

WELCOME

Ethics and technology

Why it is important to think about the impact of
technology on humans and society

(and how to put those thoughts to action!)

Presentation for HBO-i Docentenevent 8 okt 2021

Jo-An Kamp, Fontys school of ICT

Assignment

- I will show you a video prototype from a first year IMD student
- Please write down everything you see that can be explained as either *good* or *not so good* (for now and in the future)

(The video is 2.30 minutes long.
Prepare for a quick shout out afterwards. Let's go!)



Recap: Shout out

good?



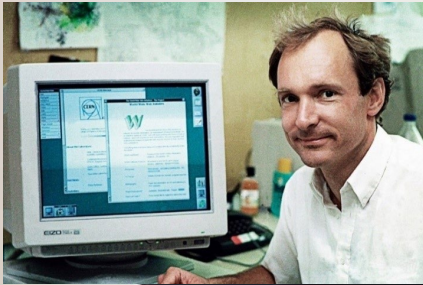
poor, bad, ill, worse?



"The more Artificial Intelligence enters our lives, the more essential Ethics & Philosophy become."

(THE AI THOUGHT BOOK)

Avoid becoming a 'tech regret'



Jo-An Kamp





Techno philosophy

Think before you choose.

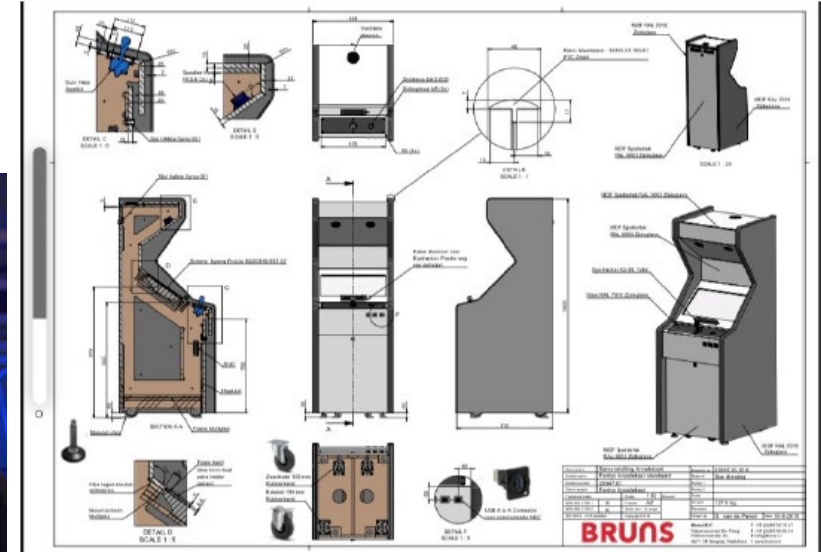




Research group application

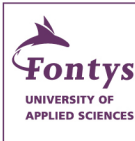
Moral Design Strategy

Designing a (mobile) moral lab





TECHNO FILOSOFIE FRAMEWORK



AI / TECHNOLOGIE

relatie mens en technologie

TECHNIEK is neutraal?

KARL JASPER, TECHNIEK ALS NEUTRAAL MIDDEL

Techniek is het op zich zelf staande middel dat de mensheid in staat stelt om de natuur te overwinnen. Het is een neutraal middel dat kan worden gebruikt voor zowel goede als slechte doelen. De mensheid is verantwoordelijk voor het gebruik van techniek.

ONSTOPBARE natuurkracht?

MARTIN HOFSTEDER, TECHNIEK ALS GEVAAR

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↓

de TECHNOLOGISCHE MENS

↓

ETHISCH FRAMEWORK

DE ETHISCHE DOELZOEK

Wat is de ethische zoektocht? Het is de zoektocht naar de juiste waarden en normen die de mensheid moeten leiden bij het gebruik van techniek.

ANPAK / TO BE CONTINUED

Wat is de aanpak? Het is de aanpak om de ethische zoektocht te vertalen in concrete maatregelen en beleid.

AI / TECHNOLOGIE

relatie mens en technologie

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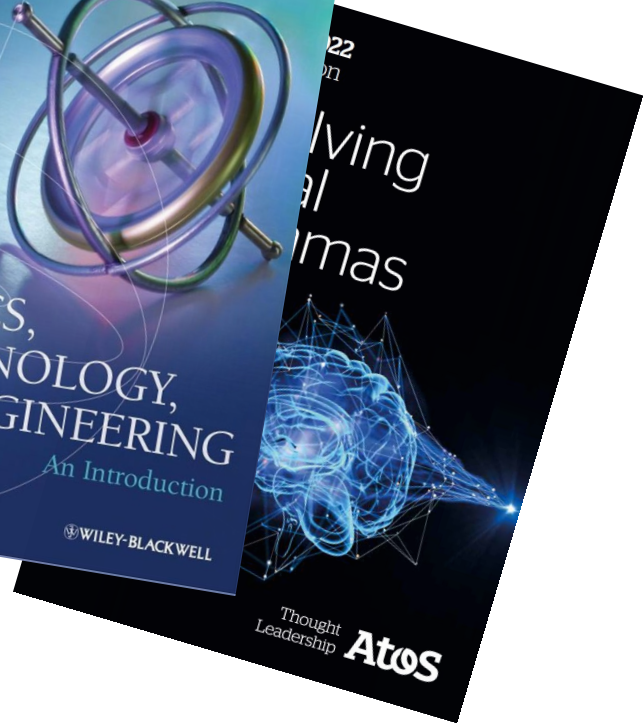
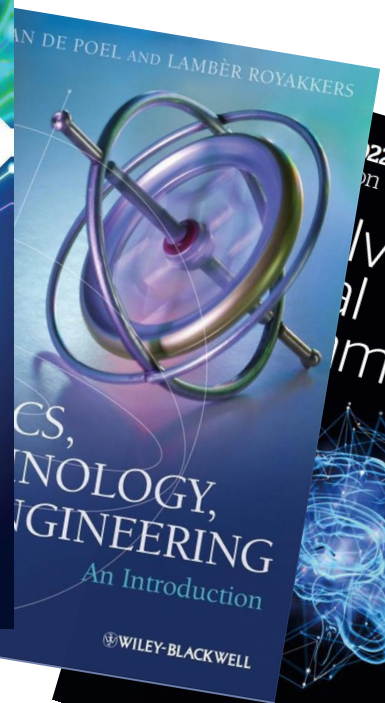
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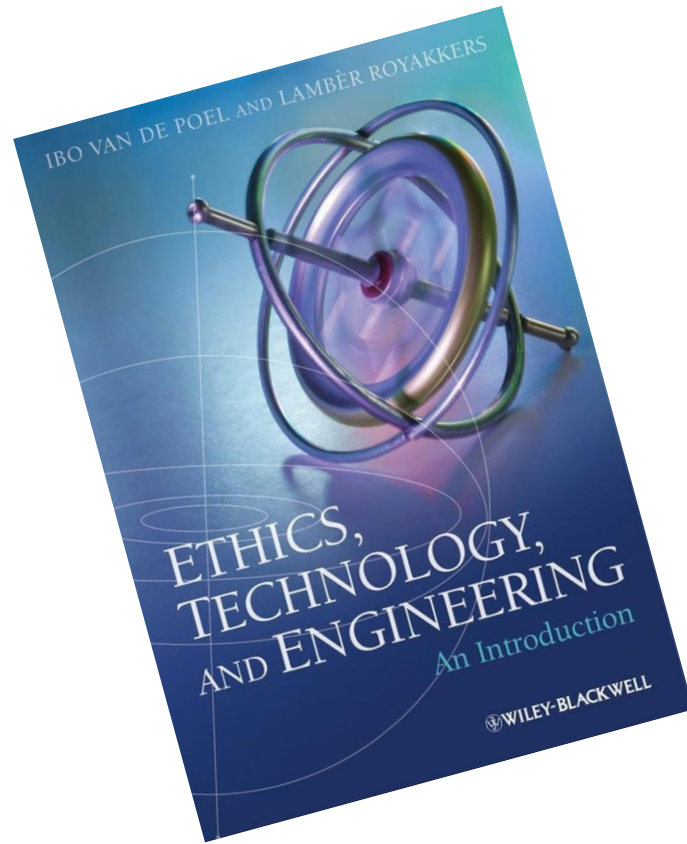
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Fontys Hogeschool BSB

Wouter Lancee, Huub Prist en Jo-An Kamp

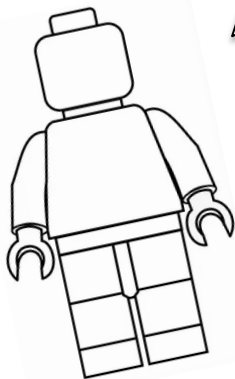
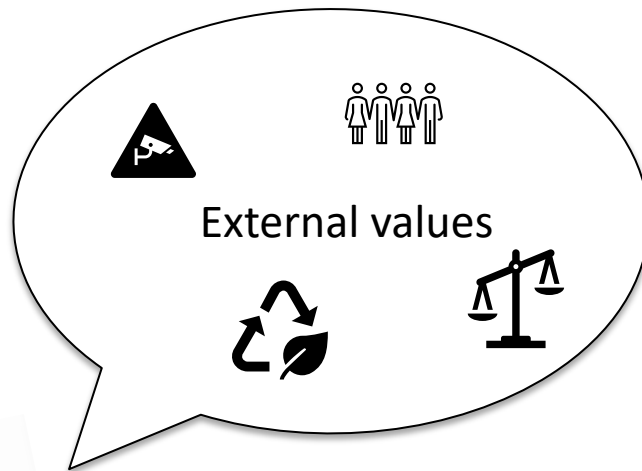
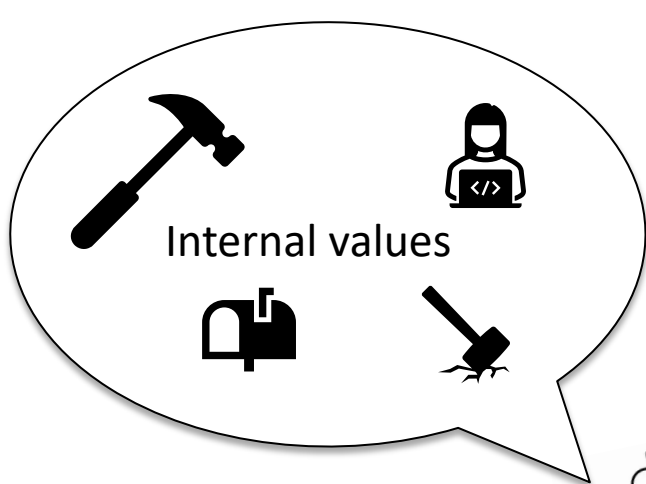




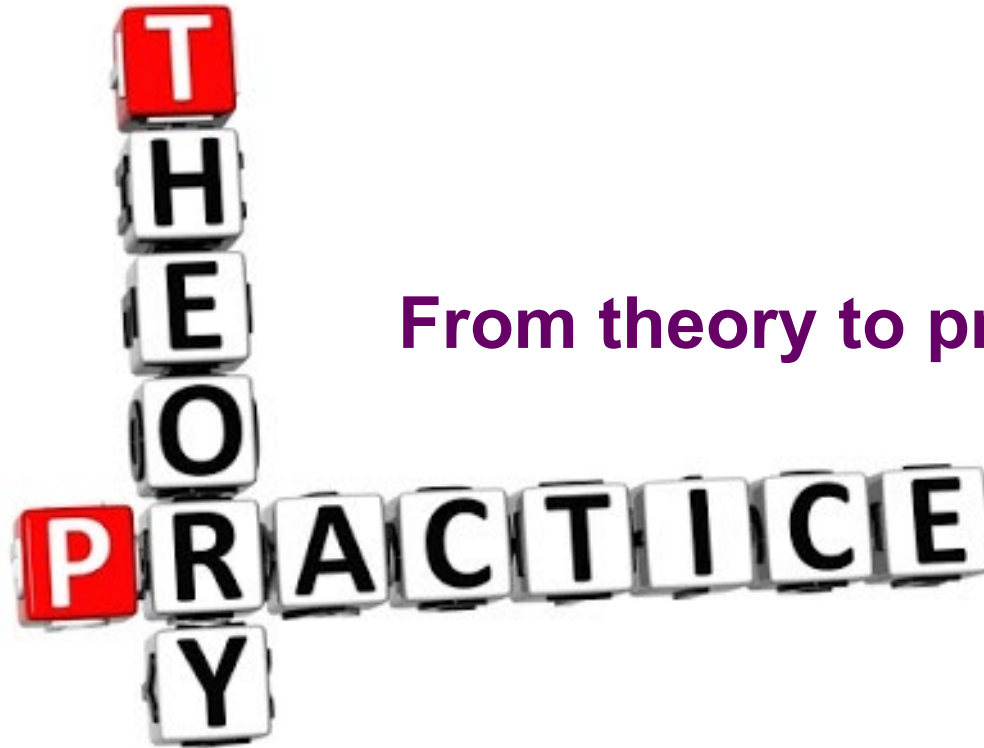
Introduction

One of the **main differences between science and engineering** is that **engineering is not just about better understanding the world but also about changing it**. Many engineers believe that such change improves, or at least should improve, the world. In this sense engineering is an inherently morally motivated activity.

Engineers have a natural tendency towards internal values



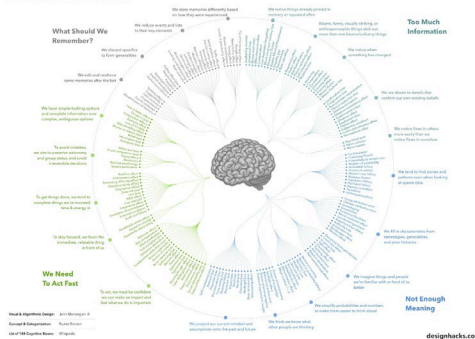
“those who create new technology should
internalize the external (terminal) values
in order to design meaningful innovation”
Ibo van de Poel, 2015



From theory to practice...

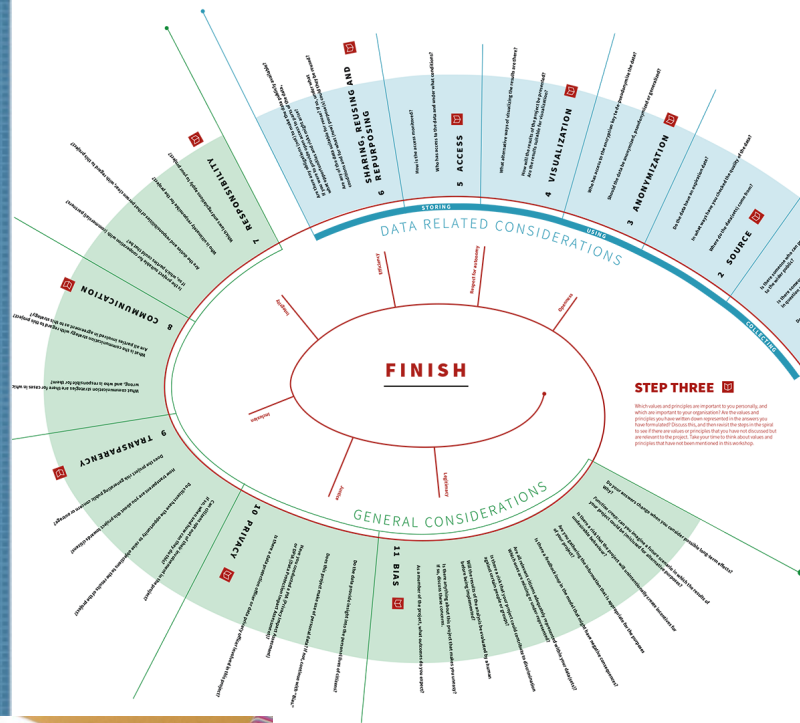
ETHICAL OS

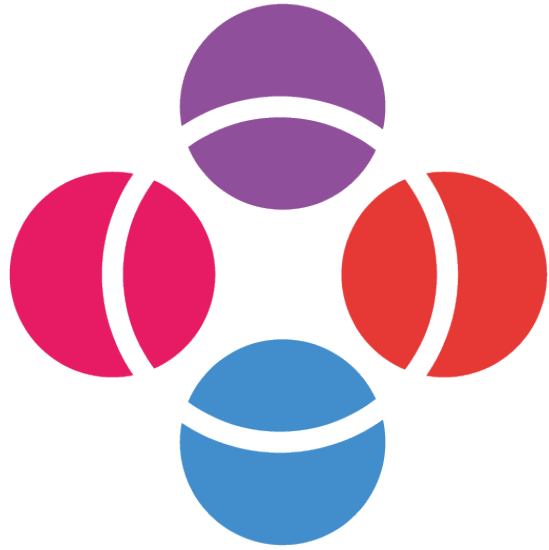
COGNITIVE BIAS CODEX



AN ETHICAL TOOLKIT FOR THE DEVELOPMENT OF AI APPLICATIONS

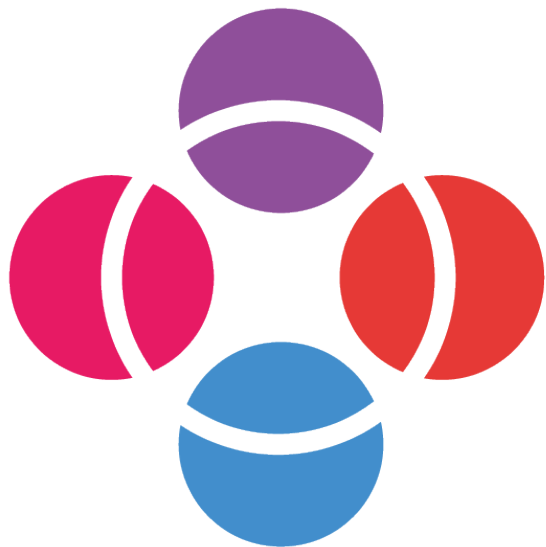
The designed ethical toolkit, in the form of a "full-day" modular workshop, assists in the generation of ideas and supports dialogue for an ethical development of AI applications. Furthermore, its seven modules provide a basis for discussion, trigger solutions, and visually communicate the topics of AI ethics to development teams and clients in a creative and collaborative fashion.





TICT

Technology Impact Cycle Toolkit



TICT

**A FREE TOOLKIT THAT HELPS USERS
TO MAKE BETTER DECISIONS
ON THE IMPACT OF TECHNOLOGY**

WWW.TICT.IO

a TEC4Society project
in friendly cooperation with



Starting points while developing the tool:

1. Technology = multidisciplinary
2. Ethics as a driving force for innovation
3. Non-judgmental (you can be as good/evil as you want)
4. Part of the (design cycle) process
5. Context is king



How is your technology going to solve the problem?

Questions, a lot of questions...

How does the technology influence the user(s) ability to make his own decisions?

What is the effect of the technology on the health and/or wellbeing of the user(s)?

Did you consider future impact?

Is there any recourse for people who feel they have been incorrectly or unfairly assessed?

What impact is expected from your technology?

Is your technology fair for everyone?

Did you consider all stakeholders, even the ones the might not be your user or target group, but still might be of interest?

Did you make any changes to the design of your technology because of these questions?

In what way is your technology contributing to a world you want to live in?

In what way do you consider the fact that data is collected from the users?

Is your technology environmentally sustainable?

Does your technology have a built in bias?

How could bad actors use your tech to subvert or attack the truth?

In which way can you imagine a future impact of the collection of personal data?



Impact



Bad actors



Privacy



Human values



Stakeholders



Data



Inclusivity



Transparency



Sustainability



Future

The most important question (at the end of each categorie)

Is your technology fair for everyone?

Did you make any changes to the design of your technology because of these questions?

What impact is expected from your technology?



Impact



Bad actors



Privacy



Human values



Stakeholders



Data



Inclusivity



Transparency



Sustainability



Future



What impact is expected from your technology?

Impact on society

Importance: **Very important**

Quality: **Very good**



What can bad actors do with your technology?

Hateful and criminal actors

Importance: **A lot**

Quality: **Very good**



Are you considering the privacy & personal data of the users of your technology?

Privacy

Importance: **Very important**

Quality: **Can be better**



How does the technology affect your human values?

Human values

Importance: **Very important**

Quality: **Good enough**



Have you considered all stakeholders?

Stakeholders

Importance: **A lot**

Quality: **Good enough**



Is data in your technology properly used?

Data

Importance: **A little**

Quality: **Good enough**



Is your technology fair for everyone?

Inclusivity

Importance: **A lot**

Quality: **Good enough**



Are you transparent about how your technology works?

Transparency

Importance: **A lot**

Quality: **Good enough**



Is your technology environmentally sustainable?

Sustainability

Importance: **Not important**

Quality: **Good enough**



Did you consider future impact?

Future

Importance: **A little**

Quality: **Good enough**



Fast impression of the impact on a canvas

Quick Scan



Summary of improvements on a canvas

Improvement Scan

We advise you to read the [Quick Start Manual](#) first.

Legend: ■ Not answered ■ Fully answered ■ Partial answered ■ Skipped

Quick / Full / Improvement Scan



Technology Impact Cycle Tool

[Logout](#)[Admin](#)[Profile](#)

Fast impression
of the impact on
a canvas

Quick Scan



Complete
analysis of the
impact

Full Scan



Summary of
improvements
on a canvas

Improvement Scan

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My Cycles
Public Cycles

Griefbot
Corona Contact App
Baby Don't cry

Do the best you can until you know better.
Then when you know better, do better.

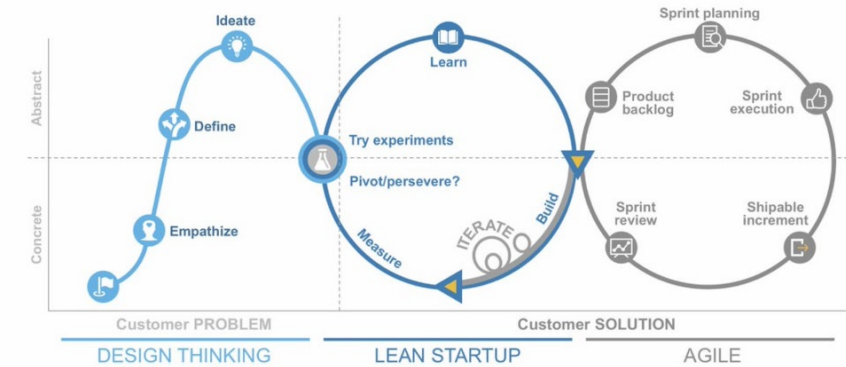
Maya Angelou

Contact

Best practices
Manual

Cycle: in all stages of the process

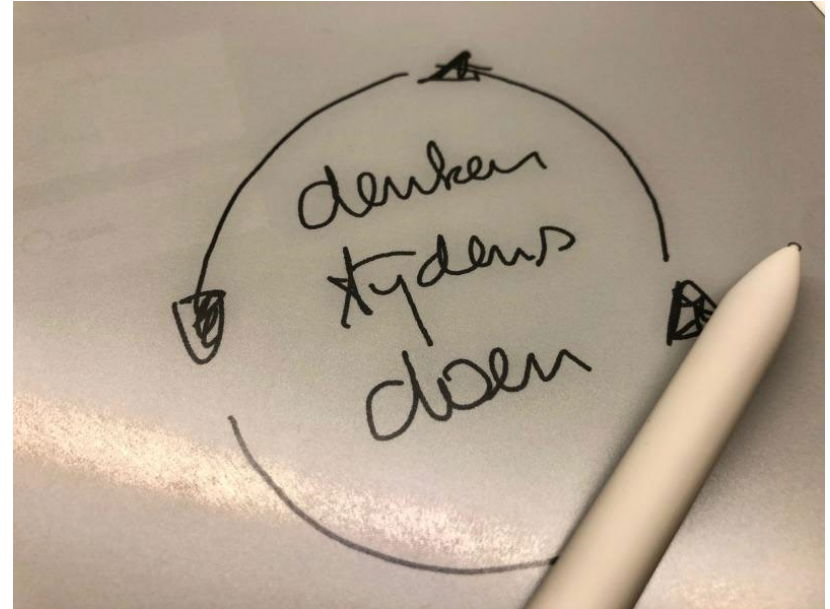
Combine Design Thinking, Lean Startup and Agile



#GartnerSYM

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Corona App(athon) in TICT (v1.0)

Corona App (in Dutch!)

Hypothetisch: De corona app is een mobiele applicatie die helpt om besmettingen met corona in kaart te brengen. De app werkt op basis van bluetooth. Telkens als jouw telefoon bij een andere telefoon in de buurt is (met de app) volgt een digitale begroeting. Als jij dan later besmet raakt, krijgt iedereen die in een bepaalde periode bij jou in de buurt is geweest een melding. Dat gebeurt volledig anoniem. De data wordt centraal verzameld om meldingen te kunnen versturen en patronen te kunnen analyseren. Het doel van deze app is om (in afwachting van een vaccin) de verspreiding van het virus verder te vertragen en zo de grenzen van de capaciteit van de gezondheidszorg te borgen. Let op: deze cyclus focust zich op de eerste van de twee geplande Apps: de zogenoemde contactonderzoek-App op basis van Bluetooth. De opvolging van deze App, de gezondheidsmonitorings-App, is voer voor een nieuwe TICT cyclus. Maak deze gerust aan als je hier ideeën over hebt of je gedachten hierover wilt toetsen. Dat geldt ook voor apps die als doel hebben om mensen in quarantaine te houden.

Sharing: Public

Created by: Rens van der Vorst

Created on: April 16, 2020 1:23 PM

Changed on: April 28, 2020 1:54 PM

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Corona Contact Tracing App in TICT (v2.0)

Corona Contact Tracing App

This is an analysis of the Dutch corona contact tracing app (CCTA). The CCTA is a mobile application that helps to map corona infections. The app works on the basis of bluetooth. Whenever your phone (with the CCTA) is near another phone (with the CCTA), a digital 'handshake' follows. If you become infected later, everyone who has been in your area during a certain period can be notified. The app works completely anonymously. A random number is generated and shared, numbers are deleted after a certain period of time. You can only indicate that you are infected with a special code from the health service (GGD). The data is collected centrally to be able to send reports and analyze patterns. The purpose of the CCTA is to further slow down the spread of the virus (while awaiting a vaccine or effective treatment) and thus safeguard the limits of the health care capacity. The CCTA is part of a large set of measures like washing your hands, 1.5 meters, getting tested and staying at home when you have symptoms.

Sharing: Public

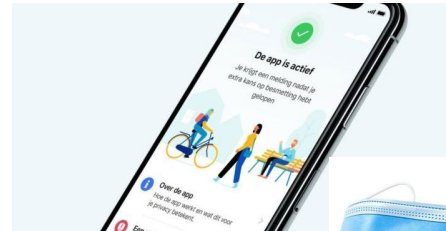
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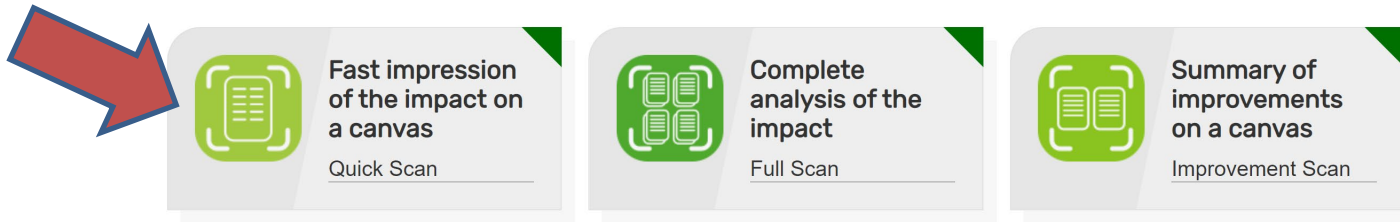
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Workshop assignment

- Take a look at the case(s) you are working on at the moment
- Decide which one might have an ethical aspect in it
- A. Perform a quick scan together with your team mates (discussion allowed!)
- B. Or start with the first categorie: impact on society and answer all the questions there
- Do (part of) the full scan if you have time left

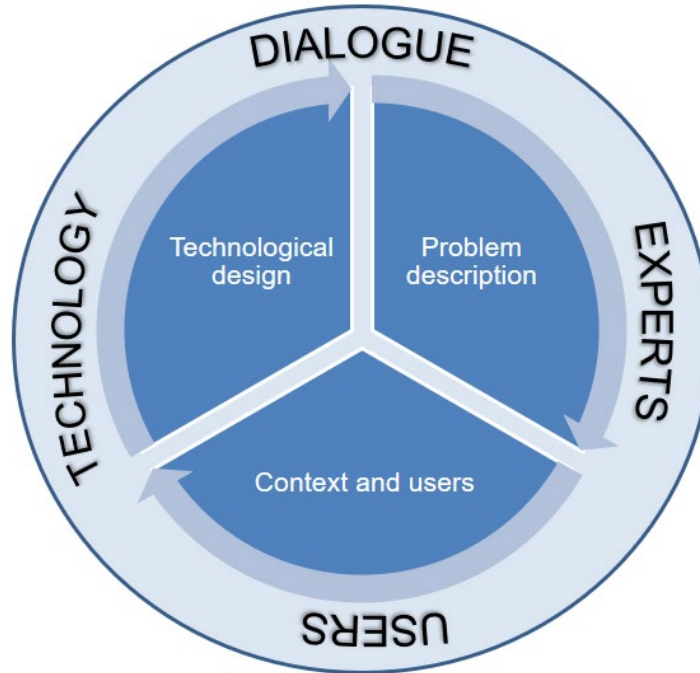


TIP: You can print it as a PDF and attach it to your (group)documentation!

(I will walk around and guide you)

Pro-tip: Start with a small cycle

Categorie: impact on society



- What is the challenge at hand?
- What problem do you want to solve?
- Are you sure you are solving the right problem?
- How is the technology going to help you here?
- What positive or negative effects can you expect?
- What about the users?
- Is this product contributing to a world you want to live in?
- Can your product be better designed? What improvements do you want to make?

Quickscan: fill it in online or use a (printed) Canvas

Quick Scan
Fast impression of the impact on a canvas

Answer the 10 questions below. The first 600 characters of your answer are printed on a clear canvas that shows the quick impact of the technology.

 [Download canvas](#)

Save Back

What is the challenge at hand? What problem (what 'pain') does this technology want to solve?

In which way can this technology be used to break the law or avoid the consequences of breaking the law?

Does this technology register personal data? If yes, what personal data?

How does your technology affect the identity of the user(s)?

What are the main users/target groups/stakeholders for this technology?

Are you aware of the limitations and subjectivity of data and is this reflected in

Does this technology have a built in bias?

(How) is explained to the users how a technology works and how the

In what way is the direct and indirect energy use of this technology taken into account?

What could possibly happen with this technology in the future?

Save Back

This technology is designed to solve a problem. That is why it is important to exactly define which problem this technology is going to solve. Can you make a clear definition of the problem? What 'pain' does this technology want to ease? Whose pain? The problem definition will help you to determine and discuss if you are solving the right problem.

Can you imagine ways that this technology can or will be used to break the law? Think about invading someone's privacy. Spying. Harboring people. Harassment. Falsely identifying them and so on. Or will people use this technology to avoid facing the consequences of breaking the law (using trackers to evade speed radars or using bitcoin to launder money, for example)?

If this technology registers personal data you have to be aware of privacy legislation and the concept of privacy. Personal data can be interpreted in a broad way. Maybe this technology does not collect personal data, but can be used to assemble personal data. If this technology collects special personal data (like health or ethnicity) you should be extra aware.

To answer this question think about sub questions like: can the technology be perceived as stigmatising? Does the technology imply or impose a certain belief or world view? Does the technology affects user(s) dignity? Is the technology in line with the person the user wants to be perceived as?

For the quickscan, you only have to list the stakeholders. Can you think of the people that are directly or indirectly affected by this technology? There are a lot of stakeholders that are obvious (like users) but be sure you also think about the less obvious ones. Missing a stakeholder can have large consequences. Later it helps to think about further questions. Questions like: Can you write down a few words in what manner the users or stakeholders will be affected by this technology? You can limit yourself to the main / core effect (you think) this technology will have on the stakeholders. Did you really consult a stakeholder? Did you consult all stakeholders? What position do you assume the position of the stakeholders? Are you going to take into account the account? What should you take into account? Are there any conflicting interests between groups of stakeholders? How will you resolve these conflicts?

It is important to understand the limitations of data and it is equally important to design a technology accordingly. Are you aware of limitations of the data used? How does this technology cope with concepts like subjectivity, incomplete datasets, feedback loops and so on? We strongly recommend to use extra links to delve into the shortcomings of data.

Do a brainstorm. Can you find a built-in bias in this technology? Maybe because of the way the data was collected, either by personal bias, historical bias, political bias or a lack of diversity in the people responsible for the design of the technology? How do you know this is not the case? Be critical. Be aware of your own biases.

Is it easy for users to find out how your technology works? Can a user understand or find out why your technology behaves in a certain way? Are the goals explained? Is the idea of the technology explained? Is the technology company transparent about the way their business model works?

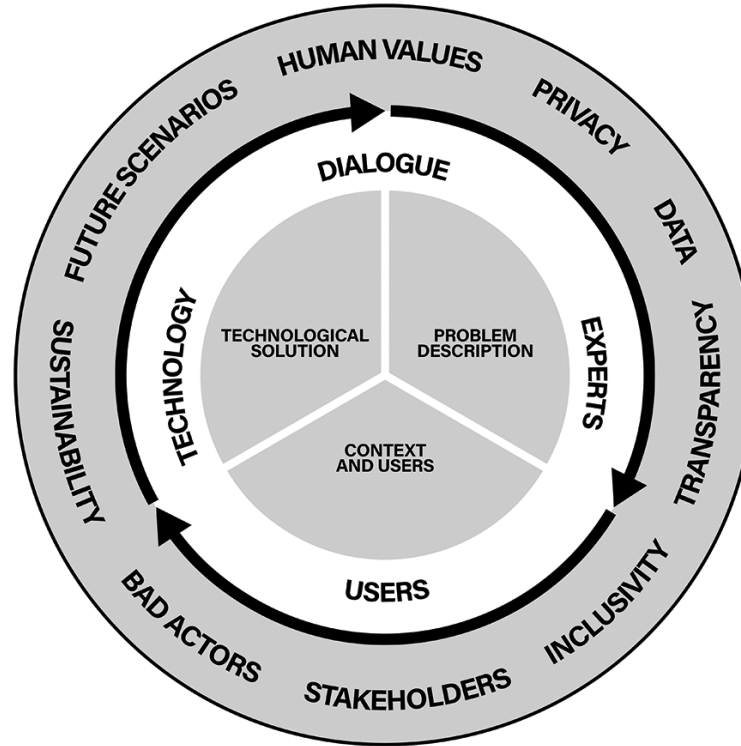
One of the most prominent impacts on sustainability is energy efficiency. Consider what the service is that you want this technology to provide and how this could be done that with a minimal use of energy.

Discuss this quickly and note your first thoughts here

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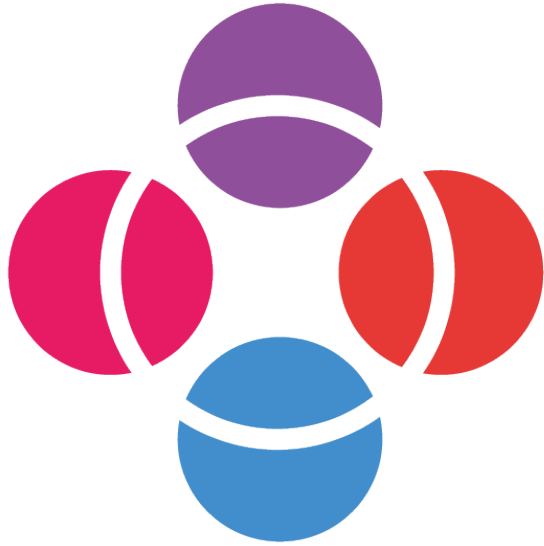
Pro-tip: later on, go further with an extended cycle

Categorie: impact
on society + all
the categories in
the biggest cycle



Do the best you can until you know better.
Then when you know better, do better.

Maya Angelou



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Go!

THANKS FOR LISTENING!



► FOR SOCIETY

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