

What are solutions?
IDEATION
What is the problem?
ANALYSIS
Explanation and examples
GENERAL

BEFORE -THE-EYE



Product Impact Tool

ANALYSE

What guidance does the product provide the user?
What guidance dis missing that the product should provide?
How could the guidance provided by the product be perceived by the user in a different way or be misunderstood?

To what extent do the does the product persuade the user to do something?

What is the image of the product?
Who would buy the product?
What is the (desired) image of the target group?
How does the product appeal to the target group?

If technologies address our cognition, this can be termed before-the-eye interaction. Products then transport signs that informs our decision making faculty. The experience of conscious use of technology largely falls in this quadrant. The eye symbolizes this mode, but other senses can act as information receivers too.

Three exemplary effects before-the-eye are: guidance, persuasion, and image.

The mechanisms collected in this quadrants are drawn from the intersection of psychology and design. They can be applied in the design of products and this is actually been done. Think of design for usability, branding, and social design.

BEFORE-THE-EYE

1st. fold

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3rd. fold

2nd. fold

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Start!
Open here

GENERAL

Products give users suggestions about possible use. A well-known concept that helps understanding impacts on behavior through cognitive suggestion is affordance.

Affordances are the use action possibilities that users recognize when they perceive products. The concept of affordance helps to analyze how buttons, grips, displays, meters, ribs, etcetera are cognitively associated with possible actions.

GUIDANCE



Can you provide proper guidance through symbols, signs, or text?

How can you integrate the desired guidance in the product logically?

Could you also provide the guidance through another one of the senses (touch, smell or sound)?

CATEGORIZE ASSIGNMENT

Take your most interesting ideas and place them in the quadrant where they fit the best

IDEATION

Persuasion is another type of influence through cognitive interaction. Compared to guidance, persuasion can be characterized as a stronger type of influence on behavior In this case the user guiding effect goes beyond supporting existing, conscious goals: it reminds people of values or intends to teach new ones.

Persuasion focuses on effects that work cognitively, by addressing user's decision making processes.



How can you make the desired behaviour more attractive to the user?

Is it possible to implement a gaming element to encourage desired behaviour?

Can you evoke a feeling of guilt when the user shows undesired behaviour?

EXAGGERATE ASSIGNMENT

Take one idea and exaggerate it within the same quadrant

PERSUASION

Products can contribute to fashioning people as they identify themselves with and through technologies. People choose products that fit their image, and thereby those products help to shape and express the identity, the self of people.

This exemplary mediation effect can best be categorized in the cognitive interaction quadrant. By using technology people express themselves.



Which style characteristics that fit the target group can you use in your product?

Can you encourage or discourage certain behaviour by implementing a certain image in your product?

MOVE ASSIGNMENT

Adjust an idea in such a way that it will render the most effect in a different quadrant

IMAGE

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Wat is the problem?
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TO-THE-HAND

TO-THE-HAND

The most obvious effects of technology on humans are direct influences on the human body and gestures. The decision making faculty is short cut. To-the-hand interaction proceeds by bodily contact or affection of the senses. The hand is used to symbolize this.

The three exemplary effects are: coercion, embodied technology, and subliminal affect.

To design is to throw obstacles in other people’s way, said Vilém Flusser. Indeed, fences and gates determine where people can and cannot go. Coercive technology often decreases freedom and user experience. But it may also afford a very natural interaction. Think of operation by touch and gestures.

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Op welke manier spreekt het concept de zintuigen van de gebruiker aan?

In hoeverre zorgt dit ervoor dat de gebruiker wordt beïnvloedt om iets te doen dat hij in eerste instantie niet van plan was?

Moet de gebruiker leren omgaan met het product?

Moet de gebruiker het product opnemen in zijn routine?

Dwingt het product een bepaald gebruik af?

Hoe zou de gebruiker zich kunnen voelen door deze dwang?

ANALYSE

Start!
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1st. fold

3rd. fold

4th. fold

2nd. fold

CATEGORIZE ASSIGNMENT

Take your most interesting ideas and place them in the quadrant where they fit the best

Can you force the user (physically) to show the desired behaviour?
How can you make undesirable behaviour (physically) impossible?
How can you make that the user is unaware of the coercion?



A clear example of technology that physically coerces human behavior is the speed bump.



Here a dangerous machine must be operated with two hands, so one cannot cut one's hand with the other.

GENERAL

Many everyday products enforce a certain behavior on humans. Latour wittily discusses a speed bumps making car drivers slow down, door rooms ensuring that doors are being closed, and hotel keys with heavy key fob disciplining hotel guests to leave the keys at the hotel desk.

Technologies carry scripts with them, guiding users it like a movie script helps actors. When products guide humans, Latour thinks this implies the delegation of morality from people to products.

COERCION

EXAGGERATE ASSIGNMENT

Take one idea and exaggerate it within the same quadrant

How can you (closely) fit the product to the body of the user?
Can you make the user to focus on the (end) result instead of on the tool?
Can you bring the desired effect by letting the user be busy with something else?



The bicycle is a god example of a product that you use without thinking about it.



Ballet shoes enable to walk on one's toes: an activity impossible without this embodied product.

EMBODIED TECHNOLOGY

Products can coerce physical gestures, but they can also structure gestural routines in more subtle ways. Products such as pencils or bikes are used without much thought. And if one does think about it, they are rather experienced as comfortably integrated and empowering, than as constraining.

Practice and discipline are necessary to attain this natural experience, even if this is often forgotten afterwards (Foucault).

EMBODIED TECHNOLOGY

MOVE ASSIGNMENT

Adjust an idea in such a way that it will render the most effect in a different quadrant

Can you make the user to think of the desired behaviour with an association with something else?
Can you bring the desired effect by letting the user be busy with something else?



Baking fresh bread in a supermarket - The smell of fresh coffee enhances the ambiance, and ces hospitality in a supermarket.



A person at a supermarket counter looking at a product.

SUBLIMINAL AFFECT

Subliminal affect denotes behavior steering effects of technology (such as attraction or dislike) by smells, noise or by images that works subconscious. Even if there is no physical contact, this effect is still best categorized in the to the-hand-quadrant.

Unlike interaction in the before-the-eye quadrant conscious cognition is however not involved. Instead, affection occurs by subliminal tuning to the triggers from the environment.

SUBLIMINAL AFFECT

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BEHIND-THE-BACK



Product Impact Tool

ANALYSE

In which environment will the product be used?

How does this environment influence the user?

Does the use of the product also influence the environment?

Which side-effects could occur that would (partially) nullify the effect of the product?

Is there a need for infrastructure to make the product function?

Which environmental characteristics are needed to make the product function properly?

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BEHIND-THE-BACK

Behind-the-back designates influences of technology which work indirectly, not by direct contact before-the-eye or to-the-hand, but via the environment. In this quadrant one finds in particular historical geographical, and sociological insights about technology.

The three exemplary effects are side effects, background conditions, and technical determinism.

Because this type of influence is indirect en because the environment is extended without a border it is impossible to simply apply behind-the-back effects. Acknowledgment of the circumstances makes it possible to adapt products. And to some degree one can design products together with services or infrastructure.

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SIDE EFFECTS

Technologies very often have side effects. A product designed for a with certain functionality may perform this function well at first glance. But in the second instance the advantages with respect to the the primary function may be undone by disadvantages on another on another plane.

The side effects may also attack on a completely different terrain than the that of the intended function: ecological side effects or social side effects.



Earthquakes are an undesirable side effect of mining in the northern area of the Netherlands. The effect of energy saving lamps is nullified if people are using more light because “the lamps are using little electricity”

Can you think of side-effects that could enhance the functionality of the product?

Which side-effects are you afraid of?

CATEGORIZE ASSIGNMENT

Take your most interesting ideas and place them in the quadrant where they fit the best

BACKGROUND CONDITIONS

Often the successful functioning of a product is dependent of background conditions. A product may require an infrastructure for maintenance or provisioning. Or the operation requires prescience and skills.

Mapping the context can therefore help to improve to understand problems with the use and acceptations of products. Sometimes boundary conditions can be designed together with a product.



Cars can only function because of the infrastructure of roads and petrol stations (or charging stations!) Blue light is used to keep drug addicts away, because proper light is needed to find the blood veins for injections.

Which environmental factors could support the functionality of the product?

How could you make the product function better if there would be used a lot of them (network)?

Which functionality of the product could also be fulfilled by (something in) the environment?

EXAGGERATE ASSIGNMENT

Take one idea and exaggerate it within the same quadrant

TECHNICAL DETERMINISM

If one looks at history, than the bigger the timespan becomes, the smaller the influence of individual people seems to matter. This raises the question of historical determinism.

Historians and geographers show which conditions have directed the course of history and in what direction. Politicians and economists address the question if the conditions may be changed as a way to influence historical developments.



Interviews from 1998 on Dutch television show that people did not think of printed media. In return, newspapers followed the design of websites. Today this has totally changed there was a need for mobile phones. News websites followed the design of websites.

Could you make the user attached to the product for a long time?

Can you anticipate to future technological or societal developments with your product?

MOVE ASSIGNMENT

Adjust an idea in such a way that it will render the most effect in a different quadrant

What are solutions?

IDEATION

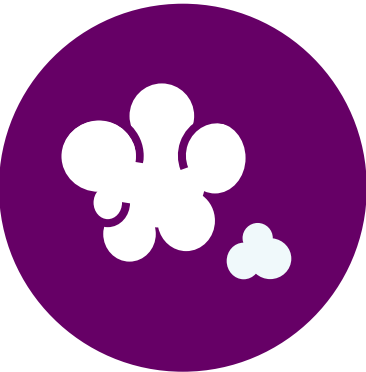
Wat is the problem?

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ABOVE-THE-HEAD



Product Impact Tool

ANALYSE

What are the views of the stakeholders about technology in this product?

What are societal issues that are related to the technology of this product?

Does the user have a primarily positive or negative perception of technology?

Does the user feel that he has to have control over technology?

Does the user feel that technology is enriching her life?

Does the user see the both advantages and disadvantages of technology?

Does the user try to use technology consciously?

What is the public perception with regard to technological developments that are associated with the product?

ABOVE-THE-HEAD

What is the influence of technology on humans, in a general sense?

The above-the-head quadrant comprises general ideas about the relationship between humans and technology. A summary of philosophical thinking about technology shows a progression of three grand visions.

The exemplary effects are utopian technology, dystopian technology, and ambivalent technology.

These ideas are general and abstract; there is no tangible point of contact. The are not so much concepts that can be applied in design. However these ideas often figure in controversies about technology. This quadrant is helpful for ethical reflection and discussion.

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4th. fold

3rd. fold

2nd. fold

Start!
open here

IDEA TION

CATEGORIZE ASSIGNMENT

Take your most interesting ideas and place them in the quadrant where they fit the best

- Can you name the positive and negative effects of your product on society?
- How could you change these effects?
- Can you associate your product with positive developments in society?

Transhumanism is an example of the One utopian promise of the Internet utopian vision in which the inade- is universal association between all quate human being can and must- people. Another is ubiquitous access perfect himself with technology. to all knowledge for everybody.



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UTOPIAN TECHNOLOGY

EXAGGERATE ASSIGNMENT

Take one idea and exaggerate it within the same quadrant

- How can you ensure that people have more control over the technology of your product?
- How can you make the user feel that technology is at the service of people?
- How can you make the technology more 'transparent' to the user?

In the movie *Modern Times* by Char- In the course of the 20th century, lie Chaplin, he plays himself a factory the downsides of technical progress worker who becomes a victim of the painfully came to light through was-



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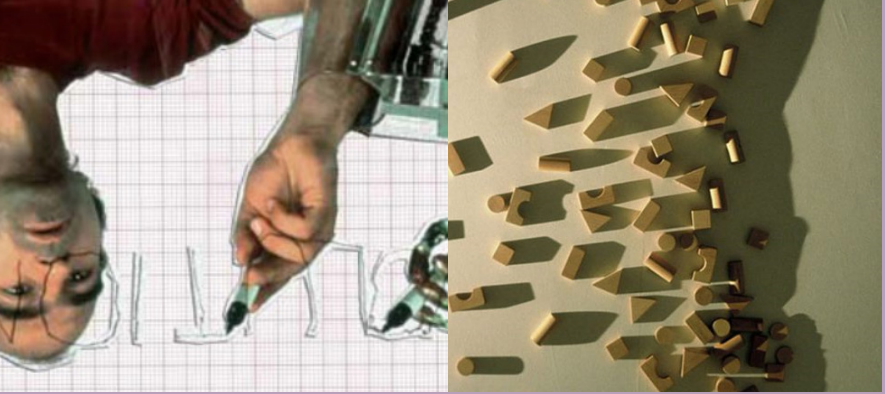
DYSTOPIAN TECHNOLOGY

MOVE ASSIGNMENT

Adjust an idea in such a way that it will render the most effect in a different quadrant

- How can you clearly show the possible advantages and disadvantages of using the technology?
- How can you balance the pros and cons of the technology?

Man's history is constantly intertwined- The artist Stelarc investigates what ed with technology - from the fist it is like to become a cyborg more and more. For example, he mounted axe to the smartphone. himself a robot arm.



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AMBIVALENT TECHNOLOGY