has one

Customer chooses way of refund (in app/receipt)

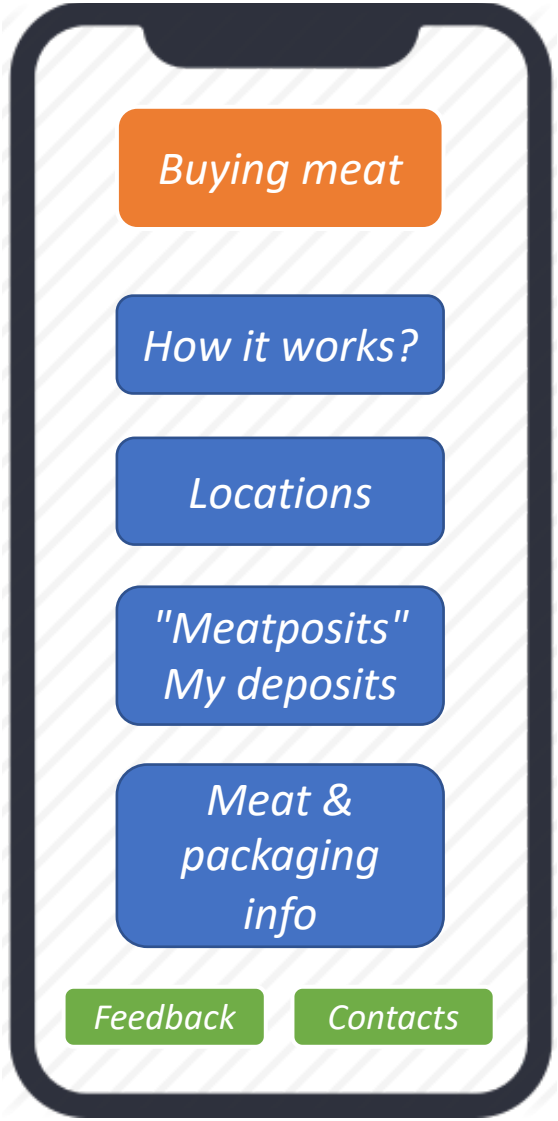
Customer chooses the amount of minced-meat



Vending machine happily prepares the order

Customer receives the minced-meat ordered

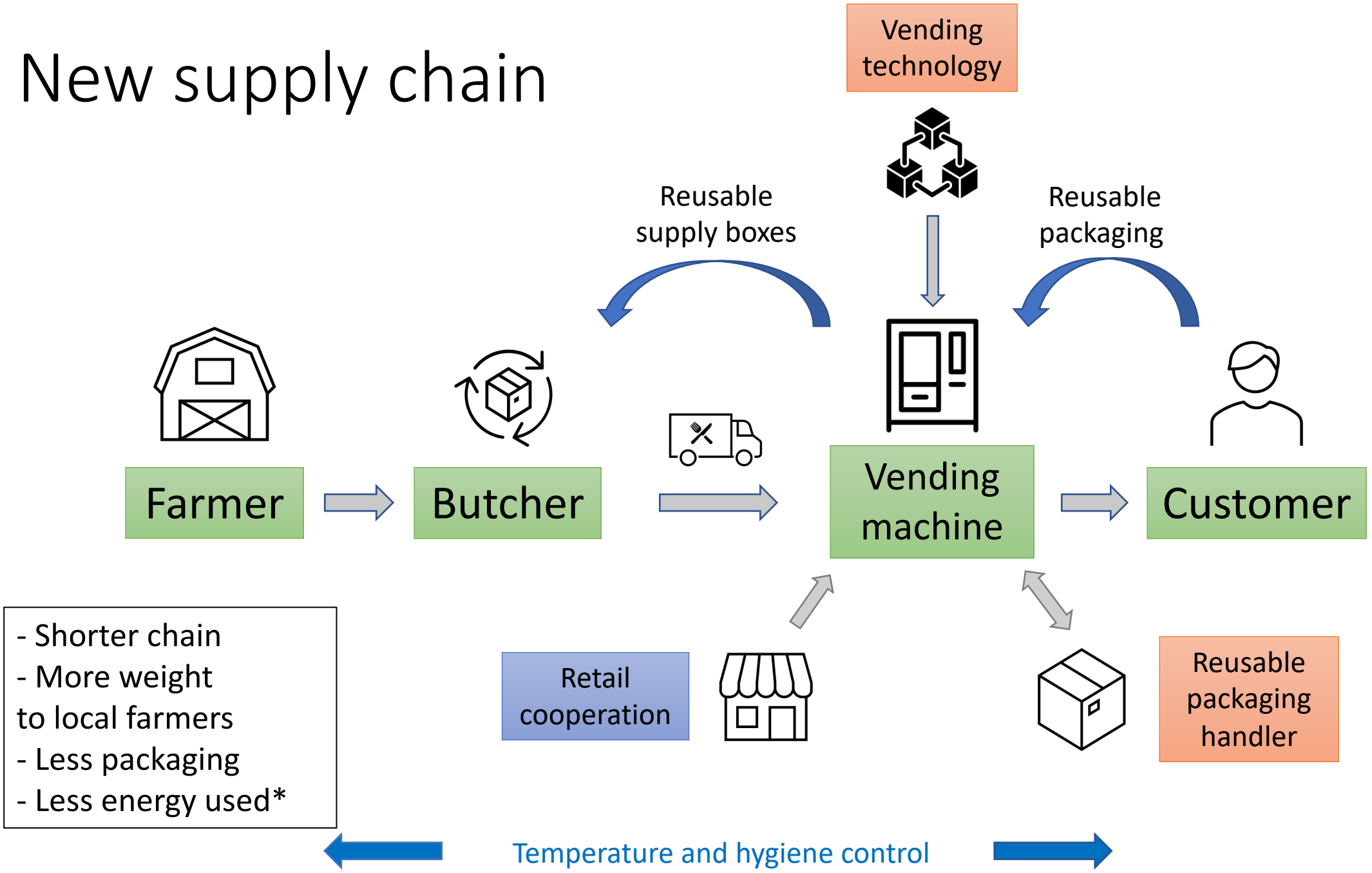
App - a helping hand



- To make buying experience more **convenient and engaging**
- To provide more info and elevate **transparency**
- To provide more options for **deposits** (save as credit / use immediately / receive as cash)

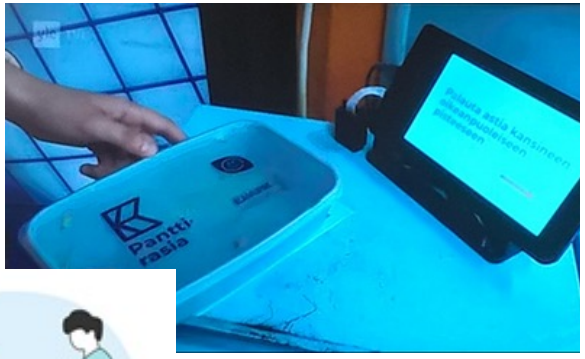
- **RFID tag / QR code** sustains washing

New supply chain



Reusable food container

* Main **environmental impacts of reusable package** :
  - manufacturing, material, transportation and washing



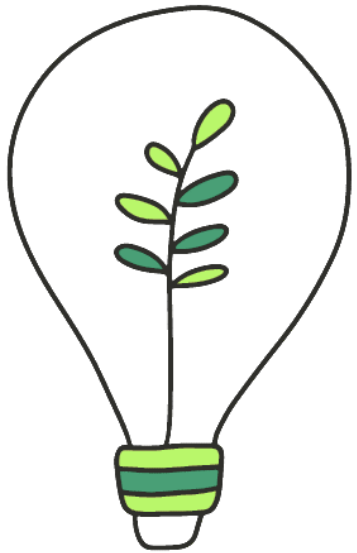
Kamupak smart food container system, possible partner

- **Co-operation:** with restaurants (collecting, cleaning, deposit)
- **Package:** PP, 100 times used, fully recyclable
- **Emissions:** 2.5 grams CO2 eq. per use
- **Apps :** QR code, information, easy to use
- **Monitoring :** hygiene, performance
- **First deposit:** 1 or 3 euros
- **Package development:** QR tags, biocomposites

Benefits

Access to a wider sales network

Access to new markets



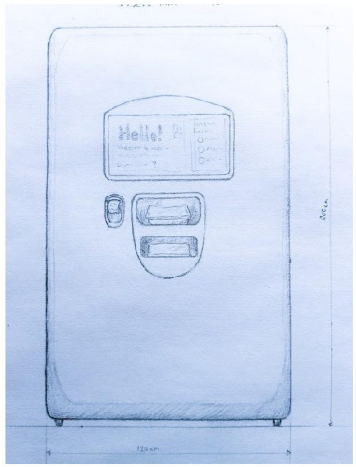
Reduced emissions and waste
Saved resources

More loyal customers

Reduced single-use packaging
Reusable package circulation
Better food security

Access to sustainable food products
Less food waste
Increased decision power

Summary



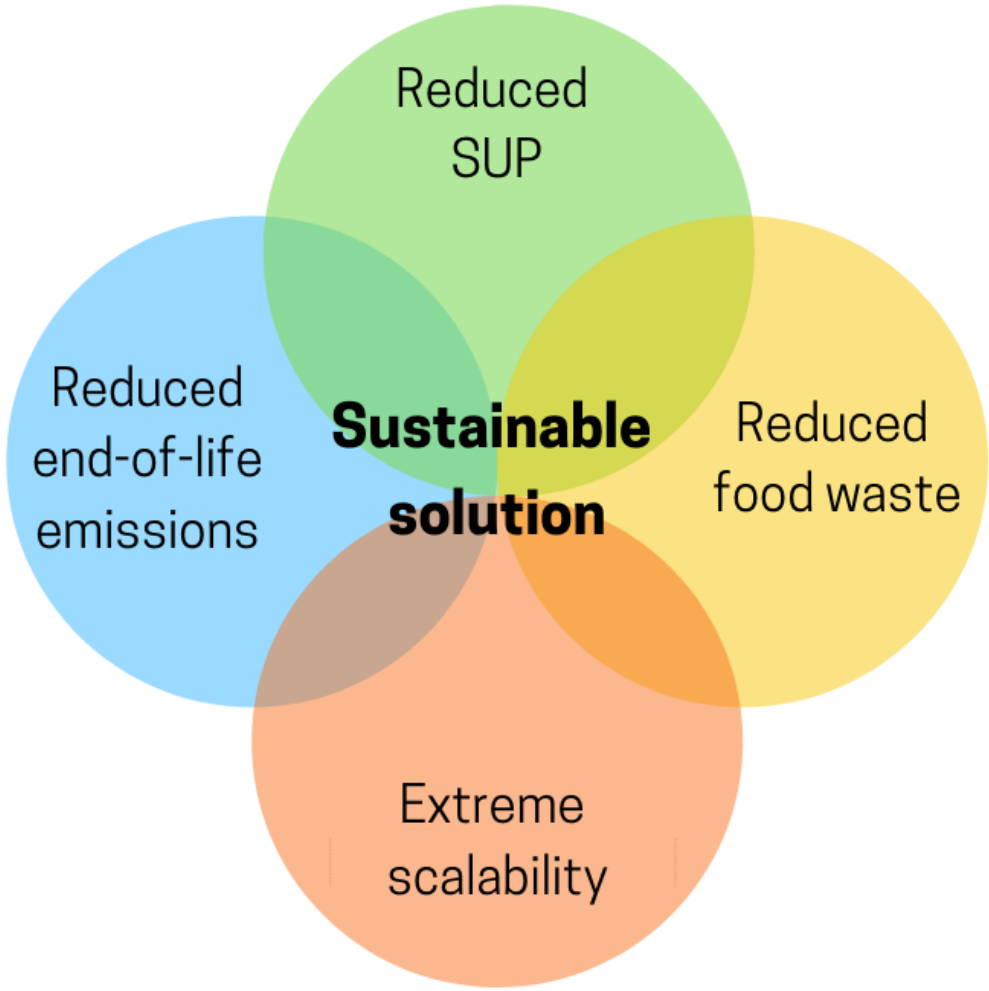
Solution summary

- Vending machine with adjustable purchase amount of meat
- Smart, reusable packaging with RFID tag / QR code and deposit system
- Reduction of single-use packaging
- Shorter supply chains and support to local producers
- Clear LCA information in application
- Temperature **(<+6°C)** and hygiene secured during all stages

Future needs

- Need to adjust food packaging legislation (reuse, plastic material regulations)

“Powerful direct impact – exponential future implications”



Thank you!

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References available upon request