

Carbon Neutral Me

Carbon Ego App - Concept documentation

25.2.2019 Forum Virium Helsinki

Kuudes / Lucky Few

ATTACHMENT 1: Data specification

Content

01 Background

02 App Concept

03 Functionalities of the MVP

04 Platform and Data



01

Background

CHALLENGE:
**How can we help citizens
make carbon neutral choices
in their everyday life?**

Despite the public interest,
there are still many challenges
that people are facing:

The everyday consumption patterns are guided by surrounding structures, convenience and availability.

”It is still quite difficult to start carpooling or car sharing, because they work only in certain, limited areas.”

”Public transport just doesn’t serve my needs. And the cycling routes in Helsinki are sometimes quite poorly planned.”

”Schools and canteens should offer a vegan meal every day.”

The lack of information and guidance are making “right” choices difficult – and unsustainable ones too easy.

”No price signal steers your purchasing decisions. The climate effect isn’t included in the price – but it should be.”

”There are simply too many non-climate-friendly alternatives. I wish that professionals and policy makers guided my choices.”

”If we really want to impact private motoring, it should be less convenient and less efficient.”

What's stopping us from changing our habits?

1

Social pressure to continue current behaviour

We are used to expressing ourselves through consumption.

2

Inaccuracy and irrelevance of information

It's hard to say what actions really make a difference.

3

Unconscious habits

Learning something new tends to be difficult.

4

Lack of incentives

Benefits & consequences seem invisible & intangible in the short term.

5

Do my choices make a difference?

Sence of fighting against the impossible.

Main insights: Carbon Neutrality



Information should be linked to the everyday life.

Many services provide general information about carbon neutrality, but personal data is hard to get.



What is abstract should be made concrete.

'Good' choices are not visible in everyday life, and it's hard to see how they can influence the big picture.



Good choices need to be the easiest ones.

Many consumption decisions are guided by routines and habits that are not actively reflected on.



Understand what really motivates the consumer.

Citizens are motivated by different things and carbon neutrality is just one of them. How can it be linked to other values?

There is a plethora of apps, services & campaigns that aim to change these perceptions...



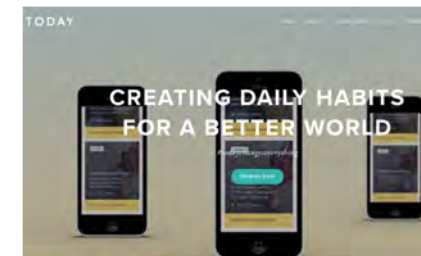
zerobnb



YHTEINEN

tekoaly-

EKOVAUVA!



ResQ



Carbon - know your footprint
Sprigglul
★★★★★ 5,35 Punkte
Free

Spark
SUSTAINABILITY

oreeco



#VEGAANI-HAASTE


But people still lack one that would transform information into tangible, daily actions.

“I need more practical tips – not just general-level recommendations.”

“I would need reminders of what’s relevant right now, like: ‘City Bike season has started!’”

“It could tell what I’m doing well and where’s room for improvement, and then a few concrete tips of what I can do about it.”

Since the increase of information around climate change tends to create more anxiety than relief, we need an application that is empowering and uplifting.



Carbon Ego
is an app concept
that responds to
these challenges



02

App Concept

Carbon Ego

Take care of your footprint.

Carbon Ego motivates and empowers you to embrace a climate-friendly lifestyle.

By visualizing data, the app gives an understandable overview of how your moving, living, eating and consuming habits produce carbon emissions. Carbon Ego helps you improve your daily behaviour in a positive, solution-oriented manner by giving tangible tips and inviting to challenges.

Carbon Ego is your own footprint that you can improve by taking good care of it!



Motivation

Empowers to
change behaviour



Tips

Gives tips for
new lifestyle



Awareness

Tracks your
progress

Carbon Ego – Future vision

Carbon Ego is a part of your everyday activities. It not only helps you keep up the new, more ecological lifestyle but it also brings a more holistic approach by showing the effect of these changes in all aspects of your life: economic, health and wellbeing. It is the City's way of bringing interaction to sustainability goals and making the climate-friendly lifestyle rather a norm than an exception.

Future Target Group:

All Helsinkians, bring added value also to those who are informed about sustainability-related questions and have a lot of knowledge about the topic.

Features Include:

- A holistic, real-time and data-led approach to one's carbon neutrality
- Not only the ecological aspect but also health & wellbeing related data
- Estimates future footprint based on current behaviour
- Allows to compare different choices based on their carbon footprint
- Lets you participate in emission trading and gives (concrete) rewards for reduced emissions
- Relevant and personalised content related to the topic
- Curated, local and relevant service providers included

To achieve this vision, we need real-time data and automation in all four areas of interest, which unfortunately yet is not the case.

However...

We also need to proof-test the desirability and functionality of the application as well as to create a concept which would lower the threshold for organisations in opening relevant data-sources for the general public.

This is what the MVP version aims to do.

Carbon Ego – MVP App

In its first form, the Carbon Ego app aims to answer the question of what people can do about their carbon footprint. They understand what their carbon footprint consists of and can make basic actions to reduce it through gamification.

MVP Target Group:

Helsinki residents with a spark to change their behaviour, but little knowledge and means.

MVP Features Include:

- Visualising one's carbon footprint
- Info based on your data
- Tracking progress & footprint
- Gamification through different Carbon ego levels
- Personal profile with the ability to add relevant data-sources
- Relevant news and tips from the City of Helsinki
- Joining challenges
- Creating communities & adding positive competition between peers



Target group for the MVP – THE CARETAKERS:

Approach to sustainability:
Concerned

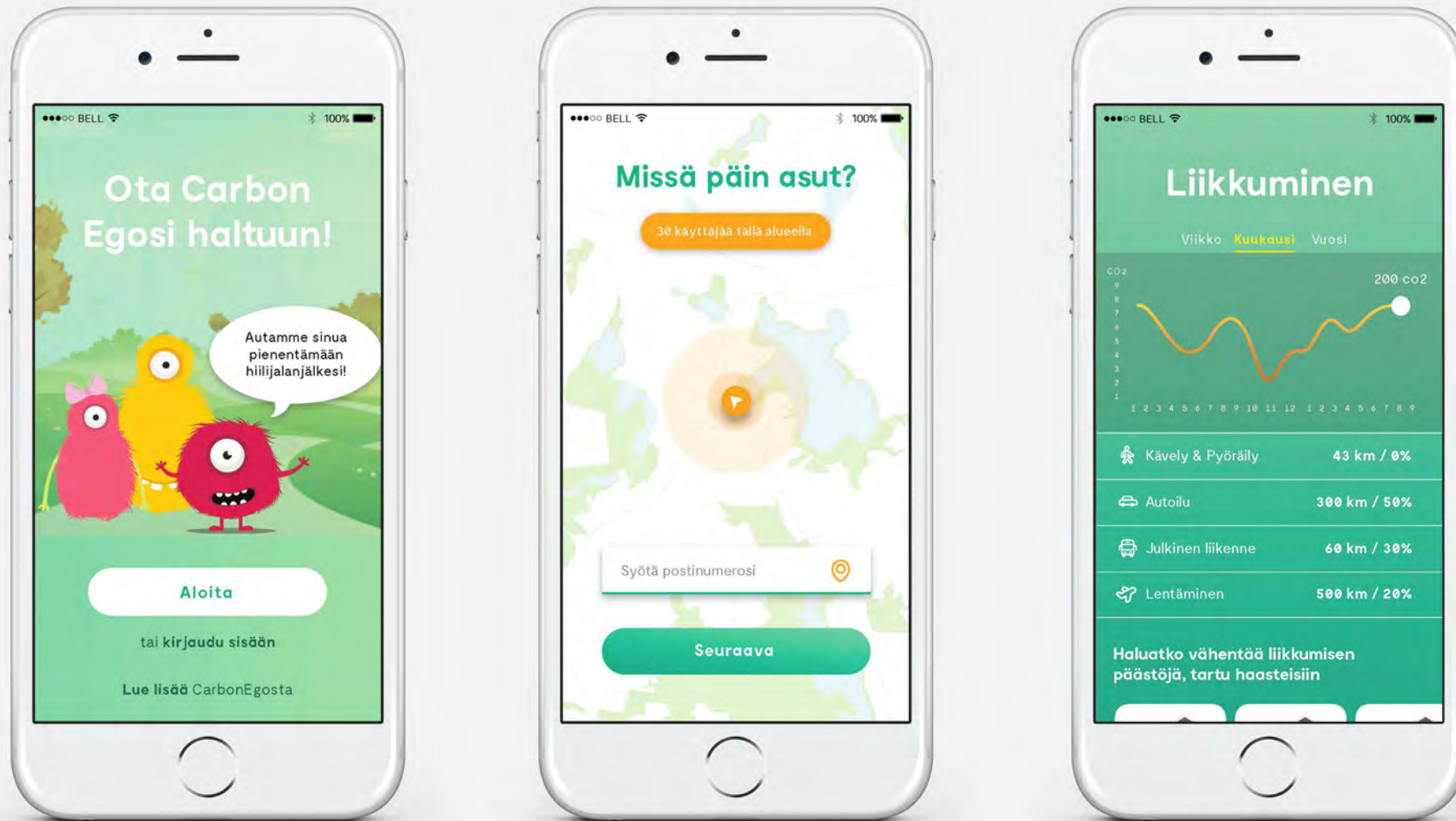
*“I want to do my part
but I'm not sure how to.”*

The Caretakers feel great responsibility for the state of the world but are not sure how they could act to improve it in their everyday life. The information overload is creating anxiety and disempowerment.

The target group profiling is based on the Kuudes study,
The Informed Consumer.

Get to know the study →

www.theinformedconsumer.fi



Link to prototype version 1: <https://bit.ly/2ltznTv>

What kind of communication style does the app have?

- Balancing between credibility and playfulness
- **Narrator voice**
"Now we're gonna introduce you to your carbon EGO", asking questions/info in a friendly manner
- **Character voice**
Speech bubbles from the Character
Whimsical and witty



Why Carbon Ego Character?

- Carbon Ego is approachable and emphatic character which aims to create emotional attachment to the topic.
- Climate change tends to create lot of anxiety and disempowerment among consumers. We try to relief that anxiety with a playful character that makes the topic more approachable.
 - *"It is nice that the character interacts and gives recommendations and tips."*
- user
- In the user-testing we noticed that users quickly formed an emotional attachment to the character. However, balancing between playfulness & credibility (not being too childish) needs to be taken in notice when designing the actual character.
- The Carbon Ego character evolves as the user proceeds and creates commitment to the application.
 - *"Oh it is so cute, my own Carbon Ego!"* - user
 - *"I really like the character."* - user



Benefits of Carbon Ego



FOR CITIZENS

- Empowers people to change behaviour
- Concretizes co2 footprint & brings it closer to everyday actions
- Possibility to take part in Carbon Neutral Helsinki 2035 goals



FOR THE CITY

- Data about citizens' behaviour & changes
- Creating commitment & participation to Carbon Neutral Helsinki 2035 goals
- Channel to communicate about City's actions
- Helps to understand the ideal model and need for Data & API's



FOR PARTNER ORGANISATIONS

- Researching and creating an understanding of carbon-neutral choices
- Combining forces to achieve common goals



FOR BUSINESSES

- Competitive advantage to be forerunners and create a common good for sustainability
- Showing transparency to customers
- Increasing brand commitment through the visibility of the users' data

03

Functionalities of the MVP

Carbon Ego aims at new levels

Since the amount of a CO₂ unit is not clear to all users, and our goal is to make people understand and reduce their overall impact, the app creates around five different levels with different CO₂ emission scales.

As you start using the app, you are assigned to a certain level, and the goal is to get to the next one by reducing your footprint.

- **Levels show your progress**
- **You'll be suggested the next level to try to reach, but you can also try to directly get into higher levels**
- **Carbon EGO proactively gives you tips based on your profile/behaviour**



Simple start to use the app

We want to make accessing the application quick and smooth. However, before using the app, we need some information about the user to assign them to the right level.

We ask only a couple of simple questions about the user's lifestyle (living, traffic, eating, consumption) in order to define the right Carbon Ego level.

- **Insert needed background info**
- **After this, the app asks you to connect your data sources to start collecting your footprint**
- **You can change personal information and add additional data sources at any later point**



Overview on your situation

The main view gives you an overview of how you are doing in the four interest areas (moving, living, eating, consuming).

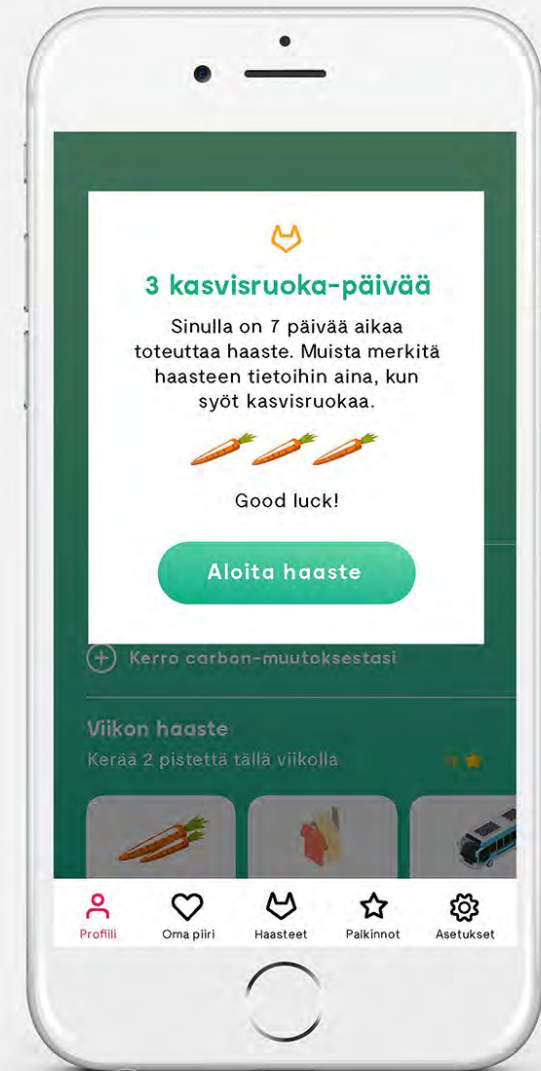
- Current Carbon Ego level
- Possibility to modify personal information
- Current, montly footprint & emissions in four different areas
- You'll get rewards as you learn new behaviour patterns
- City's news feed relating to the subject (traffic, public transportation, news etc..)



Joining challenges helps to improve your level

Within the app you can join various challenges that support you improving your lifestyle. The challenges are focused on consumption areas that you need to work on to get to the next level.

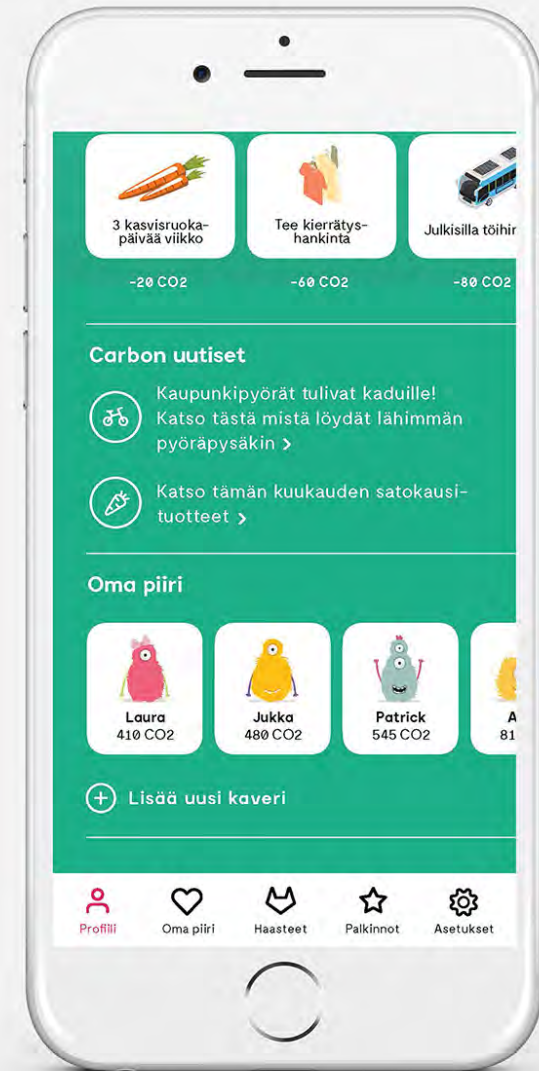
- The challenges are an appealing way of "learning" new habits.
- You get invitations to challenges based on your personal information & levels (diet, habits etc.)



Creating your circles

In order to increase positive competition among peers, Carbon Ego allows you to connect with your friends and family, and create own circles in the application. These can be a housing unit, colleagues, family or friends- which ever the user sees motivating.

- **Positive competition among peers**
- **Create your own circles to compete with friends & family**
- **Create even more impact together**



Notifications

Especially in the first phase as the data is not yet accurate, the app will use notifications to help interpreting data. For example in recognizing whether the person is in car or bus or has flown abroad by plane for a holiday.



03 Platform and Data

Platform solution

- Mobile client can be developed using cross platform framework such as React Native or Flutter. Benefits for using cross platform solution is that same code base can be used to deploy application for iOS and Android.
- React Native is developed by Facebook and Flutter by Google. Both frameworks have strong community support and developer resources. React Native solution can be written using JavaScript or TypeScript, Flutter apps are written in Dart.
- Application can be developed natively too using Swift for iOS and Java for Android. This means that there are two totally different code bases to maintain.

About backend of the service

- Backend is the core of the service which collects user data and aggregates data from 3rd party providers. It contains all the business logic and data storage. It also authenticates user and saves everything needed to a database.
- Common practice is to provide JSON REST interface for the mobile / web client. This ensures that the backend is not dependent of the client itself.
- For data storage, relational SQL database is recommended (MySQL, MariaDB or PostgreSQL).

Many programming languages and platforms are available to implement the backend, most common ones are:

- PHP
- Node.js / JavaScript or TypeScript
- Java
- Python
- Backend infrastructure is recommended to be built using cloud service providers such as Amazon Web Services, Microsoft Azure or Google Cloud. All of them has the option to store all data inside the EU.

Data is collected from & grouped into four different areas:



Living



Moving



Eating



Consuming

+ Personal data collected from the user

DATA & API DEFINITION IS EVOLVING

MVP version requires both manual & automatic/data generated input → Future version based on automation.



Living

Areas of interest/Categories:

- Heating
- Electricity
- Water consumption

Sources of data:

- Electricity/Heating companies/Helen?
- HSY
- Ilmastoatlas

Requires manual input:

- Size of household
- Size of house
- Street address (manual checkup)



Moving

Areas of interest/Categories:

- Public transportation
- Driving
- Flying
- Walking
- Cycling

Sources of data:

- HSL
- Google Fit Platform
- Apple Health Kit
- Bank (Gas, Taxi etc.)

Requires manual input:

- Flying
- National train travelling



Eating

Areas of interest/Categories:

- Groceries
- Restaurants

Sources of data:

- Bank
- Restaurants (Wolt, Eat.fi?)
- ResQ, Lunchie

Requires manual input:

- 1 st version based on manual diet categories, based on starting questionnaire



Consuming

Areas of interest/Categories:

- Clothes
- Electronics
- Other consumption

Sources of data:

- Bank data

Requires manual input:

- 1 st version based on manual consumer categories, based on the starting questionnaire



Personal Data

Recommendation is to use auth0.com for the user authentication and own backend implementation to store the actual user data.

Areas of interest/Categories:

- Household size
- Diet
- News/tips

Sources of data:

- Apple HealthKit
- Google Fit Platform
- Helsinki City/HSL/MyHelsinki
- News/RSS Feed

