

# Appendix

In the appendix materials are presented which show more detailed results compared to the report itself or explanations of certain methods.



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# PROJECT BRIEF

DESIGN  
FOR OUR  
future



## IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

### ! USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT

Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

### STUDENT DATA & MASTER PROGRAMME

Save this form according the format "IDE Master Graduation Project Brief\_familyname\_firstname\_studentnumber\_dd-mm-yyyy". Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !

family name	<u>Hoogeveen</u>	Your master programme (only select the options that apply to you):
initials	<u>L.A.J.</u> given name <u>Lisa</u>	IDE master(s): <input type="radio"/> IPD <input checked="" type="radio"/> Dfl <input type="radio"/> SPD
student number	<u>4364945</u>	2 <sup>nd</sup> non-IDE master: _____
street & no.	_____	individual programme: - - - (give date of approval)
zipcode & city	_____	honours programme: <input type="radio"/> Honours Programme Master
country	_____	specialisation / annotation: <input type="radio"/> Medisign
phone	_____	<input type="radio"/> Tech. in Sustainable Design
email	_____	<input type="radio"/> Entrepreneurship

### SUPERVISORY TEAM \*\*

Fill in the required data for the supervisory team members. Please check the instructions on the right !

** chair	<u>Ruth Mugge</u>	dept. / section:	<u>DOS/MCR</u>
** mentor	<u>Sonja van Dam</u>	dept. / section:	<u>SDE/DfS</u>
2 <sup>nd</sup> mentor	<u>Jan van Os</u>		
organisation:	<u>ATAG Benelux</u>		
city:	<u>Duiven</u>	country:	<u>The Netherlands</u>

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..

- ! Second mentor only applies in case the assignment is hosted by an external organisation.
- ! Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

comments (optional) Vincent Hofstee is also a mentor from the company



### Procedural Checks - IDE Master Graduation

#### APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

chair Ruth Mugge date - - signature \_\_\_\_\_

#### CHECK STUDY PROGRESS

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: \_\_\_\_\_ EC

Of which, taking the conditional requirements into account, can be part of the exam programme \_\_\_\_\_ EC

List of electives obtained before the third semester without approval of the BoE

\_\_\_\_\_

YES all 1<sup>st</sup> year master courses passed

NO missing 1<sup>st</sup> year master courses are:

DTM is not yet in Osiris

name \_\_\_\_\_ date - - signature \_\_\_\_\_

#### FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked \*\*. Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content:  APPROVED  NOT APPROVED

Procedure:  APPROVED  NOT APPROVED

\_\_\_\_\_ comments

name \_\_\_\_\_ date - - signature \_\_\_\_\_

Circular Kitchen Products project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 02 - 03 - 2020 08 - 10 - 2020 end date

**INTRODUCTION \*\***

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

**Company: ATAG Benelux**

ATAG Benelux is a leading supplier of kitchen appliances. We are a Dutch company and sell kitchen appliances under the brands ATAG, Pilgrim and ETNA. Since 1 June 2017, we also take care of the distribution and service of Asko dishwashers, washing machines and dryers. Our brands have a high brand awareness in the Benelux. The sale of kitchen appliances is done through kitchen and electrical compartments, electrical chains and through the kitchen industry. ATAG Benelux currently has more than 450 employees and is located in Duiven, near Arnhem. ATAG Benelux also has a branch in Denderhoutem (Belgium) where about 45 employees work.

**ATAG and Hisense, a good combination of knowledge**

In 2018, ATAG Benelux was acquired by the Chinese Hisense Group. Hisense is a multinational with an annual turnover of over EUR 16 billion, 80,000 employees and represented in more than 130 countries. Hisense is a partner with whom we can share and exploit our knowledge and experience – in the field of both R&D Cooking and kitchen retail in the Benelux – and can be used worldwide.

**ATAG and Circular Economy/Products**

Within ATAG Benelux the main focus areas for Innovation is Circular Economy. We closely cooperate in this field with suppliers, clients, Universities and com-makers. As example we work together with University, Kitchen Supplier and housing corporations on a circular kitchen project for social housing. In 2018 we started the project of Circular Products. Together with students we investigated possibilities to implement Circular products in the market. Already quite some nice ideas have been developed to make our products more sustainable. Also new business models based on ownership can help the awareness for end users and producers to make products more sustainable. One opportunity in developing the right circular products for end consumers is to design and market these products and the systems around them in a way that consumers will accept.

space available for images / figures on next page

introduction (continued): space for images

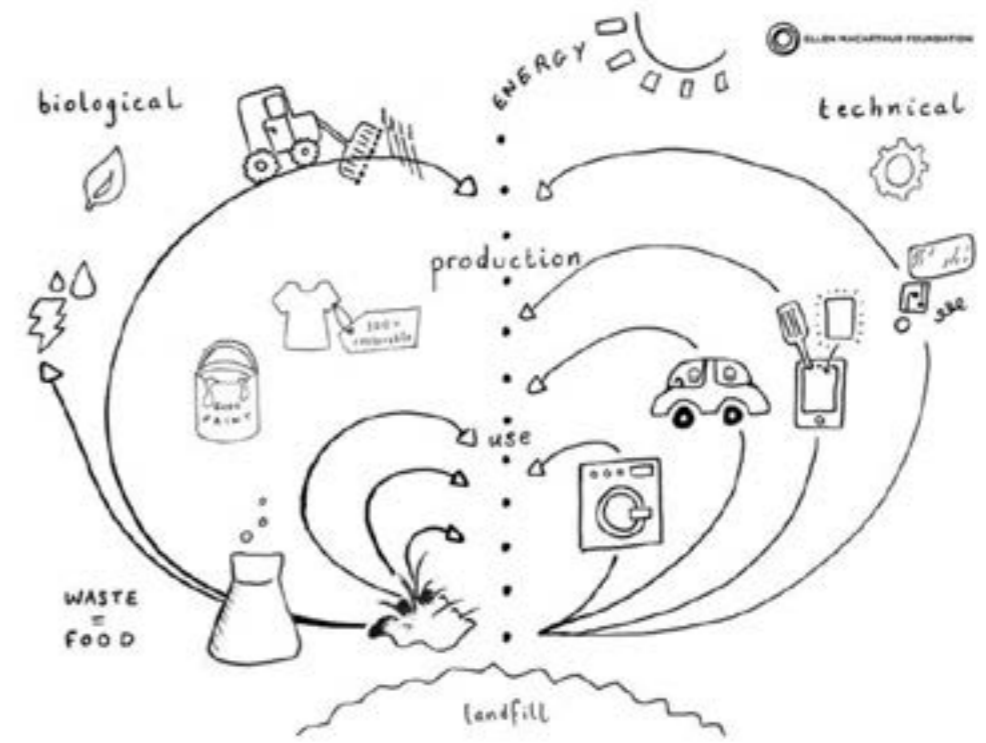


image / figure 1: Butterfly diagram, representing the circular economy strategies

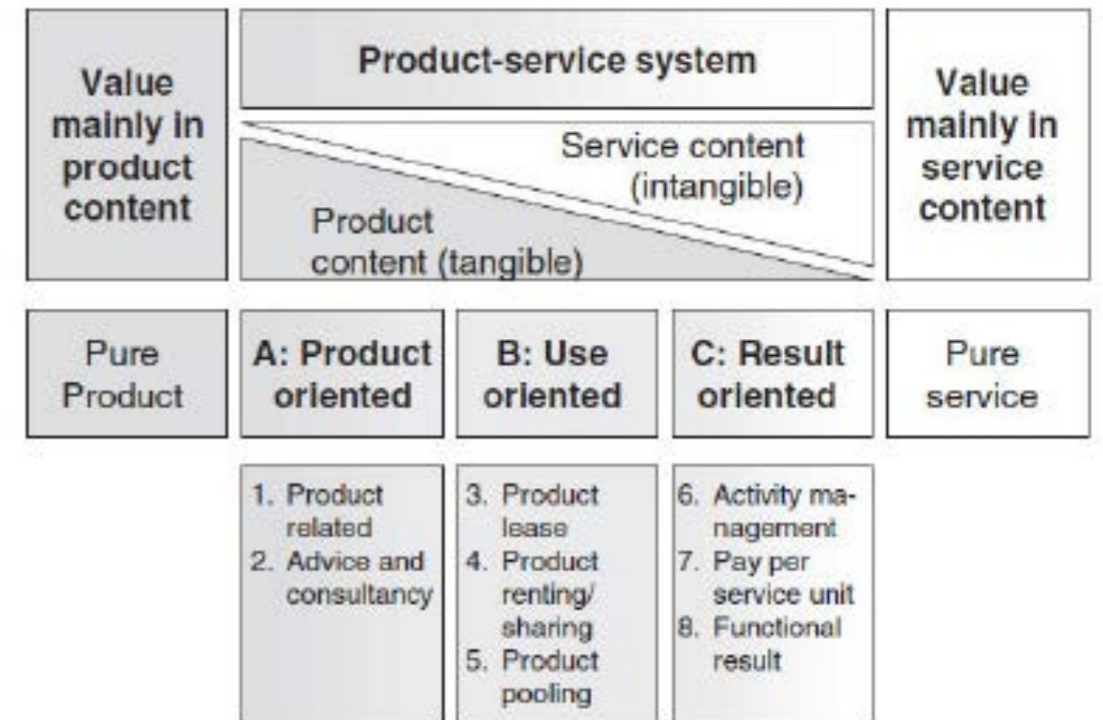


image / figure 2: Eight archetypes of Product Service Systems

**PROBLEM DEFINITION \*\***

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

The industry of kitchens and kitchen appliances is in need of new innovative models of practice to reduce its environmental footprint. Now kitchen appliances are only sold to consumers in a linear manner, not returning to ATAG, with no trace of where they end up. We need to find a way to bring a new way of owning kitchen appliances to the consumers.

ATAG Benelux wants to investigate more possibilities for Circular Economy, because their innovation strategy has been defined into the direction of more sustainable and circular business propositions and they want to comply with the government's ambition to be circular in 2050.

The current products of ATAG are not designed for a circular product service system, and distribution channels are designed for the linear approach. A product service system for kitchen appliances is very new, and the market (consumers, retailers, etc) might not be ready for it. Also, a product service system does not automatically mean a longer product lifetime or that it is more sustainable; the system needs to be designed to influence the user's behaviour in a sustainable way.

Limitation: ATAG does not sell their products directly to consumers. This goes through other retailers. Corporate (Hisense Group) has said that ATAG should not go into leasing or anything similar, having an 'extended balance' per product. However, the company can go around this, by cooperating with a third party which would enable a Product Service System around the products of ATAG.

**ASSIGNMENT \*\***

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... . In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

Develop a solution to make kitchen appliances for the circular economy. Do a case study with one of the products of ATAG, and develop a suitable product service system with a proposed redesign of the product.

The user/consumer acceptance of the model should be validated. The research will explore consumer perceptions of alternative consumptions (product service systems), inspired by what was done in this paper for clothing (Armstrong, et al., 2015).

This research aims to answer the questions: how will users experience the circular business models, how to design for it and how to stimulate sustainable use and handling.

Possible design strategies to find solutions for this:

- Product attachment for users
- Modularity of products and product parts
- Adaptability for different life cycles and new markets
- Connected products
- Interactive user interfaces

Expected result

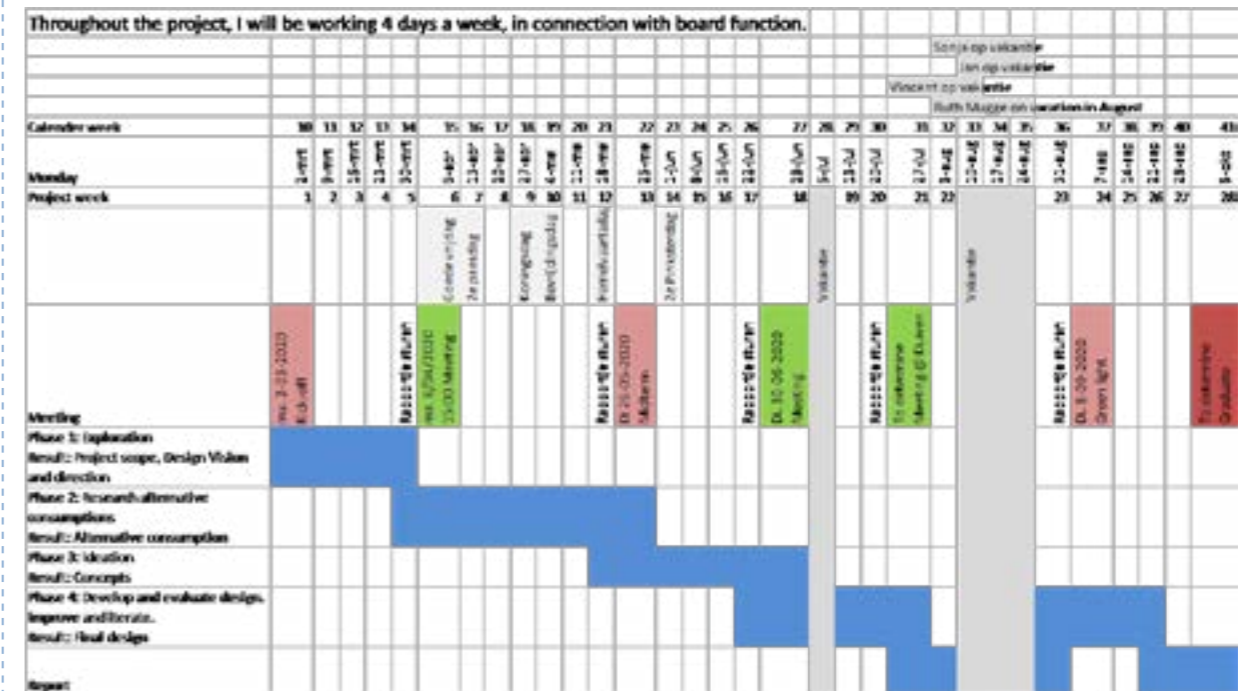
- Exploration of consumer perceptions of alternative consumptions (product service systems).
- User research
- A solution for circular design, probably a product service system (PSS)

**PLANNING AND APPROACH \*\***

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 2 - 3 - 2020

8 - 10 - 2020 end date



Throughout the project, I will be working 4 days a week, in connection with board function

Phase 1 - Exploration  
- RQ: What product would be suitable as case study for ATAG to develop a circular Product Service System? Literature study, Brand analysis, ATAG and Circular Economy/PSS's, Competitor analysis, Sustainable behavior Define criteria for the circular product service system.  
Result: Product for case study, Design goal/vision, Target group,

Phase 2 - Research alternative consumptions  
- RQ: What Circular Product Service System would be suitable? for the ATAG brand, for customer satisfaction, for acceptance and for positive environmental impact. What are consumer perceptions of alternative consumptions (product service systems), inspired by a paper by Armstrong et al (2015). Interviews, Focus group with hypothetical scenarios. Talk to stakeholders, retailers.

Phase 3 - Ideation RQ1: How would the feedback/interface work in this Circular PSS?  
RQ2: How would the use change? And how would the impact change?  
RQ3: How to create added value for this Circular PSS for the users?  
Co-creation, brainstorm sessions, creative facilitation, etc.

Phase 4 - Develop. Phase 4 is basically an iteration phase.  
User tests, prototyping. Result: Concept of a circular Product Service System.

### MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... . Stick to no more than five ambitions.

#### Motivation

From my personal page in my online portfolio:

"As industrial designers we have a responsibility on what products we create and what materials we push into the world. Our decisions have both indirect and direct influence on what happens to the products and materials. If we want to reduce the linear material flow, we have to do something about it."

"The Circular Economy can help companies change their business model for a more environmental friendly one. And part of that is that products and materials are used longer and more efficiently."

One of the most important topic I wanted to address in my graduation is sustainability, in the form of Circular Economy. Another important topic to me is being user centered; consumer acceptance and user behavior. During my studies I found that those topics can come together when designing sustainable Product Service Systems. (in the courses SBM/SPSS, or sustainable consumer behaviour)

When designing a Product Service System, you design business models (creating value for company) and different kinds of ownership which results in a different interaction between user and product (creating value for the user). And if you do it right, the change in interaction can be positive towards sustainability and efficiency of use of materials (creating value for nature).

When I heard of ATAG looking for circular solutions for appliances, thinking of pay-per-use systems for kitchen stoves, I immediately thought I want to take this challenge.

#### Personal ambitions

I want to do this graduation project user research oriented. I want to really dive into the front end: exploring consumer experience and perceptions of Product Service Systems. I learned to do the theoretical part of that by doing the course Sustainable Consumer Behavior. In various courses I have done small interviews. I have transcribed interviews as a student assistant and I helped mapping insights and conceptualising from interviews with projects of friends and in the ReCiPSS project with Sonja.

One ambition is to be able to write a scientific paper about this research, challenging myself to not only plan and do the research, but also write it down in an academic matter. (But I am not sure if this actually would benefit this particular project.)

Next to that, in my studies I have learned how to do user tests with a prototype. I would like to find out how to do such user tests with a product service system: how can you assess the user experience, in a quick manner? Some products you can let participants use for a few minutes and then you know, but how do you assess the experience of a different type of ownership?

### FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

# A.1 | CORPORATE STRUCTURE

This project is done at ATAG Benelux. On the right you can see that ATAG Benelux is part of Hisense Gorenje Europe, which is part of the global Hisense Group.

## Hisense Hisense Group

Since 2018, ATAG Benelux is part of the Chinese Hisense Group. This is a multinational company with annual turnover of over EUR 16 billion. With 80.000 people employed and represented in 130 countries.



## Hisense Gorenje Europe

In 2008 Gorenje group purchased ATAG Benelux. When purchased by Hisense in 2018, this was changed into Hisense Gorenje Europe.



## ATAG Benelux

Sells kitchen appliances under the brands: ATAG, Pelgrim and ETNA. Since June 2017, also handles distribution and service of washing machines, laundry machines and dryers of the brand ASKO.

ATAG Benelux has over 450 employees and is based in Duiven. ATAG Benelux also has a location in Denderhoutem (Belgium), with approximately 45 employees.



## PROJECT SCOPE



ATAG Verwarming uses the same name and a similar logo, is however not at all related to the ATAG Benelux which is the company stakeholder of this project.



Turnover: € 13 BN  
Employees: 75.000  
Presence: 120 countries

▼



Turnover: € 130 MIO  
Employees: 471  
Presence: 3 countries

### Our vision

Offering the best products and services to create exciting cooking experiences.

### Our mission

To be the leading and most succesful provider of 'exciting and best-in-class cooking products and services' in the Benelux.

### Our values

- Responsibility
- Innovation
- Entrepreneurship

### Our culture

 Open-minded

 Efficiency

 Respect

 Team spirit

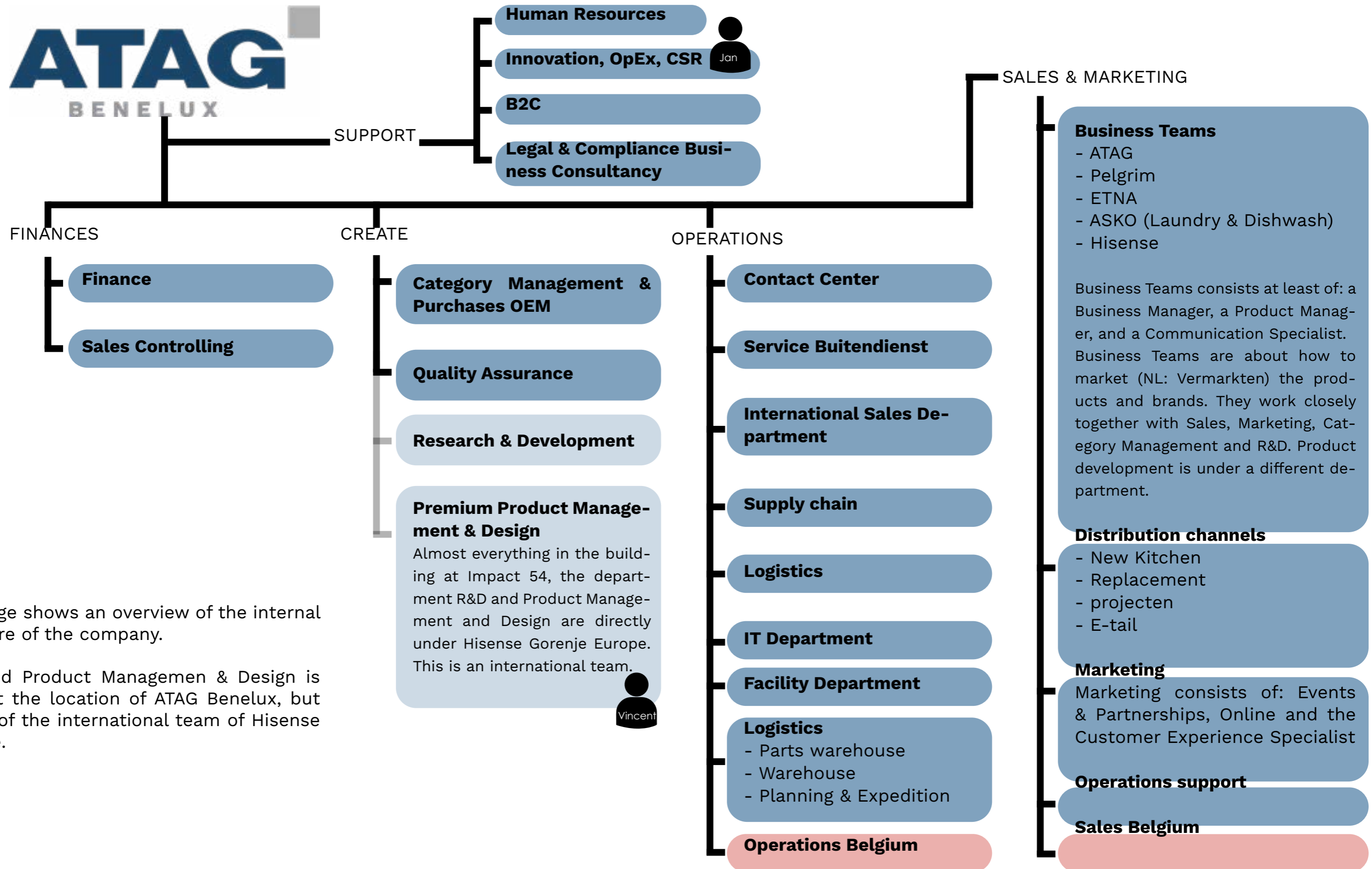
 Goal-Oriented

 Engaged





# A.2 | COMPANY STRUCTURE



This page shows an overview of the internal structure of the company.

R&D and Product Management & Design is done at the location of ATAG Benelux, but is part of the international team of Hisense Gorenje.

## A.3 | COMPANY BRANDS

ATAG Benelux has five brands. The first three are the main brands, and are all known to be Dutch.

Hisense and ASKO got added in the past few years. In the Benelux, these brands do not have all kitchen appliances, but have dishwashers (Asko) and refrigerators (Hisense). Next to that, these brands have televisions, washers and dryers.



**ATAG**  
*we love to cook*

### Visie

Het aanbieden van de beste producten en diensten om een inspirerende kookbeleving te creëren gebaseerd op innovatie en design.

### Missie

Het ondersteunen van eindgebruikers in hun dagelijks leven door hun behoefte te vervullen m.b.t. keukenapparatuur; koken, gebruikersgemak, functionaliteit en levensstijl.

### Merkwaarden

- Uniek
- Design & Functionaliteit
- Kwaliteit & Garantie
- Nederlands

**Pelgrim**  
mooi makkelijk

### Visie

Er is altijd een manier om iets eenvoudiger en makkelijker te maken.

### Missie

Pelgrim is thuis in elke keuken en in elke keuken in Pelgrim thuis.

### Merkwaarden

- Verrassend modern
- Duurzaam
- De helpende hand
- Thuis in de Benelux



### Visie

Het aanbieden van een breed assortiment functionele keukenapparaten van fraai design op zo'n aantrekkelijk prijsniveau dat zoveel mogelijk consumenten in staat zijn het te kopen.

### Missie

ETNA maakt kwaliteit betaalbaar! Wij realiseren dit door het merk te positioneren als het meest betaalbare A-merk van de markt. Doordat we de producten in Nederland ontwikkelen en testen zorgen we ervoor dat iedereen kan genieten van een mooie keuken.

### Merkwaarden

- Overtreft je verwachtingen
- Betaalbaar
- Ontworpen in Nederland
- Thuis in de Benelux

**Hisense** **ASKO**

Inspired by Scandinavia

### Visie

ASKO streeft naar een leidende positie in het hogere marktsegment op geselecteerde markten wereldwijd

### Missie

Het leveren van een hoogwaardig was-droog-vaatwas assortiment waarbij we consequent producten en ervaringen van hoge kwaliteit die consistent voldoen aan, of overtreffen van, de verwachtingen van de klant.

### Merkwaarden

- Scandinavian design
- Care
- Professional solutions

# A.4 | MARKET AND TARGET GROUP

ATAG is the premium brand, for the more luxurious kitchens. Pelgrim is the decent brand for the modal incomes. And ETNA is the budget brand.

## Projects market

This is B2B. Here ATAG works together with kitchen-producers like Bruijnzeel or Keller. They also work together with investors, housing associations, holiday parks and estate managers. The users in this market are the tenants in the rental homes. They do not own or choose the kitchen.

ATAG offers various service packages for the owner, where for example he can buy all service for 10 years. For maintenance or repair users can directly contact ATAG.

## New Kitchen(NK) market

Here ATAG sells mainly to kitchen retailers (B2B). This is where home owners buy an entire kitchen, with often multiple appliances.

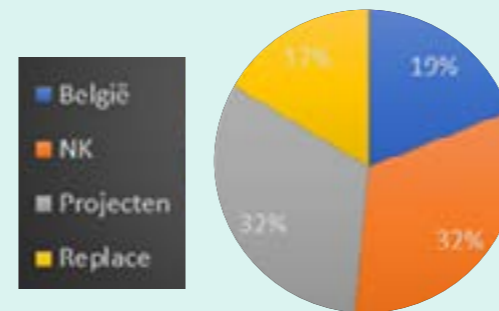
## Replace market

This market is also mainly B2B via Electronic retail and online players. Users can go here to buy single appliances to replace a broken one.

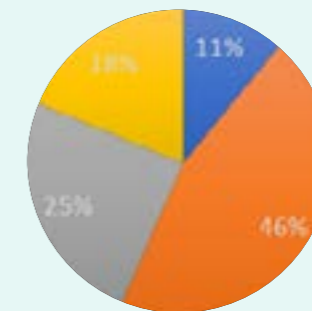


Distribution of turnover of ATAG Benelux, in the first 12 weeks of 2020.

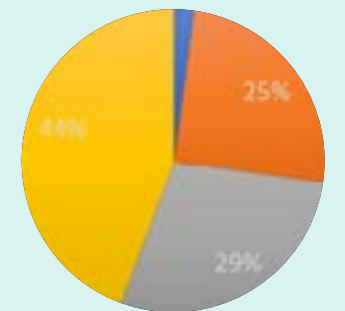
## MARKET OF THE KITCHEN APPLIANCE BRANDS



Distribution of turnover of Brand **ATAG**, in the first 12 weeks of 2020.



Distribution of turnover of Brand **Pelgrim**, in the first 12 weeks of 2020.



Distribution of turnover of Brand **ETNA**, in the first 12 weeks of 2020.

# ATAG

# Pelgrim

# ETNA®

## TARGET USER

Users who want to enrich their lives with premium products and services in their kitchens, which help them to get more value out of: cooking, their lifestyle, functional appliances and the appearance of their kitchen. They have the ability and the desire to invest in these solutions.

**Income: Above average**  
**Budget: Above 12k EUR**

- Top criteria for buying
- Quality
  - Design
  - Functionality
  - Sustainability
  - Ease
  - User friendly

The Pelgrim user looks, by the help of a professional, for a solution for his/her wishes in the kitchen with beautiful and easy appliances.

**Income: Modal income**  
**Budget: From 4k EUR**

- Top criteria for buying
- Affordable
  - Ease of use
  - Functionality
  - Quality
  - Measurements

The price aware consumer which is looking for the most value for his money. His need: No-nonsense products with a nice appearance and which are trustworthy.

**Income: Below modal**  
**Budget: Below 8k EUR**

- Top criteria for buying
- Affordable
  - Quality
  - Ease of use
  - Design

# A.5 | PRODUCT PORTFOLIOS

Besides the designs of the products, the brands differ somewhat in the types of products that are offered. The differences are highlighted.

The product portfolios reflect the difference between the brands. With ATAG, the premium brand, having more luxurious options like the gas and induction combination cooking hob or the 3-in-1 oven.

Also the fact that ATAG appliances are all recessed (inbouw). This is because this brand is doing better on the New Kitchen or Project market, where entire kitchens are bought. Stand-alone appliances are better suitable for lower budgets like the brands Pelgrim and ETNA.

## ATAG

## Pelgrim

## ETNA®

### Kookplaten

- gas
- inductie
- combinatie gas en inductie
- keramisch
- met afzuiging
- puzzelo's

### Ovens (alles inbouw)

- Magnetron
- Multifunctionele oven
- Combi-oven
- combi-stoomoven
- stoomoven
- 3-in-1 oven

### Lades

- assecoirelade
- warmhoudlade
- vacuumlade

### Afzuiging systemen

- Eilandafzuigkappen
- Plafond units
- Hood-in-hob
- Downdraft

### Anders

- Koel- en vrieskasten inbouw, onderbouw en vrijstaand
- Wijn-en drankenkoeler
- Geïntegreerde vaatwassers
- Inbouw koffiemachines

### Kookplaten

- gas
- inductie
- keramisch
- met afzuiging

### Ovens

- Magnetron
- Multifunctionele oven
- Combi-oven
- combi-stoomoven
- 3-in-1 oven

### Vrijstaande fornuizen

- inductie-electrisch
- gas met elektrische oven

### Lades

- assecoirelade
- warmhoudlade
- vacuumlade

### Afzuiging systemen

- Eilandafzuigkappen
- Plafond units
- Hood-in-hob

### Anders

- Koel- en vrieskasten inbouw, onderbouw
- Geïntegreerde vaatwassers
- Inbouw koffiemachines

### Kookplaten

- gas
- inductie
- keramisch
- met afzuiging

### Ovens (Ook vrijstaand)

- Magnetron
- Multifunctionele oven
- Combi-oven

### Vrijstaande fornuizen

- inductie-electrisch
- gas met elektrische oven

### Lades

- assecoirelade
- warmhoudlade

### Afzuiging systemen

- Eilandafzuigkappen
- Plafond units
- Hood-in-hob

### Anders

- Koel- en vrieskasten inbouw, onderbouw en vrijstaand
- Vaatwasser tafelmodel
- Geïntegreerde vaatwassers
- Vrijstaande vaatwassers

## A.6 | WARRANTY

All brands of ATAG Benelux have a similar warranty scheme:

2 years of legal manufacturer's warranty. Including call-out costs, labor and parts.

After registration additional 3 years warranty. Additional warranty excludes: call-out cost, light and additional accessoires.

This warranty scheme is only applicable when registration within 30 days after purchase.

# ATAG

# Pelgrim

# ETNA®

**2+3 years warranty.**  
**2+6 years if 4+ appliances in one purchase.**

**10 years cooking guarantee**

**2+3 years warranty.**  
**2+6 years if 4+ appliances in one purchase.**

**2+3 years warranty.**



### Koken op gas of inductie?

Kookt u het liefst op gas, maar twijfelt u om een inbouw gaskookplaat aan te schaffen omdat u niet zeker weet of uw woning de komende jaren nog aangesloten blijft op het gasnetwerk? Kies dan voor een gaskookplaat van ATAG. Mocht binnen 10 jaar uw gasaansluiting vervallen ontvangt u, geheel gratis, een nieuwe inductiekookplaat. Zo bent u de komende 10 jaar gegarandeerd van vele uren kookplezier.

### Uitfaseren van gas in Nederland

In verband met de onzekerheid over de periode waarin het gebruik van gas in Nederlandse huishoudens wordt uitgefaseerd introduceert ATAG de volgende regeling: Indien binnen 10 jaar na aankoop van uw inbouw gaskookplaat van ATAG de woning waarin de gaskookplaat is gemonteerd afgokoppeld wordt van het gasnetwerk zal ATAG gratis een (naar het oordeel van ATAG) vergelijkbare inbouw inductiekookplaat leveren van hetzelfde merk en dezelfde inbouwmaten.

# A.7 | ATAG PERSONAS



De social cook  
Saar



## Maak kennis met de social cook: Saar

Saar is de moeder die dagelijks een gezonde maaltijd voor haar gezin kookt. Snel, makkelijk en zonder al te veel poespas. In het weekend vindt Saar het leuk uit te pakken qua koken, te experimenteren met verschillende ingrediënten en nieuwe gerechten uit te proberen. Saar laat haar gezin, haar vrienden en familie graag meegenieten van haar kookkunsten. Haar keuken is een sociale ontmoetingsplek binnen het huis en van alle gemakken voorzien. Alle apparaten die ze nodig heeft zitten in haar keuken. Deze zijn functioneel, makkelijk te bedienen en haar inductiekookplaat biedt voldoende ruimte voor verschillende pannen tegelijk.

## Nieuw in de campagne 2.0

In de campagne zal Saar gekoppeld worden aan slimme apparaten, grote volumes en makkelijke bereiding. Dat bespaart haar tijd en geeft haar de mogelijkheid om maximaal te presteren in haar drukke leven.

De social cook  
Saar



**ATAG**  
we love to cook



De pleasure seeker  
Lukas



### Maak kennis met de pleasure seeker: Lukas

Lukas heeft plezier in het koken en is altijd op zoek om nieuwe gerechten te leren bereiden. Voor hem is het een sport om van iets simpels als een gebakken eitje iets bijzonders te maken. Lukas heeft een druk sociaal leven waardoor uren in de keuken staan niet in zijn schema past. Hij wil echter wel snelle en gezonde gerechten bereiden passend bij zijn levendige culinaire fantasie. Lukas laat zich graag inspireren door Pinterest, reisprogramma's en foodmarkten. De keuken van Lukas past bij zijn industriële inrichting. Functioneel maar van alle gemakken voorzien.

### Nieuw in de campagne 2.0

In de campagne zal Lukas gekoppeld worden aan vooral innovatieve en mooie apparaten. Lukas houdt van een uitdaging, van slimme oplossingen, maar ook heel goed uitgevoerd. Hiermee belooft hij zichzelf met de beste keukenapparatuur.

De pleasure seeker  
Lukas





De semi-pro  
Idris



De semi-pro  
Idris

### Maak kennis met de semi-pro: Idris

Idris is een sophisticated, selfmade man die houdt van goede kwaliteit en design. Koken is zijn passie. Idris heeft de drang zichzelf steeds uit te dagen en te overtreffen. Hij beheerst veel verschillende kooktechnieken wat hem veeleisend maakt betreft zijn kookapparatuur. Een vacumeer- en warmhoudlade zijn een must in zijn keuken. Zijn passie voor koken deelt hij graag met zijn vrienden.

### Nieuw in de campagne 2.0

In de campagne zal Idris gekoppeld worden aan vooral prestatie en innovatie. Idris stelt hoge eisen aan kook- en baktechnieken zodat hij ook het beste uit zijn creativiteit kan halen. Hij wil daarin niet gelimiteerd worden, maar presteren, uitgedaagd worden en alles uit zijn keukenapparatuur halen.



**ATAG**  
we love to cook



# B.1 | SUMMARY OF THE BUSINESS UNIT

by students from HAN University, Jeroen & Gabi.

Currently, the technical life of appliances in most cases exceeds the useful life of it. The product life can be maximized by moving appliances to a new target group after every use cycle. That is why this business unit offers customers an option between lease of appliances or buy with buy-back.

## STRATEGY

Target maximum quality and extend product life and gain profit on service and software.

## VISION

To facilitate a closed cycle for kitchen appliances that exceeds expectations of various target groups.

## MISSION

Be the leading and most successful supplier of circular kitchen appliances and services of the highest quality for everyone in the Benelux.

Core values: Sustainable, innovative, quality, social, flexible.

Interviews with housing corporations and construction companies show that there is a need for unburdening. Appliances should be easily replaceable and the contact with the end user should go through the supplier. One also wants to reduce the use of natural gas and to use energy efficient appliances. Leasing and tailor-made service is therefore considered a good option, provided that the rent does not increase because of it. Having a clear Total Cost of Ownership can be a good tool to pitch this to construction companies, investors, etc.

There are legal issues with lease and with refurbishment. Rent prices of social housing is regulated in The Netherlands. For example, offering appliances in these rental homes can only happen if the rent does not go up. Refurbished appliances must comply with new legal standards of the food and commodities authorities.

## DEVELOPMENT CONSIDERATIONS

The largest challenge is to make a long product life financially attractive. Refurbishment is a challenge for which conventional kitchen appliances are not designed. Appliances should be developed in a way that with repair and refurbishment it lasts at least 25 years. Careful handling and long use periods are stimulated by lowering the lease price when appliances are in use longer. Design for attachment can motivate users too.

### Electronic components

The electronics and software are the weak part in appliances limit the product life and refurbishment of kitchen appliances. Limited availability of spare electronic components is a barrier for reparability of appliances. It is therefore recommend making new components suitable for older appliances, or use standard components. However, discussions have shown that keeping components in stock might not be maintainable, and that components on PCB's after a while are not available anymore.

### Modular design

Modular design for easier disassemble and reassembly of appliances is an important requirement to be able to repair and refurbish appliances. In refurbishment, one can for example keep the product platforms and replace electronics. Replacing only the front is a strategy to stay up to date with trends. Modular design also makes cleaning of the components easier. Warranty on the cleaning is necessary to comply with legal standards.

On material-level, a material passport should be created, for more transparency in the chain and to be able to track materials. Next to that it is important to rethink the materials. The supplier of ceramic glass has said that it is recyclable if it is sorted separately. If it ends up in the glass recycling stream, it only pollutes this. Jeroen and Gabi argue to choose stainless steel instead of enamelled steel, because of its recy-

clability properties.

## REFURBISHMENT PROCESS

Smart and preventative maintenance can help restore the material value of appliances. Doing updates on software and electronics can also update the appliance to be more efficient. Arranging local refurbishment centres close to assembly enables shorter movements so components are available short-term, and the process is more effective. The appliances can then also be upgraded with new parts for customer specific demand. Moreover, it must be possible to do quick service for wear and tear. Next to that the refurbishment centres should be able to clean used appliances.

### Return

The buy-back price will be based on the age and the status of the appliance. However, the return of appliances still should be facilitated. One step in this is providing a packaging for returning.

Networks must be created in four important aspects. These are about organising the reverse logistics, developing the cycle process, information provision to track materials and payments, and the right treatment of waste streams.

Pure Product

A: Product oriented

B: Use oriented

C: Result oriented

Pure service

**1. Second hand appliances**  
Freestanding oven or Plug-and-play recessed (inbouw) kitchen appliances, like an oven. Design so people can take it out and build it in themselves. Role of supplier: make quality so good and market it so people know it still has value after being used for several years.

**2.a. Buy-back**  
Consider all kitchen appliances -> Multiple brands in one kitchen

**2.b. Refurbished appliances.**  
Get ovens back from the Project market and try to update them and refurbish them so they can be sold as good as new.

**3.a. Longer life design**  
It tells you, gives you incentives to maintain the product. Ovens should be cleaned after every use. They also should be designed against mis-behaviour like using the oven door as a step.

**3.b. Hybrid model**  
Subscription on new filters Or reminders on the fact that the filters need to be cleaned.

**3.c. Smart Extraction hood.**  
Energy efficient and smart on when to turn on/off and when the light should be switched on/off

**4. Warranty**  
Service for maintenance and repair.  
- Design for repairability by the service man.  
- Get reminders to clean the retraction hood filter or receive single-use filters in mail.

**5. Advice and consultancy**  
To buy the right oven. Also masterclasses on how to use and maintain the oven.  
- Teach people how to maintain and repair their products.  
- Design for repairability by the user himself. Order parts online through the webshop and have a manual and instruction videos on maintenance and repair.  
  
- Advice on efficient appliances and how to cook efficiently.

**11. Like Peerby: C2C**  
ATAG App to share ovens/ cooking hobs/kitchens. - Creates an ATAG community

**12. Appliance library**  
Voor studenten, in complex als rontgenweg, een aantal kookplaten en oventjes, niet altijd nodig, niet altijd zelfde moment. Gebruik/bibliotheek systeem voor apparaten. Ophalen en neem mee naar je studio. Binnen drie uur terugbrengen. Hoef je voor het hele complex niet voor. Met je sleutel een kluisje openmaken dat je hem weer op tijd terug moet brengen.

**6. Lease appliances to investors**  
Project market, B2B.  
- Lease of appliances is in the tenants agreement. Big amounts of kitchens in one building.

**7. Lease appliances to consumers**  
New Kitchen market or Replacement market. B2C.  
- Possible to upgrade lease plan to different sizes, additional appliances?  
- Lease temporarily? Extra fridge in the summer, extra oven, or more expensive oven during holiday season.  
  
Doelgroep: Expats  
Die zijn er veel in Wassenaar; Amerikanen die tijdelijk in Nederland werken. Misschien PhD'ers. Wonen hier maar een paar jaar en kopen daarvoor nieuw meubilair enz.  
  
Ook interessant voor kleinere huurbazen, die het kunnen doorberekenen naar hun huurders.

**8. Rent appliances for events**  
Very short term. Extra oven for holiday season?

**9. Shared kitchen**  
People can have a subscription to use the kitchen. Or pay for a timeslot that they use it. Here you can also have a Pay-per-use system in place.

**10. Portable extraction hood**  
Plug-and-play recirculatie afzuigkap (die niet naar buiten verbonden hoeft te zijn).  
-> apparaat naast je op het aanrecht, zodat je het kunt verplaatsen naar een andere locatie, eventueel naar burens.

**13.a. Pay per use**  
Pay for every time you use the oven. Price can be based on time and heat temperature. Not desirable for extraction hood. Possible for cookin hob, but that is used almost every day.

**13.b. Discounts to stimulate eating healthy**  
- To stimulate people to eat home healthy, you can give discount for every Xth use. So like: the fourth time per week you use an oven is for free.  
  
- Gamification, aangemoedigd om oven te gebruiken. Elke dag mijn gasstel gebruik, dus elke dag gezond kook, en daarom aan het eind van x periode, korting op een nieuwe. Of korting op een maaltijdbox. Hoe vaker je gebruikt, hoe meer korting je krijgt.

**14. Pay per healthy meal**  
Abonnement op gezond eten, met maaltijdbox en een duurzame/energie zuinige oven. Marley spoon/hello fresh achtige box.  
  
Abonnement op maaltijden voor bejaarden. Die moet het vaak opwarmen in een magnetron. Dus bij het abonnement een magnetron. Als ze komen te overlijden of moeten verhuizen naar verzorgingshuis, magnetron weer ophalen.

**15. Pay for clean air**  
Betaalt per uur schone lucht. Smart extraction hood, measures air and starts from itself.

**16. Service for cooking meals**  
Oven verkopen aan een derde party die maaltijden maakt en die rondbrengt voor anderen. Of verkoopt aan anderen. Ipv een oven krijgen mensen een maaltijd.

**17. Getting a meal without the use of any appliance.**

# C.1 | PSS IN KITCHEN APPLIANCES

## CREATING SCENARIOS

This page shows the results of a brainstorm on possible PSS's with kitchen appliances. The scenarios were developed based on the main and subcategories of PSS (Tukker, 2004), creating a wide range of scenarios differentiating on the amount of service and level of dematerialisation. From this wide set scenarios, a comprehensive set of five is selected to be researched on user's attitudes. The selected scenarios (marked red) are chosen, because they are expected to be suitable for ATAG and their target group. For example, PSS's that involve peer-to-peer renting are less likely to provide an opportunity for an intervention that ATAG can fulfil, therefore those PSS's have been excluded from the study. Also it is perceived more suitable for ATAG that the PSS's provide a private appliance to users for their own kitchen.

LEGEND



















**Selected scenarios**

**Other scenarios**

Fig 3.1 | Result of brainstorm on possible PSS's with kitchen appliances. The brainstorm happened before the oven was selected as focus appliance

## C.2 | SELECTING PRODUCT

Characteristics of products for which a PSS typically will work Tukker and Tischner (2006)


	<b>Induction Cooking hob</b>	<b>Oven</b>	<b>Extraction hood</b>
<b>Expensive</b>	1600-2800 EUR 	MAGNA: 2500-2900 EUR 	600-2500 EUR 
<b>Technically advanced</b>	Ceramic glass surface with induction technology underneath 	Cavity with heating elements, motor, steam system and perhaps microwave function 	Filters and motor in a housing 
<b>Require maintenance and repair</b>	Glass surface is easy to clean 	Parts that can break, food stains and descaling needed if it has a steam function 	Filters need cleaning or replacing 
<b>Easy transport</b>	Relatively flat to transport, but hole in the counter has to fit. 	Bulky to transport, but standardized sizes make it easy to fit it in various kitchens 	Bulky to transport, and especially the more expensive units are hard to install in a different kitchen 
<b>Infrequent used</b>	Cooking hob is used every time one cooks 	Oven is not used for every meal. Use frequency depends per household. An oven is also not present in every kitchen. 	Extraction hood should be used every time one cooks 
<b>Not heavily influenced by trend</b>	Visible in the kitchen, thus influenced by trends 	Visible in the kitchen, thus influenced by trends 	Only the invisible ones are not influenced by trends. 

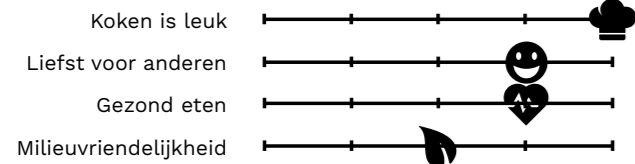
# D.1 | PARTICIPANTS



## Alice [H1]

Werkt in keukenbranche 

 >40d Inkomen



 Pachtwoning

Keukenapparatuur zelf gekozen. Haar keuken bevat goede apparaten “waar ik veel verschillende kooktechnieken kan toepassen.” Is ook voor af en toe restylen van de keuken. Ook gedaan bij keuken van 10jr: nieuwe fronten en nieuw fornuis.


Probeert graag nieuwe recepten

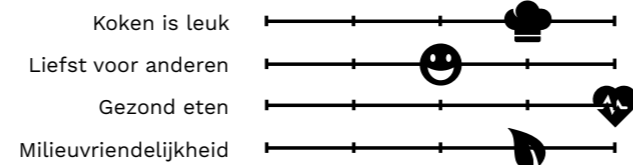


Gebruikt veel functies van haar oven. Voor ovenschotels, bakken van taarten en koekjes voor de kids, familie en vrienden. Probeert graag nieuwe recepten uit. Oven is 4jr oud.



## Max [H2]

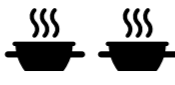
 20-30d Inkomen



 Huurwoning, 700e p.m.

Keukenapparatuur zat al in de woning. Max is gefrustreerd met bijna alles in de keuken die hij deelt met huisgenoten.

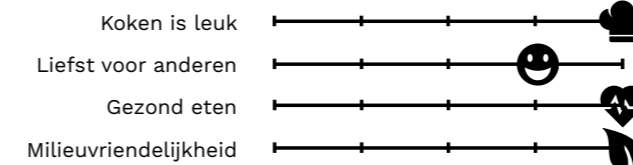
 Deelt oven met anderen

 Gebruikt oven 2x per week. Huis bevat een kleine, compacte oven van 1 jaar oud. Max gebruikt alleen hetelucht, kent de andere functies ook niet. Gebruikt de oven voor Quiches, pizza en zoete aardappel.



## Ella [H3]


 >40d Inkomen



 Huurwoning, >900e p.m.


Keuken zat al in de woning, maar oven niet.

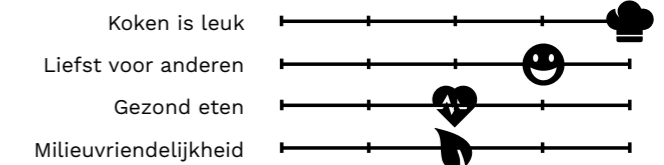
 ivm huurhuis geen dure oven


 Gebruikt de oven 1x per week. En de magnetronfunctie 5x per week. 3jr oude combimagnetron van Samsung.




## Jess&Daniel [H4]

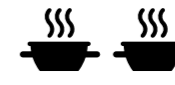
 30-40d Inkomen



 Huurhuis, <700e p.m.

Bepaalde keuze in keukenapparatuur bij aanschaf van de keuken.

 Zouden deze oven meenemen naar volgende huis

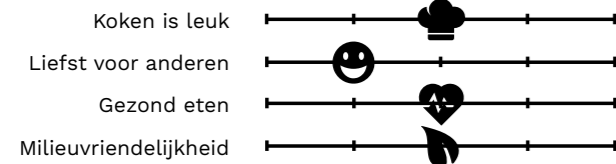
 Gebruiken oven 3x p.w. 5jaar geleden Bosch oven gekocht, voor 800e. Was eerste aankoop nadat er geld binnenkwam na verkoop huis. Speciaal telescooprails erbij gekozen i.v.m. handicap van Jess.



# Carmen [E1]

Werkt in keukenbranche

>40d Inkomen



Koopwoning

Keukenapparatuur zelf gekozen.

Ik houd niet zo van koken  
 Oven 4x per week  
 Heel tevreden over 7jr oude oven.



# Doris [E2]

>40d Inkomen



Koopwoning

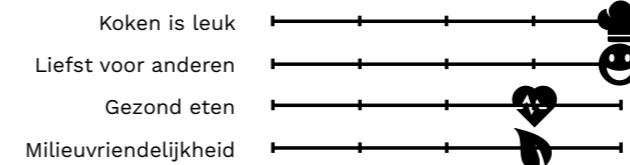
Keukenapparatuur zelf gekozen. Veel ruimte, goede apparatuur en contact met gasten is belangrijk in een keuken.

“Zonder oven kan ik niet”  
 Gebruikt oven 1-2x per week.  
 10jr oude oven. Gebruikte de oven voor avondeten, het afbakken van broodjes of voor taart wanneer er visite komt.



# Chloe [E3]

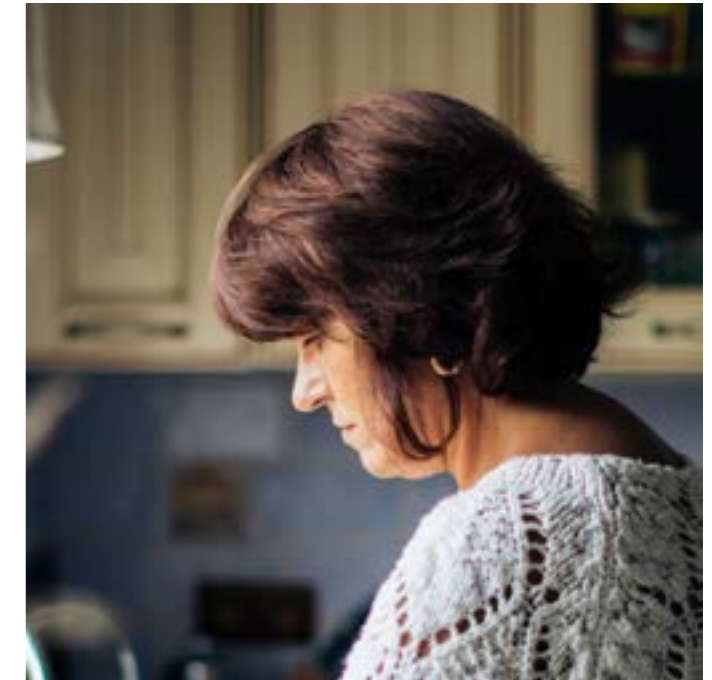
>40d Inkomen



Koopwoning

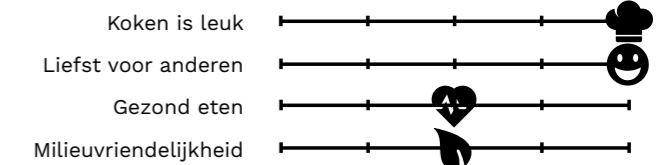
Keukenapparatuur zat al in de woning “Ik hou van mijn keuken. Ik zit het meest in mijn keuken.” Ze woont en leeft er zelfs. Goede apparaten en voldoende ruimte is belangrijk in haar keuken.

“Zonder oven kan ik niet”  
 +  
 Veel gebruikte functies: Verwarmen, Snel voorverwarmen en hetelucht  
 Nauwelijks gebruikte functies: Ontdooien, magnetron, vacuum maken, alle voorgeprogrammeerde programma's.



# Celine [E4]

>40d Inkomen



Koopwoning


Keuken is handgemaakt en naar eigen wensen ingericht. Wil graag logische route en alles op een vaste plek. Zit graag aan de eettafel in de keuken voor natafelen of krant lezen.

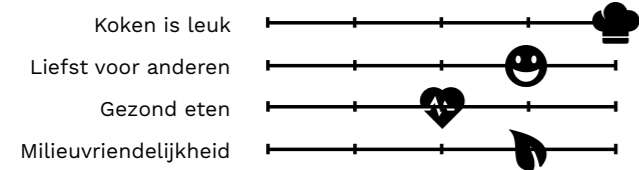
Oven is eenvoudig en gezond  
 +  
 Celine gebruikt haar 5jr oude oven dagelijks. Gezin met twee kids, die soms wel, soms niet, soms met vriendjes thuis komen eten, dus moet heel flexibel zijn.



## Peter [E5]

Werkt in keukenbranche 

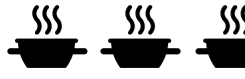
 20-30d Inkomen



 Koopwoning


Heeft keuken zelf ontworpen en de nieuwste apparaten erin geplaatst voor goedkoper dan winkelprijs. Doet alles graag in de keuken, van simpel koken tot uitgebreid experimenteren.

 Wil de nieuwste snuffjes

 Gebruikt de oven 3x p.wk. Wil graag de nieuwste technologieën hebben in zijn apparatuur. Een oven moet gebruiksgemak en ontelbare mogelijkheden bevatten. Peter gebruikt de oven voor allerlei dingen: van gastronomisch koken tot iets makkelijk bakken. Oven is 2jr oud.




## Christel [E6]


 >40d Inkomen



 Koopwoning


Keukenapparatuur zelf gekozen.

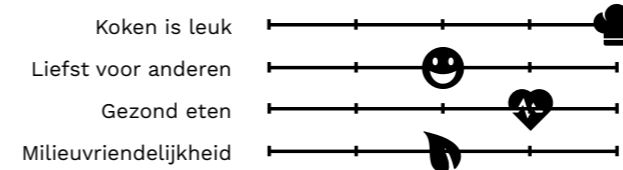
 Ik gebruik hem de hele dag door

 Combinatie oven en magnetron, gebruikt ze de hele dag door, vooral voor het avondeten (Tot 10x per week). Gebruikt niet de schoonmaakfunctie, omdat deze te ingewikkeld is. Oven is 7jr oud.




## Iris [E7]

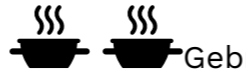
 >40d Inkomen



 Koopwoning


Keuken helemaal zelf ontworpen en dus keukenapparatuur zelf gekozen. Deze is ook op maat hoger dan een standaard keuken, omdat Iris lang is. Houdt van veel opbergruimte in kasten.

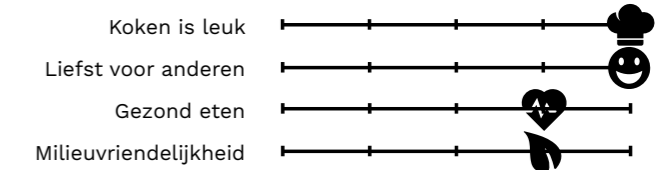
 "Ik betaal contant. Zo heb ik inzicht in mijn uitgaven."

 Gebruikt oven 2x per week, vaak op de hetelucht functie of gril, niet de boven- en onderwarmte. Oven is 10jr oud.




## Luna [E8]


 >40d Inkomen



 Koopwoning

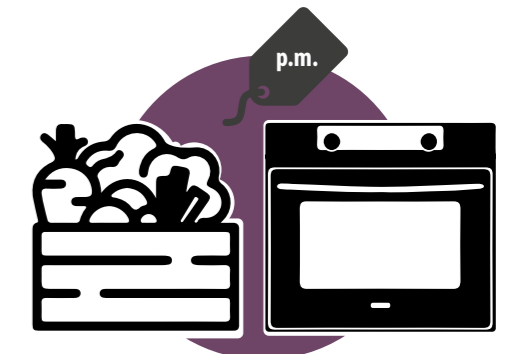
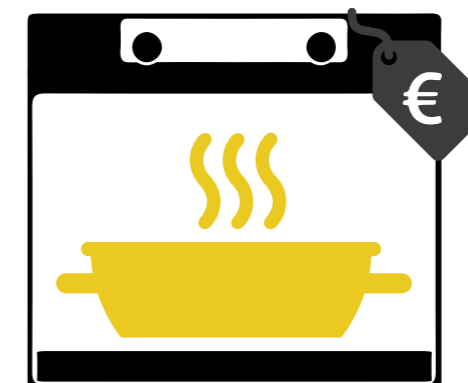
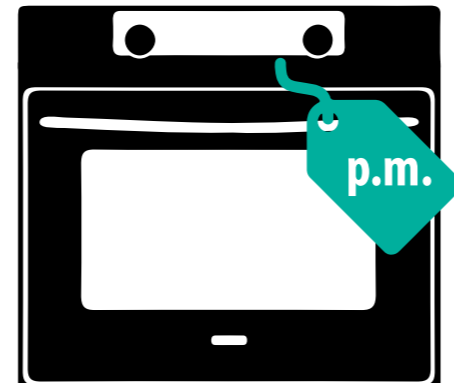
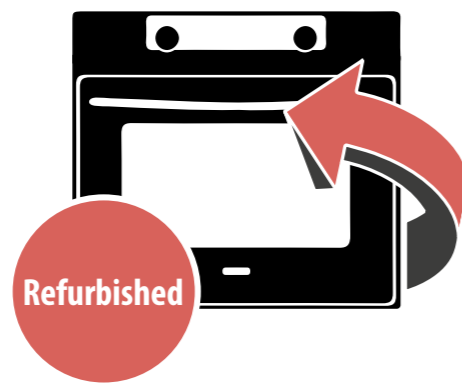
Trots op eigen ontwerp van keuken: open woonkeuken macht perfect met de rest. Apparaten ook gekozen. Belangrijk in de keuken: functionaliteit, design en gezelligheid. Frustratie: Vaatwasser moest 5x worden gerepareerd in 9 jaar.

 2 ovens: daarover is nagedacht

 Gebruikt haar twee combi-magnetrons dagelijks, en ze gebruikt alle functies.

# D.2 | PROJECT IDEAS

This page shows the results of a brainstorm on possible project ideas for the future. These can be market opportunities, design challenges or other interventions. This brainstorm was used as input for the scenario choice.



Maintenance contracts with refurbished oven. Like a lease or warranty to guarantee product life

Design for refurbishment: modular design

Enable insight into product's history (age, maintenance and usage)

Design for sustainable behavior, reducing the energy consumption when using the oven

Storytelling with the previous usage of the oven

Design for Attachment

Design for longer product life

Design a lease PSS that is sustainable and perceived that way

Maintenance service for all kitchen appliances instead of just the oven

Design for maintenance. Motivate/enable users to maintain their lease oven

Lease PSS for a difficult-to-maintain appliance

Design for Adaptability for different life cycles and new markets

Give users a sense of ownership in a rental home

Enable users to have a say in what type of oven they have in their rental home, by giving them a choice

Upgrades/personalisation options for tenants to choose so they have a sense of choice and ownership

Create a community with cooking enthusiasts in the same building, because everyone has the same oven

Design the system for users to engage in, so they are motivated to use the oven as integral part of their circular kitchen

Design for shared kitchens. Maintenance and cleaning is here the biggest challenge

Easy, hassle-free, user friendly PPU system. PPU is seen as a hassle. If this PSS is pursued, it should be hassle-free

Design for pleasure/fun People said they loved baking and cooking, and the wrong oven can ruin that

Whole kitchen PPU. People will likely use the cheaper way to prepare something. Therefore the cheaper option should be the more sustainable one

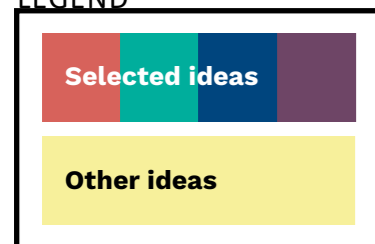
Design an app/function for users to get insight in energy use

Collaboration with mealbox service, so users can use the mealboxes in the first period after they purchased their oven, to learn all the functionalities of the oven

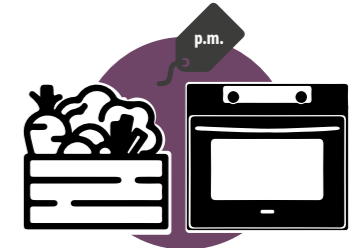
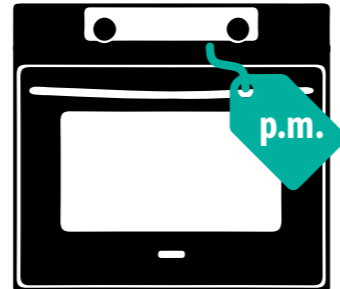
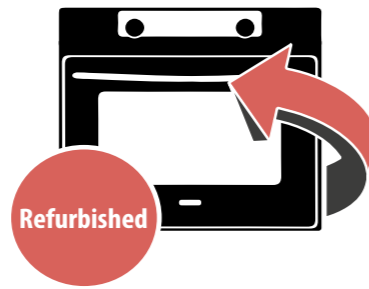
Lease a microwave and freezer with the mealservice for elderly, who cannot cook on their own anymore

Subscription to healthy meals, where in addition to the meal box, you receive a lease oven to be able to prepare your meals in the most healthy and tasty way

## LEGEND

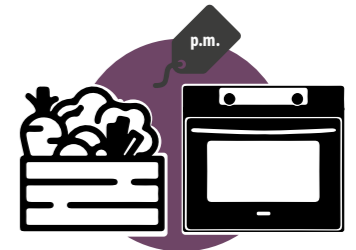
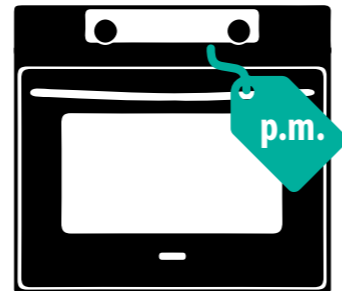
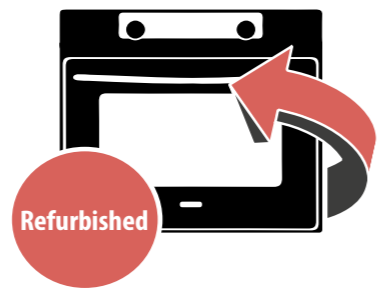


# D.3 | SCENARIO CHOICE CRITERIA

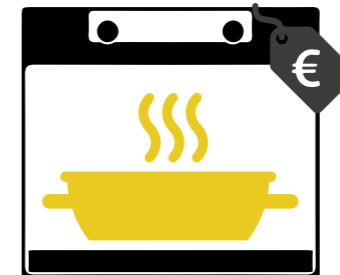
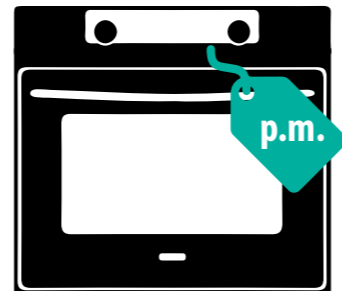
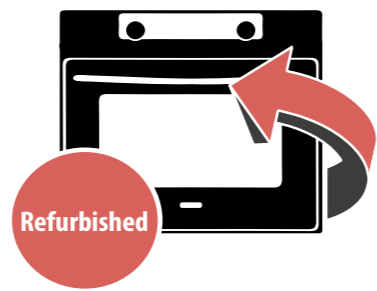












































<p><b>1.a   Business potential</b> Is it a financially viable scenario?</p>	<p></p> <p>Costs for: set up refurbishment line, logistics, refurbishment activities, storage space. Revenue: ATAG can sell refurbished ovens for 75% of the original price of the appliance. Revenue stream on the short term (directly at purchase). Buy-back through discount means value remains within the organisation and is not an extra expense.</p>	<p></p> <p>Long term revenue stream rather than short term. ATAG can get larger margins. Costs for service offer. Need for be good contracts and systems for check-ups and repairs. Appliances come back and can be refurbished and leased again.</p>	<p></p> <p>Long term revenue stream and larger margins. Costs for service offer. Need for be good contracts and systems for check-ups and repairs. Appliances come back and can be refurbished and leased again. Lease goes in bulk, creating more stability and service offer also in bulk.</p>	<p></p> <p>Costs for placing the ovens in kitchens. Revenue depends a lot on the use.</p>	<p></p> <p>This is very unsure. You need partners for this. And there are many questions regarding the service and placement of the ovens. What term? Etc.</p>
<p><b>1.b   Brand</b> Does it fit the brand? 'We love to cook'</p>	<p></p> <p>Visible sustainability efforts. Products must be good if the company is selling them again after first use. Refurbishment is a learning process, so in the beginning some things may go wrong and 'refurbishment' triggers people's experiences with other refurbished products.</p>	<p></p> <p>User is not the owner, so the appliance becomes more of a luxury product: 'You are allowed to use the product.' Control over brand experience: Every touch-point is with ATAG, including maintenance and payments. Closer customer relationship.</p>	<p></p> <p>Contract invisible to consumers, does not create a sustainable brand image. Less control over brand experience. Basic appliances will be leased instead of premium ones. Getting circular appliances in rental homes is also a way to get exposure and to have users experience the appliances.</p>	<p></p> <p>It demotivates people to use the oven and stimulates other (perhaps unhealthy or unsustainable) ways to get/prepare dinner, like getting take-out or cooking in a pan with gas, where you have less control over the cooking process than in the oven.</p>	<p></p> <p>Meal subscription would probably be focussed on the meal with additional oven. The brand would be strongly affected by how the meal is perceived. So this gives control over brand away.</p>
<p><b>1.c   Market</b> Not too niche. Scenario should be 'mainstream enough' to have a large potential market.</p>	<p></p> <p>Wider market, because it makes premium recessed oven affordable for others, at entry-level price. With discount for second purchase at ATAG after handing in appliance, returning customers.</p>	<p></p> <p>Wider market, because it makes premium recessed oven affordable for others, at a fixed monthly payment.</p>	<p></p> <p>Giving tenants the opportunity to have a recessed oven at an affordable monthly payment. Housing associations want to delegate service to ATAG. Investors want to have ownership of kitchens, including appliances.</p>	<p></p> <p>PPU oven fits in shared-/community kitchens. This can be student dorms. You can place these ovens through the project market, but instead of having 80 ovens for 80 apartments, it would reduce to 8-10 for the entire building.</p>	<p></p> <p>The market would be that similar to the market of the meal box services, which is growing. However, only part of that would want an oven in addition to the service.</p>
<p><b>1.d   Viable</b> Fitting with company activities?</p>	<p></p> <p>Classic sales model, so this can go through the current retail channels. More effort needs to be put in returning the appliances, because the ownership is with the users.</p>	<p></p> <p>'Selling' private lease ovens can go through the existing distribution channels, through retail. ATAG is already familiar with financial lease. The service component needs to be developed.</p>	<p></p> <p>Existing distribution channels of the projects market. The service component needs to be developed, maybe in cooperation with service for the rest of the kitchen appliances/cabinets.</p>	<p></p> <p>The appliance needs to be connected. Development is needed for this. In the future payment systems that people are familiar with might be more use-based. This scenario is innovative and futureproof, but for now too far-fetched.</p>	<p></p> <p>Need partners. When talking to hellofresh in the past, it was found that both companies want very different things. That is probably also the case for others.</p>
<p><b>1.e   Current activities</b> Is it in line with their other circular projects?</p>	<p></p> <p>The circular efforts of ATAG are about refurbishment, modular design, lease and lease to social housing associations.</p>	<p></p> <p>The circular efforts of ATAG are about refurbishment, modular design, lease and lease to social housing associations.</p>	<p></p> <p>The circular efforts of ATAG are about refurbishment, modular design, lease and lease to social housing associations (with CIK).</p>	<p></p> <p>Circular efforts within ATAG have briefly addressed pay-per-use, but have been disregarded because of the limitations.</p>	<p></p> <p>ATAG has not done anything in this direction.</p>

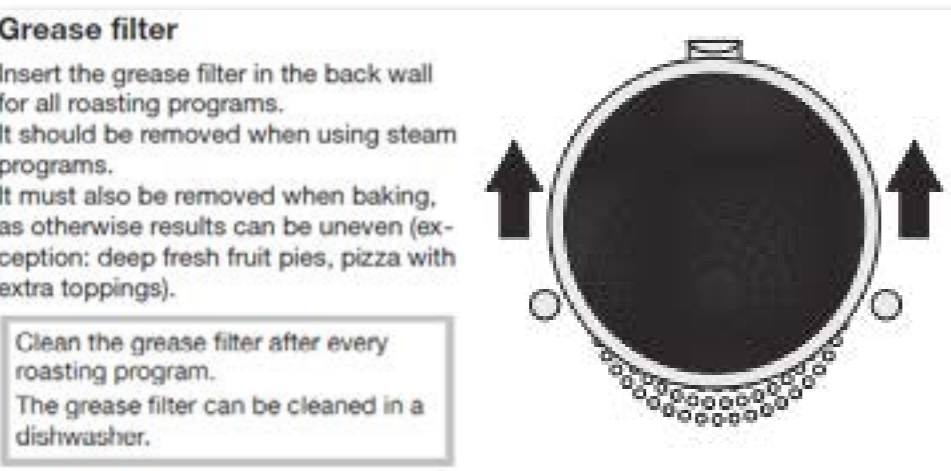
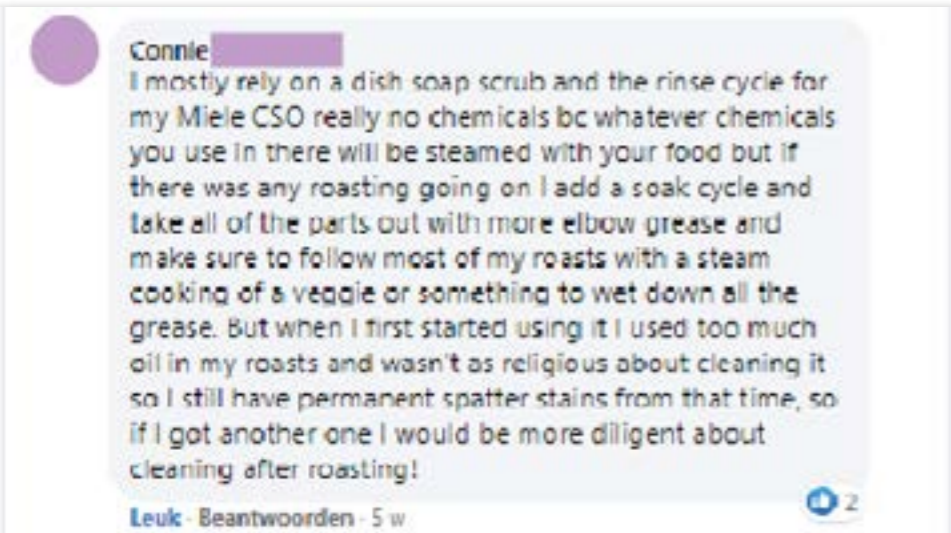




<p><b>2.a   Behavior</b> Does the scenario stimulate sustainable behaviour?</p>		<p>Private lease as the risk of users not taking care of their products and becoming more resource intensive.</p>	<p>Here there is even less sense of ownership in relation to private lease.</p>	<p>PPU appliances will influence behaviour so that users will be save energy, or use the oven more efficient</p>	<p>Connecting the oven to something as short-term as groceries might make it feel more like a disposable product.</p>
<p><b>2.b   Circular Economy</b> In systems, potential for others to follow and join in this concept.</p>	<p>Bringing materials back and for the refurbishment activities, ATAG needs to collaborate with others. And refurbishment is essential for the other scenarios to be circular, so ATAG should get started on this.</p>	<p>Similar to refurbishment</p>	<p>Collaborating on this level with housing associations and investors can create a circular system around kitchens and housing.</p>	<p>PPU can help buildings with community kitchens or public kitchens become circular</p>	
<p><b>2.c   Material flow</b> Does this enable ATAG to keep control over its materials and resources?</p>	<p>This scenario enables ATAG to buy back, and to return material back, but because it is still the classic sales model, after purchase ATAG has no control over de products.</p>	<p>ATAG stays the owner of the product, so control.</p>	<p>ATAG stays the owner of the product, so control. Here in bulk.</p>	<p>ATAG stays the owner of the product, so control.</p>	<p>With the collaboration, the control of materials might be in the hand of the grocery provider.</p>
<p><b>2.d   Product life</b> Extending the lifetime of the product (materials).</p>	<p>Product lifetime 200%</p>	<p>Product lifetime 200%</p>	<p>Product lifetime 150%</p>	<p>Product lifetime 250% Product is not used that much, but it is also not cared for.</p>	<p>Product lifetime 80%</p>
<p><b>2.e   Logistics</b> Environmental impact of the system.</p>	<p>Risk of not getting products back, yet the impact of the system is not that much larger than the classic sell model.</p>	<p>Risk of having to transport products back and forth a lot.</p>	<p>Logistics can be optimised because it is through projects market and therefore it is with bulks of products in one building.</p>	<p>Use cycle of product might not be long.</p>	<p>Meal services are flexible. To have the subscription for the oven become only a little bit flexible, there is a lot of logistics that need to happen for it.</p>



<p><b>3.a   Acceptance</b>          Low perceived risks, high perceived benefits.          Does it raise a lot of questions or is the scenario accepted or familiar?</p>	<p>Familiar</p> 	<p>Little risks, only that it is expensive. But only very limited benefits, like no need for maintenance on the oven.</p> 	<p>Paying a monthly fee is familiar</p> 		
<p><b>3.b   ATAG Target group</b>          Does it help cooking enthusiasts?          Does it fit ATAG target group?</p>	 <p>Similar target group, but with smaller budget. With the brand Pelgrim, ATAG has experience with that target group.</p>	 		  <p>People who love to cook do not want to pay per use. They feel limited and discouraged to use the oven.</p>	 <p>ATAG target group loves to cook, they want to have control and freedom what to cook and how.</p>
<p><b>3.c   Users' interest</b>          Based on the results from the interviews</p>	  <p>Participants show most interest in refurbishment.</p>			 	 
<p><b>4.a   Design for Interaction</b>          The resulting design direction should fit in the Master's programme Design for Interaction.</p>	 <p>Appliance has to be redesigned for refurbishment, involving the user in the refurbishment process.</p>	 <p>Lease service system has to be designed, user centric.</p>	 <p>Lease service system has to be designed, user centric.</p>	  <p>Good functioning Pay-per-use systems rely on very good and easy human-product interaction which is quick and effortless.</p>	  <p>Meal subscription scenario is more dependent on the meal service rather than the oven/appliance.</p>
<p><b>4.b   Personal fit</b>          The resulting design direction should require knowledge/skills that I personally can add to the company.</p>	  <p>I can use the results I got from the interviews, together with a user-centered approach.</p>		  <p>There is yet quite some more stuff to organise. This direction for ATAG has legal issues with rentprices, with housing associations and landlords. Where the users does not have much to say in the system/decision making.</p>	 <p>I don't know much with IoT, but I would be able to design a user friendly interface.</p>	  <p>See above</p>
<p><b>4.c   Working from home</b>          Is this project suitable to do from a distance (not being able to work at ATAG a lot)</p>	 		 <p>This process is a multistakeholder scenario. Which needs a lot of collaboration. In the current situation with limited access to contact with colleagues, I believe it is not beneficial for this project to do in this time.</p>	 <p>Also multi stakeholder</p>	  <p>Multi stakeholder scenario, with stakeholders outside of ATAG, which probably are not even interested.</p>



# E.1 | PRODUCT CARE

## RESEARCH ACTIVITY: SOCIAL MEDIA POST

### Goal

For the purpose of exploring product care from the user perspective, a social media research activity is executed. To find out how users clean their oven, I asked people on social media how they clean their oven.

RQ: How do users clean their oven?

### Method

I posted a message in few selected Facebook groups, asking how people clean their oven. Personal experience has shown that if you post a genuine question, you get more response than when you introduce yourself as a researcher, so that is what I did.

This message is posted in two Dutch groups about cooking and baking, in an international group specific for steam and combi oven users, and I posted the question in a Dutch group on sustainability.

### Key Insights

Over all four groups, I got response from 27 different people.

Over time the user's attitude changes towards cleaning the oven. A new oven is easy, you barely need to clean a new oven. Also a new kitchen motivates to keep it clean: "I love this new kitchen so much, I am just wary of grease stains that turn into accumulating ugly messes!"

Functionality of the oven also changes how users clean their oven. With the steam function: Run a steam cycle: "steam veggies and soak the oven at the same time." And some people make their own steam function, by putting a bowl with water, vinegar and lemon in the oven.

Others mention the self-cleaning functions like Pyrolysis, after which you have to sweep dust away. Someone mentions he does the pyrolysis 2-3 times a

year: "oven cleans itself".

Most people who mention when cleaning should be done, express it should be done regularly, preferably after every use: No need to scrape, a sweep with a cloth should be enough.

One person says to use the oven's programmed settings for cleaning, rinsing and drying with additional deeper manual clean every month or two.

For cleaning, people want a detergent that is safe with food. Either non-chemical, or specific for cleaning ovens, when it says that it does not give fumes.

- Hg ovenreiniger
- Dasty
- Bowl with water and cleaning vinegar and lemon,
- Mix of warm water, with bi-carbonate of soda, some dishwashing fluid and vinegar, in a spray bottle.

The level of how 'aggressive' one can clean their oven differs. One person mentions a paint scraper to get splashes of fat from the door, whereas another mentions that their oven has some sort of special coating which you could damage with regular oven products.

### Manual

I got the tip to look up the manual online. But others also express they didn't read their manual at first use, and learn new things when reading it after years of use.

### Grease filter in Miele appliances

One person mentions the grease filter of the Miele oven. After a look in their user manual, I found that this is an additional part that user should put in for certain functions, and take out for others, so that grease does not enter the fans. (figure to the left)

# READING THE MANUAL

## Goal

The product's user manual contains instructions on how to use the steam oven properly. Therefore there I assume the essential product care activities should be in there too.

Relevant research question: What are the essential activities the user can do to clean and maintain the oven?

## Method

### Finding the user manual

I already (within a few months of ownership) could not remember receiving a user manual with the steam oven. With a quick glance in the box that I kept, I could not find it either, so I decided to look online. Finding the manual online: with a few google clicks it is doable. You can choose between languages: NL, EN, DE, FR. But you also have to find the model number of the oven. I then googled for the MAGNA steam oven of ATAG and found the model number on their website (ATAG.nl). However, if the oven were a little older, I would want to find the manual of exactly my oven, so taking a guess would not be enough. Luckily you can find the model number on the inside of the oven when you open the door.

## Key insights

The manual contains instructions and tips for the user to ensure product life and quality.

Cleaning should be done regularly “to prevent fat and food particles from accumulating, especially on the surfaces of the interior and the exterior, the door and the seal.” No water should enter the vents.

## Soft materials and detergents

The user manual calls for use of soft materials and non-aggressive cleaning detergents:

“Clean the exterior surfaces with a soft cloth and warm soapy water. Next wipe with a clean, damp cloth and dry the surfaces. Remove splashes and stains on the interior surfaces with a cloth and soapy water. Next wipe with a clean, damp cloth and dry

the surfaces.”

Also the user should: “never use abrasive cleaning materials or chemical solvents.” And after every steam function, the user should: “Dry the inside of the oven with a soft cloth.”

## Water after steam function

After the steam function, water should be removed from the appliance. “Let the oven cool down and dry the inside of the oven with a soft cloth,” and “empty, clean and dry the water reservoir. Only fill the reservoir just prior to using it!”

## Careful handling

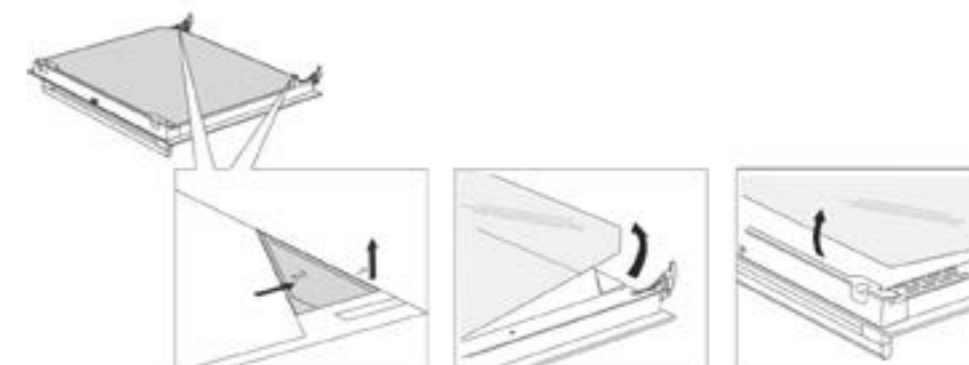
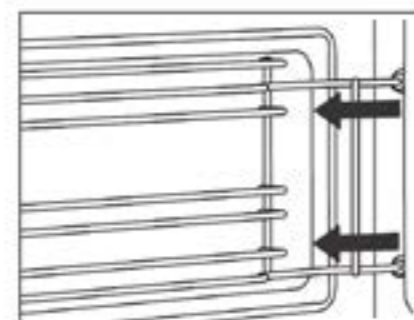
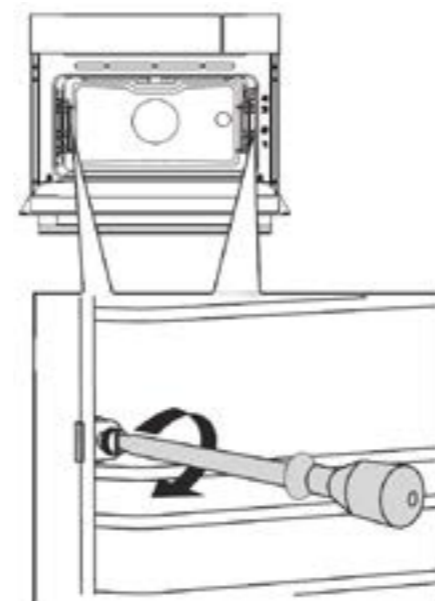
- “Only close the oven door when the telescopic guide rails have been returned completely back into the oven cavity.”

- The door of the oven has a soft close function, so no special attention is needed on that.

## Accessories mindful handling

The oven also comes with accessories. The user manual also contains instructions on how to use those. This includes how to use the culisensor and baking trays, but also that some accessories are not suitable for certain the oven functions. One instruction that surprised me is: “Never place an accessory on the bottom of the oven.”

## Infrequent cleaning activities



Activities that have to be done less frequent, but are necessary to guarantee the quality of the components are cleaning the water tank filter and descaling the appliance. With descaling, the appliance alerts the user it needs to be done and the user manual contains a recommendation for a descaling agent that is “non-corrosive, not aggressive and is environmentally-friendly” (User manual).

Taking out parts for cleaning, repair or replacement The manual also contains instructions for users to take the following parts:

- Removing the guide rails
- Replacing the oven light bulb
- Removing the oven door
- Removing the oven door glass

## ‘Personalising’ the appliance and setting water hardness

There are a few settings the user can set in this appliance:

At the first use or after the appliance was disconnected from the mains for a longer period of time, the user has to set ‘Language’, ‘Time’, ‘Date’ and ‘Water hardness’. Setting the correct water hardness helps in product care, because the equipment will be programmed so that the descaling notification will appear in accordance with the actual water hardness. Users can also save settings in ‘favourites’, so they can find their more frequent used programmes faster.

# INTERVIEW QUALITY ASSUR- ANCE

## Goal

RQ: What product care tasks can and should the user do to maintain the quality of the oven?

## Method

Expert interview with Senior Quality Engineer at Quality Assurance department of ATAG Benelux.

## Key insights about product care

- The times a pyrolysis or steamclean function is needed really depends on the use of the oven, and whether it is used for preparing a piece of meat, a frozen pizza, or to steam vegetables. It is most important that you make sure it is done regularly. ATAG generally recommends for frequent users to use pyrolysis a few times a month, but some users only do it twice a year.

- Important in design is to have no ribs or edges that dirt can stick behind. People can take the racks out of the oven to clean them and behind them in the oven.

- The user just really has to regularly clean it, so it remains a small task and you do not have to start with 'heavy' cleaning materials.

- The most dirt and fat splatters end up on the top side of the oven. There is a heating element that makes it hard to clean and burns the spots in faster.

- In the back there are little holes, they make it a little harder to clean, but there is not more dirt there than on other sides.

- The enamel [NL: Emaillie] coating in the cavity is a strong material that can handle aggressive cleaning materials. So you do not need be as careful as the manual says with a soft cloth and mild cleaning detergent. Willard also thinks many people refer to the use instructions of cleaning detergents like Dasty or HG over the one of the oven.

- If the enamel does get a scratch, it reveals the steel underneath and that may cause rusting, especially when steamovens are not left open to dry after use.

# F.1 | CREATIVE SESSION REFURBISHMENT - PLAN

## Design for Interaction

Interaction on human-product interaction level, is about the way people use, understand, and experience products.

## Spelregels

- 1 | Geen apparaten
- 2 | Geen kritiek
- 3 | **Schrijf-teken alles op**
- 4 | **Kwantiteit**
- 5 | **Borduur voort op ideeën**

Ontwerp richtingen en ideeën voor **user-centered design** voor en rond **refurbishment**.

06-07-2020, 13:00-17:00u  
Location: ATAG Benelux in Duiven

## AANWEZIG

Lisa Hoogeveen  
Jan van Os - Innovation Manager - Innovation & Projects  
Vincent Hofstee - Global Design Manager Cooking & Refrigeration - ASKO  
Iris Hogervorst - Industrial Designer - ASKO Design team  
Roxanne van Rijn - MSc Student Strategic Product Design TU Delft and MSc Management of Innovation  
Pauline Timmers - MSc Student Integrated Product Design and Science Communication TU Delft

## MAIL NAAR DEELNEMERS

Hoi allemaal,  
Leuk dat jullie maandagmiddag meedoen met de creatieve sessie.  
We gaan tijdens de sessie veel ideeën bedenken en daarvoor zo veel mogelijk schetsen en tekenen. Daarvoor vraag ik jullie het volgende filmpje te kijken over hoe je de simpelste dingen kunt tekenen:  
[https://www.ted.com/talks/graham\\_shaw\\_why\\_people\\_believe\\_they\\_can\\_t\\_draw?language=nl](https://www.ted.com/talks/graham_shaw_why_people_believe_they_can_t_draw?language=nl)

Het onderwerp van de sessie is refurbishment van de oven. En het doel is om ideeën te bedenken voor hoe er in het ontwerp waarde kan worden toegevoegd voor de gebruiker en het refurbishment proces. Hier is een voorbeeld van Philips:  
[https://www.youtube.com/watch?v=cWWZl-Qcz6Oc&feature=emb\\_logo](https://www.youtube.com/watch?v=cWWZl-Qcz6Oc&feature=emb_logo)

## Tijdschema

13:00	Welkom en introductie
13:15	Presentatie Bevindingen
	Probleem verkenning
	Brainstorming oefening
15:00	Pauze
15:15	Ideeën uitwerken
16:00	Posters presenteren
	En Roadmap maken
16:45	Afsluitend
17:00	Einde

## DOEL

Ideeën en ontwerp richtingen voor user-centered design for refurbishment.

## UITGEBREIDE PLANNING

<b>13:00</b>	<b>Welkom en introductie</b>
	Voorstelronde
	Design for Interaction
	Brainstorm-regels
	Circulariteit
	Doel voor vandaag
<b>13:15</b>	
15 min	Presentatie Bevindingen
5 min	Brain dump
5 min	Energizer
<b>20min</b>	<b>Probleem verkenning:</b>
	Formuleer Design Goals. Werk met tijdlijn en users
<b>10 min</b>	<b>Creëer HKJ's</b>
	aan de hand van die Design Goals. Selecteer er 10 en schrijf ze ieder op een eigen A3 vel.
<b>20 min</b>	<b>Creëer ideeën</b> met de HKJ's.
	De HKJ vellen worden doorgegeven en je krijgt iedere keer een minuut.



**20 min Hang de vellen op de muur.**

De HKJ vellen worden gepresenteerd.  
Noem een paar ideeën die je hier aanspreken.  
Zien we nieuwe ideeën of nieuwe combinaties?

**15:00 Stemmen en pauze**

**15:15**  
10 min Snelle oefening  
Woord associatie.

**15 min Werk een idee uit**  
Ieder kiest 2 ideeën om deze verder uit te werken  
Ieder idee 5 min

**10 min Value oefening**  
Ga in tweetallen. Leg je ideeën uit aan de ander.

**20 min Maak een poster**  
Werk in tweetallen en kies een idee of combineer jullie ideeën tot één concept.  
Werk deze visueel uit.  
Wat zijn de Unique Selling Points van jullie concept?

**Korte pauze?**

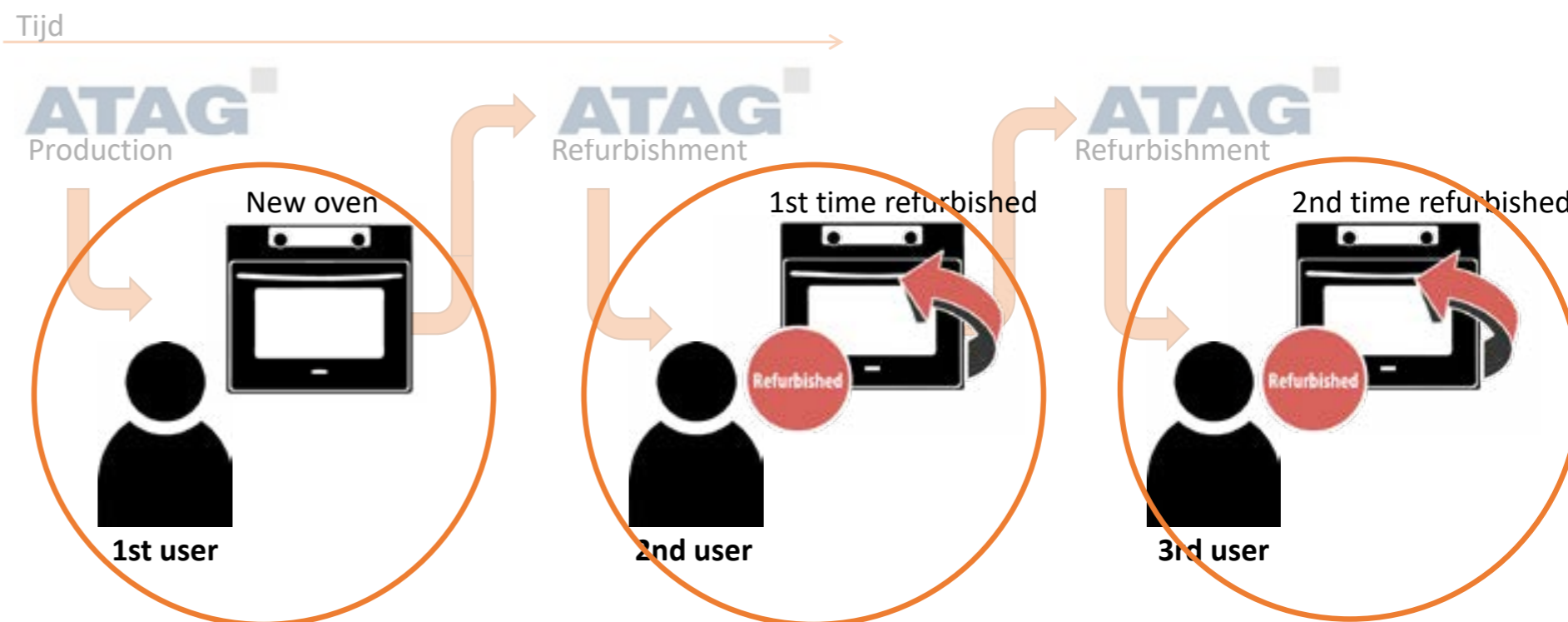
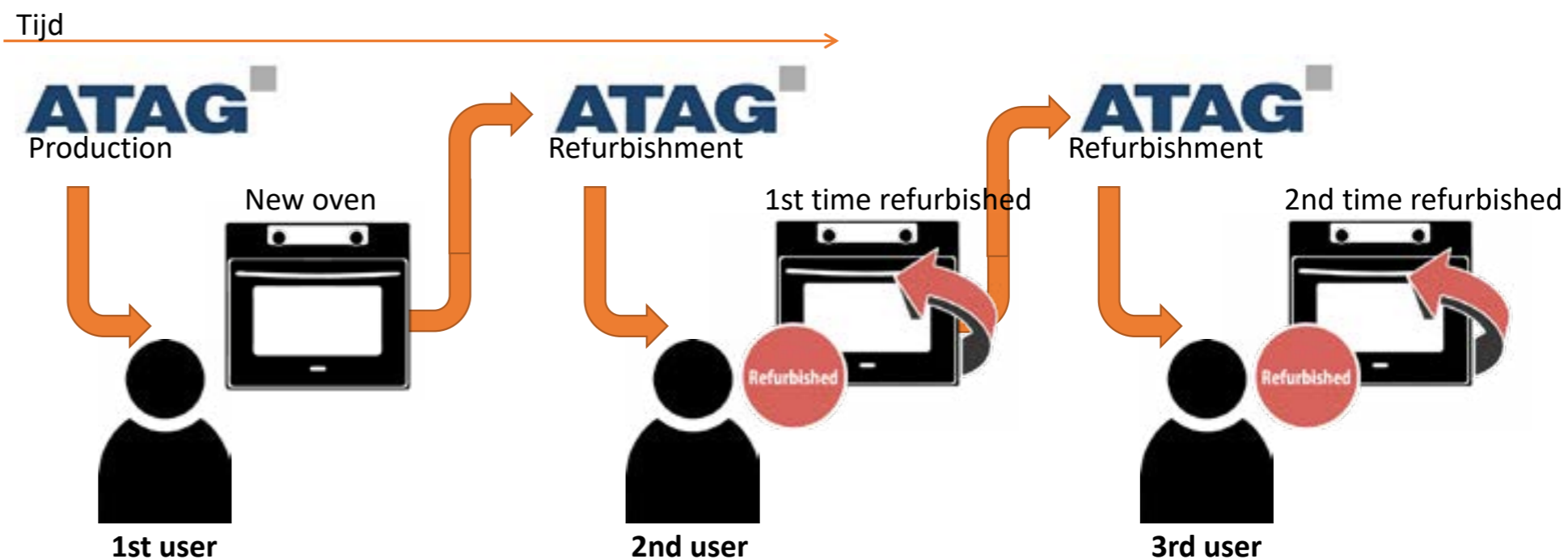
**16:00**  
**10 min Posters presenteren**  
20 min Schrijf op post-its wat je hiervan vindt.  
Welke waarde heeft dit concept voor de stakeholders?

- ATAG
- Gebruiker
- Milieu
- ....

**15 min Roadmap maken**  
Welke stappen moeten hier genomen worden.

**16:45 Afsluitend**  
Reflectie  
Hoe vonden jullie het om dit te doen?  
Wat nemen jullie mee na vandaag?  
Wat hopen jullie voor ATAG?

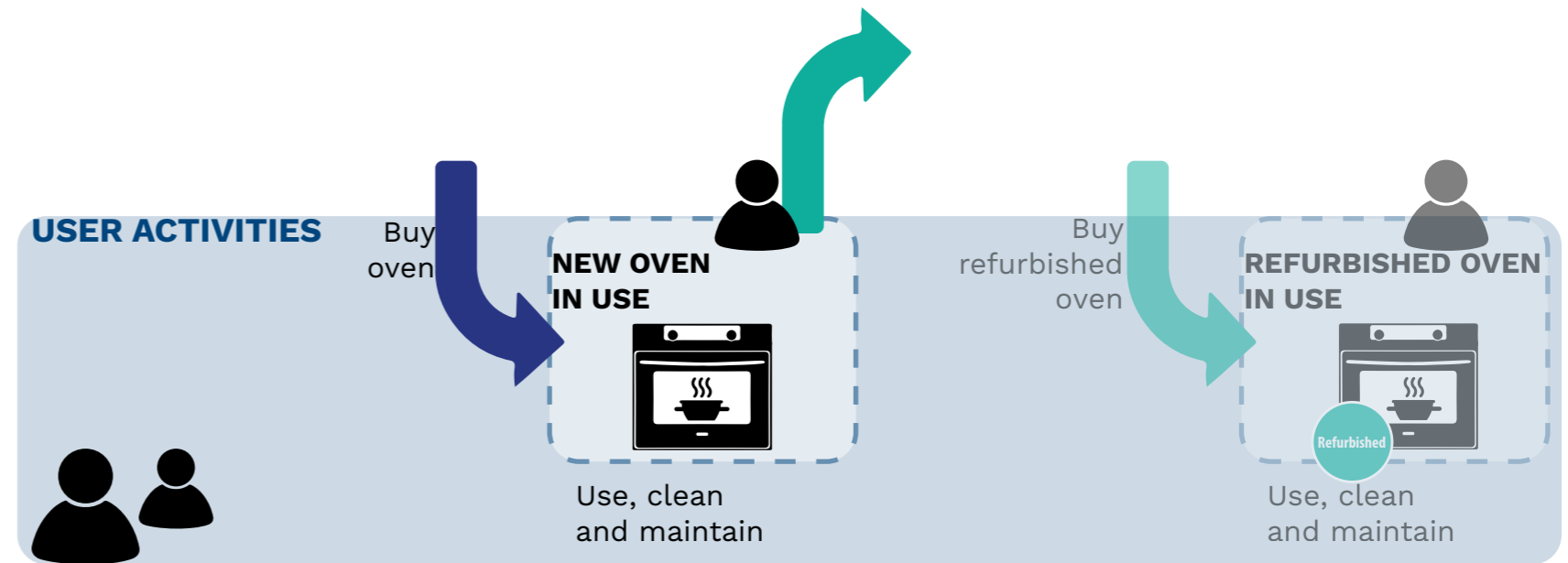
17:00 Einde



# F.2 | CREATIVE SESSION REFURBISHMENT

## - RESULTS: DESIGN GOALS

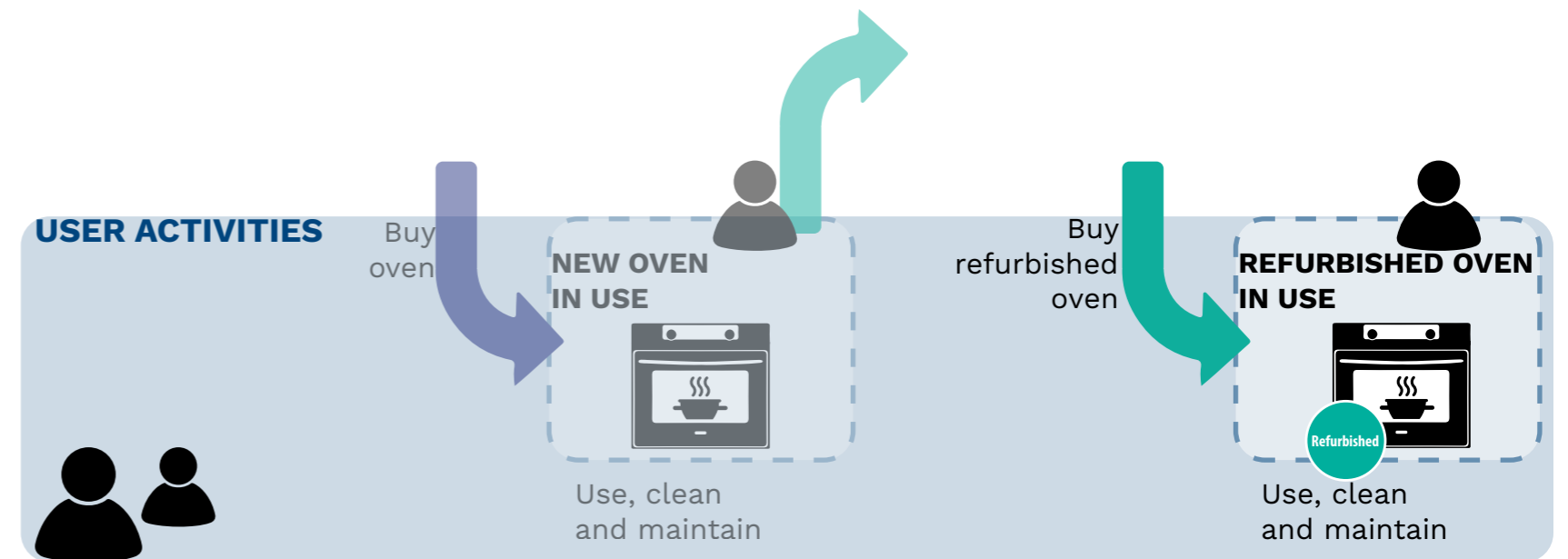
### DESIGN GOALS – 1ST USER



<b>User</b>	Social cook, wanting to show off their baking skills to friends	People who cook	Mensen die verhuizen naar een lelijke keuken	Social cook	Parents with family	Pleasure seeker	ATAG target group
<b>Situation/location</b>	At their home when friends are visiting	In the kitchen or living room	Die toch iets terug willen	Preparing meal for friends	Kitchen preparing dinner	Cooking with friends or family	
<b>Effect</b>	Will not be withheld by their oven in their aspirations	Oven die het goed doet maar doorgegeven kan worden als je hem niet meer gebruikt.		Guiding you through the process of cooking	Energy efficient behaviour	Providing the feedback to all 'users' at the same time	they want to buy an oven that will have a target life
<b>Stakeholders</b>		Buren, familieleden, producent, volgende gebruiker				Ecosystem of connectivity around the oven Solo cookers	
<b>Design goal</b>	<b>Social cooks die hun baking skills thuis willen laten zien aan bezoek, zullen hun baksels perfect op tijd af hebben.</b>	<b>Let people who want to cook use a good oven and return it when they are done.</b> <b>Wegdoen voor een tweede leven.</b>	<b>Voor mensen die verhuizen naar een lelijke keuken ze iets terug te geven bij een nieuwe oven.</b>	<b>What feedback is needed to help the chef during cooking?</b>	<b>How can we improve products to be more energy efficient when used?</b>		<b>Making it attractive for our target group to buy an oven that will have a second life and thus reducing footprint, giving the opportunity to make a change, environmentally and to make it accessible for a next owner. 'Look after it for the next owner.'</b>
<b>HKJ</b>	HKJ nieuwe functionaliteiten bieden in een bestaande oven?	HKJ mensen motiveren hun oven op het einde te laten refurbishen?	HKJ mensen verleiden hun ATAG oven in te leveren bij een nieuwe keuken/huis?		HKJ ovens energiezuinig maken?		



# DESIGN GOALS – 2ND USER

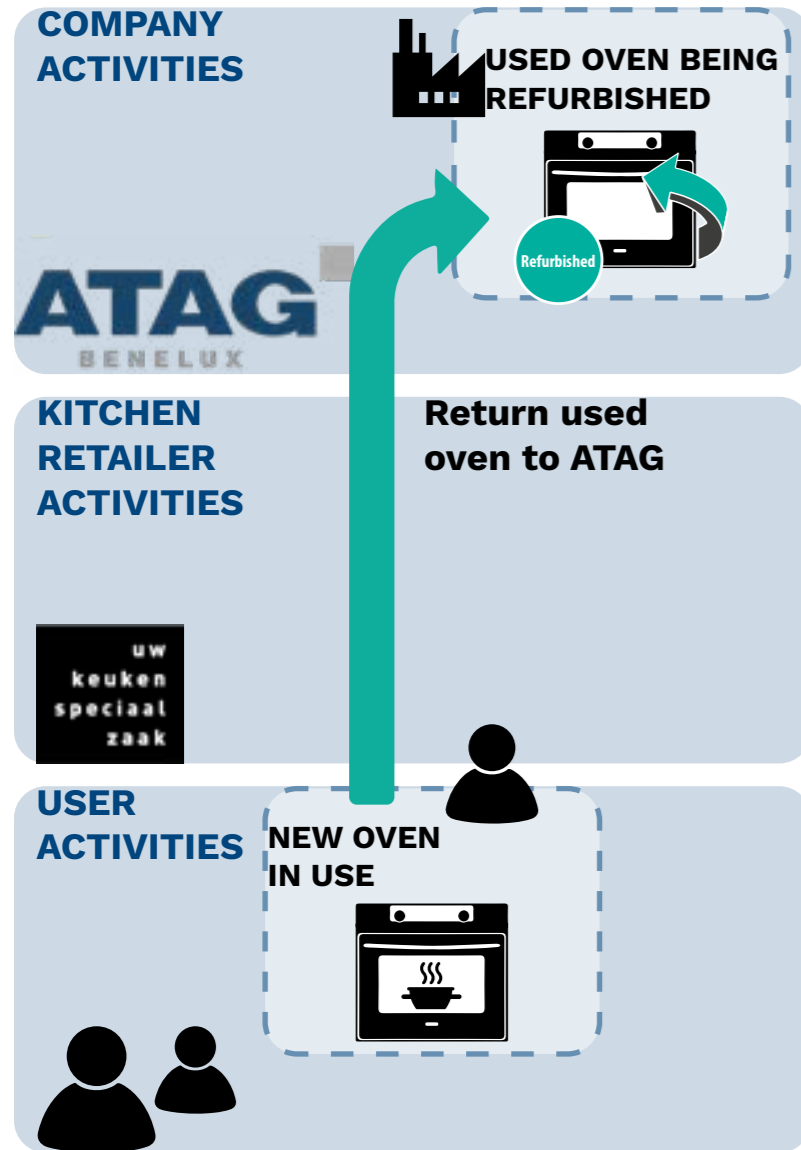


<b>User</b>	A user who would like quality (and to whom estetics are important), but can't or won't afford a new oven.	3rd user in circular cycle	People who don't have a lot to spend / Who care about the planet / Are not interested in cooking		People who are environmental conscious.
<b>Situation/location</b>	When the user chooses their 'new' oven the outside won't withdraw them because they can choose the look themselves.	Preparing lasagne for dinner	Kitchen		Who show friends their new kitchen
<b>Effect</b>		How can I clean the oven easily	Loving the oven as any other oven (/ like new)		Groene oven. Status object, trots
<b>Stakeholders</b>	Easy exchangeable fronts must be produced and assembled		Repair / clean people of oven Family / huisgenoten, buren		
<b>Design goal</b>	<b>Let the buyer of a refurbished oven choose a design fitting their personality and environment.</b>  <b>To reduce the resistance for a refurbished oven.</b>	<b>How can we make oven better cleanable?</b>	<b>Let people who buy a refurbished oven love it as much as any other oven. (adoptie kindje)</b>	<b>Making it attractive for our target group to buy a refurbished oven, by making the refurbished oven like brand new and still giving very good value for money, ans also enabling the personalisation of the oven.</b>	<b>Mensen die bewust omgaan met hun leefomgeving kunnen een oven gebruiken als een status symbool en gevoel van trots als zij hun vrienden een nieuwe keukens laten zien.</b>
<b>HKJ</b>	HKJ ervoor zorgen dat een oven terugkomt voor refurbishment?  HKJ ervoor zorgen dat een oven schoon en netjes blijft? -> gebruiker helpen  HKJ ervoor zorgen dat het 'front' gewisseld kan worden?	How to make cleaning the oven more easy?  How to prevent the oven from becoming dirty?	HKJ mensen van hun oven laten houden?  HKJ 'refurbished' aantrekkelijk maken?  -> wel weer door naar 3e u		HKJ van een refurbished oven een status symbool maken?

# F.3 | CREATIVE SESSION REFURBISHMENT

## - RESULTS: IDEAS

### IDEAS FOR RETURNING THE OVEN TO ATAG



#### Brainstorm questions

- HKJ mensen verleiden hun ATAG oven in te leveren?
- HKJ ervoor zorgen dat de oven terugkomt voor refurbishment?

#### System change

- Abonnement op steeds nieuwste oven, oude wordt ingeleverd;
- Oven blijft eigendom van ATAG;

#### Buy-back

- Financiële incentive;
- Terugkopen; statiegeld/borg wat je terugkrijgt;
- Bij inlevering oude oven korting geven (op nieuw product / op volgende ATAG oven / bij nieuwe keuken/oven);
- Garantie: Binnen garantie terugkopen;
- Terugroep actie;
- Verplichten, anders boete/deurwaarder;

#### Amount of money back depends on state of the oven

- Netjes klasse:
  - A - 500eur,
  - B - 300eur,
  - C - 50eur;

#### Use kitchen specialist

- Elke ATAG keukenspecialist een bonus geven voor elke teruggebrachte oven;

#### Educate users

- milieu benadrukken; educatie over duurzaamheid;
- Bij kopen al noemen dat oven terug kan; Verplichte voorlichting bij aankoop keuken;

#### Good customer relationship

- Connected blijven met user/owner en weten wanneer;
- Hele blijde ATAG mensen, zoals bij de kringloop;

#### Return when placing new oven

- Bij koop nieuwe, oude automatisch eruit; Ophaalservice van ATAG; Aan huis ophalen;

### IDEAS FOR INCREASING (PERCEIVED) ENVIRONMENTAL VALUE

#### Award or sticker for user

- "Ik ben groen bezig"-award op oven;
- "#kg CO2 bespaard"-certificaat;
- "600kg CO2 bespaard" - sticker op oven;
- Duurzame kok!;
- Jij bent goed bezig, jij redt de wereld;
- Wat gebeurt daarna? 3e gebruiker certificaten

#### Use the brand image

- ATAG keurmerk, 8 jaar garantie, super degelijk product; Kwaliteitskeurmerk;
- Reclame;
- Sympathiek merk;

#### KITCHEN RETAILER ACTIVITIES



#### USER ACTIVITIES



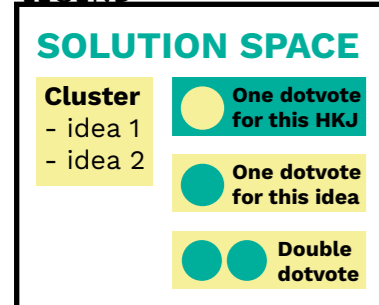
#### Joining the bigger movement

- Als individu ben je onderdeel van een beweging;
- Shaming voor nieuw kopen

#### Use all materials

- Creatief met materialen;
- Ook nieuwe oven uit herbruikte onderdelen samenstellen;

#### LEGEND



## IDEAS FOR ADDING VALUE DURING REFURB.

### Brainstorm questions

- HKJ 'Refurbished' aantrekkelijker maken?
- HKJ van een refurbished oven een statussymbool maken?
- HKJ een oven nieuwe functionaliteiten geven?

### Renaming refurbishment

- Noem het anders:
  - Previously 'loved' <3 ; of Tweedekans;

### Plan additions with refurbishment

- Speciale front die alleen bij refurbished oven kan;
- Uitbreiding net als bordspellen; Kan zelf kiezen of ervoor wilt betalen;
- Meenemen wanneer planning nieuwe modellen wordt gemaakt (hier kunnen we in de toekomst .... Aan toevoegen);
- Updaten €, Add new function bij update;

### Software update

- Uitbreiding software bij bestaande hardware;
- Software update; Nieuwe software;
- Pre-owned - Oven heeft ervaring; Maak dagboek van ervaring;
- Gamification -> Reached next level;

### Offer additional services

- Service erbij, installeren;
- Reinigings service

### Other ideas

- Mix permanent en tijdelijk;
- ATAG Circular logo; (permanent)
- Kletsen met vorige eigenaar;

### Marketing efforts

- Super duur maken €€€, Reversed psychology;
- Goedkoop €
- Verkoop in combi met kookplaat;
- Is de beste keuze;
- + Accessoires, Gratis accessoires uitkiezen;
- Special limited editions;



## IDEAS FOR REFURB. PROCESS

### Brand new unpacking experience

- Kaartje aan handgreep; (alleen first-time use)
- Glansspray of geurspray, net als 'nieuwe auto'-geur;
  - In een doos laten komen/zoals normaal;
- Buitenkant helemaal shiny;
- Sticker: 'Ik ben zo goed als nieuw.';
- Mooi gepoetst en met strik erop afgeleverd; Grill rooster / bakplaat met een strik erom; Opgepoetst;
- Paar nieuwe onderdelen;

### Brainstorm questions

- HKJ een refurbished oven er brand-new uit laten zien?

### Factory reset

- Net als telefoon;
- Of juist factory reset; Reset naar fabriekssinstellingen: "Gefeliciteerd met uw nieuwe ATAG oven." ;

## IDEAS FOR DESIGN



### Brainstorm questions

HKJ ervoor zorgen dat een oven in elke soort keuken past?

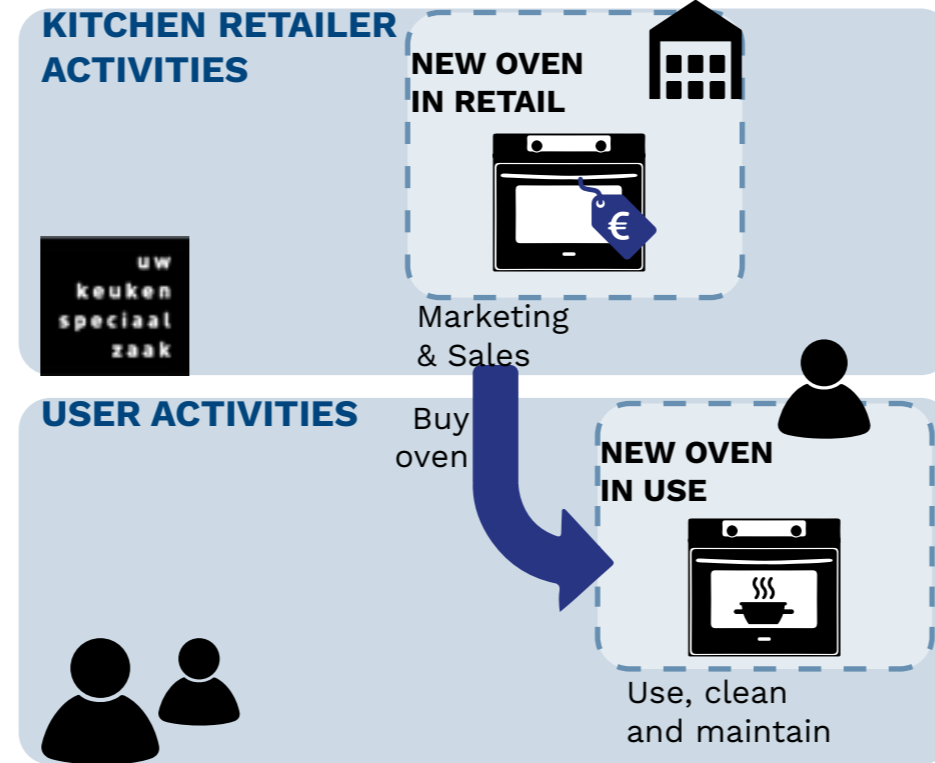
### Timeless design

- Oven alsof het een kastje is. Net als koelkast/vaatwasser;
- Tijdloos design;
- 1 standaard maat voor alle keukens, makkelijk in bestaande keukens in te wisselen;
- Glas design; Neutraal zwart; Past overal; Geen handgreep (past in elk design keuken); Zonder handgreep (geïntegreerd), neutraal glas design, aanpasbaar licht design;
- Goed design;
- Super gebruiksvriendelijk;

### User builds appliance

- DIY oven door consument; Bouw het zelf, bestelt onderdelen à la IKEA;
- Oven uit legoblokjes maken;

## IDEAS FOR PERSONALISATION



### Brainstorm questions

HKJ een oven personaliseren/nieuwe frontjes geven?

### Modular design

#### Personalisation for new user

- Magnetic front;
- Telescoop geleiding op eigen niveau;
- Eigen naam graveren;
- Nieuw frontje;
- Modulair design: replace and update; Makkelijk vervangbare frontjes; 'skin' aanpassen: display-kleur en ambient light; New front: kleur, materiaal, handgreep.
- Likje verf;

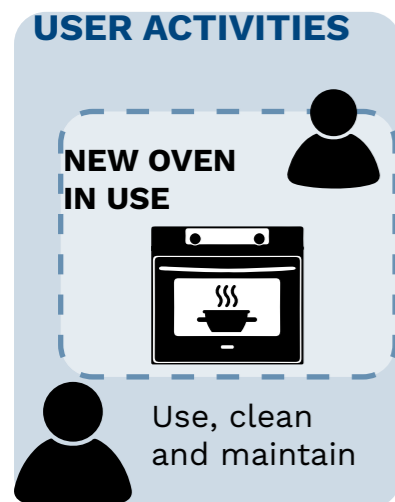
### Personalisation through use/ by user

- Meest gebruikte programma op 1e plek;
- Krassen op surface in laag dat weggekrast kan worden;
- Whiteboard;
- Stickers;
- tv scherm, screen/pictures; foto's ophangen; fotolijstje geïntegreerd in front; foto van gezellig diner;
- Herinneringen opslaan; herinneringen aan oven verbinden;
- Personal settings kunnen instellen; favo recept in standaard setting; Oma's appeltaart recept geprogrammeerd; Eigen recepten uploaden; recepten aan oven verbinden;
- user interface met eigen kleuren schema;

## IDEAS FOR SHOWING REAL AGE OF OVEN (KM STAND)

- Kilometer stand = experienced oven: '74u exp.';
- KM stand in geheugen - 'no reset';
- Gebruiksdata;

- 'Dagboek' van de oven;
- Oven-paspoort met 'km-stand'



## IDEAS FOR GETTING A RELATIONSHIP WITH YOUR OVEN

### Brainstorm questions

HKJ mensen van een oven laten houden?

### Personal communication

- Persoonlijke berichten; Hello Lisa; personal touch; I've got a new dish for you;
- Praten met je oven; complimenten geven;
- oven zegt: "I love you. You look great"
- oven terug laten houden van gebruiker;
- Oven krijgt ook credit voor baksels: Mensen laten beseffen dat ze dankzij hun oven altijd geweldige baksels maken;

## IDEAS FOR CLEANING

### Brainstorm questions

HKJ ervoor zorgen dat een oven schoon/netjes blijft?

### Educate users

- Handleiding: Hoe maak ik mijn oven schoon;
- Instructiefilmpje op youtube;

### Oven cleans itself

- Cleansteam reinigings-functie;
- Autoclean functie;
- Schoonmaken doet de oven helemaal zelf;
- Steamclean kan alleen als oven 40 graden of lager is.;

### Protective layer

- Bakpapier op bakplaat;
- Folie over de hele binnenkant, eruit;

### Use display to guide users

- Oven display zegt: "Clean me!"- stappen om te doorlopen getoond in de display. Gebaseerd op bakuren; Oven die zegt: "Maak me schoon."
- Subtiele nudges, in user interface. (Beter voor smaak, even snel doen met tips en tricks);
- Timing van schoonmaak nudge is belangrijk; Na een bepaalde tijd na het koken/bakken geeft de oven een opdracht voor schoonmaken.;
- Oven op slot; kunt hem niet gebruiken;
- Spel ervan maken: 'Zorg goed voor je oven, dan dit...!'; Lol krijgen in schoonmaken, en lol houden;
- Gewoontje: doekje aanrecht -> meteen oven;
- Netjes schoonmaken -> Gratis reinigings set terug krijgen.

## IDEAS FOR ENERGY EFFICIENT USE/SUST. BEHAVIOUR

### Brainstorm questions

HKJ energiezuinig gebruik bevorderen?

- Oven laat energie intensieve functies niet toe;

- Meer over leren -> Tips & Tricks van ATAG;
- Krijg inzichten van bijv. app/nieuwsbrieven etc;

- Feedback geven over verbruik. Persoonlijke competitie zuinig koken; Feedback over neergie verbruik + Tips hoe je dit kunt verbeteren; Inzicht in wat je verbruikt: €1,55 / 2kg CO2;
- Zet je gerecht erin TIJDENS normaal voorverwarmen. 30min +8min = X CO2 i.p.v. 45 min = XX CO2.
- Duurder energieverbruik;
- Challenge: Zo zuinig mogelijk koken (& win een keuken)

## OTHER IDEAS

- Oven doorgeven aan kennis met ATAG garantie (garantie en apparaat op naam nieuwe eigenaar);
- Digitaal kopen;

# F.4 | REFURBISHMENT - EVALUATION OF SOLUTION SPACES

The possible interventions in the solution space should...

1. ... be a potential design solution.
2. ... require knowledge/skills that I personally can add to the company.
3. ... be user-centered.
4. ... have the potential to make a significant difference in refurbishment.
5. And the resulting design goal should fit the scope of the remainder of this graduation project

	1. Design solution.	2. Personal knowledge/skills	3. User-centered.	4. Significant difference in refurbishment.	5. Fit in project	
<b>Returning oven to atag</b>	✓	✓	✓	✓	✓	Taking a user-centered perspective in getting products back is a new and innovative take on reverse logistics. Having the user as key stakeholder in returning the products, buy-back has potential, but should be refined and communicated in the right way.
<b>Showing real age of oven (mileage)</b>	✓	✓	✓	✗	✓	Measuring real age of the oven is one of the things ATAG can do for gathering data, learning about the value depreciation of their products so they in the future will be able to estimate in what state their product will return. I expect this will happen eventually when the kitchen appliances are 'connected', and I definitely recommend communicating real mileage of a refurbished oven. But how this will affect the perceived value of refurbished ovens is hard to predict, and has to be researched. This is something for the future.
<b>Refurbishment process and adding value during refurbishment</b>	✗	✓	✗	✓	✗	Software update or factory reset is required for refurbishment. Creating a brand-new user experience is so too. Yet this is a small part in the whole use cycle, so I want to focus my project on other parts.
<b>Increasing perceived environmental value</b>	✗		✓	✓		ATAG should never stop increasing the environmental value of their appliances. Here I believe increasing the environmental value of the oven itself is more in line with the engineers of ATAG. Also increasing the perceived environmental value is more something for the marketing department.
<b>Timeless design</b>	✓	✗	✓	✓	✓	Design of the refurbishable oven should be Timeless design hardware and personalisable software (temporary personalisation). The Create department of ATAG already focusses really well on creating timeless design.
<b>Modular design</b>	✓	✗	✗	✓	✗	For refurbishment, modular parts and components is also really important, preferably a removable cavity would be great. ATAG has been and will be working on this in the future. This is too large of a challenge for me.
<b>Personalisation</b>	✓	✓		✗		Temporary personalisation is a real interesting angle for refurbishment. It has been shown to create more careful behaviour towards the product. However, I wonder if this is priority for refurbished ovens. Timeless design seems more worthy for refurbishment.
<b>Getting a relationship with your oven</b>	✓	✓	✓		✓	Just creating a relationship is not necessarily good for refurbishment. Attachment has upsides (more careful with products) and downsides (not being able to send it off to proper reuse or refurbishment).
<b>Cleaning</b>	✓	✓	✓	✓	✓	Changing users' behaviour so they take better care of their products is an interesting angle. For refurbishment it is not necessarily that we want to prolong the use cycle, but it is to make sure the oven is in better state when it returns, given that part of the users dispose of their oven for other reasons than it not working.
<b>Energy efficient use / sustainable behaviour</b>	✓	✗	✓	✗	✗	Making the appliances more energy efficient requires expertise of the engineers of ATAG. Next to that, creating a sustainable use behaviour does not seem to fit the brand of ATAG, where they do not want to discourage users to use their ovens, but rather have them use the oven and eat healthy. Also, this is something ATAG should still work on, but it is not specific for refurbishment.



# G.1 | RESULTS GROUP SESSION PRODUCT CARE

Product: ATAG (recessed/built-in) oven with steamer



Combi-stoomoven met TFT touchscreen (45 cm)



**Why do you use the oven?**

- To cook dinner
- To bake:
  - bread
  - cake
  - cookies
- To steam:
  - veggies
  - meat
  - potatoes
- To enjoy the process of creating a nice meal
- To cook for others and be social
- To be healthy and eat and cook responsibly

**How do you use it?**

Choosing setting → Pre-heating → Cooking process → Cooling down → Cleaning

**Where and when do you use it?**

- At home, in the kitchen
- Before dinner
- When baking, or for snacks

**What interactions?**

```

    graph TD
      A[Showroom experience] --> B[See videos and experience event at friend's home]
      B --> C[Introduction of product together with consultation and registration of the product]
      C --> D[Choosing setting, pre-heating, cooking process, cooling down]
      D --> E[Cleaning inside and outside of oven, Empty water tray etc.]
      E --> F[After a while the user develops habits and favourite routines]
      F --> G[Remove oven from home]
      C --> G
  
```

**Non-intended use?**

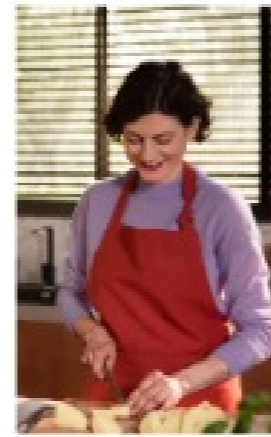
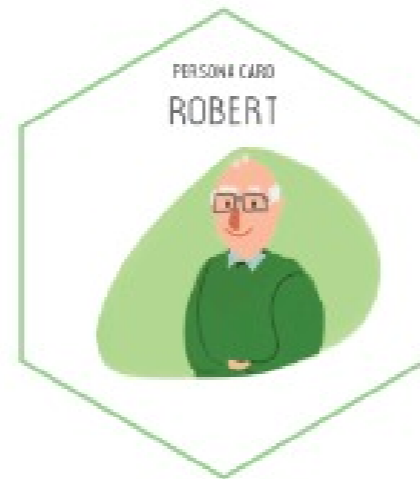
- Heat/warm/dry non-food
- Use oven as storage for dishes and other

**Which forms of product care can be applied to the oven?**

- Empty the water tray
- Descaling/ decalcifying
- Use cleansteam function of the oven
- Clean the door of the oven, outside and inside
- Use pyrolysis function of the oven
- Use a rag through the cavity of the oven to clean it
- Set the settings to personal preferences
- Manage recipes: Add favorite recipes / remove old recipes
- Clean oven tray



User: Cooking enthusiasts, with above-average income



Die wasser-cook  
box



Die pressure-cooker  
Lutero



Die semi-pro  
ova



A day in the life

Buns for  
breakfast

Bake  
a cake

Have  
friends  
over

Dinner  
with  
vegetables

Home situation

Built-in  
oven

Family  
with older  
kids

Motivate behavior

Health

Becoming  
better,  
developing  
skills

Love  
cooking

Fun in  
baking/cooking

Good  
taste of  
food

Love  
cooking  
for friends

Having  
friends  
over to  
show off

What stops them / makes it hard to change behavior

User does  
cooking,  
not the  
oven

Lack of  
freedom

Oven is partner  
in  
cooking/baking

Oven that  
does not  
have desired  
function

oven door  
closed ->  
cannot see  
what care has  
to be done

Lack of  
knowledge

When oven is  
turned off,  
cannot open  
steam/water  
tray

What skills/knowledge do they have when it comes to product care?

Stains  
burning  
into  
material

Emptying  
water  
tray

no steel  
wool

pyrolyse

repeat  
small  
care

clean  
functions  
that are  
shown

Skill  
level:  
4/5



### INSTRUCTED & MINDFUL HANDLING

This means that the user knows or feels what kind behaviors or actions would be bad for the product. This could for example be by having read a manual, learning about it (from others), through intuition or by experience. The product is kept in a good state because the user abstains from behaviors or actions that negatively influence the state/ lifetime of the product. Or they only perform acceptable behaviors or actions.

**Which actions can have a negative impact?**

**What are desired behaviors or actions of the user?**

Has been paired often with the following strategies:

- Reflecting
- Informing
- Experience
- Control



### PREVENTIVE MEASURES

Preventive Care are measures that are taken to make sure a product breaks or deteriorates slower than usually. Or preventive measures that try to prevent sudden breakages. These measures often consist of external products or services that equip or protect the product against its environments.

**What kind of breakages or deterioration should be prevented or postponed?**

**What does the user need to do to make that happen?**

Has been paired often with the following strategies:

- Appropriation
- Enabling
- Control

Which actions can have a negative impact on the product life of the oven?

- putting heavy stuff on door when open
- Not correctly building the oven into the kitchen
- Time (the longer used, the higher chance of it stopping too work)
- liquid spill on UI (touchscreen or buttons)
- Cooking greasy / leaky products that spill over (especially if you don't clean regularly)
- Closing the door suddenly
- Kids hanging/climbing on the door
- Using on very high heat for long time
- baking paper catching fire in the oven
- cooking with food that corrode (eg. citrus food)
- Cooking stuff/food that splatters in oven. Cooking oily food like lasagna
- using metal wool to clean
- using wrong cleaning detergent
- 'smacking' the door close

What are desired behaviors or actions of the user?

- Soak oven, with water
- add protective layers of baking paper and aluminum foil etc.
- Cleaning often
- Cleaning with soft tools -> soft towels.
- Be more careful with food
- Regular cleaning (being preventive then when cooking hotly ingredients. Closing door carefully (although a door that automatically closes slowly seems like a better solution to this))
- Putting lids on
- Do not use aggressive detergent etc.

What kind of breakages or deterioration should be prevented or postponed?

- burning in the food stains
- Stains on the glass door (inside and outside)
- Scratches on the touchscreen
- Scratches on the surface in the inside of the oven
- permanent greasy stains/ smell
- Broken door
- Loosing loose parts
- seals that isolate the oven that break down
- Dents in the touchscreen
- Light in the oven breaking
- Glass window broken

What does the user need to do to make that happen?

- Have soft cleaning supplies
- cleaning each week
- Material that does not stain
- motivation to clean
- Making loose parts easy to find back
- Clean the seals
- Cleaning material
- Guidance in cleaning and maintaining
- Cleaning triggers
- Knowledge



**What sort of daily patterns or routines does your user have?**

After cooking, making sure the kitchen is tidy (-> dishwashing, wiping surfaces, cleaning stove/oven if used)	Having dinner with the family	Doing the dishes / putting dishes in the dishwasher	heating up frozen bread for lunch & breakfast
cooking/ preparing dinner	Doing dishes. Filling and emptying dishwasher	Eating and having dinner	Having breakfast
Setting dinner table and cleaning dinner table	After dinner -> clean oven, empty water tray		

**How could necessary product care activities fit into the user's daily patterns and routines?**

Incorporating them in the existing kitchen cleaning activities	having the oven placed next to the freezer	Have parts that fit in the dishwasher and can be cleaned that way	when putting dishes back into cabinet, go with a wet towel through the oven.
--	--	---	--

**What sort of small activities can be done (regularly) to ensure the quality or performance of the oven is upkeep?**

Maak een surface die heel duidelijk laat zien dat er stains zijn spiegel materiaal wat op hitte reageert	take any grease out every few weeks (before it hardened)	mix some water with soda and lemon in a small bowl, put in in the oven, put on the highest heat, leave there for 30 minutes, cool down a bit and clean entire oven	
Gebruik speciale materialen die oplichten of veranderen als je de oven schoonmaakt -> interactief	Easy to clean materials	los haalbare onderdelen die je in de vaatwasser kan gooien/ makkelijk af kan wassen	
clean right after cooking (after its not too hot!)	Use steam function to soak	Empty water tray	use pyrolyse
use a cloth over the bottom of the cavity	Use a cloth to sweep the inside of the cavity	use a cloth to take out dust or small things from the cavity	use a cloth over the glass door inside and outside

### DESIGN STRATEGY CONTROL

THE DESIGN STRATEGY CONTROL SHOULD BE CONSIDERED AS AN OVERALL DESIGN STRATEGY THAT ENCOMPASSES ALL DESIGN STRATEGIES THAT ARE RELATED TO THE DESIGN OF THE PRODUCT.

**FUNCTIONAL**

Self-cleaning function on oven  
 Indicate need for cleaning on screen  
 Indication if oven becomes too hot on screen

Oven door closes slowly by itself.  
 Self cleaning oven.

### DESIGN STRATEGY EXPERIENCES

THE DESIGN STRATEGY EXPERIENCES SHOULD BE CONSIDERED AS AN OVERALL DESIGN STRATEGY THAT ENCOMPASSES ALL DESIGN STRATEGIES THAT ARE RELATED TO THE DESIGN OF THE PRODUCT.

**EMOTIONAL**

It should be fun to clean your oven. Like you would show your toddler that it is fun to clean after playing

Rewards for product care is a clean oven  
 No idea when something has been cleaned the last time  
 Users have to empty the water basin; have visual cue on the outside whether there is still water in it or not  
 postponing it makes the oven stink  
 Get a reward for product care

Create a smiley character that reacts to condition of the oven (sad face when it's dirty etc.)  
 if they do not have product care, the UI can slowly 'break down' or show [road]  
 Emotional visual when oven needs cleaning (sad face ...) or when it's been well cleaned (happy face ...)  
 Visual of pain/sadness when mishandling (e.g. closing the door too violently).

### DESIGN STRATEGY REFLECTING

THE DESIGN STRATEGY REFLECTING SHOULD BE CONSIDERED AS AN OVERALL DESIGN STRATEGY THAT ENCOMPASSES ALL DESIGN STRATEGIES THAT ARE RELATED TO THE DESIGN OF THE PRODUCT.

**PERSONALIZATION**

Use insights about where the user has been to help a chef but also make it possible to create a smiley character that reacts to different situation

There's a lot of things you can do with the right side you use the machine  
 The user can add recipes to the oven's front, either digitally on a screen or maybe funny legs with a picture  
 Oven this simplifies food smells or can return them (probably not extremely possible)

you can upload family dinner pictures to door of the oven. The whole front of the oven is a screen  
 instead of changing the oven, let the brand tag be connected to inspiring cooking chefs / cases / books, to indirectly link this value to their equipment  
 Give ice cream certificates and to life achievements - Here you can see a being made at home - Here is turn on for the first time - Also give the idea that you are not the first one using it but you can still have the experiences of the person using it for the first time

you can upload family dinner pictures to door of the oven. The whole front of the oven is a screen  
 instead of changing the oven, let the brand tag be connected to inspiring cooking chefs / cases / books, to indirectly link this value to their equipment  
 Give ice cream certificates and to life achievements - Here you can see a being made at home - Here is turn on for the first time - Also give the idea that you are not the first one using it but you can still have the experiences of the person using it for the first time

Manual  
 Help the oven maintain its value  
 Look for a specific type of cleaning product care lights up

Making it more personal by having to authenticate it  
 Ask for your name  
 What its name is  
 Setting your own background color for the touch screen - Setting your own menu style  
 Later  
 Show what someone from what the user made a year ago. Save baking times in your own menu. A 3D printer you can add the what you made before and you can print it again. Same could apply for your oven.

### DESIGN STRATEGY ENABLING

THE DESIGN STRATEGY ENABLING SHOULD BE CONSIDERED AS AN OVERALL DESIGN STRATEGY THAT ENCOMPASSES ALL DESIGN STRATEGIES THAT ARE RELATED TO THE DESIGN OF THE PRODUCT.

**FUNCTIONAL**

Brand the oven really well, connect high level chefs to the oven to make the user feel pride and let the user take care of the oven.  
 maybe take a look at the professional kitchens. How do they clean ovens. Can they clean themselves?  
 tag taking responsibility, after removing the kitchen, they offer a reduction on your new kitchen if you bring back the old oven

Sticker on oven with contact info in case of issues  
 Allow for parts to be taken out for cleaning  
 Provide reparability options (modularity of oven parts that break most often)

### DESIGN STRATEGY INFORMING

THE DESIGN STRATEGY INFORMING SHOULD BE CONSIDERED AS AN OVERALL DESIGN STRATEGY THAT ENCOMPASSES ALL DESIGN STRATEGIES THAT ARE RELATED TO THE DESIGN OF THE PRODUCT.

**EMOTIONAL**

water flowing sound and blue ambient light when it needs to be used  
 Manual  
 Help the oven maintain its value  
 Look for a specific type of cleaning product care lights up

form nudges into the movement of cleaning/emptying  
 Product care tips always available on the touchscreen  
 Use ambient light to show where you have to clean and what to do  
 use soft materials, clean gently.

Oven tells you when it's time to clean it. Give you feedback on the quality of the cleaning and the effect it has on the longevity of the product.  
 Clear instructions on the screen, reminding you that you have to do small little things often  
 Show that cleaning and product care is team effort the oven does something and user does something and you help each other.  
 Oven indicates when repair / maintenance is needed, where the problem is, and contact details of repair services.

### DESIGN STRATEGY APPROPRIATION

THE DESIGN STRATEGY APPROPRIATION SHOULD BE CONSIDERED AS AN OVERALL DESIGN STRATEGY THAT ENCOMPASSES ALL DESIGN STRATEGIES THAT ARE RELATED TO THE DESIGN OF THE PRODUCT.

**PERSONALIZATION**

Possibility to add in extras such as e.g. food thermometer, maybe delayed cooking (put your pizza in in the morning so that it's ready after work?), special care settings etc... (maybe also allow these extras to be built into existing ovens?)

Oven exterior design that matches rest of the kitchen. Or that can be changed over time.  
 the front of the oven exists out of mosaic tiles which the user can replace/ rearrange any time

timeless design, as little buttons as possible, neutral colors  
 Mirror front glass: only transparent when oven is turned on  
 possibility to change buttons

### DESIGN STRATEGY SOCIAL

THE DESIGN STRATEGY SOCIAL SHOULD BE CONSIDERED AS AN OVERALL DESIGN STRATEGY THAT ENCOMPASSES ALL DESIGN STRATEGIES THAT ARE RELATED TO THE DESIGN OF THE PRODUCT.

**FUNCTIONAL**

### DESIGN STRATEGY CHANGE

THE DESIGN STRATEGY CHANGE SHOULD BE CONSIDERED AS AN OVERALL DESIGN STRATEGY THAT ENCOMPASSES ALL DESIGN STRATEGIES THAT ARE RELATED TO THE DESIGN OF THE PRODUCT.

**EMOTIONAL**

# G.2 | RESULTS CREATIVE SESSION PRODUCT CARE

## IDEAS ON WHAT THE INTERACTION SHOULD BRING FORTH

### Relationship

- oven enables/helps the user to bake wonderful things

### Team effort

- Show that cleaning and product care is team effort: the oven does something, and you help each other.
- Oven is your team mate in cooking
- message on screen: 'alsjeblieft, je pizza is klaar' -> 'my part is done, now you can finish the cake'

### Positive emotions

- It should be fun to clean your oven, like you would show your toddlers that it is fun to clean after playing
- clean function is fun-> shows cool animation
- Show more emotions
- Yay FUN
- An empty water tray is a happy tray
- Emptying is satisfying
- Carrying tray should be satisfying
- positive emotions to clean product
- care/cleaning task -> yippeee

### Emphasize hygiene

- Hygiene! If you clean, you can have hygiene when cooking
- Cooking for allergic people -> hygiene care is important
- empty water tray means you can eat healthy

## IDEAS ON HOW A SMART/CONNECTED OVEN DOES PRODUCT CARE

### Self cleaning

- Self cleaning function on oven
- Self cleaning oven
- Steam clean
- Pyrolyse
- Oven cleans itself automatically
- use steam for food, also cleans oven?
- Cleaning robot -> going over oven
- dishwasher in oven -> cleans oven automatically



### Smart oven starts steamclean when temperature is right

- Indication if oven is too hot (to use steam clean) on screen.

### Automatic software updates

- Automatic software updates which benefit the user

### Main screen changes after frequent use of functions

- Favourites on main screen. Automatically after use.

## IDEAS ON HOW DESIGN CAN PREVENT THE NEED FOR PRODUCT CARE

### Stains are part of the pattern

- Cavity-floor with pattern includng stains and splatters



### Stain resistand coating

- Stain resistant coating
- new coating in cavity
- Stainless material. surface - no stain ever lasts



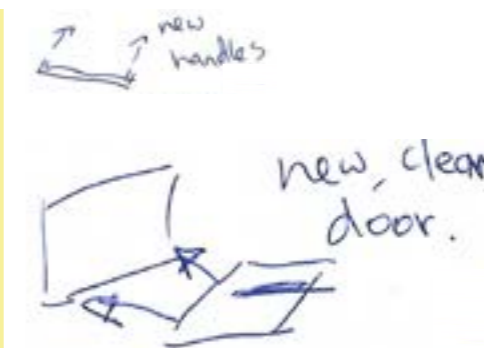
### Protective cover

- Cover on oven against scratching
- layer that you can peel off
- Folie dat gebruiker zelf kan vervangen -> voor glazen deur of voor bodem van cavity



### Repairability and modularity

- magnet front
- new handles. personalisable
- new, clean door
- possibility to change buttons
- Provide repairability options (modularity of oven parts that break most often)
- extra parts. Sluiging reservoir vervangen



### LEGEND

- Towards concept 1
- Towards concept 2
- Towards concept 3

# IDEAS ON HOW THE OVEN POINTS OUT PRODUCT CARE...

## ...WITH MECHANICAL MOVEMENT

### Oven shuts down

- Oven stops working if care is needed. refuses to work until it is done.
- Oven shuts down unless there is something done

### Door opens/closes automatically

- Door opens automatically
- door opens to draw attention
- HO STOP ; oven houdt persoon tegen met openslaande deur
- Oven door opens slowly by itself, to prevent being 'smacked' closed



### Water reservoir comes out if not empty or turned on

- water tray compartment opens automatically
- Push water reservoir out when still water in it.
- Oven has sensor for water in tray. Alarms the user to empty it.
- Water reservoir comes out. to be cleaned/emptied.

### Button attracts attention

- Thing moving out when task is not done
- Button pops out attracting attention; push back because it is annoying



## ...BY USING SOUND AND LIGHT

### Use colour in light

- Use colour for when care is needed
- Green ambient light; replicate agea growth
- red -> alarming colour
- Purple -> is an annoying colour

### Sound to alert

- BEEP ; ATTENTION
- Gives notifications with sounds -> later sounds will be enough info to users to know what to do
- Water flowing sound and blue ambient light when it needs to be rinsed
- Sounds that show positive or negative
- Sound turns ugly when something needs to be done.

### Use icons and flashing lights and alarms

- Signals/alarms with icons like in cars
- flashlights and alarms
- Button that lights up showing you need to do something
- icon specific for a type of cleaning/product care lights up
- Light showing that the oven needs to be descaled/decalcified



## ...BY SHOWING ON DISPLAY

### Oven indicates need for cleaning

- Indicate need for cleaning on screen
- Flashing screen - saying you need to do something
- Oven indicates when repair/maintenance is needed, where the problem is, and contact details of repair services.
- There should be cleaning on the main screen
- oven lets you know when it's time to clean it
- Care task info when you take out the dish/dinner -> keep it there till other button pressed
- Use icons. use clear visual instructions -> minimum tekst.
- clear instructions on screen, reminding you that you have to do small little things often
- Use screen to inform
- Smart oven -> know when to show user it has to be done.
- Learn routines of user
- taking food out -> clean. 'Wipe after use'

### Mold water

- After times the oven shows patterns of (fake) mold creeping down every few days reminding you that it is unsanitary after a while.
- Fake mold 'growing' on screen. Light showing fake mold in cavity
- Screen is visually 'overflowing with water'. Virtual fish swim in screen
- If they do not have product care, the UI can 'slowly break down' or show rust.



### Smiley character emotions

- Oven has a face with emotions
- create a smiley character that reacts to different situations
- create a smiley character that reacts to condition of the oven (sad face when it's dirty)

### Use aggressive light to show stains

- White cavity to show stains
- Light needed to clean the oven. To see all stains -> aggressive light to show stains
- Two hands needed for cleaning, extra hand for light?
- User has to empty the water reservoir: have visual cue on the outside whether there is still water in it or not.
- Show water is there (in water reservoir)
- Transparent window (water reservoir)



## OTHER

### Nudges into cleaning

- Nudges in design help to clean
- form nudges into the movement of cleaning/emptying



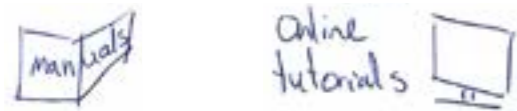
### Parts & materials

- sign inside of the oven that says 'clean me'
- mirror glass; only transparent when oven is turned on.
- use soft materials, clean gently.

# USER LEARNS TO PERFORM PRODUCT CARE (OVEN TEACHES)

## Ability and knowledge to user

- Give good cleaning supplies with oven
- Have cleaning tools close to oven
- tool om gaatjes te bedekken wanneer je met zwaar geschut gaat schoonmaken
- Manuals
- Sticker on oven with contact info in case of issues
- Show small maintenance tasks in manual or tutorials
- product care tips always available on the touchscreen
- NFC chip net als senseo apparaat in afstudeer opdracht (van Jozine Bouma)
- Online tutorials
- Instructons with guidance on the screen -> with clean visuals
- Instruction videos -> access them on screen



## Tutorial mode first period of use

- First use -> first month of use shows more instructions. Later less. Instruct what to do. 'Tutorial mode'.

## Light

- Keep light in oven on after use

## Use light to indicate where care is needed

- Moving flashing lights to show where care is needed
- highlight parts that need cleaning
- spotlight showing what should be done.
- Use ambient light to show where you have to clean and what to do
- Blue ambient light around water tray
- Ambient light around door



# EXPERIENCE THE RESULT OF PRODUCT CARE

## Reward for product care

- reward yourself with the fun thing
- > when this is done, you can bake cookies!
- Rewards for product care is a clean oven
- get a reward for product care
- reward on screen
- unlock achievements by using oven
- > certain images for stand-by-screen



## Value

- Show how much value is decreased every use and gained every cleaning
- inform of decrease in value
- inform user on consequences
- gives you feedback on the quality of the cleaning and the effect it has on the logevity of the product.
- Challenge to increase the value (just like in the ZOE)
- inform on consequences of product care: product value is based on use.

## Consequences of not cleaning

- Negative emotions
- Frustration if not cleaned.
- Not emptying the water -> water goes green.
- Postponing emptying the water basin, makes it possible for algea to grow in there and it to go green.
- Posponing it makes the oven stink

# WAYS AND MOMENTS TO CUSTOMIZE YOUR OVEN

## Customize before/at purchase

- ATAG gives options to customize before purchase. To match their identity or preferences.
- Possibility to add in extras such as food thermometer, maybe delayed cooking (put your pizza in in the morning so that it's ready after work) Special cake settings etc (maybe also allow the extras to be built into existing ovens?)
- let users decide on height of rack
- You have to pick a cleaning programme when buying the oven. Forces/teachers user to think about it.



## Design of exterior of oven

- Oven exterior design that matches rest of the kitchen. or that can be changed over time.
- The front of the oven exists out of mosaic tiles which the user can replace/rearrange any time
- Timeless design.
- Ass little buttons as possible, neutral colours

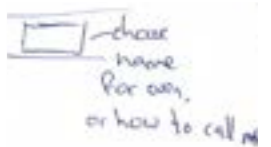
## Physical customization by user, during use

- Whiteboard -> write on it.
- Stickers with motivational text related to product care, or funny pun.
- Magnets
- Oven contains memories; stickers, magnets.
- Sticker, like a car sticker, on the oven, small customization



## User can manually change UI

- Choose ambient light
- choose colour of screen
- choose what should be on front screen
- choose name for oven, or how to call me
- Make it more personal by having to authenticate it.
- Ask for: your name; what its name is; setting your own background colour for the touchscreen; setting your own menu style
- oven knows your name.



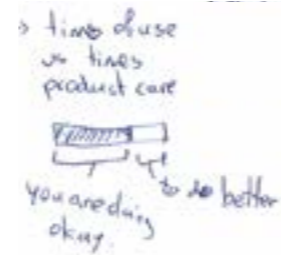
# OVEN KEEPS MEMORY OF ACTIVITIES AND MORE

## User's personal recipes on screen

- Make your oven into your cookbook
- change menu preferences and order
- load recipes, throw recipes
- Make the oven smart so you can see the recipes with an app
- user can add recipes to the oven's front, either digitally on screen, or maybe funny tags with a picture
- Add nfc chip to send your own recipes to the oven from your phone so you can later download your own recipe via the oven.

## Memory in cleaning

- show stats
- user gets feedback on use
- memory last time you cleaned it
- stats of use of clean function
- track uses and cleaning moments
- > visual calendar when is needed agains
- times of use vs. times of product care. -> You are doing okay 70% -> 30% to do better.

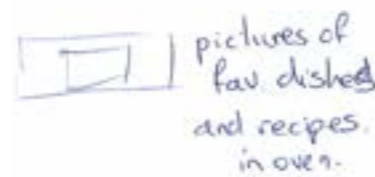


## Memory of last dishes

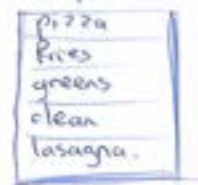
- recipes say also about cleaning
- oven menu preferences change depending on what you use
- Memory: last few dishes
- show last few activities
- Let front of the oven show visuals of how he/she used the oven: e.g. fish is blue, steak is red, veggies is green. -> a coloured block is added with every use of the oven. Whole front of the oven is a screen.

## Create an emotional bond with the oven

- pictures of fav. dishes and recipes in oven. -> log of all cakes -> connected to insta, where pictures of cakes are shared -> when stand-by, own pictures are shown.
- Later: show achievements from what the user made a year ago.
- You can upload family dinner pictures to door of the oven. The whole front of the oven is a screen.
- Saving baking times in your own menu. At 3D printer you can see what you made before and you can print it again, same could apply for your oven.



show stats of best activities.



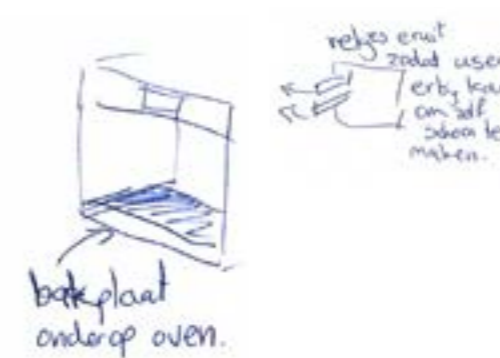
## Give oven a history of other use cycles

- Give insights about where the oven has been. Not only a story, also more reliable.
- Give pictures of the earlier use of the oven.
- 'I baked this amazing cake with this oven and this recipe.'
- Focus on what is possible with the oven instead of that someone used it.
- Example: Gordon Ramsay (could also be a normal person) cooked for 4yrs with this oven and this oven helped him to perfect this book (or this kind of cake).
- Focus on the fact that it has been reliable for all these years and it still is.

# USER CLEANS AND REPLACES PARTS

## User does repair

- Send through post NL. DIY installing.
- Easy take out of the oven. returned when fixed.
- User can take out the oven with own tools.



bakplaat onderop oven.

## Take out parts to clean (behind) them

- Allow for parts to be taken out for cleaning
- rekjes eruit zodat user erbij kan om zelf schoon te maken
- Racks can be taken out to be put in the dishwasher and so you can clean walls.
- Take tray out to empty like with a toaster or a bird cage
- Provide protective layer for the oven, that they can put in the dishwasher
- Bakplaat onderin oven



racks can be taken out to be bakin.

# PEERS AND COMMUNITIES OF USERS

## ATAG community

- ATAG hackers -> consumers can share ideas and inspiration on how to alter their CIK (Circular kitchen) to make them unique and fit their desires.
- ATAG community -> share cleaning tips and product care tips
- MyATAG -> sharing secret cleaning detergent 'recipes'

## Community

- Show pictures of other people's oven
- graphs and stats comparing your use to others; "you can clean more." "You forgot to clean more frequently than others"



share baking

## Use together

- Clean together
- Clean together with your child -> teach your child to clean and cook/bake
- Share oven with neighbours
- Share baking
- encourage to invite others to enjoy cooking/baking
- oven enables users to cook for friends



share oven

## Cleaning is a so-lo-task

- Cleaning should be done alone



## ATAG DOES PRODUCT CARE, OR USE THE ATAG BRAND

### Use brand to add value

- Brand the oven really well, connect high level chefs to the oven to make the user feel proud/pride and let the user take care of the oven.
- Instead of changing the oven, let the brand ATAG be connected to inspiring cooking chefs/classes/books, to indirectly link this value to their equipment

### Birth certificate/passport of oven

- Give a birth certificate and its life achievements.
- Here you can see it being made at ATAG
- Here it turned on for the first time
- Also gives the idea that you are not the first one using it, but you can still have experiences of the person using it for the first time.

### ATAG takes over care and maintenance

- ATAG takes over repair/maintenance, the user pays per month for a functioning appliance
- ATAG taking responsibility; after removing the kitchen, they offer a reduction on your new kitchen if you bring back the old oven.

### Mandatory check-up

- Check-up by professional or maintenance fuy who placed your oven
- > be judged that you are doing it wrong
- Mandatory check-up

# G.3 | RESULTS BRAINSTORM RETURNING THE OVEN TO ATAG

## CASHBACK, REWARDS AND MANUAL

### Cashback and Warranty

- EUR money
- Cash back. Zit bij garantie
- Garantie verlopen? Notificatie dat je de oven terug kunt sturen
- MOMENT
- Deadline voor garantie of voor goedkopere reparatie
- Op het moment dat die stuk gaat

### Share rewards with others

- To stimulate (future) users to hand in their devices, propose multiple mutual benefits to users who involve family and friends in the reward programme.
- The concept mainly focused on the compensation factors and making the collection effortless,

### Manual

- Manual
- Handleiding hoe te demonteren
- Trigger

€ money



MANUAL

## INFORMATION AND SUPPORT

### Buying a new oven

- Tell them when they buy the oven / a new oven
- Als je op het punt staat een nieuwe oven te kopen
- Bij aankoop informeren
- Voordat je een weekend weggaat of op vakantie, zodat je er geen last meer van hebt.
- Stekker eruit -> eerst nog pop-up over end-of-life disposal
- ATAG Circulaire oven. Lever oude oven in.

### Product relationship counsellor

- acknowledge the end of the use cycle at the purchase.
- Soothing separation anxiety for returning the old appliance with a strong relationship.
- Poppelaar (2020) mentions the idea of a "product relationship counsellor" as part of an after service for handing in a used phone.
- Counselling and after service: data backup, appliance recycle options, appliance return, general support.

### LEGEND

Ideas from brainstorm with CDL students

Ideas from conversations with company mentors

Ideas based on an idea in Poppelaar (2020)



## EXPERIENCE AND REMINISCE

### Experience

- coole ervaring met terugbrengen
- afscheidsritueel
- afscheidsceremonie
- Ophalen is een ervaring
- speciale trolley voor coole ervaring

### Reminiscence and look back

- By enabling to reminisce and look back at old appliances as well as their digital content at the time, designers can play on the factor of psychological compensation.



### Off-boarding service

- Guide to a respectful goodbye
  - a "ceremony to say goodbye" to give the new appliance a good start by cleaning the digital content from the old oven before putting it "into a new body".
1. Clean up your appliance's digital content
  2. Make a back-up and transfer your data to your new appliance for a fresh start
  3. Reminiscence on the time spent with your old appliance through visual memories
  4. Thank your old appliance, erase data and place it in the care of ATAG.

## PROMOTION

### Promotion

- Lottery -> give the chance to win a brand new oven from ATAG
- Promotion: hand in your oven, together with kitchen-retailers.



## CONNECTED OVEN

### Connected oven

Je kunt een uitgangspunt hebben als de circulaire oven ook een connected oven is. Stekker eruit -> melding in myATAG over de EoL van de oven.

### Sign oven up for return through screen

- Servicemonteur bellen -> it in menu
- op scherm aanmelden voor return. Kost plek voor functies, dus misschien niet.
- Online aanmelden voor re-shipping
- User can call service to pick it up. bol.com-like return service.

## IDEAS ON PICK-UP AND SHIPPING

### ATAG shipping box

Dus bewoner meldt de oven aan, ATAG doet de rest. ATAG-> verzenddoos. Koelkast/oven/wasmachine. Soort sok, of universele vouwbare doos.

### Handling should be done by professional -> pick up at home

Gebruikers kunnen iemand bellen om het op te halen. Het maakt ook al uit hoe je het overhandigt. Dat kan voorzichtig, maar anderen doen het hardhandig.

### Re-boxing experience

- making the "re-boxing" of the old appliance a memorable experience (a deliberate opposite to "unboxing").



### Re-Pack

- Samenwerking met Re-pack

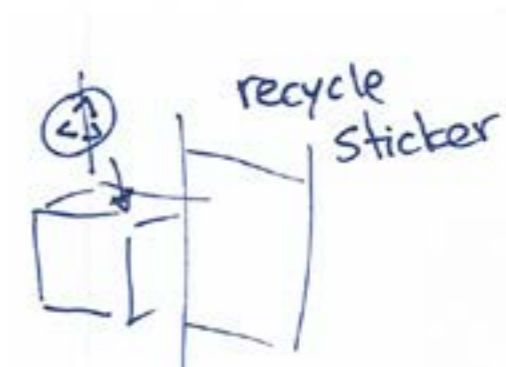
## SELF-DIAGNOSTICS

### Self-diagnosis

- Building in a self-diagnosis system to evaluate the performance of the device and help sell it after use.
- It combines both the factors of financial compensation and effortless collection.



## STICKER OR TEXT IN/ON OVEN



### Timecapsule

- Something hidden inside cabinet, on the housing of oven, like a treasure

### Text in/on oven

- Schrijf het op de oven zodat mensen het onthouden: "Hand in the oven when it is done."
- "Wist je dat je deze oven in kunt leveren?"
- recycle sticker op de behuizing van de oven
- Warning stickers
- Positieve berichten aan binnenkant
- 'property of ATAG'. aan binnenkant van oven. Mensen triggered dat het doodnormaal is om hem terug te brengen.
- belonging -> sticker
- "X% van andere gebruikers leveren het in" -> "X% wordt gerecycled"



## OTHER

### Other

- Levels van geschiktheid
- iemand die hem ophaalt -> Tijdelijk vervangende oven
- Irritante piepgeluidjes; meldingen op scherm
- weggeven aan de volgende bewoner
- Wat heb je nodig? bon? garantiebewijs?



# G.4 | IDEAS COMBINED INTO CONCEPTS

## CONCEPT 1

### User can manually change UI

- Choose ambient light
- choose colour of screen
- choose what should be on front screen
- choose name for oven, or how to call me
- Make it more personal by having to authenticate it.

Ask for: your name; what its name is; setting your own background colour for the touchscreen; setting your own menu style

- oven knows your name.

### Personal communication

- Persoonlijke berichten; Hello Lisa; personal touch; I've got a new dish for you;
- Praten met je oven; complimenten geven;
- oven zegt: "I love you. You look great" - oven terug laten houden van gebruiker;
- Oven krijgt ook credit voor baksels: Mensen laten beseffen dat ze dankzij hun oven altijd geweldige baksels maken;

### Smiley character emotions

- Oven has a face with emotions
- create a smiley character that reacts to different situations
- create a smiley character that reacts to condition of the oven (sad face when it's dirty)

### Create an emotional bond with the oven

- pictures of fav. dishes and recipes in oven. -> log of all cakes -> connected to insta, where pictures of cakes are shared -> when stand-by, own pictures are shown.
- Later: show achievements from what the user made a year ago.
- You can upload family dinner pictures to door of the oven. The whole front of the oven is a screen.
- Saving baking times in your own meny. At 3D printer you can see what you made before and you can print it again, same could apply for your oven.

### Use the brand image

- ATAG keurmerk, 8 jaar garantie, super degelijk product; Kwaliteitskeurmerk;
- Reclame;
- Sympathiek merk;

### Off-boarding service

- Guide to a respectful goodbye
- a "ceremony to say goodbye" to give the new appliance a good start by cleaning the digital content from the old oven before putting it "into a new body".

  1. Clean up your appliance's digital content
  2. Make a back-up and transfer your data to your new appliance for a fresh start
  3. Reminisce on the time spent with your old appliance through visual memories
  4. Thank your old appliance, erase data and place it in the care of ATAG.

### Product relationship counsellor

- acknowledge the end of the use cycle at the purchase.
- Soothing separation anxiety for returning the old appliance with a strong relationship.
- Poppelaar (2020) mentions the idea of a "product relationship counsellor" as part of an after service for handing in a used phone.
- Counselling and after service:
  - data backup,
  - appliance recycle options,
  - appliance return,
  - general support.

## LEGEND

From product care

From returning to ATAG


From refurbishment brainstorm

## CONCEPT 2


### Use light to indicate where care is needed

- Moving flashing lights to show where care is needed
- highlight parts that need cleaning
- spotlight showing what should be done.
- Use ambient light to show where you have to clean and what to do
- Blue ambient light around water tray
- Ambient light around door

### Use display to guide users

-  - Oven display zegt: "Clean me!"- stappen om te doorlopen getoond in de display. Gebaseerd op bakuren; Oven die zegt: "Maak me schoon."
- Subtiele nudges, in user interface. (Beter voor smaak, even snel doen met tips en tricks);
- Timing van schoonmaak nudge is belangrijk; Na een bepaalde tijd na het koken/bakken geeft de oven een opdracht voor schoonmaken.;
- Oven op slot; kunt hem niet gebruiken;
- Spel ervan maken: 'Zorg goed voor je oven, dan dit...'; Lol krijgen in schoonmaken, en lol houden;
- Gewoontje: doekje aanrecht -> meteen oven;
- Netjes schoonmaken -> Gratis reinigings set terug krijgen.

### Return when placing new oven

-  - Bij koop nieuwe, oude automatisch eruit; Ophaalservice van ATAG; Aan huis ophalen;

### Text in/on oven

- Schrijf het op de oven zodat mensen het onthouden: "Hand in the oven when it is done."
- "Wist je dat je deze oven in kunt leveren?"
- recycle sticker op de behuizing van de oven
- Warning stickers
- Positieve berichten aan binnenkant
- 'property of ATAG'. aan binnenkant van oven. Mensen triggered dat het doodnormaal is om hem terug te brengen.
- beloning -> sticker
- "X% van andere gebruikers leveren het in" -> "X% wordt gerecycled"

### Memory in cleaning

- show stats
- user gets feedback on use
- memory last time you cleaned it
- stats of use of clean function
- track uses and cleaning moments
- > visual calendar when is needed agains
- times of use vs. times of product care. -> You are doing okay 70% -> 30% to do better.

### Button attracts attention

- Thing moving out when task is not done
- Button pops out attracting attention; push back because it is annoying

### stekker

- Stekker eruit -> eerst nog pop-up over end-of-life disposal

# CONCEPT 3

## Oven indicates need for cleaning

- Indicate need for cleaning on screen
- Flashing screen - saying you need to do something
- Oven indicates when repair/maintenance is needed, where the problem is, and contact details of repair services.
- There should be cleaning on the main screen
- oven lets you know when it's time to clean it
- Care task info when you take out the dish/dinner -> keep it there till other button pressed
- Use icons. use clear visual instructions -> minimum tekst.
- clear instructions on screen, reminding you that you have to do small little things often
- Use screen to inform
- Smart oven -> know when to show user it has to be done.
- Learn routines of user
- taking food out -> clean. 'Wipe after use'

## Ability and knowledge to user

- Give good cleaning supplies with oven
- Have cleaning tools close to oven
- tool om gaatjes te bedekken wanneer je met zwaar geschut gaat schoonmaken
- Manuals
- Sticker on oven with contact info in case of issues
- Show small maintenance tasks in manual or tutorials
- product care tips always available on the touchscreen
- NFC chip net als senseo apparaat in afstudeer opdracht (van Jozine Bouma)
- Online tutorials
- Instructons with guidance on the screen -> with clean visuals
- Instruction videos -> access them on screen

## Buy-back

- Financiële incentive;
- Terugkopen; statiegeld/borg wat je terugkrijgt;
- Bij inlevering oude oven korting geven (op nieuw product / op volgende ATAG oven / bij nieuwe keuken/oven);
- Garantie: Binnen garantie terugkopen;
- Terugroep actie;
- Verplichten, anders boete/deurwaarder;

## Use aggressive light to show stains

- White cavity to show stains
- Light needed to clean the oven. To see all stains
- > aggressive light to show stains
- Two hands needed for cleaning, extra hand for light?
- User has to empty the water reservoir: have visual cue on the outside whether there is still water in it or not.
- Show water is there (in water reservoir)
- Transparent window (water reservoir)

## Educate users

- Handleiding: Hoe maak ik mijn oven schoon;
- Instructiefilmpje op youtube;

## Light

- Keep light in oven on after use

## Tutorial mode first period of use

- First use -> first month of use shows more instructions. Later less. Instruct what to do. 'Tutorial mode'.

## Smart oven starts steamclean when temperature is right

- Indication if oven is too hot (to use steam clean) on screen.

## Self-diagnosis

- Building in a self-diagnosis system to evaluate the performance of the device and help sell it after use.
- It combines both the factors of financial compensation and effortless collection.

## Amount of money back depends on state of the oven

- Netjes klasse:
  - A - 500eur,
  - B - 300eur,
  - C - 50eur;

# G.5 | FEEDBACK ON THE CONCEPTS IN MIRO

## DISCUSSION ON THE TOPICS THE DIFFERENT CONCEPTS REPRESENT

### Building a bond with your oven?

Leuk dat je een band creeert, zodat mensen beter met hun oven omgaan.	Ik geloof ik hechting en vertrouwen, dat je de oven ook beter onderhoudt.	I like the more indirect approach to taking care of the product.
Zonder credits, maar gewoon al en toe contact te hebben en nuttige informatie te sturen, bijv. over schoonmaken, order je ook hechting van het product. Mensen worden dan geticht aan het product en raken overtuigd dat het goed is.	Als de oven beter mensen helpt in het dagelijkse koopgedrag, hecht je meer waarde aan het apparaat. Dat heeft niet te maken met het feit dat die oven een naam heeft. Hoe meer het apparaat mij helpt en hoe meer ik er mee kan, hoe belangrijker ik het vind om hem goed te onderhouden.	Vergezocht. Veel moeite voor een oven.
Bezadenen (van de klant) buiten het product om, helpt de waarde waarden. Filmjes, over het onderhouden, of dat mensen over jouw product aan het praten zijn, dat helpt om de merkwaarde en heuring van je product te verhogen, dus het hoeft niet alleen in het product zelf te zitten.	If I can show it off, I can get more attached to it.	Ik denk dat het meer gaat over vertrouwen dan een band. Stel wij beloven dat een toestel minimaal tien jaar op de markt is, dan moeten we daar service voor bieden, dan krijg je vertrouwen.

### About designing the End of Life

Daarin is de rol naar het product naartoe gaat belangrijker, als het bedrijf het zo belangrijk vindt, dan moeten we de service eromheen gaan bieden, dat je die handelingen van installeren, repareren, reviseren, gaan helemaal naar het bedrijf.	I.p.v. het onderhoud, is de grootste winst voor circulariteit denk ik in de motivatie om de oven vervolgens weer af te leveren, daar is de grootste win als het gaat om circulariteit.	Less is more. Why would I want to learn a different way of interacting with the oven again. Why not just design for the end of life.
Als het bedrijf het zo belangrijk vindt, dan verwacht ik ook wel de service eromheen en dienen ze mij er niet mee lastig te vallen.	Recyclen doen ze maar bij de stort waar ik hem inlever. Als ik iets wil weten dan zoek ik het zelf wel op (digitaal)	Gaat het over het langer gebruiken, of over wat je ermee doet als die kapot is? Vaak is afscheid heel abrupt. Dat die kapotgaat wordt niet aangekondigd.
Laats optie Circulariteit kan gehandeld worden op het moment dat het een leasemodel wordt aangeboden. Zijn er een aantal voorwaarden om deze oven in de juiste conditie te houden. waarbij dient de communicatie naar de eindgebruiker op orde te zijn.	het is ook een punt dat je dingen niet naar de sloep moet brengen. Om die rol als bedrijf is om mensen daarop attent te maken.	In sommige industrieën worden dingen in apparaten gemeten en die geven aan dat een onderdeel vervangen moet worden.

### Reason for maintenance is good to communicate

Denk wel dat het 'waartoe dient iets' uitleggen van toegevoegde waarde kan zijn, zodat klant het belang ervan inziet (dat het bijdraagt aan langer behoud, etc).	Schoonmaken is essentieel maar daarbij is zeker de waarom relevant en de juiste uitleg hoe dit te doen. Dus die uitleg moet je geven. Op dit moment moet ik mijn koffiemachine af waken ontsteken en vervangen filters van de afzuigkap vervangen. Omdat er geen urgentie is ook ik er niets mee!
Concept 3. Ik mis vaak, waarom moet ik het doen.	

### About cleaning the oven

Schoonmaken kan wel een verandering zijn om de oven een langere levensduur te geven, en ook voor de gebruiker fijn om een schone oven te hebben.	Het schoonmaken is een super belangrijk aspect (ook fijn voor de gebruiker zelf). Het moment van subtiel melding x minuten nadat de oven klaar zelf kunnen instellen is fijn en voorkomt het vergeten.
Concept 2: waarde behoud van product. Beste optie voor levensduur verlenging of 2e leven.	We zien nu op dit moment dat een stuk educatie in "gebruik en onderhoud" belangrijk zijn voor het praktische gebruik en behoud van apparatuur.
Schoonmaak op gekozen programma, Idris/Lukas/Saar hebben allemaal baat bij een stukje communicatie/advies op het moment dat ze de oven gebruikt hebben.	

### LEGEND

Pros by ATAG	Pros by students
Cons by ATAG	Cons by students
Ideas by ATAG	Ideas by students

# FEEDBACK ON CONCEPT 1 - BUILD A BOND

Oven asks Saar to give it a name



Oven gives suggestions



Saar enters a name that suits her



Name is used in following scenarios



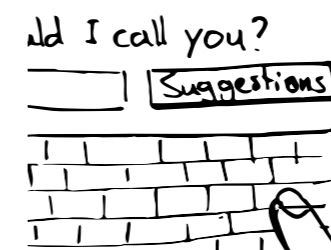
## Giving a name to the oven

<p>Naamgeving van de oven is al geïntegreerd in de app, dit gelijk op het toestel kunnen doen is een leuke toevoeging.</p>	<p>Je oven een naam geven gebeurt nu ook in de app.</p>	<p>I like the part where the user gives their name to the oven, because that adds a layer of personalization.</p>
<p>Ik zou de naamgeving via de app doen, niet via de oven.</p>	<p>Naam geven is leuk, maar het is geen gamechanger.</p>	<p>Concept 1: leuke toevoeging maar beperkt toepasbaar voor hergebruik.</p>
<p>Oven een naam even heb ik niet veel mee. Ik zie het meteen als een tweede huisdier. Ik haak daar ook af.</p>	<p>Concept 1 zou ik bij de naam geven alvast een suggestie (niet menselijk) laten zien die je zelf kan aanpassen als je dat zou willen.</p>	<p>Misschien beter als de oven al een naam heeft, net als Siri of Alexa</p>
<p>Kun je de naamgeving verbinden met Alexa/Siri. Spraakgestuurd.</p>	<p>Naamgeving is essentieel in een connected kitchen om de specifieke appliance te identificeren</p>	

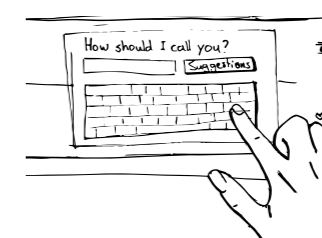
Oven asks Saar what to call her



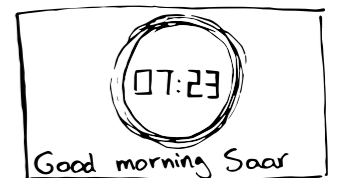
Oven gives suggestions



Saar enters a name that suits her



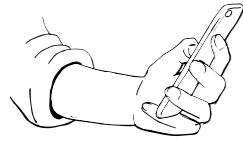
Name is used in following scenarios



## Letting the oven call you a name

<p>Leuk dat de oven je aanspreekt</p>	<p>dat je wordt genoemd, 'good morning'</p>
<p>Houd je wel rekening met meerdere gebruikers in een huishouden?</p>	<p>I still like the fact that we can add the name of the user. That can be profiles, based on the people using it. Then for different in the family would tend to use the product in different ways, if the product can learn that, that would create attachment. When the appliance learns the routines of the users.</p>

Saar uses the app on her phone



Uploads a few pictures



Choose setting when to show them



Saar can choose a background of the stand-by screen, or the timer.

Oven shows the pictures



Saar feels happy with the oven



### Uploading a picture to the screen

Foto uploaden is leuk. Net als een foto die ik op de achtergrond van het dashboard van mijn moeders auto heb gezet.

Tech-geeks vinden het misschien wel leuk

foto uploaden zou ik ook niet doen, ik ben niet zo van de digitale fotolijstjes. Ik vind de fotos een beetje vergezocht.

Ik zou één foto doen. Net als de achtergrond op je telefoon. Of moet het een digitaal fotolijstje zijn?

Leuk als de suggesties geeft voor andere dingen doen. Die lijken op wat je hebt gedaan. Dit is misschien logischer via de app. Ook fijn als je oven weet wat voor schalen en pannen je hebt.

Heb ook wat standaard opties, zodat je iets kunt kiezen dat bij je keuken past.

### Other new ideas deriving from this concept

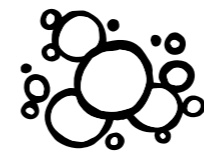
Kun je klanten duidelijk maken wat er gedaan is om een product te bouwen? Meer inzicht in productie en logistieke proces.

Timers kun je veel mee. Mensen kunnen zelf meer ques instellen, hoe veel ze willen zien over hoe ver de oven is.

Misschien kun je de herinneringen ook gebruiken tijdens de levensfase. Inspiratie door wat je eerder hebt gedaan. Herinnering van tijd geleden.

Scenario: End of Product life Guide to a respectful good-bye

Clean up appliances digital content



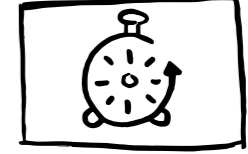
Make a back-up to transfer the data to the new appliance for a fresh start



Reminisce on the time spent with the old appliance through visual memories.



Thank your old appliance, erase data and place it in the care of ATAG



### Saying goodbye

heeft waardig einde

Stel je bent gehecht aan je apparaat, waarom lever je hem dan in.

### Reminisce on the time spent

memories leuk. Grappig.

Ik vind de memories wat far-fetched

For concept 1 I like the reminisce part. I would like to see how many pizzas I made in the oven, etc.

Herinneringen. Dat is wel leuk om wel even te zien. Niet super belangrijk, en de oven is dan al klaar voor vertrek. Het trigger je niet om de oven netjes vanwel te zeggen. Voeg niets toe voor het proces.

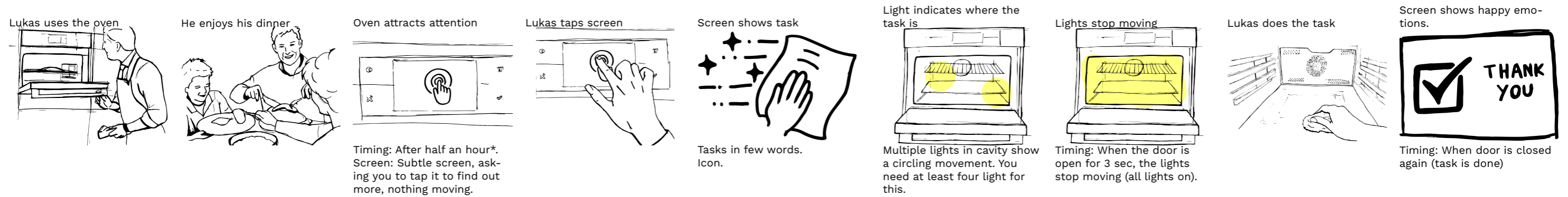
### Cloud

App slaat de gegevens toch op, niet de oven. Dus het is sowieso in de cloud.

Dit zou een service van ATAG moeten zijn. Dat als je je oven vervangt, de gegevens worden overgezet.



# FEEDBACK ON CONCEPT 2 - GUIDING THE USER



## Reminders of cleaning tasks

- De hints zijn makkelijk te gebruiken voor diverse gebruikers.
- Ik zou het mooi vinden als de herinnering wordt gegeven op het moment dat ik daar behoefte aan heb. Geen gelukje, maar licht aan in de oven, of het licht zachtjes pulseert. Of iets op het scherm. Als je het niet doet is het na een half uur weer weg.
- 2 zie ik wel zitten. Na een half uurtje melding is wel nice.
- Non-intrusive. Fijn dat je op een subtiele manier een herinnering krijgt
- Handig. Praktisch. Als de oven zegt dat je 'alleen dit plekje' even moet doen, is fijn.
- irritatie...te veel sturen kan juist bemoeierig overkomen.

## Use of light as visual cues

- Lichtjes wel handig
- Licht is ook leuk
- Ik zou niet meer onderdelen toevoegen, maar gebruik maken van wat er is. Reservoir aanlichten is niet nodig, kun je ook in het scherm doen.

## User should be able to skip things

- Denk dat de gebruiker wel elementen moet kunnen overslaan.
- Moet de herinnering wel moeten kunnen dismissen/skippen
- Optie de herinnering te negeren: skip / remind me later / Dont remind me anymore. -> Warning: this may affect the amount of money you will get back on your oven.
- Je moet de melding ook wel weg kunnen klikken

## Other new ideas deriving from this concept

- Kleur in de oven, dat het licht in de cavity aangeeft hoe ver de oven is.
- oven laat een icoontje zien, en in de app kun je zien wat het betekent en wat je moet doen
- disco-lichten in de oven

## Users choose how they are guided

- Ieder gebruik is anders, dus laat de gebruiker kiezen wanneer en hoe die getriggerd wil worden.
- Misschien kan je instellen welke dingen je wilt. Net als vinkjes of tijd instellen wanneer je herinneringen wilt.

Scenario:  
End of Product life



When power is off, screen shows user where to put the oven for refurbishment.

Also text/sticker in or on the oven.  
[about increasing triggers]

### Multiple triggers

The placing of the triggers, triggers can be placed in multiple places, which increases the likelihood that it sees in one place or the other. Also the timing with when the power is turned off.

### Stickers on the outside of the oven

De sticker is kansrijk, zie je niet snel over het hoofd.

Makes sense to put it in the place where you don't see it when it is plugged in.

De sticker bovenop doen

Ik zou de sticker er idd op doen.

You can just put a QR code for refurbishment.

### Show image when power is unplugged

Niet echt zichtbaar voor gebruiker als je de stekker eruit haalt.  
'wat stond er eigenlijk?'

When the power turns off—there are also other scenarios where the power is turned off, and then you see the screen too, but the oven should not be sent to refurbishment. I hope it does not give the impression that the oven is no longer functioning and needs to be put for refurbishment. So it depends on how the message is.

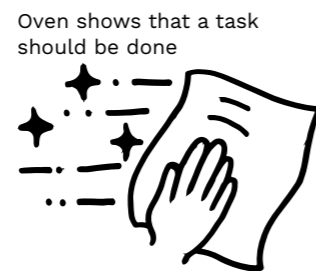
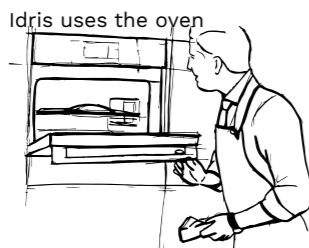
What if I had not unplugged the oven yet, but am thinking about refurbishing.

# FEEDBACK ON CONCEPT 3 - TEACHING THE USER

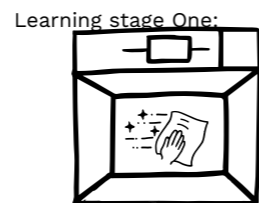
Oven tracks activities and use. And knows when certain activities should be done.

Idris

Scenario:  
User has to dry or clean the inside of the cavity

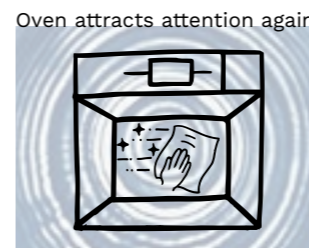


Timing:  
When oven programme ends, door open and closed, then after 3 seconds no new programme has started: show screen

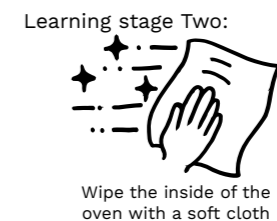


Wipe the inside of the oven with a soft cloth so no stains will burn in

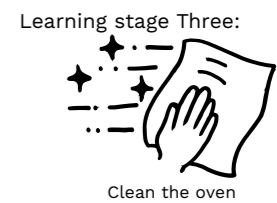
Screen shows in detail what needs to be done, where and why.



Timing: After half an hour\*. Screen: Background of task starts moving, in calm, light-wave-like movements. Different 'motion'/colour combination for every task.



Learning stage Two starts after the first month of use, or 20 times use\*\*. Screen: less text shown in screen.



Learning stage Three is the final stage, and starts after another five months, or 100 uses\*\*. Screen: no text. Just (minimal version of) the icon and background.

## The instructions for cleaning should not be a course

het moet niet te belerend worden dat mensen zich eraan gaan irriteren.

Negatief: Concept 3, veel informatie aan het begin kan voelen als een overload.

Het moet alleen niet voelen als een volledige cursus oid.

Beter er veel klaar mee om allemaal push berichten te krijgen. Oven moet het gewoon doen en 1x in de week schoonmaken moet voldoende zijn. Heb het al druk zat.

online leerstof zoals bij concept 3 als een soort videoles.

## Different learning stages throughout use cycle

Concept 3 is OK voor beginnende users	Vooraf beginnende gebruikers zullen instructies waarderen en volgen.	Goed dat je in het begin wordt meegenomen. In het begin maak je het veel schoon en daarna zit het in je routine.
Als ik voor de tweede keer zo een oven zou kopen, zou ik gek worden	Learning stages zijn wat lastig te begrijpen	De learning stages gaan mensen van afhaken denk ik
Verwarrend als de informatie/uitleg ineens er niet meer is.	Volgende stage al veel sneller. na twee keer schoonmaken snap ik het wel	Laat zien hoe ver je bent in de learning stages. 'expert'-level enzo. Laat zien dat het gebeurt/gaat gebeuren.
Zorg dat de stappen zichtbaar zijn. Dat het stapsgewijs is		

## Let the users be in control of when/how/what they are guided in

De interval/manier waarop moet door de consument ingesteld worden. Hierbij duidelijk de urgentie/noodzaak ervan aan te geven.

draait om balans en relevantie. laat de klant bepalen hoe vaak, hoe hij info krijgt en ook bepalen als hij het niet wil.

## Timing is important

ik wil vrijheid hebben om zelf de oven te ontdekken, de lange termijn is dan nog niet iets waar ik me mee bezig houd. Tenzij het wordt gepresenteerd in een kort overzicht en dan zelf laat kiezen waar je meer over wilt weten.

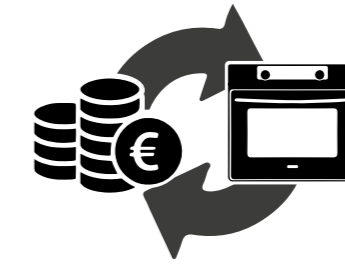
Je moet het wel afstellen op in welke mate mensen informatie willen. dat je het niet gaat negeren, omdat er te veel informatie is.

Bereikbaarheid: Als je informatie nodig hebt, dat je er makkelijk bij kan.

er zou een level ingesteld moeten worden mbt informatie wat men min / max verwacht...

Scenario:  
End of Product life

Self diagnostics.  
Earning points through-  
out the use.  
Buy-back. Amount is  
done by the self-diag-  
nostics.  
'Property of ATAG' more  
present



### Other new ideas deriving from this concept

<p>Hoe je je oven gebruikt, heeft invloed op hoe en hoe vaak je de oven schoon moet maken. Kunnen we daarover informeren. Als je activiteit trackt om op basis daarvan advies te geven. Kun je mensen ook attenderen op andere functies die ze kunnen gebruiken.</p>	<p>Maar contact en informeren zorgt dat mensen weten dat het er is, dat kan helpen in de buy-back. (Miele stuurt ook maandelijks informatie, is ook een goed contactmoment). Dat lijkt me een hele goede om iets mee te doen als je het hebt over circulariteit.</p>
<p>denk aan de digitale marketing om de educatie te geven.</p>	<p>Denk aan de koppeling via de Digitale Marketing om de educatie via andere media te houden, dan alleen de oven. Alle premium MAGNA MATRIX ovens binnen ATAG pulen connected zijn en registratie via de APP zijn dan nodig om toegang te hebben tot connected features. Dus de ingang naar de email is er.</p>

### Self-diagnostics: Tracking use so buy-back value can be determined

<p>Vind de diagnose die de oven geeft obv gebruik vs onderhoud wel sterke. Hoe vaker gebruik, hoe eerder onderhoud nodig is. Dit is persoons afhankelijk.</p>	<p>Diagnostics met buy back kan leuk worden, kun je combineren met de sticker.</p>	<p>Interessant, als je hem goed onderhoudt, krijg je meer geld terug. Net als bij iPhone. Je hebt A-grade, B-wear of C. De websites geven daar informatie over.</p>
<p>Als je wilt dat ovens een tweede leven krijgen, dan is het belangrijk dat de waarde van die oven wordt laten zien. "ik heb de oven drie jaar, en door hoe ik het schoonmaak, kan ik zien dat die mij nog 400 euro waard is. Als ik dat weet, ben ik bereid om hem terug te sturen."</p>	<p>I also like the earning points throughout the use. The points part can be used for the buy-back idea.</p>	<p>Fijn dat het bedrag dat je terugkrijgt ergens op gebaseerd is.</p>
<p>Wat voor punten?</p>	<p>earning points, gaat wat ver voor een oven. Je moet het zo makkelijk mogelijk houden.</p>	<p>Hoe zorg je ervoor dat de buy-back duidelijk is tijdens de levensduur van de oven zelf?  Credits? Dat je met gebruik iets spaart, of het levert je aan het einde korting op een volgende oven.</p>

### Buy back

<p>Cashback goede incentive om de oven terug te brengen</p>	<p>Buy back is een sterke manier om de gebruiker te motiveren de oven op een juiste manier vaarwel te zeggen.</p>	<p>De enige incentive om het terug te brengen zit in concept 3, met buy back.</p>
<p>De stimulans bij terugkopen van het apparaat is een interessante insteek. Uiteindelijk ga je dan over de portemonnee en te daarnaast een goed gevoel geeft dat je bijdraagt. Consequentiën constructie. Installeren kost een vermogen. Je krijgt bij gebruik geld terug. Daarnaast krijg je ook nog belasting voordeel terug.</p>	<p>buy back is ook nice</p>	<p>There has to be an incentive to not throw the appliance in municipal waste.</p>
<p>I don't know how people will respond to the availability to get cash for the appliances.</p>		

### 'Property of ATAG' sticker

<p>'property of ATAG' is nice.</p>	<p>'Property of ATAG' -&gt; are you saying it is not owned by the user? "if it works, it belongs to you, if it does not work, it belongs to us." You can say that.</p>
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