

# Jan-Wessel Hovingh

Designer/Consultant



Waxle  
Intimate Data Design

Lecturer



Communication &  
Multimedia Design

Coordinator



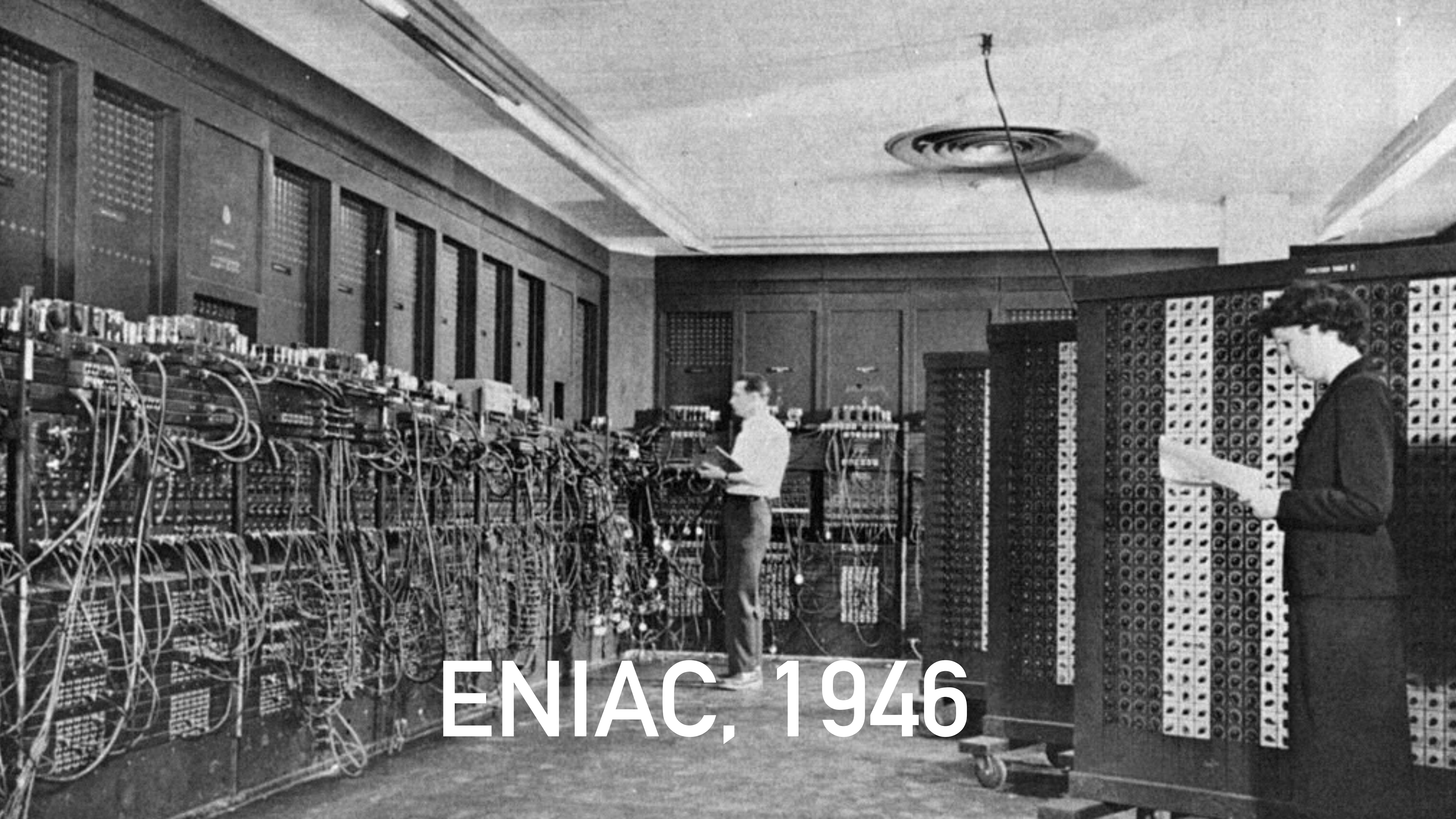
Minor  
The Next Web

 **User interfaces**

**User interfaces make complex machines and systems usable for regular human beings.**

**User interfaces are the long levers  
that could move the earth.**

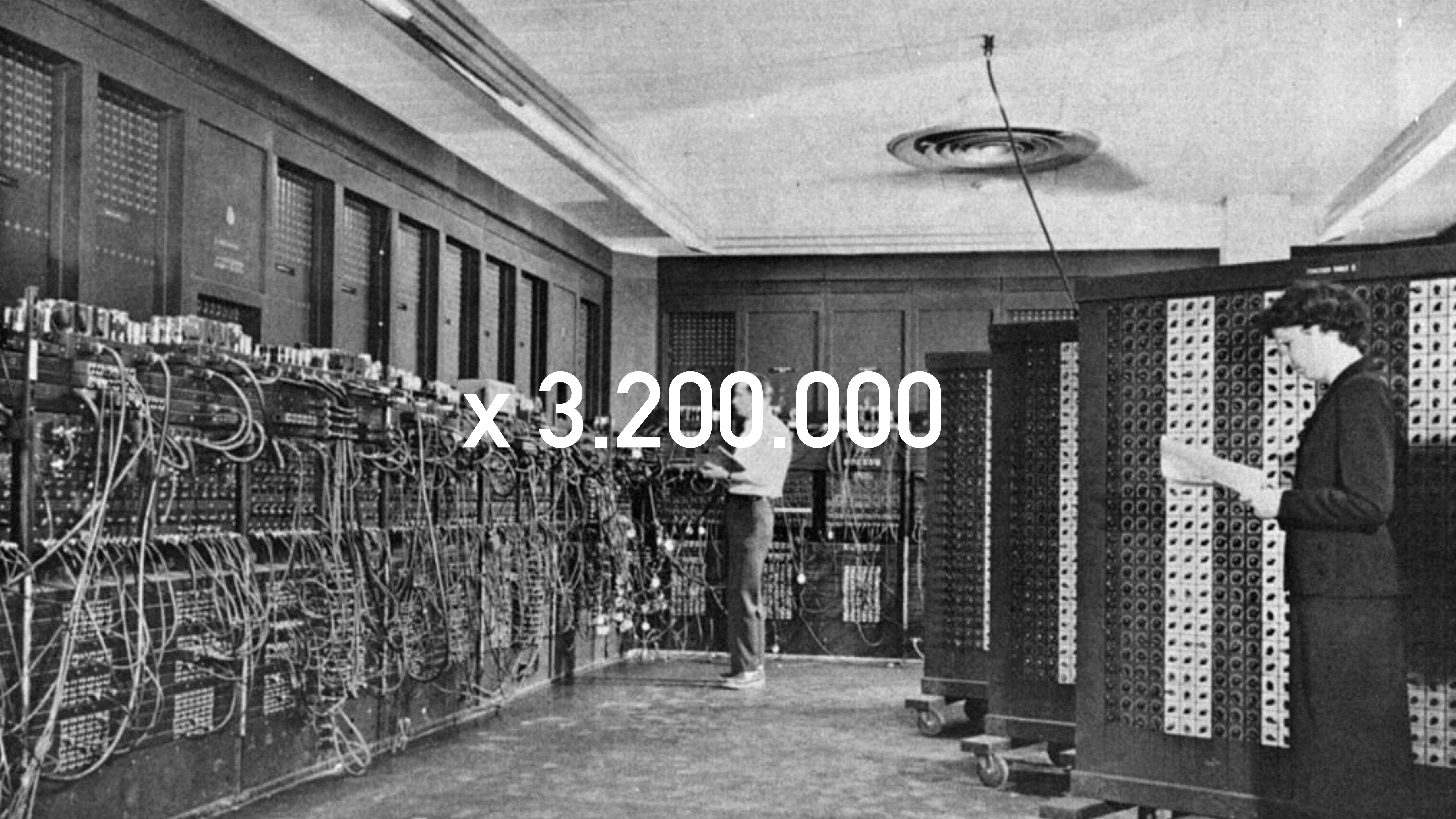
(Archimedes, 2017)



**ENIAC, 1946**

**18000 Transistor tubes**  
**150kW Energy consumption**  
**167 m<sup>2</sup> surface**  
**6 Operators**





x 3.200.000



A large aircraft carrier is shown from a low angle, highlighting its massive scale. The ship's superstructure is complex, with multiple levels of radar and communication equipment. The deck is filled with several fighter jets, including F/A-18 Hornets, and a few crew members can be seen on the deck. The sky is a clear, pale blue.

x 2500

(Nimitz Class aircraft carrier)



(Chicago Metropolitan Area)

**We can use all this power  
through user-friendly interfaces**

(but we came a long way)



C:V =





This is not just a car. It is a computer & interface to achieve a very pleasant transportation experience.



WITH  **Bluetooth**<sup>®</sup>  
SMART

This is not just a toothbrush. It is a computer & interface to achieve a very high standard of clean teeth.





This is not just a doll. It is a computer & interface to achieve a very high standard of entertainment.

**"The best user interface is the self-effacing one, The one that you don't even notice."**

**Mark Weiser - XeroX**  
**Ubiquitous Computing (1993)**

**Interface design has evolved into  
experience design and the experience  
prevails over transparency and  
conscious decision making.**

**The experience should be positive.  
Risks and contingency should be  
hidden from users.**

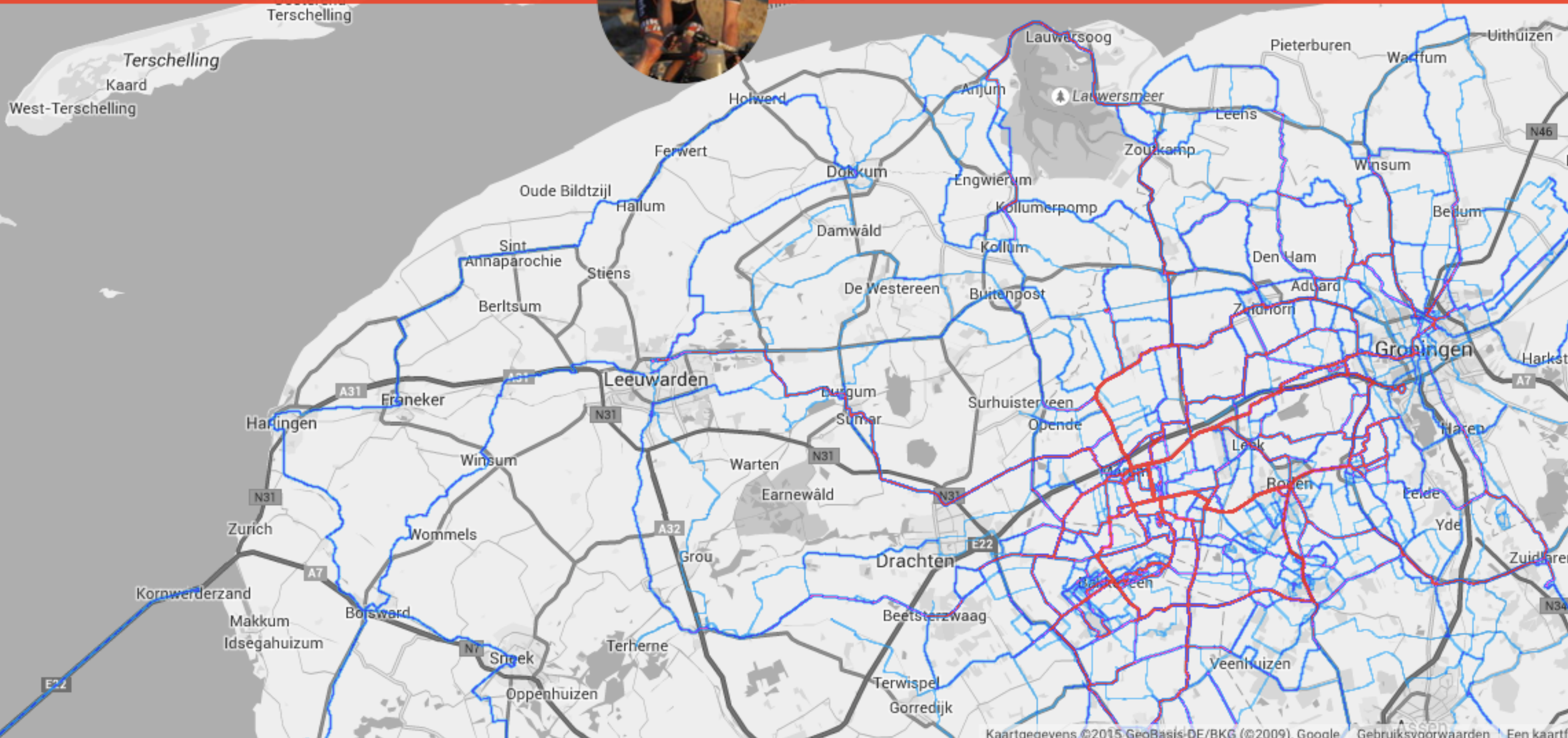
**Risks and contingency.**



**Food on Route**

FIETS-HEATMAP

ALLER TIJDEN



KOM KOMMER  
COURGETTE'S

0,50 p 50

BONEN 0,75

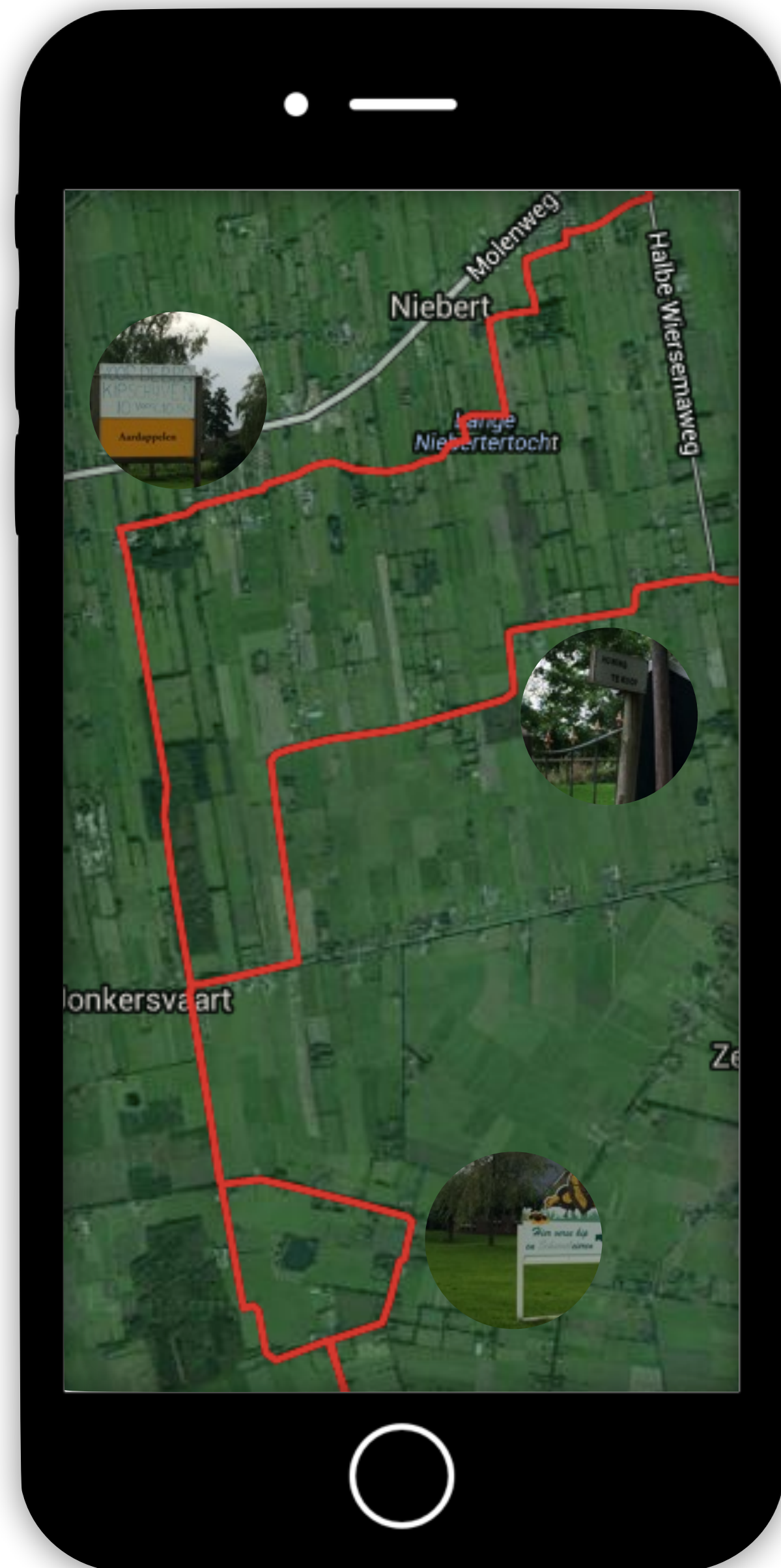
Onbespoten  
groenten  
en fruit





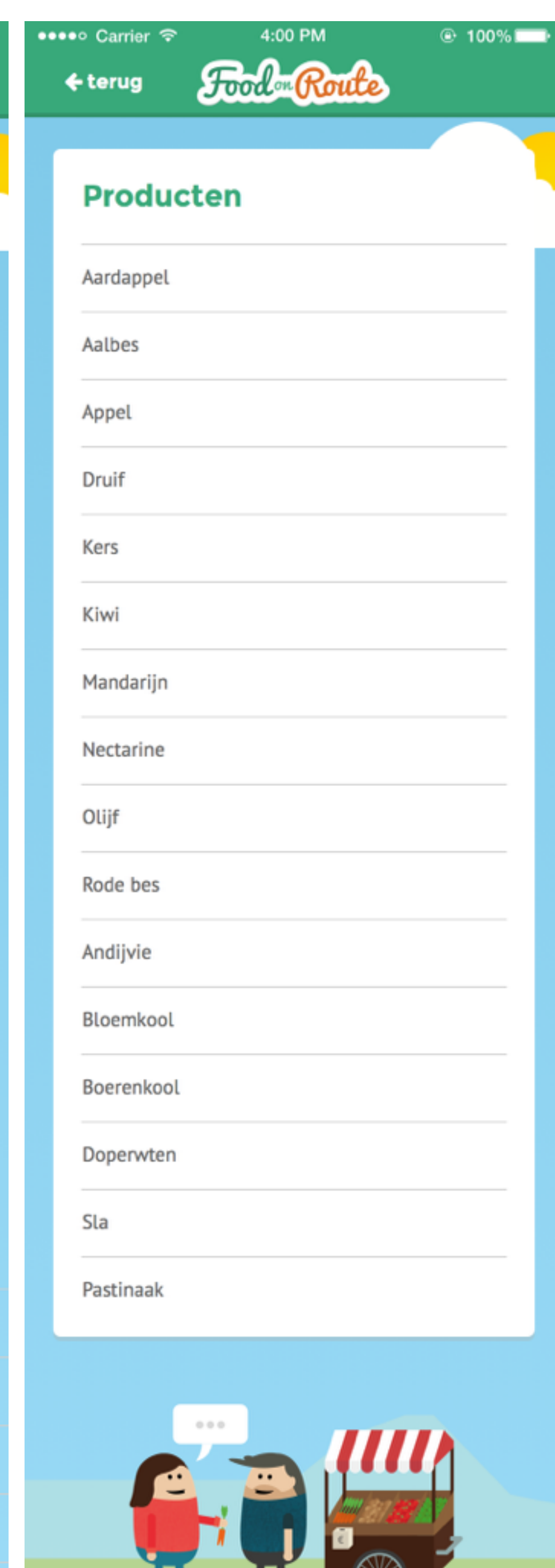
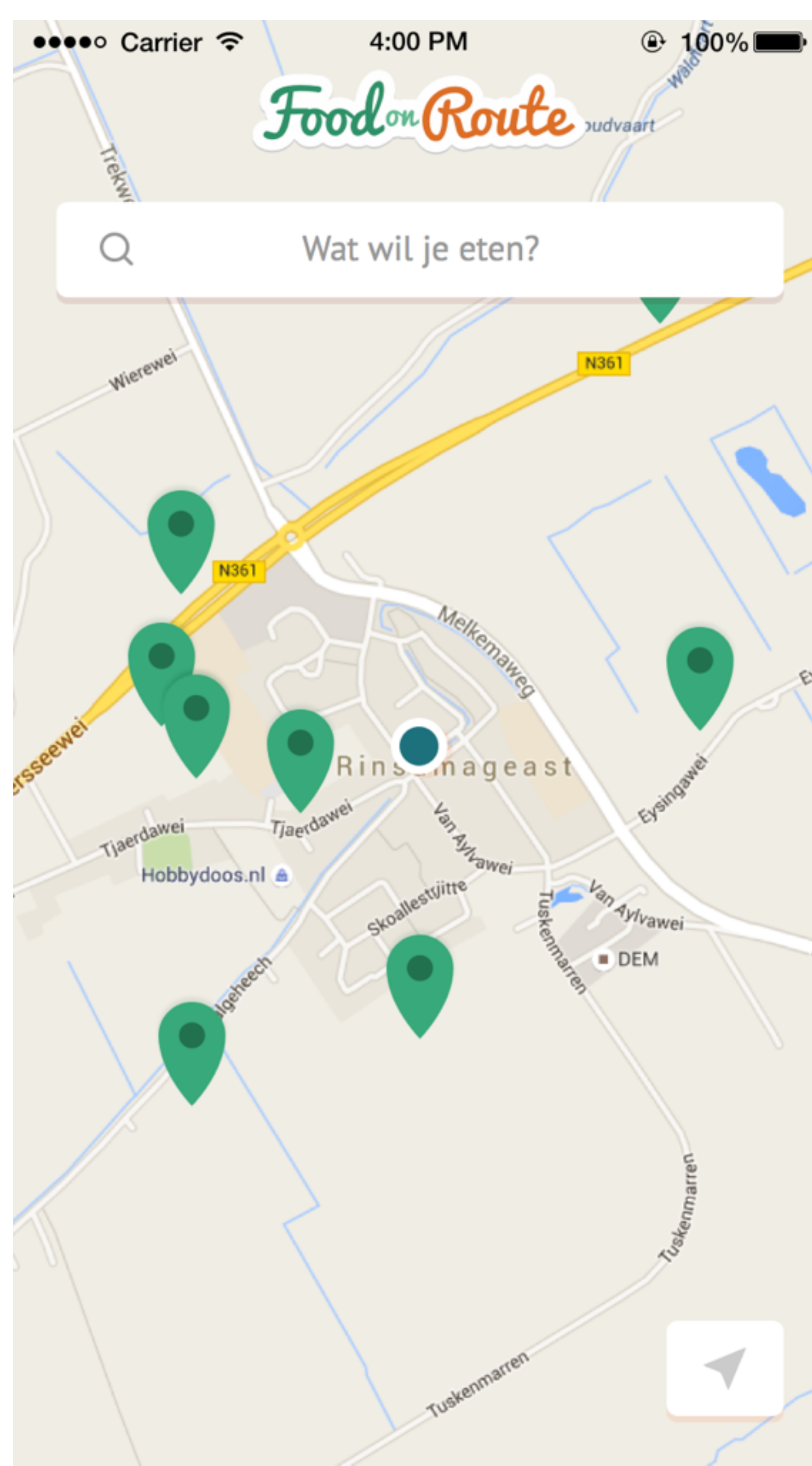
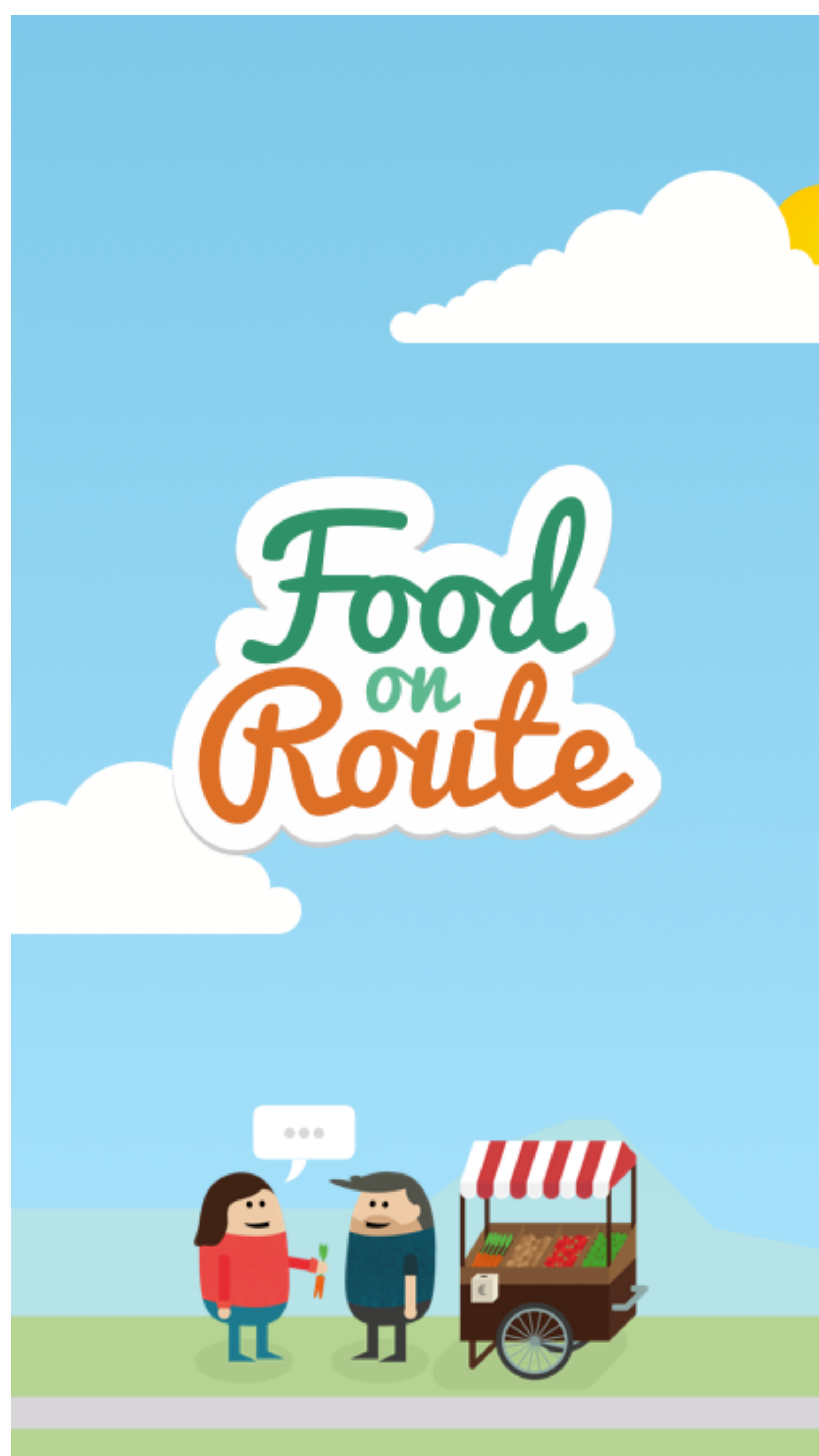
- Zucchini - 2 pc, big
- Olive Oil olie - 2 spoons
- Onion - 1, chopped
- Beef - 300 gr
- Carrot - chopped, handful
- Garlic powder -  $\frac{1}{4}$  spoon
- Salt -  $\frac{1}{2}$  +  $\frac{1}{4}$  tea spoon
- Cocos oil - 1 spoon





**Locate a shop/booth & take pic;  
Enter offered vegetables;  
Enter a recipe.**

**Choose a recipe;  
Get an itinerary/route;  
Get your bike;  
Get the vegetables;  
Make a nice dinner.**





Belastingdienst

**Enter the Dutch Tax Authority**

**As a tax specialist pointed out, we had provided a very useful tool for investigating VAT evasion.**

That was not entirely what we had intended.

...and neither was it Target's goal to tell a father his daughter was pregnant.

FEB 16, 2012 @ 11:02 AM 3,247,672

Your Ultimate Guide to Buying Bitcoin

## How Target Figured Out A Teen Girl Was Pregnant Before Her Father Did



**Kashmir Hill**, FORBES STAFF

Welcome to The Not-So Private Parts where technology & privacy collide [FULL BIO](#)

Every time you go shopping, you share intimate details about your consumption patterns with retailers. And many of those retailers are studying those details to figure out what you like, what you need, and which coupons are



Nor was it Facebook's intention to reveal a girl's sexual orientation to her parents.

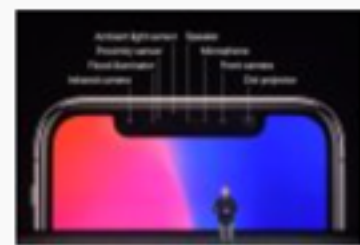
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PERSONAL TECHNOLOGY

This Crazy Camera Is the Future of Photography



Donald Trump Accuses Facebook of Being 'Anti-Trump'



The Needs M Talent— Everyone



WHAT THEY KNOW

## When the Most Personal Secrets Get Outed on Facebook



By *Geoffrey A. Fowler*

October 13, 2012

AUSTIN, Texas—Bobbi Duncan desperately wanted her father not to know she is lesbian. Facebook told him anyway.



Most Popular Videos

1. This 16-Lens Camera Is a



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## German parents told to destroy Cayla dolls over hacking fears

17 February 2017 | Europe

f | | | | Share



GETTY IMAGES

The My Friend Cayla doll has been shown in the past to be hackable

### Top Stories

**UN failures on Rohingya revealed**

28 September 2017

**Mumbai station stampede kills 22**

7 minutes ago

**IS posts 'new tape of leader Baghdadi'**

29 minutes ago

### Features



**The archaeological treasures IS failed to destroy**



To put insult upon injury:

**Government Surveillance.**

## US national security

Glenn Greenwald on security and liberty

# NSA Prism program taps in to user data of Apple, Google and others

- Top-secret Prism program claims direct access to servers of firms including Google, Apple and Facebook
- Companies deny any knowledge of program in operation since 2007
- [Obama orders US to draw up overseas target list for cyber-attacks](#)



**Surveillance Capitalism**

**Personal data ends up in places where  
it may be of harm to end users and others...**

User friendly interfaces coerce us to surrender our personal data to systems we have very little knowledge of.



**Most of us are vaguely aware of this at least,  
but we keep using these devices and services  
anyway.**

**But why?**

# Cultural probe



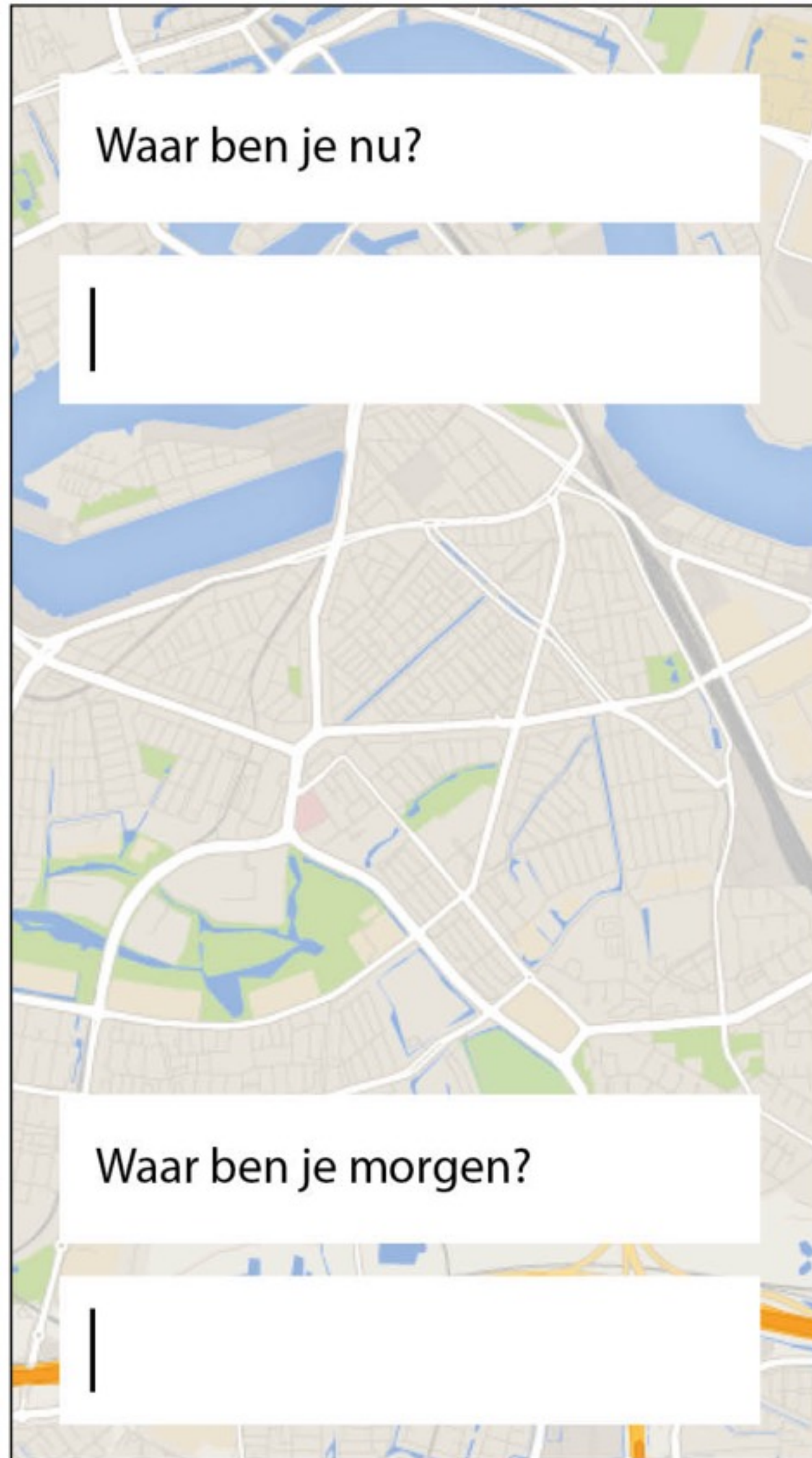


# Analog Smartphone



# Rules

- **A questionnaire (that becomes more invasive with every question)**
- **Can't or won't answer the question? Rip out the page!**
- **Analog data recording: heighten awareness and consciousness**
- **30 participants, to ensure enough usable data**
- **Recorded interviews afterwards, to reflect on the experiment**



Waar ben je nu?

|

Waar ben je morgen?

|

6



Hoe vaak is je schermpje kapot gegaan?

|

Hoe voelde je je daarna?

😊 😊 😐 😞 😡

● ● ● ● ●

Hoe lang duurde het voordat je 'm repareerde?

|

7

Schrijf je laatste chat op:

|

|

|

|

8



**Deze medische symptomen heb ik het meest recent online gezocht:**

**Dacht je dat je een ernstige ziekte had?**

Ja

Nee

**Was dat ook zo?**

Ja

Nee

**Wanneer was dat?**

47

Schrijf de laatste 5 berichten op van een chat met een ex:


49



Met deze exen heb je nog regelmatig contact:

28





...and my smartphone overlaps these, but I know the rules of my phone.

# Conclusions

- After the experiment, most participants were more aware of their privacy risks
- Some deleted their Facebook account
- None had ever read ToS of their phone or other apps, but some started reading them after the experiment
- Increased awareness of risks.

**some cognitive dissonance:**

"I've got nothing to hide"

"I'm not interesting for companies or government"

"So I'm paying with my data, so what"

**more interesting:**

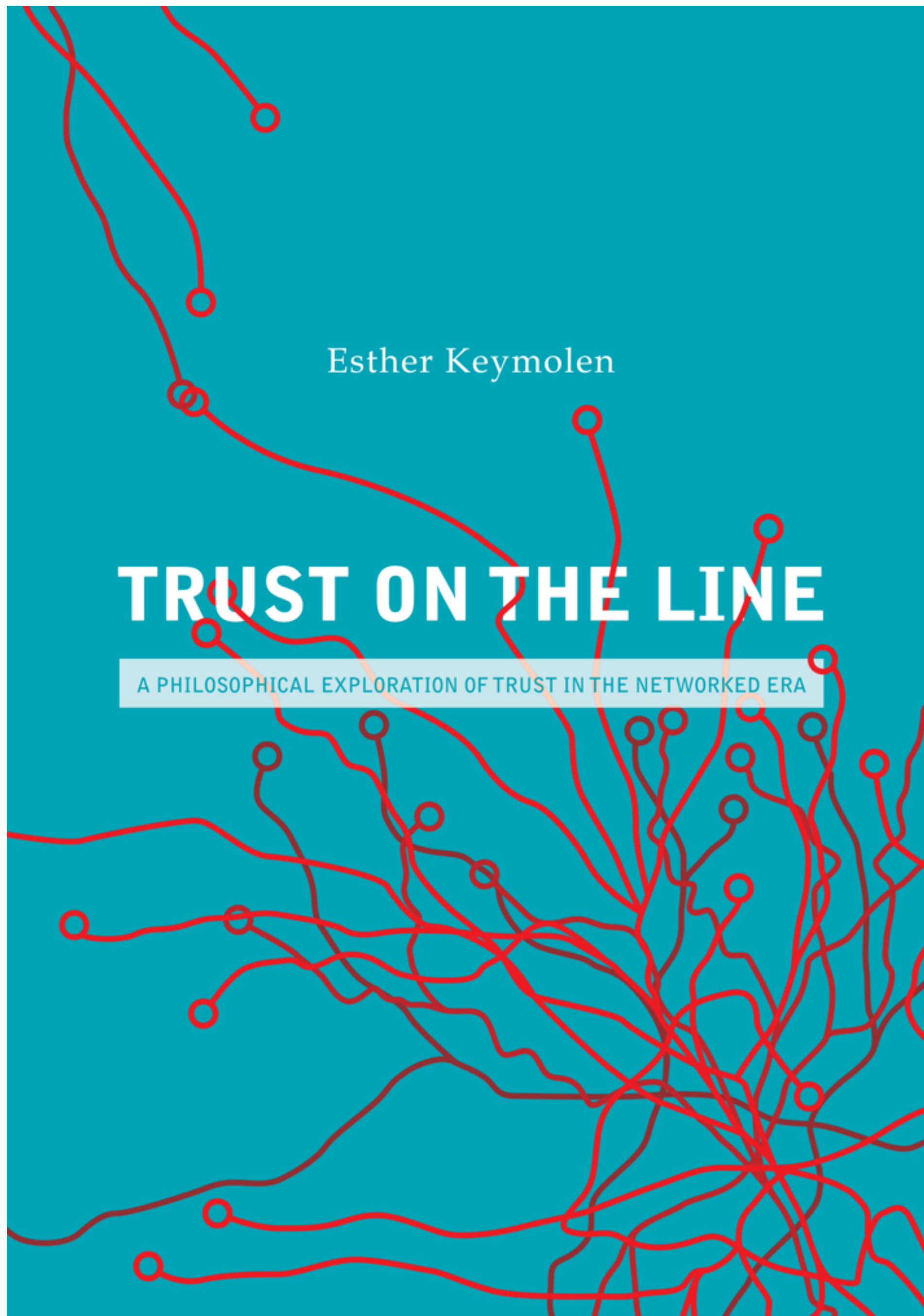
Trust in smart artifacts is mainly based upon trust in systems: Government, Laws, regulation.

The smartphone is considered as part of the identity: it enables and carries most social connections.

The social connections and interactions the user has via the smartphone makes that user trust the device.

**Trust**





**Trust is to act as if  
the future is certain**

**Trust bridges a knowledge gap**

**Trust enables us to deal  
with complexity and contingency**

Trust on the Line; Keymolen, E. (2016)

**Smart devices, especially smart phones,  
have become part of our familiar world, because  
they are customizable and connect our real, trusted world.  
They 'feel' familiar, so we can use them with confidence.**

**They are super easy to use,  
so they have become 'ready to hand':  
we do not need to think about their functionality  
or their risks. They do what they promise to do.**

**(so they say)**

# **So in a way, user interfaces can act as materialized trust.**

**They promise users a certain (near) future**

**They bridge a user's knowledge gap towards technology**

**They reduce complexity for a user**

**So what if it is trust we actually design.**

How good are we really at this?

# I asked Tinder for my data. It sent me 800 pages of my deepest, darkest secrets

The dating app knows me better than I do, but these reams of intimate information are just the tip of the iceberg. What if my data is hacked - or sold?

- [Getting your data out of Tinder is really hard - but it shouldn't be](#)



Advertisement



**Can we do better?**

Let's try.

**Some inspiration.**

(Quotation alarm)



**Alan Cooper**

"Father of Visual Basic", inventor of the Persona, witer of "About Face"

## On Mental Models:

"People don't need to know all the details of how a complex mechanism actually works in order to use it, so they create a cognitive shorthand for explaining it. This explanation is powerful enough to cover their interactions with it but doesn't necessarily reflect its actual inner mechanics."

(Cooper et al., 2014: 17)





## Larry Tesler

Worked on the first GUI at Xerox PARC,  
inventing of the Copy/Paste concept,  
participatory design for GUI's.

### On Participatory Design:

'I gave her a paper document with lots of markups on it for reference and asked her to imagine that is was on the screen. She just designed it right there! "I would point there, and then I would hit the delete key," she said.'

(Moggridge, 2007: 64)



# Anthony Giddens

Sociologist,  
Theory of Structuration

## On Trust:

"Trust is a project, to be worked on by both sides."

'A pure relationship is one in which external criteria have become dissolved: the relationship exists solely for whatever rewards that relationship can deliver. In the context of the pure relationship, trust can be mobilised only by a process of mutual disclosure.'

(Giddens 1991: 6)

**"...a process of mutual disclosure."**

**The goal: designing a tool to create a transparent shared mental model that enables all relevant stakeholders of the design of a smart artifact to discuss and to form an opinion on its functionality and its use of private data.**

**So who should be at the table?**

# Let's start with everyone involved.

## To name a few:

- Programmers / Developers
- Product designers
- Information Architects
- UI designers
- Graphic designers
- Marketeers
- Business Analysts
- Lawyers
- Privacy Experts
- ...and last but certainly not least:

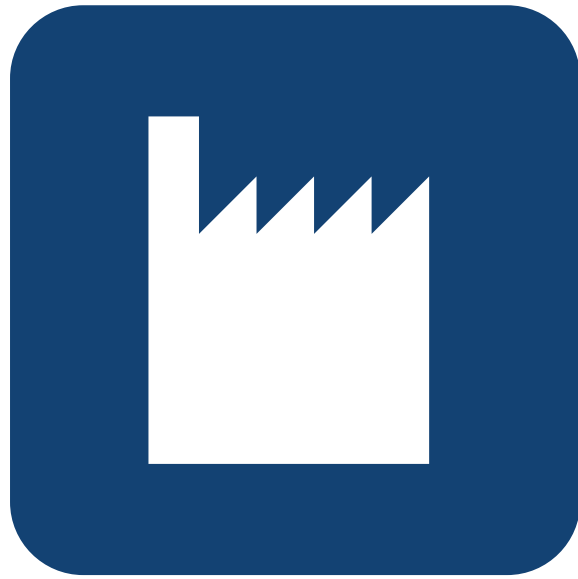
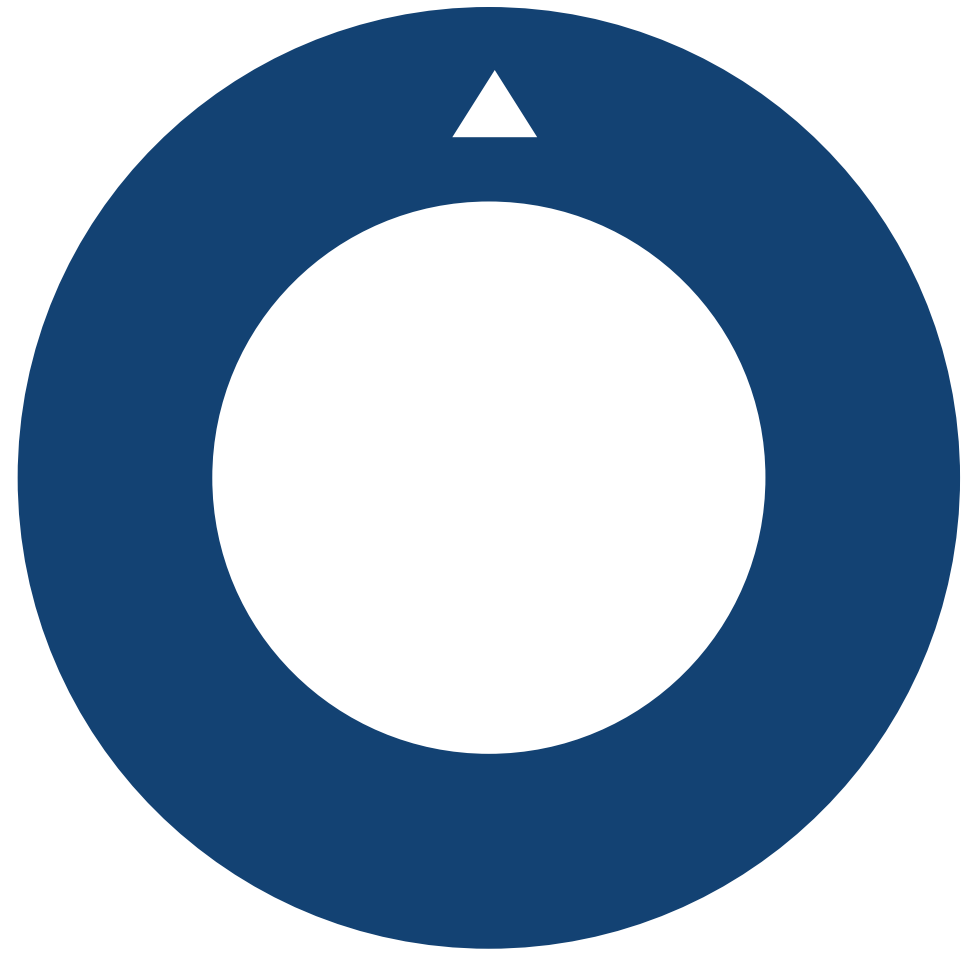
~~End users~~

**or: Humans who will be affected by the use**

The focus on the role of user is too narrow  
when it comes to personal data.

**Let's create a shared mental model**





# Trusted



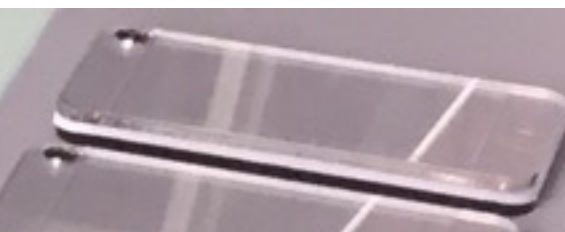
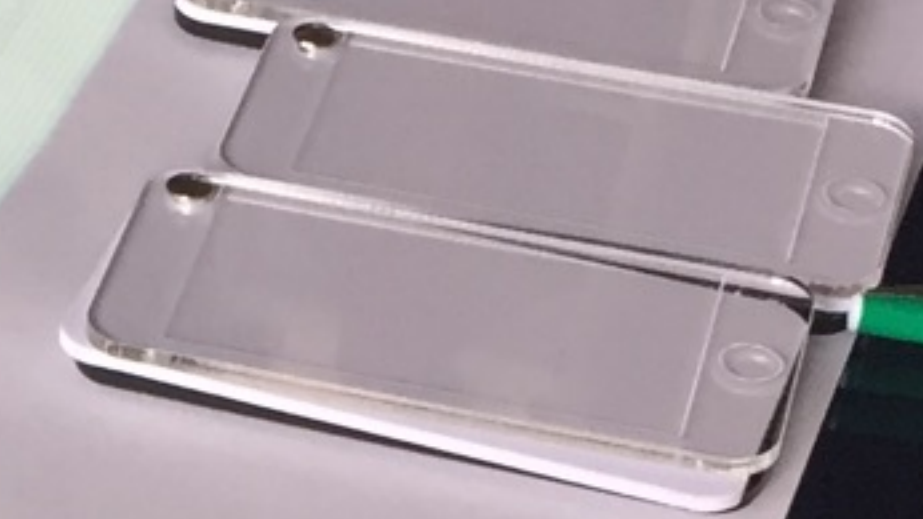
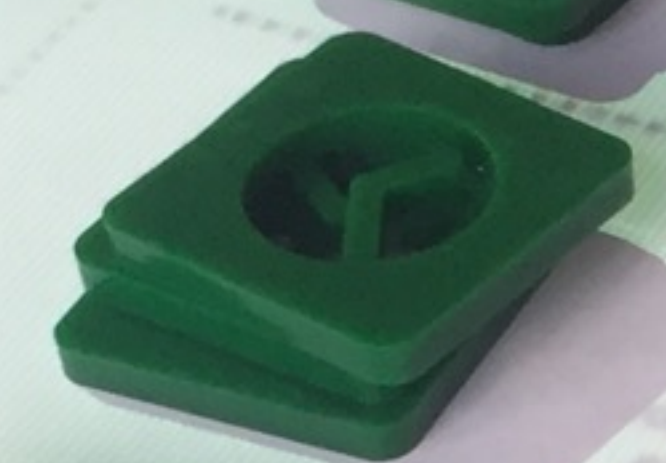
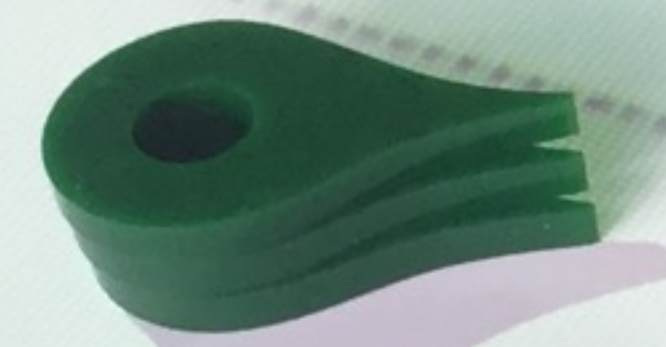
# Not trusted



sum, not zero-sum  
full lifecycle protection  
transparency - keep it open  
respect for user privacy - keep it user-centric

# Legenda

More trust

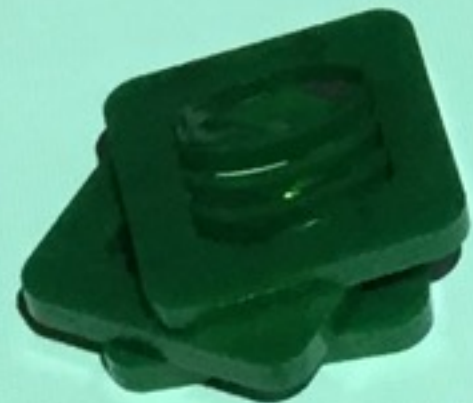


## Design by Privacy

1. Proactive not reactive: Preventative not remedial
2. Privacy as the default setting
3. Privacy embedded into design
4. Full functionality – positive-sum, not zero-sum
5. End-to-end security – full lifecycle protection
6. Visibility and transparency – keep it open
7. Respect for user privacy – keep it user-centric

## Legenda

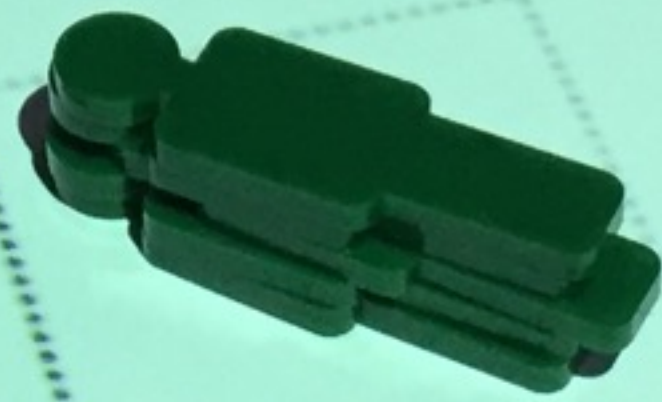
More trust



stored data



sent data



stakeholder



location



date & time

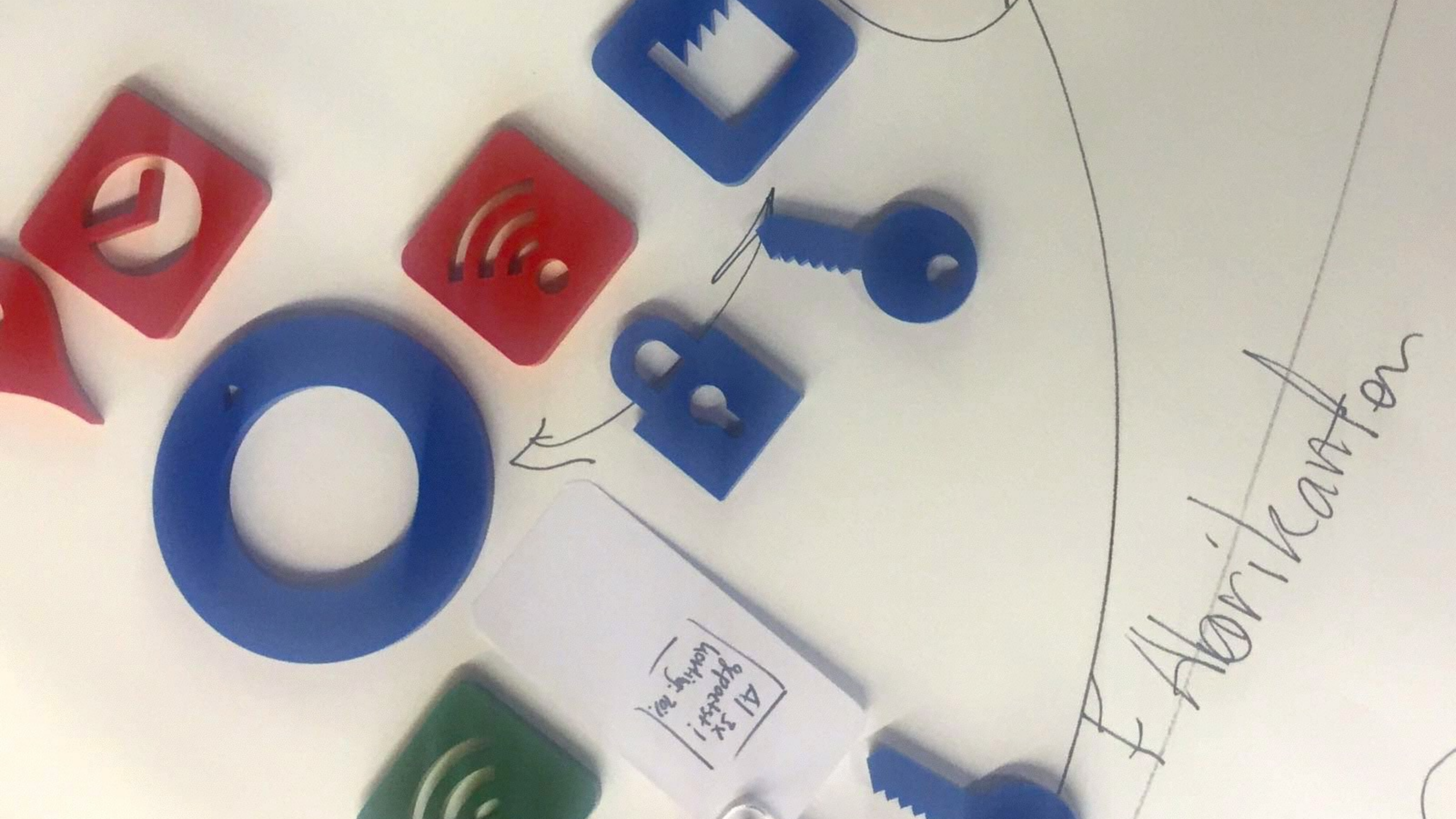


stored data

## Story graph







Handwritten text on the right side of the page, possibly a signature or name, written in a cursive style. The text is partially obscured by a curved line and appears to read "A1 3x 3x 3x 3x 3x 3x".

overzicht  
eigen  
geschiedenis

①.  
②.  
③.  
④.  
⑤.

1  
Verwijderen

INSTELLINGEN

IK DEEL

- SNELHEID
- BEZOCHTE LOCATIES
- 

PRIVEMODUS VOOR

- \_\_\_\_\_
- \_\_\_\_\_

○

\*  
VEELBEZOCHTE  
PLEKKEN  
100 KM  
GEM. SNELH.

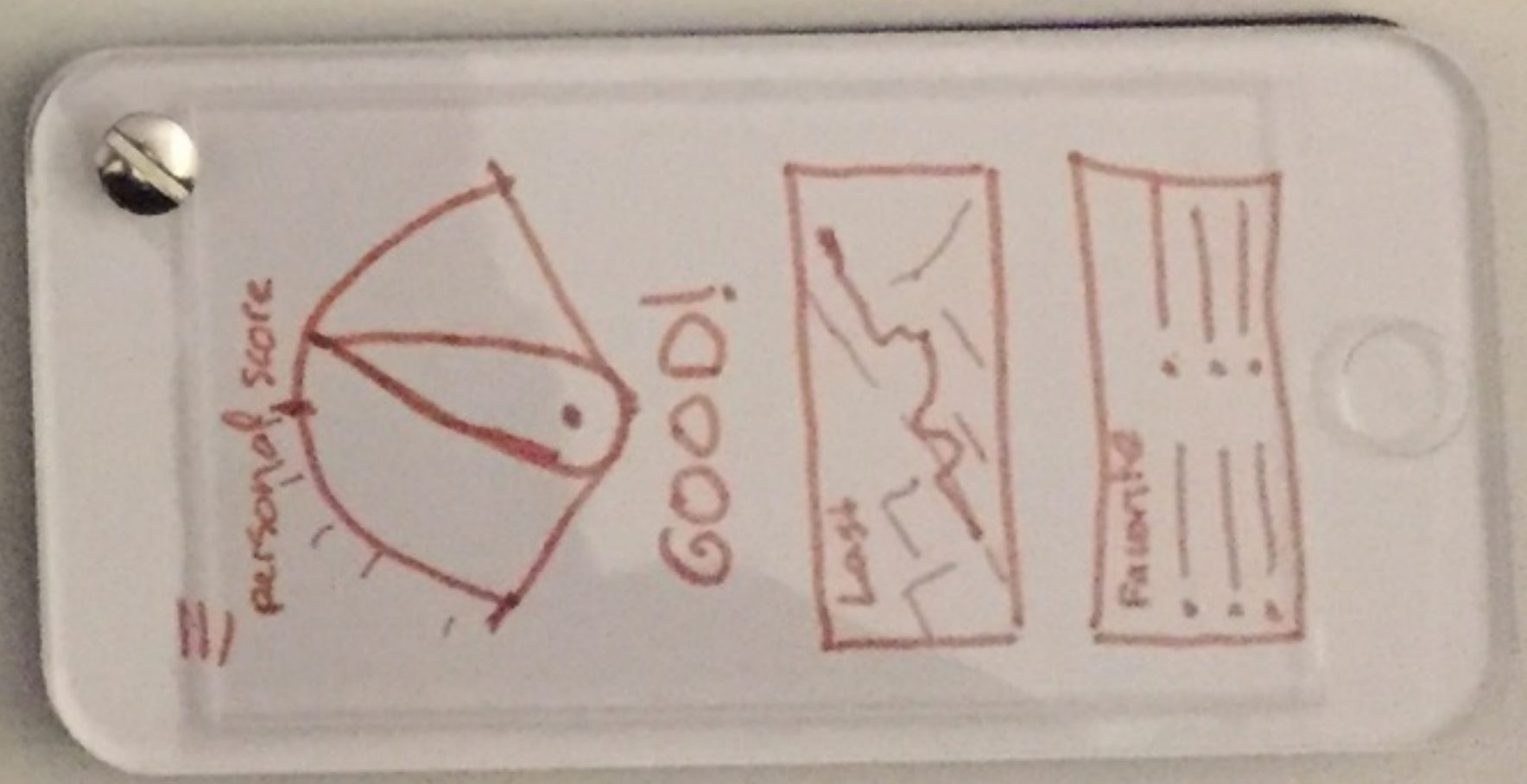
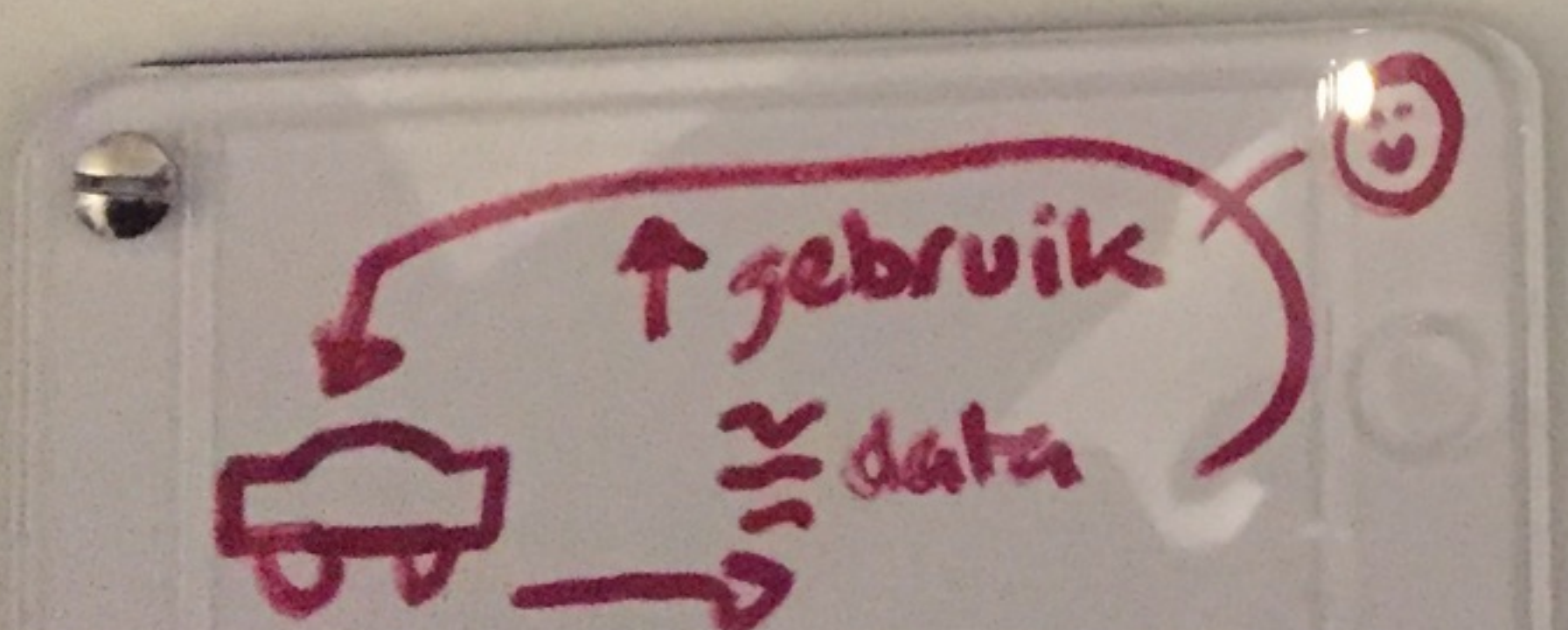
Hoi  
Joeké  
gegevens:  
=====  
Verwijder?

Mag ik de data delen?

yes NO

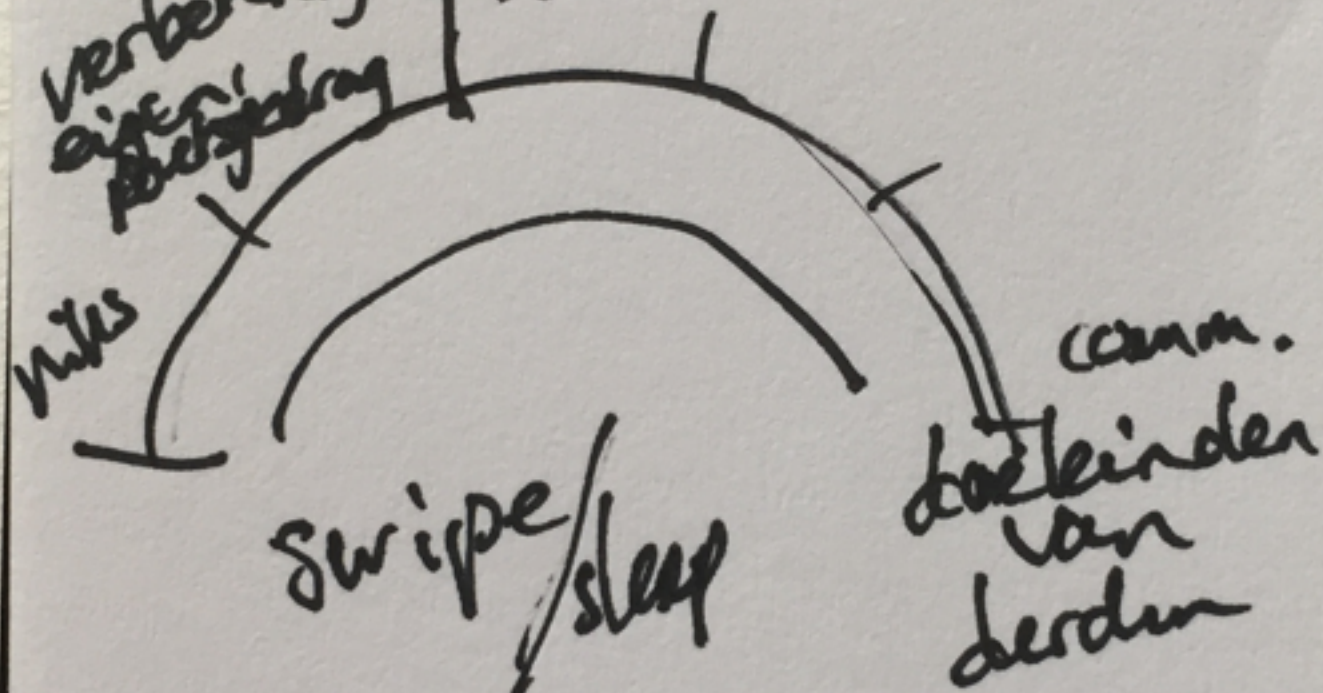
yes

Bedrijf      Gemeen-      Vrienden  
                         te



waarvoor wordt je data gebruikt.

verbetering  
eigen bijdrage  
gezondheid  
doelinden



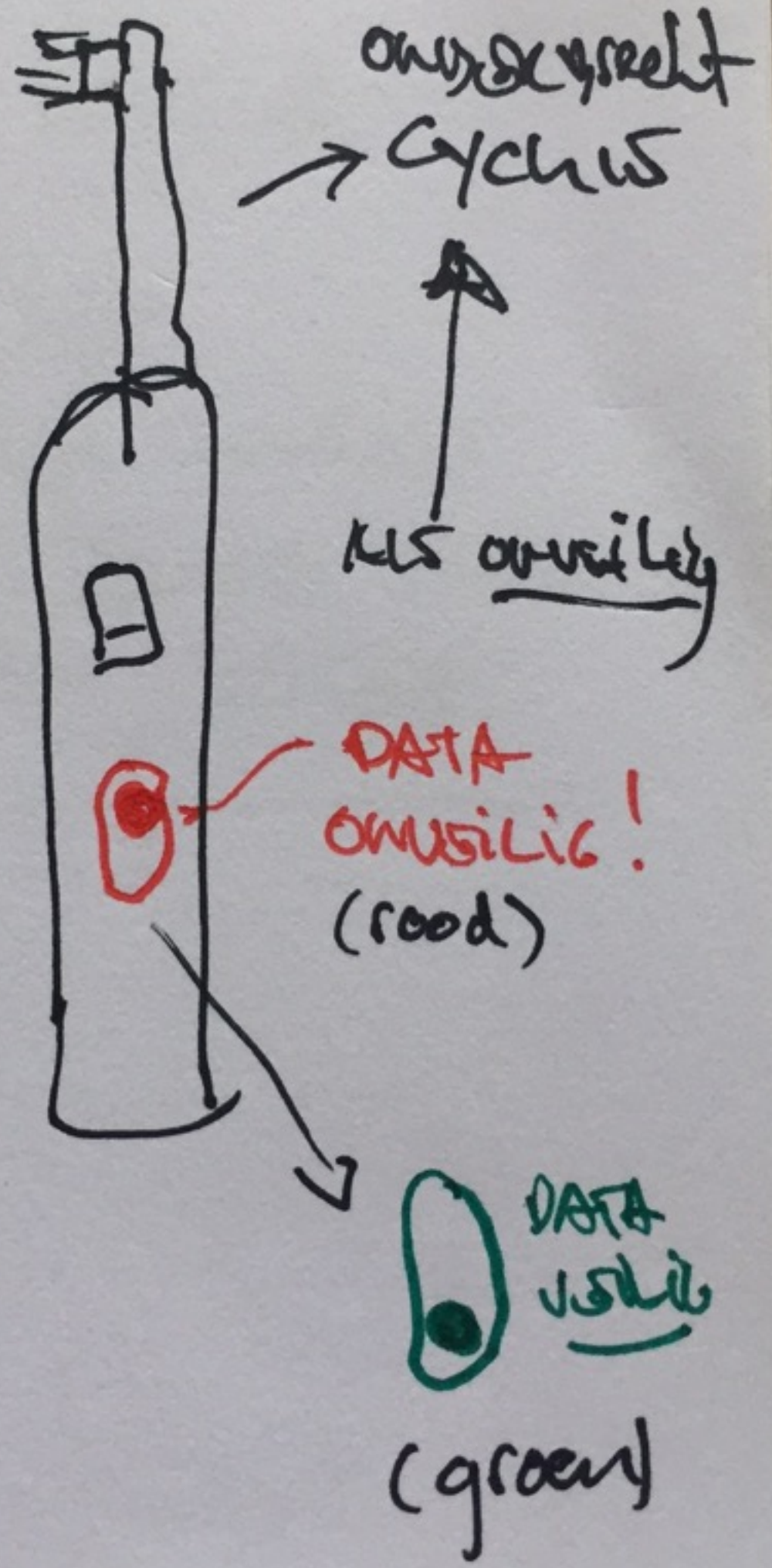
+ ander "ingangsclassen"  
in interface in  
anonieme modus

Handwritten notes on a transparent card, including the phrase "Z wordt gebouwd in".





Titubon (handwritten)



5 modes



**But Jan Wessel...**

**...wouldn't that be way too expensive?**

**Enabling trust is never too expensive.**



**Nils Bohlin**

**“There is not sufficient factual information on the protective value of seat belts in automobiles to form any definite conclusions”**

**(...)**

**“There is little interest on the part of the motoring public in actual use of seat belts.”**

**General Motors VP Charles Chayne**

**Unsafe At Every Speed, Ralph Nader**

# WE DESIGN EVERY VOLVO TO LOOK LIKE THIS.



You're looking at a perfect Volvo. A Volvo that performed exactly as our safety engineers designed it to. Its front and rear ends, for example, collapsed on impact. As a result, much of the crash energy was absorbed instead of being passed on to the passengers. The car's middle section, however, didn't collapse. That's because the entire passenger compartment is surrounded by Volvo's unique "safety cage." Made of six box section steel pillars, this protective housing is strong enough to support the weight of six Volvos.

But the passengers of this car were also protected in ways you can't see. Because inside are such standard features as a driver's side Supplemental Restraint System, a collapsible steering column and, of course, 3-point seat belts, front and rear.

Every Volvo is designed to help protect its passengers in all these ways. And, as a result, will look remarkably similar to this one after being in the same type of accident.

If you're concerned about safety, you can't find a more beautiful car.

**VOLVO**  
A car you can believe in.

Make

Model

OR

Class

OR

**ALL RESULTS & REWARDS**

Make & Model	Overall rating					
Seat Leon	2012 ★★★★★	94%	92%	70%	71%	
Hyundai i30	2012 ★★★★★	90%	90%	67%	86%	
Opel/Vauxhall Mokka	2012 ★★★★★	96%	90%	67%	100%	
Subaru XV	2012 ★★★★★	86%	90%	64%	86%	
VW Golf	2012 ★★★★★	94%	89%	65%	71%	
Kia Cee'd	2012 ★★★★★	89%	88%	61%	86%	
Audi A3	2012 ★★★★★	95%	87%	74%	86%	
BMW 3 Series	2012 ★★★★★	95%	84%	78%	86%	
Ford B-MAX	2012 ★★★★★	92%	84%	67%	71%	
BMW 1 Series	2012 ★★★★★	91%	83%	63%	86%	
Honda Civic	2012 ★★★★★	94%	83%	69%	86%	
Nissan Leaf	2012 ★★★★★	89%	83%	65%	84%	
Volvo V60 Plug-In Hybrid	2012 ★★★★★	93%	83%	65%	100%	



 @waxle

 @intimate\_data