Satis-action

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Introduction

Our society faces many issues like malnutrition, ageing, climate change, energy consumption, water scarcity and air pollution, These social, economic and environmental issues are growing in magnitude on a global scale. Our way of life has to change in order to tackle these major challenges to the global society (Brand & Rocchi, 2011). Our way of life requires a fundamental shift in mindset, vocabulary and behaviour, (Gardien, Djajadiningrat, Hummels, & Brombacher, 2014). This kind of fundamental shifts is described by Kuhn (1970) as a shift of paradigm's.

I see in my professional and social environment that organisations, especially governmental organisations, have to adapt to this continuous change as well. Change in governmental organisations is a complex process (Gerritsen, 2011). I envision that combining technological, social and cultural innovation with focus on individuals and organisations will create solutions for all kind of complex social issues.

In the transformation of governmental organisations there are lots of experiments going on to change the way of interaction between the living world and the systemic world (Eindhoven University of Technology, Industrial Design, 2017). This systemic change creates valuable and meaningful interaction between individuals and organisations within a co-operating ecosystem (Ackoff, 1998; Brand & Rocchi, 2011).

According to Brand and Rocchi (2011) it is essential in the new paradigm to provide this meaningful context, to practice long-lasting, ethical business, and to share value and collaborate with multiple stakeholders. This new paradigm is called the Transformation Paradigm. An economic paradigm which is unfolding in our society along the Industrial, Experience and Knowledge paradigms.
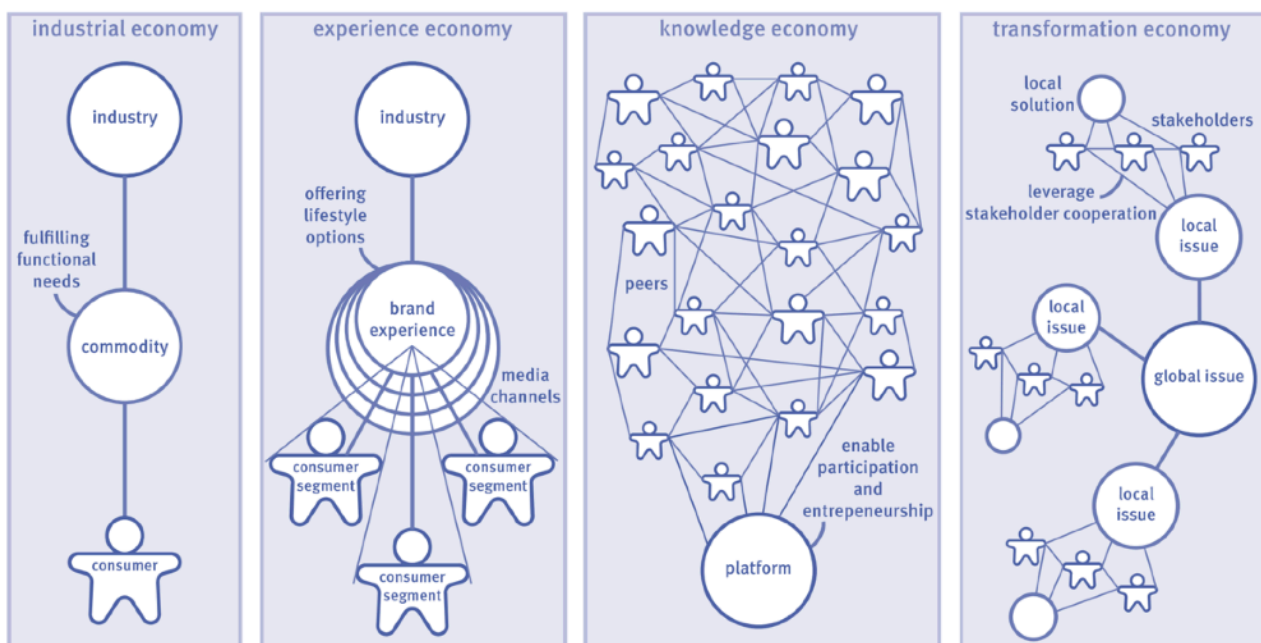
Economic Paradigms

figure 1. Visualisation on economic paradigms (Hummels, 2012; Brand & Rocchi, 2011). Retrieved from (Hummels, 2012, p.17).

The economic paradigms gave a meaning to the systemic patterns of change that are unfolding. Brand and Rocchi (2011) defined these paradigms as follows.

Industrial economy is based upon mass production of goods for the consumer for an affordable price. The model for this paradigm is straightforward linear, input, throughput and output with quality controls and management on production and quality.

The Experience economy is based upon the creation of an identity for target groups where the value of the experience determine the price which is paid. The model for this paradigm is also a linear only not as one shot but a stream of information to feed the brand of both the industry and the target group.

The Knowledge economy it is about the support of peers to produce your own product, experience or service for followers. Technical development place a crucial roll in this paradigm, internet, smartphones, printers and services as search engines or personal video streaming services opened up technology to a mass group of people. The amount of likes or followers determine your value and the money you receive out of this. This model turns the industry on the base as a platform and is a more circular iterative process.

Lastly the Transformation economy is about the self-actualisation of persons who are stakeholders in a network. Creating solutions for local issues with the possibility to scale up to global issues.

But what is the generated value for a person in this paradigm? Can we place practical examples on the model (figure 1)? What is the design process to follow? Some researchers have tried to answer these questions (e.g. Gardien, Djajadiningrat, Hummels, & Brombacher, 2014) but overall we are still struggling for words to describe the transformation paradigm and make it understandable for practitioners. Is it a gap in our language or do we not yet understand the paradigm well enough to explain the dynamics and qualities for a broader audience?

In this design project, I try to find out how the interaction in the transformation paradigm and the transformative practices can be better understood and improved with the help of new design tools. Transformative practices refer to practices that explore and support the transformation paradigm and aim at enabling socially, environmentally and economically sustainable communities (Vimeo, 2017).

The approach
The Transformative practices DRIVing framework is used for the design process of this project (Hummels, Trotto, Lévy, Peeters, Lino & Klooster, 2018). The figure of this framework (figure 2) visualise the foundation, design and innovation activities and the different assets and support systems which creates the transformation of societal challenges.

I explain the framework in my own words based on the workshops of Hummels (Vimeo, 2017) and fully aware I have to practice more to understand the framework. In the centre the societal challenge is positioned together with the need for change on a personal, community and systemic level. This change, or transformation, is achieved along a path of growth thru different phases (incubator, nursery, adoption & transformation). Activities are needed to go along this path and they have to be taken in collaboration with other stakeholders (the light green and dark green elements in figure 2). There is no prescribed sequence but most of the time it starts with the top elements (immerse & empower or position & frame). The practitioner needs assets, supporting systems and a foundation of transformative practices to energise the activities.
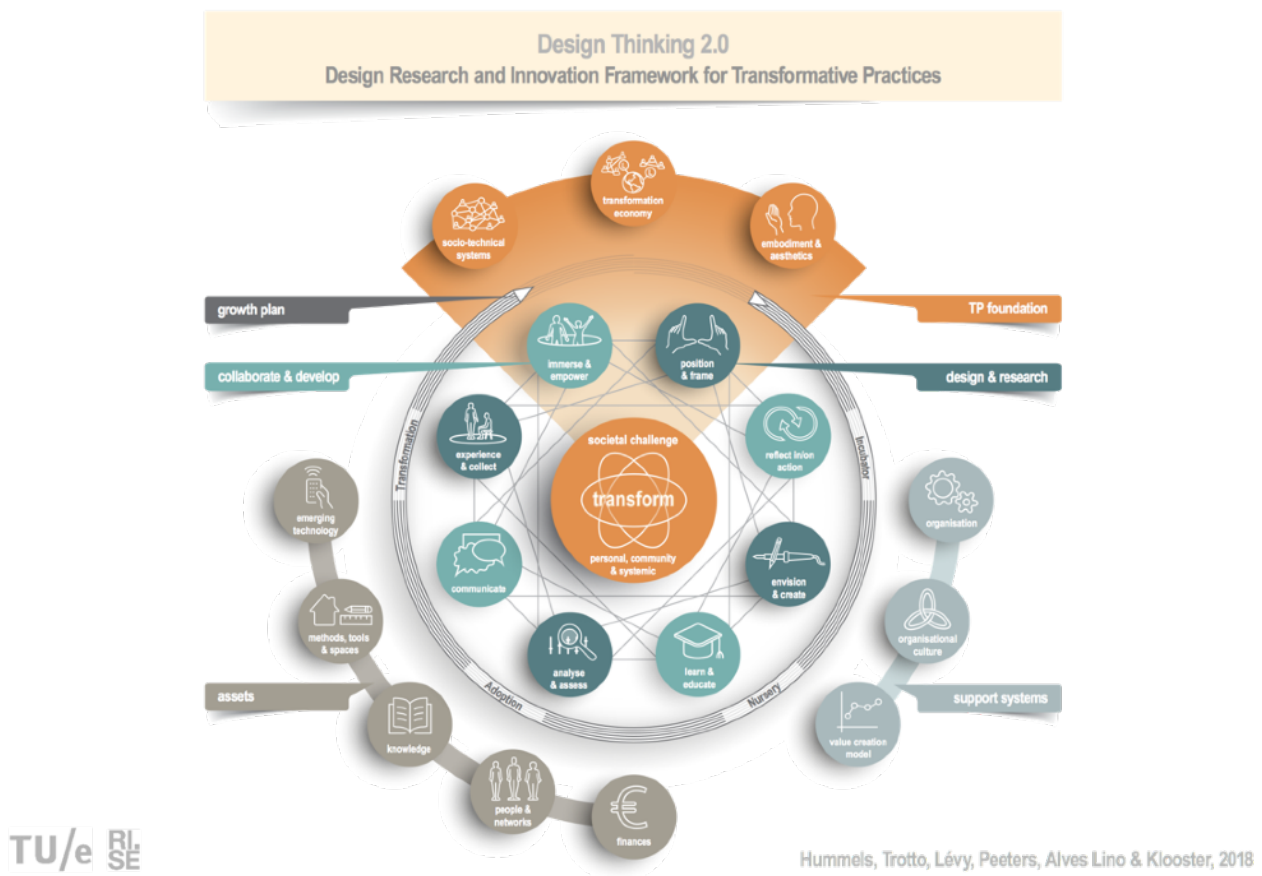
figure 2. Visualisation of the Transformative practices DRIVing framework.
(Hummels, Trotto, Lévy, Peeters, Lino & Klooster, 2018).

In this project we want to develop a tool and method which can function as an asset for governmental and other stakeholders to explore and develop transformation. For our own process, we will use the entire framework. The project activities can be positioned in the middle, on the green circles. The project foundation is explained partly in the orange circles above (transformation economy), and in our experiments we also incorporate embodiment and socio-technical systems. During our process, we make use of various assets (methods, knowledge, people etc) and our overall project will be focused on the value creation model, the grey circle on the right.

To position the main design question of this project into the framework, we ask ourselves: How to explore, visualise and facilitate value creation in a multi-stakeholder setting.

How to read this report

In this report we describe the design process we went through as a design group and later on individually. The 'we' in this report are Renee Noortman, Vera van Otterdijk, Myrte van Dongen and Peter Corvers, the 'I' in this report is Peter Corvers.

The elements in the framework are used to position and describe the activities in more detail. The activities are described chronological in different paragraphs and indicated as numbered steps.

> In the orange text boxes a small reflection describes the insights gained. It contains sometimes also a question as the starting point of the next step.

> *The blue text boxes describe the terminology as used in this report.*

Design challenge

The transformation paradigm gives an interesting description on future scenarios. Not only in business and people's mindset but also in the social, cultural and technological mindset interesting thoughts can be generated out of the research on the transformation paradigm and the transformative practices. The transformation paradigm also generates a scientific language on these futuristic scenario's (Brand & Rocchi, 2011; Hummels & Lévy 2013).

In this design project we focus on the communication within transformative practices. We ask ourselves how we should envision the transformation paradigm, how we can support persons and organisations who practice the methods of the transformation paradigm, and what kind of value creation distinct the transformation paradigm from the other paradigms.

More specific, we want to focus on the way governmental organisations influence the social aspects of life and how this fit into the transformation paradigm. We therefore want to look into the role of organisations working in a social context such as municipalities, provinces and non-governmental organisations. To make our project doable within a semester, we want to select the social context and organisations which practice the transformation or at least try to do so. To make it understandable and to explore the characteristics of the transformation paradigm, we start on more familiar ground with the people and business who seems to have a transformation mind set.

The exploration we take, first as a design group and later individually, is in a way the endeavour to grasp what a social mindset looks like in the transformation paradigm. By challenging ourselves to design an interaction method or tool we also got insights from, and communicated the dynamics of the Transformation Paradigm with, our clients and the Transformative Practices group within the Connecting Realities squad.

Scope of the project

The base for this project is the paper of Brand & Rocchi (2011) on the economic paradigms. They describe the business and people mindset of the transformation paradigm. We use this for the theoretic orientation and as the starting point of our project.

We also use the expertise of Brand and Rocchi in this project. We talked with them on September 20, 2017 at Philips Design were we talked about the transformation paradigm.

In the next step of our project we add an institutional and social mindset to this transformation paradigm as well as the design practices for this paradigm, inspired by the research of Gardien, Djajadiningrat, Hummels and Brombacher (2014)(Vimeo, 2017).

Because of the focus on social values in the transformation paradigm and the willingness of clients working in the social context we focus this project on the tools for persons and organisations working on wicked problems in the social context. This also fits the former experiences and the professional development of the author as described in the appendix.

We use participants of the field test and practitioners as a soundboard group. They are professionals working for organisations active in the social context or persons who are subject in the wicked problems.

Research and Design process

Step 1 - Orientation

De Bruijn and Ten Heuvelhof (2012) speak about dynamics in multi-actor-networks in their book Managing Networks. They explain the different aspects of behaviour of the actors in a specific context on a common objective. This objective is a solution for a wicked problem which only can be realised in collaboration with the different actors. The context is therefor created by the relevant actors around the wicked problem. This collaboration is an iterative process with different plays and rounds and not a project with predetermined chronological steps. The skills and behaviour of the actors is therefore different, and needs the collaboration and commitment of all actors to the end, everybody needs to be involved even though some actors will get their advantage before the finish line.

Brand and Rocchi (2011) even enlarge this kind of thinking by adding the holistic view that local solutions can contribute to global solutions, as they also describe in their view on the transformation paradigm (Brand & Rocchi, 2011).

In our conversation with Brand and Rocchi on September 20, they emphasise that no actor can make that transformation alone. Companies, governments, NGO's and others have to start working together. There is no single solution from the government or industry and to find any solution or to get anywhere, a change in the whole system with all involved actors is required to make impact (Brand & Rocchi, 2011).

The involved actors have to start acting and need to approach issues from the whole system point of view rather than the part of the system that they are familiar with. This whole system approach also relates to a sense of ownership over the issue, causing actors to take responsibility and contribute to solving the issues (Brand & Rocchi 2011; Gerritsen, 2011; De Bruijn & Ten Heuvelhof, 2012). As a system (Brand & Rocchi, 2011) or as a multi-actor-network (De Bruijn & Ten Heuvelhof, 2012) the actors can solve the issues (Kumar, 2010; Gerritsen 2011).

> *Multi-actor-network*
> *the mutual dependence between acting subjects.*
>
> *Wicked problems*
> *are issues without consensus on the values and great uncertainty about the solution.*
>
> *Actor*
> *is an acting subject like organisations or individuals.*
>
> *(De Bruijn & Ten Heuvelhof, 2012)*

> *From now on system and network are both used for the same meaning, mutually depended subjects working towards a combined product.*

To express our conversation with Brand and Rocchi in some terminology of De Bruijn and Ten Heuvelhof (2012): Brand and Rocchi talked about the perspective of the actors. In a system with a top-down approach, actors push their value creation towards the end-user (industrial paradigm). But in the transformation paradigm both the actors and the end-user are figuring out what the end-user needs are, from very different perspectives. Because paradigm shifts are also about changing value systems (Kuhn, 1970; Brand & Rocchi, 2011; Vimeo, 2017), in the transformative paradigm it is therefore essential for actors to recognise the blind spots in their own perspective and to search for ways to work around these blind spots. For example when looking at elderly people as end user in the Dutch healthcare system. Do caregivers, family, insurance companies (actors) and care receivers (end-user) see elderly people as a lonely or as an independent self-sufficient elderly person? This is a question were we can look at the underlying value system.

A design research question came into my mind after the conversation with Brand and Rocchi. How could we, as a design group, look at actors in a network and determine their involvement in the transformation paradigm. Can we determine this by looking to the supply chains in the network?

Before we can answer this design research question we need examples of networks in the different paradigms so we can compare and understand the qualities which differentiate the paradigms.

Therefore the next research question of the design group is: can we find real life examples (practices) of actors or networks in the different economic paradigms?

Step 2 - Visualising practices of the economic paradigms

To improve our understanding of how the theory of the transformation paradigm translates into practice, we (as a design group) dissected several examples from practice. We did so by searching for businesses and organisations and check their mission statement and working methods as they published on for example the internet or in annual reports. This exploration is based on open source data. Criteria we used for searching adequate examples were organisational structure, network or supply chain environment, value flows and the criteria Brand and Rocchi (2011) stipulated in their article on a business mindset.
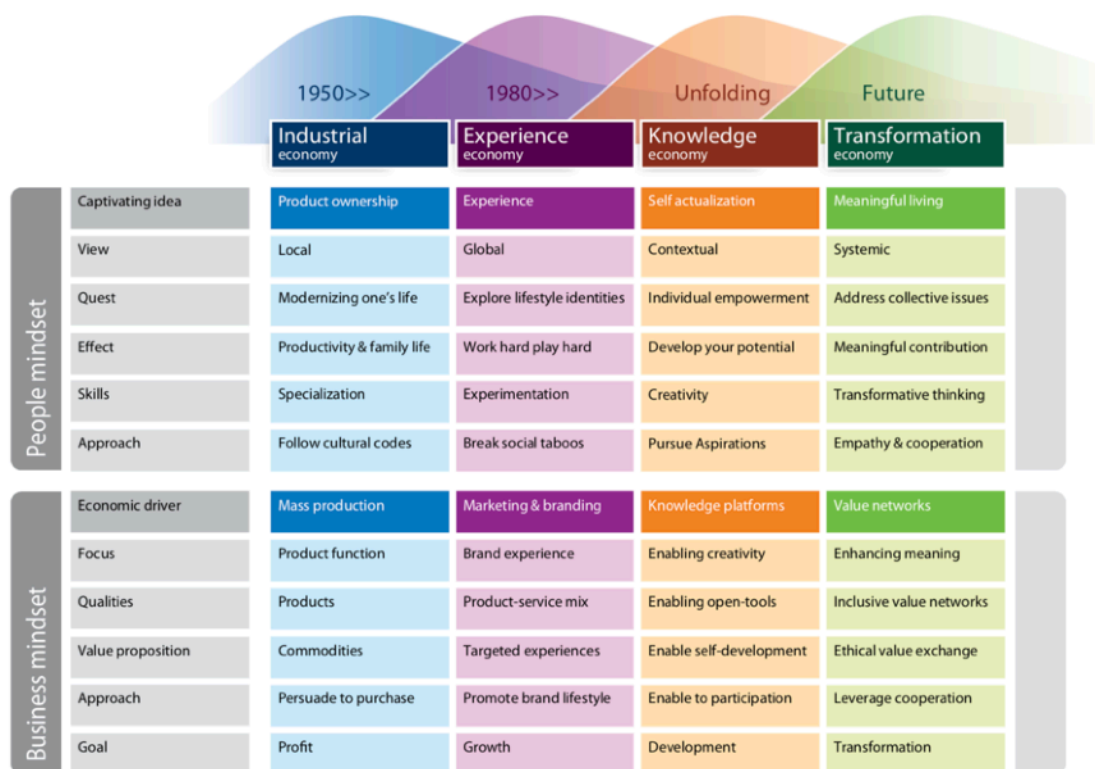
		1950>>	1980>>	Unfolding	Future
		Industrial economy	**Experience** economy	**Knowledge** economy	**Transformation** economy
People mindset	Captivating idea	Product ownership	Experience	Self actualization	Meaningful living
	View	Local	Global	Contextual	Systemic
	Quest	Modernizing one's life	Explore lifestyle identities	Individual empowerment	Address collective issues
	Effect	Productivity & family life	Work hard play hard	Develop your potential	Meaningful contribution
	Skills	Specialization	Experimentation	Creativity	Transformative thinking
	Approach	Follow cultural codes	Break social taboos	Pursue Aspirations	Empathy & cooperation
Business mindset	Economic driver	Mass production	Marketing & branding	Knowledge platforms	Value networks
	Focus	Product function	Brand experience	Enabling creativity	Enhancing meaning
	Qualities	Products	Product-service mix	Enabling open-tools	Inclusive value networks
	Value proposition	Commodities	Targeted experiences	Enable self-development	Ethical value exchange
	Approach	Persuade to purchase	Promote brand lifestyle	Enable to participation	Leverage cooperation
	Goal	Profit	Growth	Development	Transformation

figure 3. Diagram of paradigms in value creation, Brand and Rocchi, (2011).
Retrieved from (Brand & Rocchi, 2011, p.16).

First, we made a list of actors or cases which we thought should fit in the different paradigms. In a thorough discussion within the design group we compared every case to the different paradigms and labeled the case under one of the paradigms. From this categorised list we selected three cases of the transformation paradigm. For this selection we used criteria such as available information and appealing for ourselves and people around us (by just talking about it).

P1: Industrial	P2: Experience	P3: Knowledge	P4: Transformation
Ford T	Pepsi-Cola	Google scholar	Tony Chocolonely
Shell olie	Apple iPod	Bol.com	Greyston Bakery
Action troep	BMW 1	Etsy	Just Things Foundation
Aldi eten	Disneyland	Facebook	The Ocean Cleanup
Primark kleding	Hard Rock Café	Airbnb	Fairphone
DAF trucks	Ikea VR showroom	Youtube	
BIC pennen	Philips Hue	Duolingo	
Boeing 747	Albert Heijn XL	Vimeo	
Opinel	NS Oei & Knoei App	LinkedIn	
	Rijksmuseum Schiphol	Fitbit	
	KLM	IBM SPSS	
	My first Opinel	Fiverr	
		Uber	
		Upworks	
		Coursera	
		Udemy	
		Unity	

The three selected cases were Tony Chocolonely, Just Things Foundation and Fairphone. These cases were described in more detail and we made them visual and tangible. We did this by positioning coloured toy materials, representing actors and values, in a way that visualises the situation or environment of the cases. Connections between the actors and values were drawn with markers.

Tony Chocolonely

https://tonyschocolonely.com/

Tony Chocolonely set itself the mission to make '100% slave free' the norm for chocolate production. Leading by example, they collaborate closely with their local suppliers and manufacturers, ensuring a high ethical standard. They made the origin of their supplies traceable and work on empowering the local farmers with knowledge, better income and long term contracts.

The whole production process is rather industrial, the branding strategies have aspects of the experience paradigm, but the focus on ethical correctness over profit firmly lifts this company into the transformation economy.
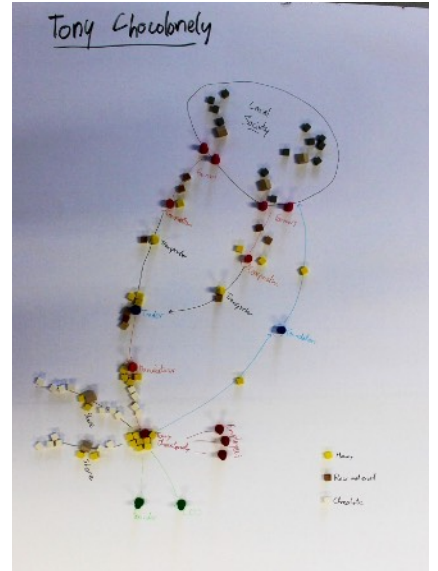
figure 4. Diagram on Tony Chocolonely
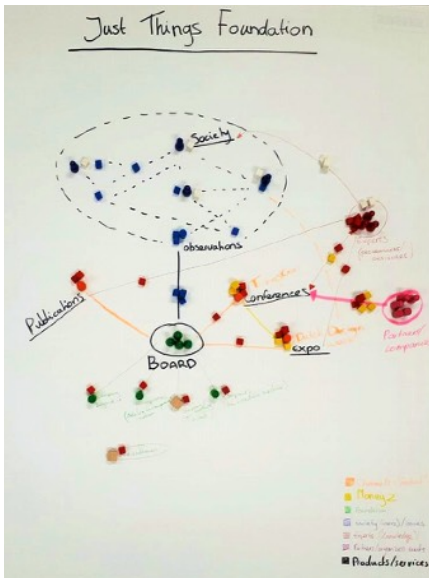
figure 5. Diagram on Just Things Foundation.

Just Things Foundation

https://justthings.org/

The Just Things Foundation concerns itself with the ethical duplicities around the internet of things, such as poor digital protection standards. This initiative differs from the other cases in two ways, first in that it is a non-profit organisation, second in that it delivers knowledge and awareness rather than a physical product. Through a wide network of organisations, experts and researchers they develop guidelines for the responsible use of the internet of things and convey these to the public through papers, conventions and exhibitions.

Fairphone

https://www.fairphone.com/

Fairphone is a company that strives to limit the environmental impact of electronics. By designing a modular mobile phone, they made it easy to replace parts once they fail or become outdated, so the device lasts longer. Parts are made from responsible acquired materials under ethical labor conditions.

In this way the entire design of a mobile phone is rethought to intervene in every area in the production system and create an ethically sound product that contributes to solving a global issue.
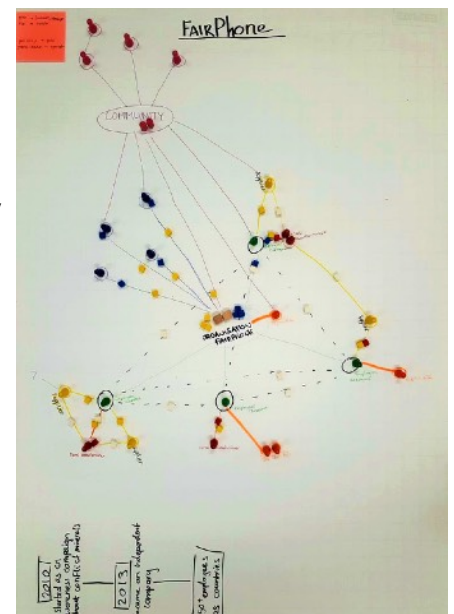

figure 6. Diagram on Fairphone.

As a design group, we started the exploration on the transformation paradigm with the search and visualisation of examples from practice. We experienced the difficulty of finding transformation paradigm examples. Of the identified examples, there is not a lot of open source information available besides the information from the businesses themselves. Therefore it is difficult to determine the reliability of the facts and figures, we could only use their information and this analysis to gain insights and experience of the dynamics in the paradigm.

During the activities of ourselves, we also visualised the dynamics in the transformation paradigm. Actors were pawns, products, money and services were cubes and marker lines were relations or connections between the actors. Creating these kind of visualisations made us more focused and aware of the dynamics per case. By analysing the visualised case, we gained more understanding of the situation.

Organisations in the transformation paradigm often have characteristics of the other paradigms. The big difference lies in the *mindset,* the drive of the organisation in the transformation paradigm is not purely oriented on the exchange of value for profit but more on intangible factors. We formulate it as *social value*, value gained from others by working on social impact (Kumar, 2010).

The next design research question in this project became: can we improve the created visualisation method and incorporate the *social value* into this method?

Step 3 - Visualising intangible values

In step 2 we got more insight and understanding in the transformation paradigm and the transformative practices. The design group questioned how to visualise the actor's supply chain, collaborate partners and the used practices. Three characteristics we argued could distinguish the transformative practices from the other practices in the other economic paradigms.

We tried to translate the examples from practice as explored in step 2, and relate them to the schematic overview of Brand and Rocchi (figure 7), but it did not make it more understandable. We therefore explored other ways to visualise the collaborating actors, relations between these actors and the common issue or solution they are working on.
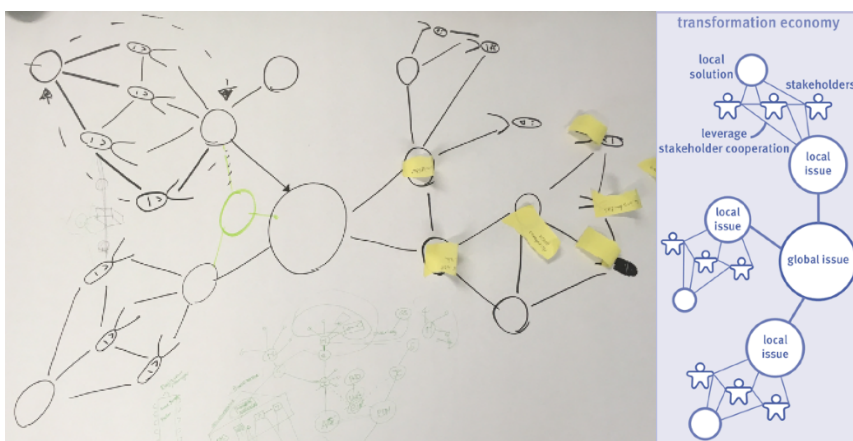

figure 7.
a. *Attempt of a sketch to visualise an example from practice on the representation of the Transformation economy by Brand and Rocchi (2011).*
b. *Representation of the Transformation economy by Brand and Rocchi (2011). Retrieved from (Hummels, 2012, p.17).*

10

It was important for us, in this stage of the project, to create a visualisation which could be used for all four paradigms. Because while doing research you cannot say upfront which paradigm fits the example at hand.
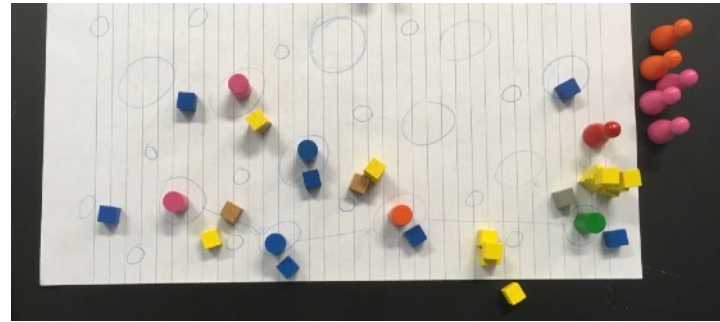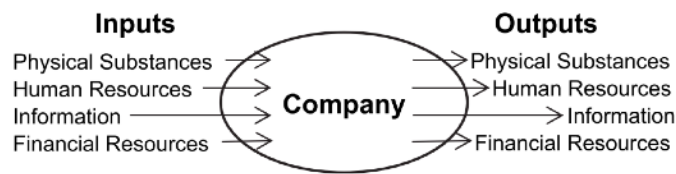

figure 8. Attempt to visualise the Hutchins and Sutherland (2008) diagram with toy materials. Retrieved from (Hutchins & Sutherland, 2008, p.1689).

In this stage of the project we wanted to create a visualisation which identified the paradigm and teaches the practitioners in the transformative practices so they could apply it in there work. That is why we came up with the input, throughput and output diagram as described by Hutchins & Sutherland (2008), which is common practices in process, project, and business management. By using this in- and output approach a process chain can be created. We also wanted to create an adaptable method in which the players are invited to be creative. So we sketched different board prints.

In the end we decided to make a blanc board where players could draw on with whiteboard markers and to explain the process chain method in the step-by-step description of the board game.

Ideating with the game Pandemic

Because of also wanted to create a playful interaction method, we focused on a board game. This was also the reason to use toy materials like pawns and cubes during the exploration during step 2.

To get more feeling in a board game and gain insight in the possibility to relate a board game to the transformative practices, we played Pandemic. In this game every player has a character with special powers. The goal is to contain the outbreak of a pandemic by collaboration. So all players have to work together against the board game.

figure 9. The game Pandemic was played for inspiration.

We got insights from playing the Pandemic game. In our board game the special powers of the character have to be unknown for the other players so they are forced to communicate about their powers (e.g., resources).

Our board game has to be tangible and interactive, players have to use the board, cards, pawns, etc., so players can interact on the content (instead of the relation with each other) in a third person perspective using artefacts.

11

Ideating on social values and layers

We asked ourselves what the exchange of social values in the transformation paradigm might look like. Our assumption is that every actor in a Hutchins and Sutherland (2008) product chain will give and receive social values. This is not exchanged between the actors per se, but more to the greater society. So we came up with the idea of the social contribution of the actors to the community and the social reward of the community towards the actor. Like Tony Chocolonely contribute to the community by creating better conditions for the people on plantations in Africa and they are rewarded for this by the chocolate consumer in the Netherlands. In the picture this is visualised by the white and blue cubes.
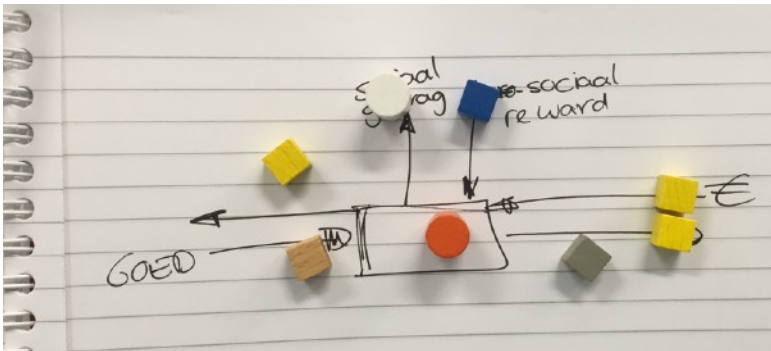

figure 10. Attempt to visualise social contribution and reward within a Hutchins and Sutherland (2008) diagram.

figure 11. Prototype of the game board tool as used in the field test Designhuis.

The visualisation can use a practical layer were practical values like products, services and capital are exchanged between the actors and a social layer were social values are exchanged between the actors. The first prototype therefor exist of two layers which are divided in the board game by a transparent board on a standoff above a basis board.

After the ideation on social values and layers we can visualise practices of the transformation paradigm through a process chain method with the products, services and capital in a practical layer on the basis board and the social values as a social contribution and reward system in a social layer on a standoff transparent board.

After step 3 we created a prototype of the board game with a white board sticker on a black basis board as practical layer and a transparent board with standoff as a social layer (figure 11) and used it ourselves on the practices we visualised before in step 2.

We found this kind of visualisation understandable and doable for tangible products and services, but how does this kind of visualisation apply to social services and how do professional practitioners perceive the social contribution and reward system?

The next design research question in this project became: how do practitioners perceive and use the board game method and the *social value* in this method?

Step 4 - Test of the board game

In step 3 the design group designed a board game method. During our conversation with Brand & Rocchi, we spoke about the different actors who have to collaborate in the Transformation Paradigm. It is a necessity to collaborate with other organisations than merely businesses, for example governmental organisations. Most of these organisations do not operate actively in the *market* as businesses do, but operate more in the *public sector*. Also these organisations benefit from the economic paradigm thinking, since the Transformation Paradigm refer to the collaboration between all stakeholders (Brand & Rocchi, 2011). So when the opportunity arouse to test the board game method with governmental organisations, we got a change to find answers on the questions on the use of the board game method and the social values in it.

During the masterclass of October 9, 2017, in the *Designhuis* Eindhoven on Transformative Practices by Prof. dr. ir. Caroline Hummels, civil servants from the province *Noord-Brabant* were introduced and educated in the theory and practices of the transformation paradigm. As a design group, we got the opportunity to fill in a part of a workshop with our board game.

Test set-up

Before the actual workshop, we designed the set-up of the workshop and the way of testing. We wanted to test the assumptions underlying the board game method, captured in the following questions:

- Is the visualisation in chain processes and the division into a practical and social layer understandable for the participants?
- Does the method invite the practitioner to go beyond their organisational borders into the transformative practices?
- How do participants experience the board game method?

For this test we created three different tools to compare the board game with other tools. These tools all used the same method description.

All participants were asked for feedback in a questionnaire so we could use this feedback for our questions as stated above.

Test method

First we asked the participants to choose a design idea for a better situation of a social problem within their own environment.

We then asked the participants to visualise the network around this design idea and the value exchange in this network. For guidance we made a poster with a step-by-step description of the method, created cards to identify stakeholders (actors) and values (figure 13), and a balance sheet to analyse the value exchange within the chain process (figure 12 and appendix).

The balance sheet is designed to check if all relevant actors were in place by the equation of inputs and outputs. We did not have a really good idea about the balance sheet but wanted to look how the participants used them to get more insight into the need of analytic tools within our design.

figure 12. Value balance sheet.

figure 13. Name tags for actors.

Tools for the board game method

We designed the tools with the use of our experience from the visualisation of practices in Step 2 and the insights of the practical- and social layers in Step 4. These layers have similarities with the transformation paradigm characteristics (Rocchi & Brand, 2011);

- personal mindset => social layer
- business mindset => practical layer

All the tools get the same step-by-step explanation of the method on a poster and cards for actors and values (figure 12 & 13). Members of our design team were present by the different tools and groups as facilitators.

The steps of the method as tested with the three tools were:

1. Define stakeholders
2. Positions stakeholders on the basis layer
3. Define *practical values*
4. Copy stakeholders to the social layer
5. Define *social values*
6. Place the two layer over each other (only for the board game)
7. Define potential interventions
8. Present the findings

Tool 1: Flipchart or whiteboard

One tool with two variations is used as a baseline because this tool is more familiar with the work method in the current situation of te participants (civil servants). This tool was also our first tool to visualise the practices in step 2. The variation was made by using a flip-over or a white board. We added the coloured toy materials to the flip-over because it was used by ourselves as well and in this tool we wanted to test the assumption of tangible artefacts as described in Step 3 - ideating with the game Pandemic.

Further we facilitated:

figure 14. Tool 1: Flipchart

(a) poster, cards, flip-overs, post-its, coloured toy materials and markers or
(b) poster, cards, whiteboard, magnets and markers.

The basis and social overlay could be established on the flat surface of the board or paper by the use of different colours. Actors are visualised with post-it or magnet and the connections are drawn with markers on the surface.

14

Tool 2: Constellation

A second tool is inspired by the family constellations as used in psychology (Cohen, 2006). In our constellation the participants stand for an actor and had to take a position in the room. Other participants became the support group and made the connections between the positioned actors. A connection in the basis layer was visualised by tape on the floor and the social layer was visualised by a rope which was held by the connecting actors. The exchanged value was written down on a paper that was connected to the tape or rope. The support group looked from different sides to the constellation and were asked to execute step 7 and 8.

figure 15. Tool 2: Constellation

Tool 3: Game board

A third tool was the board game as designed and described in Step 3. Next to this, the poster, cards and markers were provided.

Execution

During an introduction briefing of five minutes the fifty-three participants were divided into nine groups of six persons. Every group got a specific tool which was situated in a room or space in the *Designhuis*.

figure 16. Tool 3: Game board

During fifty minutes the participants were guided through the workshop by the method as described on the poster (appendix B). When necessary the facilitators gave support. In case of tool 2 Constellation support became necessary because of the space the groups needed. After fifty minutes the participants were asked to fill in the questionnaire for feedback on the tools and method, thereafter the participants were grouped into a central room. A spokesperson of every group was asked to present the experience of the participants with the different cases, transformative practices and the tools. This last gathering went on into the reflection of the whole masterclass and thereby was the end of the test on the tools and method.

Observations

At the end of the workshop we asked the participants to fill in a survey. We received feedback from 29 of 53 participants on the survey. This feedback was clustered and analysed.

tool	Flipchart or whiteboard	Constellation	Game board
responses	8	14	7
participants	14	18	8

"as a caregiver I start in the social overlay, after the practical overlay is constructed we found a lot of troubles in the communication between the two layers"
~ a participant ~

In the flip-over version, participants get stuck on the discussions about organisations, systems and interactions. They found it difficult to stay in one level (micro, meso or macro).
~ own observation ~

15

*"During the dialogue we found a difference in exchange between stakeholders. The
expected interaction and the interaction in reality are not the same.
We did not always talk about the same kind of interaction."*
~ a participant ~

"The tool gave me some understanding, but I still can't put this on a real case."
~ a participant ~

The reflection on the tools by the participants gave us insights in the practicalities of the tool and the effect of the tool on the actions of the participants, which we'll elucidate below.

With tool 1 (Flipchart or whiteboard) participants tend to get into discussion on system level (some participants called this institution level) and found it difficult to name values to the connections in the different layers (some participants called this interactions). The participants did however get a better view on the whole system and especially on the interests and resources of other actors.

With the use of tool 2 (Constellation), the overall view was lost and it wasn't easy to visualise the exchanged values. The participants did get a better *feeling* on the relation between the actors (some participants called this institutions) and the common goal of the created process chain, also described as centralised case or person.

With the tool 3 (Game boar), the actors and their interest were smoothly identified and a dialogue was focussed on the interaction on and between the layers. It was hard to play with the changes for intervention in the last steps of the method.

Some notes during analysis of the feedback

- The participants are searching for connections between the practical and social layer. How can we visualise this connection?

- In the constellation tool participants experienced very well the connection by empathy and the estimation of consequences of choices. The later means the participants better understand the relation between cause and effect of their behaviour or actions.

- The flipchart creates discussion and old behavioural pattern by the participants.

- The visualisation of the board game made the dialogue between participants more easy and let to more focus on the case at hand. One of the conditions is to nail down the actors and values as quickly as possible.

> Out of these insights some questions came up:
> 1. How can we improve the tool to get more insights in the case at hand?
> 2. How can we improve the tool to get a common language for participants?
> 3. How can we create an interactive tool which reacts on interventions by the participants?
> 4. How can we improve the guidances of the tool through the different phases?

Step 5 - Analysis on feedback on the method

Out of the field test *Designhuis* we found tree potential paths for a next step which we discussed in the design group:

1. We could create more variables, like adding a systemic layer or creating other forms for the board, to enrich the method depending on the case or participants.
2. We could create more versions of the tool to support different parts of the Transformative Practices.
3. We could improve the method with more in depth characteristics of the actors.

Below we explore some potential improvements like adding a systemic layer, creating a circle board, increasing embodiment, enriching the actors in the method and social contribution and reward system. For every element, I sketch potential design directions.

Variable: systemic layer

The tool could be extended with an additional layer as learned from the feedback out of the field test *Designhuis*. This layer seems to be very important with participants from governmental organisations but we assume they could be used by large business organisations as well because the dynamics in a multi-actor-network are the same regardless the type of organisations in this network (de Bruijn & ten Heuvelhof, 2012).

Next to the people mindset and business mindset within the Transformation Paradigm (Brand & Rocchi, 2011) we think there should be a governmental mindset. This mindset could be visualised in the method by a systemic layer. Participants talked about institutional or systemic layer, because Brand and Rocchi (2011) use systemic as well we used the term systemic layer during this phase in the design project.

In this systemic layer it's all about the exchange and restrictions of procedures, rules, guidelines and laws. This can be a very influential layer in the real life but was not visualised yet. (I received feedback from my coach at the end of the project on Habermas, we did not read or include any of his articles because I am not familiar with his work.)

- governmental mindset => systemic layer

The resources or power of an actor in the systemic layer can be of great influence on the behaviour of the actors in other overlays, like all actors in a multi-actor-network have influence on each other (de Bruijn & ten Heuvelhof, 2012).

Variable: circle board

In cases about societal issues, most of the time the issue, person or group has to be in the centre, as I learned from practitioners in former courses (Gerritsen, 2011; De Bruijn & Ten Heuvelhof, 2012). A round shape or circle of the board can influence the behaviour of the participants. Therefore, I decided to take into account the possibility to design a round board as basis for the game board. It could create awareness for the way of thinking of ' putting the subject in the centre' and gives insight in the distances between the subject and the actors.

Variable: embodiment

The constellation tool created a first or third person perspective, depending on the participants (if they were part of the case at hand it could be a first person perspective). This tool could be updated by creating a real time visualisation of the participants positions, for example on a large screen. Moreover, the interaction could be enriched with the use of sensors and augmented or virtual reality. For example with the use of a relay baton, to assign a value, the participants really exchange values and thereby make a deeper connection.

Note: Due to the time limitations this variable is not implemented in the design.

Characteristics actors

In the different layers, the actors can have different responsibilities and characteristics (de Bruijn & ten Heuvelhof, 2012). For example, a business organisation in a social layer is oriented on their mission and vision while in a practical layer the interests and resources are more dominant. This different kind of focus and behaviour is also stipulated in the economic paradigms (Brand & Rocchi, 2011). Therefore in every layer actors could behave differently because of these characteristics. So, we could create a method were actors have enough characteristics to represent behaviour in the different layers.

Social contribution and reward system

Out of the feedback we got the insight that the social contribution and reward system as designed into the social layer, was not easy to understand. But we also found out from the participants of the board game tool that it was helpful as a starter for communication about the social values of the case. So, we want to improve the reward system and make it understandable and supportive to the overall method.

It is important for this design project to find academic underpinning of social values and valid methods to measure these values. Because we thought the exchange of values in a social layer could be a key factor of our method, we looked into the research on social values.

In this stage of the project I thought we should create tools which can be used in general to learn about the transformation paradigm and can be used in a real life case of the participants.

I thought we should create at least three tools. One to identify the whole system and understand the dynamic (current board game with additional systemic layer). A second tool to give the case more empathy by the participants like the constellation tool. And the last tool with virtual reality which gives more insights into the consequences of interventions made by the participants.

We agreed to divide tasks in the design group. Two of us focused on the exploration of the technical realisation of an electronic board game. One focused on the realisation of data storage, input and analysis in order to record the different steps of a session on the tools. I myself focused on the concept behind the method, tools and data.

My next questions in this project became:
1. How can we integrate institutions and a social layer into the method and tools?
2. What kind of academic underpinning can be found on the social contribution and reward system in the social layer?

Note on the process

As a group we divided tasks and planned to finish the prove of concepts after two weeks and basic functionalities ready for testing after four weeks. After four weeks the data and concept were ready for testing as planned but the electronics turned out to be too much work.

During those last weeks, the collaboration in the team was not that smooth anymore: miscommunication, different views on the end result, different paths and different learning objectives. So, after consultation with our coach, we decided to split up after the rough outline of the electronic board game was set, the database outline was set and the concept of human scale development and system dynamics was clear, but before the concept was tested in the field test *High tech campus*.

So some of the characteristics and restrains of the electronic board game and database, as chosen during the earlier week of the design process, were adopted in my concept and field test. For example, the fixed positions of actors and the coloured connections which represent exchanged values, can be seen in both concepts.

Step 6 literature research for next prototype

The field test *Designhuis* brought insights into the use of the tools and gave feedback on the description, application and execution of the method for interactive visualisation. As described above, out of these insights a second literature study focused on the social layer and the role of institutions.

I started by searching the internet on topics like "social improvement", "institution", "human needs" and "human values". From this point I watched Youtube videos of some academic thinkers and theories about sustainability. One video titled *Social sustainability: Satisfying human needs* (https://youtu.be/FyT9TMlzC6s) introduced the sustainability research program of the Brundtland Commission of the United Nations and the human needs of Max-Neef. This inspired me to look into the Human Scale Development (Max-Neef, 1992) and the Indicators of Sustainable Development (United Nations, 2007).

Another search path started from the subject "impact analysis". In 2016 during a workshop by the Netherlands Ministry of Justice and Security, I learned about a related tool used to analyse the impact of concept policy in a social context. The civil servant of the Ministry who gave this workshop, indicated that this tool was very useful with quantitative data or even a lack of data because of the knowledge of the subject matter experts who participate in these kind of analysis.

The scientific method behind the impact analysis as was presented in 2016, is the System Dynamic Group Model Building. This inspired me to look into System Dynamics (Ackoff, 1971) and Group Model Building (Vennix et al., 1997; Andersen, & Richardson, 1997; Andersen et al., 1997; Luna-Reyes et al., 2006)

Human Scale Dimension, System Dynamic Group Model Building and Sustainability Development are three potential academic subjects which could answer some questions on the social layer and the integration of institutions, and will be briefly described below.

System dynamics

The systems approach to problems is about solutions to a whole system from a holistic point of view (Ackoff, 1971). This is also the basic theory under the Transformation Paradigm (Brand & Rocchi, 2011). A system is described as

"A whole defined by one or more functions, that consists of two or more essential parts that satisfy the following conditions: (a) each of these parts can affect the behaviour or properties of the whole; (b) none of these parts has an independent effect on the whole; the way an essential part affects the whole depends on what other parts are doing; and (c) every possible subset of the essential parts can affect the behaviour or properties of the whole but none can do so independently of the others". (Ackoff, 1998, p.28)

To understand the system and its dynamics, models of this system are built within the system dynamics. These models can be put into a computer simulation to visualise the dynamics and to learn the consequences of the interventions (Andersen, Richardson & Vennix, 1997).

The building of models in a facilitated conference process is called Group Model Building (GMB) A model of a system is built by a group of professionals working around or even in this system. The model is built in a facilitated conference process. When the system is modelled, potential interventions can be simulated. Out of this simulation it become visible what could be the effects of the intervention. This process can support policymakers and decision makers in their decisions making process.
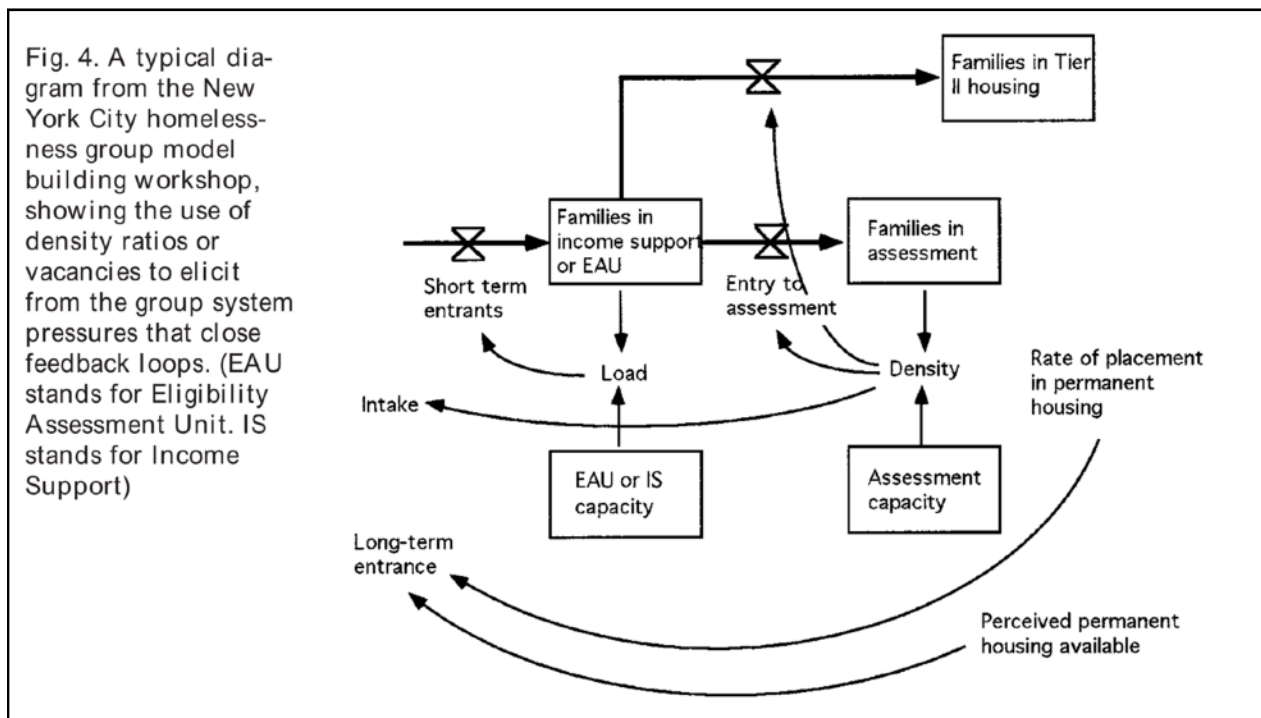

Fig. 4. A typical diagram from the New York City homelessness group model building workshop, showing the use of density ratios or vacancies to elicit from the group system pressures that close feedback loops. (EAU stands for Eligibility Assessment Unit. IS stands for Income Support)

figure 17. Example of a model out of a GMB workshop (Andersen & Richardson, 1997).
Retrieved from (Andersen & Richardson, 1997, p.121)

GMB creates a rich understanding of the dynamics in a system, including the effects of interventions, but there is some debate about the empirical evidence of the method. In this debate it becomes more clear that the impact of computer models on decision making is more conceptual than instrumental. So participants learn during the process of GMB, structuring the conversation about the system in a learning environment (Andersen, Richardson & Vennix, 1997).

Research on wicked problems within the city Amsterdam teaches us to put the public value or problem in the centre. Moreover, Gerritsen (2011) also indicates to make the problem as specific as possible. This is done often by putting a face to it, i.e., by making a *central figure*. This *central figure* is also the starting point for analysis towards a collaborative solution (Gerritsen, 2011).

We can learn from GMB that the method is positively perceived by participants for the insights they get over the specific system environment. Thereby this method could make it possible to visualise networks, like the networks of the Transformation Paradigm. GMB can also be simulated in existing software applications like Matlab and thereby it could make the connection between the electronics, data and concept in our design project.

We can learn from Gerritsen to put the public problem in the centre of the system. We can use the view on the systemic environment out of GMB into our method by talking about a *constructed world* on the board. In this way the system consist out a *constructed world* around a *central figure*.

20

Sustainability Development

The United Nations have addressed the satisfaction of human needs in the research towards Sustainability Development. This research was executed by the Brundtland Commission of the World Commission on Environment and Development. Brundtland described Sustainability Development as the opportunity to create satisfaction of human needs for all people with positive impact on everything, now and in the future.

> *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their needs".*
> *(Brundtland, 1987, Chapter 2, para 1.)*

Society, the environment and economic-industrial development are three conceptual-pillars supporting the concept of sustainability. There has to be connection and interaction among these pillars to create a balance in sustainability (Hutchins & Sutherland, 2008).

Business processes are about input, throughput and output. By reconfiguring physical substances, human resources, information, and financial resources, the business process is gaining profit. To be sustainable in this profitable business process means that businesses create the profit without a negative impact in or on society nor the environment. A business-system can be measured and controlled by Life Cycle Assessments (LCA) considering raw material extraction, manufacturing, distribution, use and recycling. Key elements in LCA are analysing the controls over, organisation of and actions in the life cycle (Hutchins & Sutherland, 2008).

We can use the framework of Sustainability with the supporting pillars to model our view on the behaviour of organisations inside the *constructed world*. In the Transformation Paradigm organisations have to contribute ethically in the network to be effective (Brand & Rocchi, 2009). A first estimate on the contribution of an organisation can be made by a quick review on the pillars society, ecology and economy.

We can learn from the Sustainability Development about the Life Cycle Assessment approach, which look like a process flow, by visualising the life cycle of the exchanged values in the system as a value flow between the actors in the system.

Human Scale Development

Another research on the satisfaction on human needs is the Human Scale Development, the resulting methodology of the research executed by Max-Neef, Elizalde and Hopenhayn (1992) when they worked on the development of a more humane system in several countries around Latin-America.

Fundamental human needs, self-reliance, and the organic relation of people with nature and technology are the tree conceptual-pillars supporting the Human Scale Development. There has to be connection and interaction among these pillars to create a balance in the Human Scale Development (Max-Neef, Elizalde & Hopenhayn, 1992).

Max-Neef's 9 Human need Subsistence, Protection, Affection, Understanding, Participation, Leisure, Creation, Identity, Freedom.

This sounds familiar, because the same concepts were used in the Sustainability Development. We could even argue the similarities of the pillars environment and society with the organic relation of people (society) with nature and technology (environment). The difference is that Human Scale Development is about people. We could say; the Human Scale Development puts the human needs in the centre of the system.

Max-Neef did in-depth research on the human needs and came up with nine universal human needs. These human needs are applicable regarding culture or time. According to Max-Neef (1992), humans needs are understood as a system in a way that they are interrelated and interactive. There is no hierarchy with the exception of subsistence (Max-Neef, Antonio & Martin, 1992).

There are *satisfiers* which render the human needs at different levels and intensities. For example, a satisfier can be a product, service, activity, information, capital, state of mind, institutions, law, space & time. One satisfiers can fulfil multiple human needs. In contrast to the universality of the human needs, the satisfiers are depending on norms, values, culture and time. An overview of needs and satisfiers are put in a matrix (Max-Neef, Antonio & Martin, 1992)(Appendix-D).

We can conclude that in both Human Scale Development and Sustainability Development the interdependency between society and the environment are important pillars. The research gives an academic underpinning of the social contribution and reward system of our tool, as discussed in earlier stages of the project. The exchanged values in the tools can be directly connected to Max-Neef's satisfiers, while the validation of the central issue can be measured by the human needs. Moreover, there is potential for assessing organisations on the pillars of sustainability.

> We can design the social layer based on the exchange of satisfiers supporting the nine human needs of Max-Neef.
>
> The next question would be: how can we combine the insights from literature on System Dynamics, Sustainability Development and Human Scale Development into the design of our method and tools?

Step 7 - Design of method and tools

Next prototype on method and tools

The method and tools as tested in the *Desinghuis* can now be improved with the insights gained out of the second literature study and tested in another field test. Because of the setbacks on the technical part, the method was tested with analogue tools. Therefore I started to design and create the next prototype based on the above mentioned literature. During this stage, the design team decided to go further on two separate parts. I started with the design and production of the next prototype including System Dynamics, Sustainability Development and Human Scale Development, in order to be able to test the interaction method and tools.

This newly designed interaction method is called Satis-action, an acryology which expresses the core of the method. By fulfilling the human needs with satisfiers and the willingness of each participant to achieve them (action), the method strives for a satisfied human being (central figure).

Satis-action is a method that focuses on the improvement of the needs of a person or group. These needs are met by satisfiers. Satisfiers come about with the help of the characters that are brought into play. The connection between characters visualises a satisfier. In this way a tangible world is constructed around the central figure. The chain of satisfiers shows a flow. The participants can determine what the satisfaction worth is for the different characters. Comparing these worths creates a perspective about the resilience and sustainability in the constructed reality.

The new prototype is an interactive method with two tools: the system constellation tool and the board game tool (as will be explained below). The method can be used in a facilitated conference process like the Group Model Building, but also in other group set-ups. A step-by-step description explains how to use the tools and thereby execute the method (Appendix-E). During the test, the method was explained on a poster so participants could use the method without the support of a facilitator (Appendix-C).

System-constellation tool

One tool is called the system-constellation and can be used in a first or second-person perspective depending on the topic and participants. If the topic is about civil servants in a municipality and the participants are the same civil servants, the tool can be used as a first-person perspective. If the participants are civil servants from the province, the tool can be used as a second-person perspective. I used red fabric of 15x15cm to create spots on the ground in the same formation as the islands on the board game tool. In this way we could use the two tools next to each other.

Board game tool

The other tool is a board game. Due to technical restrictions the board of the board game tool had to have fixed positions (as was previously explored by the other team members), therefore I created islands on a baseplate. The actors were created with laser cut artefacts with a name-tag to name the actor. The actors can occupy an island by standing on it. The exchanged values (satisfiers) were visualised by coloured ribbons with a label. I used magnets to put the actors on the island so the ribbon could easily be added to the board. The satisfier was written down on magnetic paper and attached at the end of the ribbon.
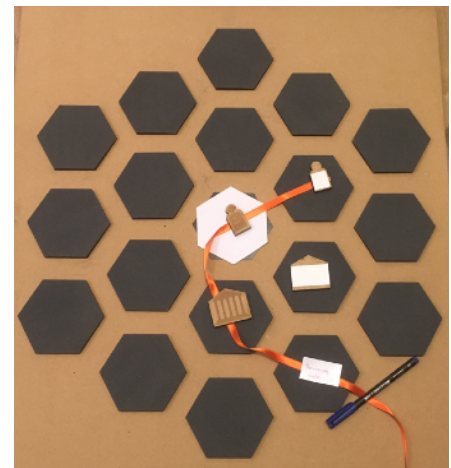

figure 18. Board game tool as used in the field test High Tech Campus

Characters

The actors are called characters. I choose this word because it is almost the same in Dutch and English and especially in Dutch it gives the notion of play. In the method, which is intended to create a playful learning experience, characters play a role to gain insights in their environment. This environment is created with all kind of characters around the central figure. The central figure is the centre of the created environment and it is the character who represent the social problem at hand.

figure 19. Icons to visualise characters a) person b) group c,d,e,f) organisations

Before the use of the method the user has to choose if they want to start in a third-person perspective on the board or a second-person perspective in the constellation.

At first the characters have to take a position on the board or in the space relative to the central figure. When every character has a position, the environment around the central figure is set. At this point there will start some kind of awareness about this context by the participants. The outcome of this phase is a placement of characters who take position around a social issue.

During this process, one participant takes the role of reporter and interviews the different characters. In this way all the characters have the opportunity to talk about their intent, perception and the reason they choose their position. They also hear the other characters, thereby getting deeper insights and some kind of understanding of the dynamics of the characters and the whole constructed situation. Major breakthroughs and insights are immediately written down on a whiteboard or flip-chart by the reporter. The outcome of this phase is a common understanding of the social issues around the central figure.

The last step could be the ideation and design on interventions in the constructed situation with the purpose to improve the satisfaction of the central figure. In this phase the set-up around the central figure will be changed, so characters take other positions and exchange other satisfiers. With a constructive dialogue between the characters who intervene and are object of the intervention, potential effects in the whole constructed reality could be assessed. The outcome of this phase is a list of activities and subsequent characters for execution of the activities.

Step 8 - Testing the method and tools

When I reached this stage in the project, I got the opportunity to test the method and tools again. But I had only a weekend to prepare. It turned out I had to create two board games and a system-constellation so I had to push it to the limits at this stage.

figure 19. Board game tool in use during preparation of the field test High Tech Campus

The *High Tech Campus*-workshop was organised during a work visit of officials of the province Limburg to the province Noord-Brabant. The purpose of the workshop was to create awareness and understanding of the wicked problems on camping sites and, if possible, identifying a role for the provinces in, and developing of solutions for, these wicked problems. The workshop was prepared by an artist from *Academie voor Beeldvorming,* an organisations that is engaged in the subject of camping sites through their project *Camping Kafka* (http://www.campingkafka.nl), as well as two officials from the province *Noord-Brabant* and the myself.

During the preparation of the workshop to test my design, the method was used with the board game tool to get awareness and understanding on the subject and to develop the workshop (figure 19). Sadly it was not possible to test the whole method with the two tools during the workshop. I therefore choose to test the method with the board game tool during

the preparation and to test the method with the system-constellation tool during the workshop. This meant I had to accelerate again to come up with a setup and script which could fit the social issue and the participants, and let space and time for the artist to present his project *Camping* Kafka. In close collaboration, we created a list of relevant characters, a description of the main character and a script for the workshop.

The workshop was facilitated by the artist on the content and by the myself on the method. I also acted as reporter. After an introduction into the issues around camping sites, the different characters were identified by the participants. The central figure, persona 'Anna', was described on a flip-chart and visualised by a cartoon drawing of a woman.

The different characters were divided under the participants who acted as characters and choose their position around the central-figure persona 'Anna' and discussed relevant issues on the topic, encouraged by the facilitators through interviews.

figure 20. System constellation tool in use during the field test High Tech Campus with the persona in the centre.

understanding

After some time the facilitators estimated there was enough awareness about the environment of the central figure and even some understanding about the reasoning of some characters. Something what is not part of the method but was scripted for the workshop was the replacement of the persona by the real 'Anna'. The persona was not a fictional but a real person who was in the same room the whole time. This was a great intervention in the workshop and really woke-up the participant, as the facilitators found out in the undocumented conversations after the workshop.

At first Anna explained her story and reacted on the behaviour and words of the characters. This brought new information into the reality of the characters. Another round of discussion was made whereby the central figure repositioned the characters from her point of view, also guided and intervened by the facilitators through interview technics. The result was a complete shift in the reality around the central figure.
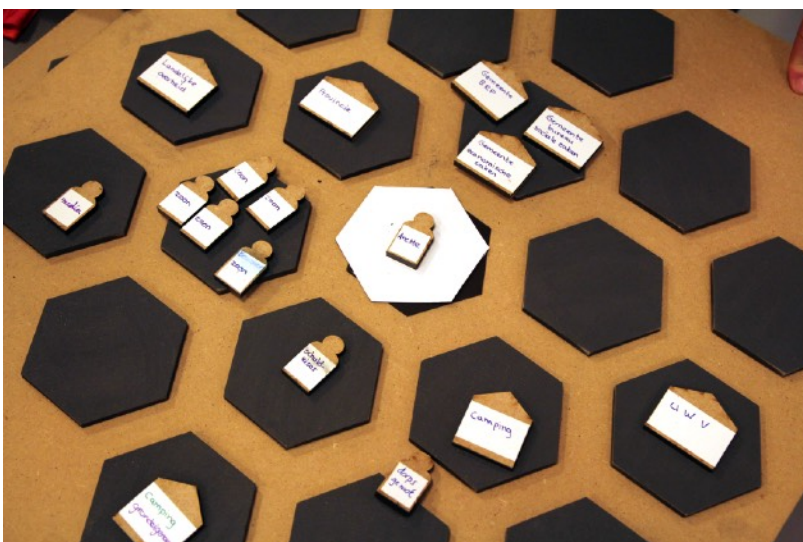

figure 21. Board game tool in use to record the positions during the System constellation at the field test High Tech Campus with the persona in the centre.

25

At this point we ended the workshop because of time and also because of the emotions the came up by all participants, which also resulted in tiredness. But before we stopped completely, we had a reflection session with all participants at the end of the workshop, According to the participants the workshop resulted in great new insights and understanding of this specific social issue, the potential solutions for this issue and the specific satisfier which played a central role in this issue, namely *living*.

The reflection of the High Tech Campus-workshop confirms the potential of the method and the board game and system constellation to explore and evaluate a *wicked problem* in the social context. The workshop also brought up feedback on the description of the Satis-action-method such as the used terms and to use examples which are recognisable within the field of work of the participants. Out of this confirmation and feedback the method was finalised (for now) and described and printed in a booklet for further use and research.

DISCUSSION

This design project started with the objective to create a method and tools to improve and understand the interaction within the transformation paradigm and transformative practices.

During the project I learned from literature, professionals and practitioners, and through the designed tools how to initiate the interaction within complex issues in society.

We discovered during the field test in the *Designhuis* that the tools on itself did not really make a difference in these conversations as long as they were not tangible.

We also found out that artefacts and embodiment of stakeholders created a common understanding by participants during both field tests. This was a conversation kick-starter because we observed that the participants very quickly started talking about the content instead of the context and the participants really listened to each other; they became more sensitive towards each other and the topic.

As with the Group Model Building (Andersen, Richardson & Vennix, 1997), the impact of the Satis-action method can be found during the execution. Recreating the situation around the central figure was the learning process of the participants.

> *"During the dialogue we found a difference in exchange between stakeholders. The expected interaction and the interaction in reality are not the same.*
> *We did not always talk about the same kind of interaction."*
> *~ a participant ~*

The method creates some awareness and understanding about the wicked problems by participants. But the problems remain difficult to grasp and the method does not create understanding by all participants.

> *"The tool gave me some understanding, but I still can't put this on a real case."*
> *~ a participant ~*

As with the Human Scale Development, participants really became aware of their position in the system and by inhibiting a space within the system, participants start a meaningful interaction with each other, as told to me by the client and co-moderator during the reflection on the field test High Tech Campus at the end of the day. I think the emotions that comes around during this enrich interaction and the embodiment of the participant with the character and each other contribute to this.

"Met de live-opstelling en het bordspel wordt de eigen positie en die van anderen in het vraagstuk bespreekbaar en invoelbaar."
~ the client ~

Participants also start to understand how they can be more successful when taking another position in the system, as told to me by the participants, client and co-moderator during the reflection on the field test High Tech Campus at the end of the day. I think this shows the opportunity of the method and tools for development of interventions into the reality of the central figure.

"Peter laat mensen zien waar ze eigenlijk staan. Daardoor leren ze dat de plek die ze kiezen voor zichzelf niet per se de plek is waar ze het beste tot hun recht komen."

~ co-moderator ~

CONCLUSION

The Satis-action method is a method which can be used in the transformation paradigm practices and can be useful to support the process of solving wicked problems. It creates a general language for all kind of persons involved in the issue and can be used on different levels of co-operation, co-design, co-creation and collaboration.

The Satis-action method is not a method to analyse problems, nor does it generate solutions. The method can support the involved actors to become aware and to understand the reality around a central figure using their knowledge and wisdom. It provides participants a learning environment for other perspectives and challenge them to take a stand. Therefor it is advisable to use this method with a moderator for guidance.

The Satis-action method gives participants knowledge on universal human needs and how to satisfy these needs. It does not provide a turn-key solution like a chart with values and their potential outcomes on the satisfaction of people. Therefor the outcome of the Satis-action method is as good as the knowledge and wisdom of the participants.

Towards the future I see potential for further developing the accompanying tools, making a smoother connection between the board game and the sense making on the floor with the participants.

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Appendix-A Cases Economic Paradigms

Nike

https://blog.thinque.com.au/nikes-new-strategy-move-into-the-transformation-economy

Wat is het

- Nike heeft een nieuwe strategie ontwikkeld die verder kijkt dan het product zelf
- Hun conventionele producten worden aangevuld met o.a. een app en ren club

Waarom transformation economy

- Volgens het artikel faciliteren deze middelen een persoonlijke transformatie. "The combination of Nike's shoes, gear, the app and the Nike Running Clubs enable people to become more than just a loyal customer, it helps them to become part of a community where they are being encouraged to become better runners and athletes."

Kritiek

- Naar mijn idee past dit toch niet helemaal in het plaatje van de transformation economy (afgaande op dit artikel in ieder geval)
- De zogeheten "transformatie" is op persoonlijk niveau, niet op grotere schaal
- De community klinkt meer als zo'n platform à la knowledge economy dan het soort netwerk waar de transformation economy heen gaat

Small business saturday

https://www.americanexpress.com/us/small-business/shop-small/about

Wat is het

- small business saturday is een initiatief van American Express om kleine, lokale winkels te ondersteunen door mensen te stimuleren daar meer te gaan winkelen
- De dag na Thanksgiving worden door communities

Waarom transformation economy

- Er is een duidelijk socio-economisch probleem dat wordt aangepakt : kleine winkeliers die onder druk staan door grotere concurrenten en online winkels
- Er is een netwerk van verschillende partijen op andere niveaus betrokken zijn, van de grote hoofdsponsor tot de lokale organisatoren, vrijwilligers en kleine winkel eigenaars
- Die worden allemaal verbonden om het probleem aan te pakken

Kritiek

- Is meer een soort promotiestunt voor American Express dan een product met een verdienmodel, daarom wellicht minder bruikbaar voor ons

Tony's Chocolonely

Wat is het

- Lekkere chocolade uiteraard

- Die verantwoord geproduceerd wordt, dus zonder (kind)slavernij

- Heeft om het product heen ook een soort 'vrienden van Tony's Chocolonely' club waar fans lid van kunnen worden, die regelt o.a. petities en social media acties tegen slavernij

Waarom transformation economy

- Wederom een duidelijk socio-economisch probleem dat wordt aangepakt, in dit geval door bewustzijn te creëren over het probleem en een beter alternatief te bieden aan de consument

- Maakt ook daadwerkelijk winst omdat mensen het product kiezen wegens die ethische waarden

- Faciliteert bovendien dat de consument actief kan bijdragen aan het oplossen van het probleem, via die vrienden van Tony's Chocolonely community

(by Peter)

Potential research context:

- Veiligheidshuis, a municipality organization where police, justice department's, health care organizations, etc. working together to solve cases regarding 'multi problem families'. Different stakeholders with all kind of interest have to work together to create solutions for this families. After the case the collaboration is ended. Sometimes lessons can be learned for more families and are transformed towards guidelines, rules and even law.

- Construction consortium, where competitors joining together and work with contractors on complex constructions like the tunnel A2 nearby the city Utrecht or the creation of the Maasvlakte 3 at the Rotterdam Harbour. Individual organizations cannot take the risk or have the resources to build the project but in collaboration they can.

Appendix-B Description of the method during the Fieldtest Designhuis

see separate file

Appendix-C Posters fieldtest High Tech Campus

see separate file

Appendix-D Max-Neef's Matrix of Human needs and satisfiers

(Max-Neef, Antonio & Martin, 1992)

Table 7.1 Matrix of needs and satisfiers*

Needs according to axiological categories	Needs according to existential categories			
	Being	*Having*	*Doing*	*Interacting*
Subsistence	1/ Physical health, mental health, equilibrium, sense of humour, adaptability	2/ Food, shelter, work	3/ Feed, procreate, rest, work	4/ Living environment, social setting
Protection	5/ Care, adaptability, autonomy, equilibrium, solidarity	6/ Insurance systems, savings, social security, health systems, rights, family, work	7/ Co-operate, prevent, plan, take care of, cure, help	8/ Living space, social environment, dwelling
Affection	9/ Self-esteem, solidarity, respect, tolerance, generosity, receptiveness, passion, determination, sensuality, sense of humour	10/ Friendships, family, partnerships, relationships with nature	11/ Make love, caress, express emotions, share, take care of, cultivate, appreciate	12/ Privacy, intimacy, home, spaces of togetherness
Understanding	13/ Critical conscience, receptiveness, curiosity, astonishment, discipline, intuition, rationality	14/ Literature, teachers, method, educational policies, communication policies	15/ Investigate, study, experiment, educate, analyse, meditate	16/ Settings of formative interaction, schools, universities, academies, groups, communities, family

Participation	17/ Adaptability, receptiveness, solidarity, willingness, determination, dedication, respect, passion, sense of humour	18/ Rights, responsibilities, duties, privileges, work	19/ Become affiliated, co-operate, propose, share, dissent, obey, interact, agree on, express opinions	20/ Settings of participative interaction, parties, associations, churches, communities, neighbourhoods, family
Leisure	21/ Curiosity, receptiveness, imagination, recklessness, sense of humour, tranquility, sensuality	22/ Games, spectacles, clubs, parties, peace of mind	23/ Day-dream, brood, dream, recall old times, give way to fantasies, remember, relax, have fun, play	24/ Privacy, intimacy, spaces of closeness, free time, surroundings, landscapes
Creation	25/ Passion, determination, intuition, imagination, boldness, rationality, autonomy, inventiveness, curiosity	26/ Abilities, skills, method, work	27/ Work, invent, build, design, compose, interpret	28/ Productive and feedback settings, workshops, cultural groups, audiences, spaces for expression, temporal freedom
Identity	29/ Sense of belonging, consistency, differentiation, self-esteem, assertiveness	30/ Symbols, language, religions, habits, customs, reference groups, sexuality, values, norms, historical memory, work	31/ Commit oneself, integrate oneself, confront, decide on, get to know oneself, recognize oneself, actualize oneself, grow	32/ Social rhythms, everyday settings, settings which one belongs to, maturation stages
Freedom	33/ Autonomy, self-esteem, determination, passion, assertiveness, open-mindedness, boldness, rebelliousness, tolerance	34/ Equal rights	35/ Dissent, choose, be different from, run risks, develop awareness, commit oneself, disobey	36/ Temporal/spatial plasticity

* The column of BEING registers *attributes*, personal or collective, that are expressed as nouns. The column of HAVING registers *institutions, norms, mechanisms, tools* (not in a material sense), *laws*, etc. that can be expressed in one or more words. The column of DOING registers *actions*, personal or collective, that can be expressed as verbs. The column of INTERACTING registers *locations* and *milieus* (as times and spaces). It stands for the Spanish ESTAR or the German BEFINDEN, in the sense of time and space. Since there is no corresponding word in English, INTERACTING was chosen à *faut de mieux*.

Appendix-E Description of the phases

Phase 1 - Awareness

The purpose of this phase is to come into a state of consciousness of the current reality wherein the social issue arose. In the next steps the system around the central figure is reconstructed.

i.   Participants determine the physical limits of the space wherein the world will be created. They will name the central figure and place the representation of this person or group on an island in the middle of the world.

ii. One participant acts as a reporter to interview characters and to record important insights.

iii. Participants name the remaining characters and the characters are divided among the participants. Each character is positioned in the world in relation to the central figure by putting the character on an island.

iv. The reporter will interview every character about its role in the world of the central figure. In-depth questions may be asked by the other characters as well.

v.   Together the participants will check if all relevant characters are present. Characters can be added and removed during the game.

vi. Participants will lay connections between the islands and name the satisfier which is exchanged over each connection.

vii. Together the participants will check if all relevant connections have been placed. Does the value flow have a beginning and an end?

viii. The reporter summaries the narrative of the system based on the characters, connections, satisfiers and value flow in the created world.

Phase 2 - Understanding

The purpose of this phase is to feel the dynamics in the constructed reality and to experience the emotions and feelings of the characters. In these steps the system around the central figure is analysed in depth.

ix. The reporter will interview the central figure about its story.
     What are the experiences, emotions, facts and viewpoints of the central figure?
     What does the central figure want to do to other characters?
     Which characters should be given a different position?

x.   The other characters will join the conversation with the central figure.

xi. If applicable the characters will take the position as directed by the central figure.

xii. The contribution of each character is determined with the use of a value-balance sheet.
     Does the character make a positive contribution to a sustainable reality for the central figure?

Phase 3 - Development

The purpose of this phase is to design interventions for the constructed reality and to assign task to the involved characters. In these steps the reality around the central figure is changed with the purpose to improve the satisfaction of the central figure.

xiii. Together the participants will identify one value that needs to be changed or added to improve the world of the central figure.

xiv. Determine the why, which specific value will contribute to the needs of the central figure.

xv. Determine the characters that play a role in the creation of the satisfier which will create the identified value.

xvi. Determine the necessary activities to create this satisfier, the what.

xvii. Assign actions to characters, the who.

xviii. The reporter records these why, what and who.

Appendix F - about me (PDP 3.3 September 2017)

I started the master Industrial Design after a bachelor in mechanical engineering, a post academic study civil engineering, an education as Military Engineer Officer for the Royal Netherlands Army and a post academic study on chain management[1]. The master Industrial Design was a next step in my professional development as leader, engineer and designer. My mission in these roles is to inspire persons to contribute to a meaningful global society for every human being and I want to participate in the creation of freedom for every living soul. My personal or professional development plan (pdp) focus primarily on the development of the role of designer in this mission. This design project started from the described vision in my pdp.

Vision Peter Corvers

A society moving towards the Transformation Paradigm requires a fundamental shift in mindset, vocabulary and behaviour[2]. Governments and their organisations have to adapt to this continuous change as well. Change in governmental organisations is a complex process. As Designer I envision combining technological, social and cultural innovation with focus on individuals and organisations[3].

I experience a growing need of individuals for spiritual development and a meaningful life. Also organisations, like the Ministry of Defence, address or incorporate these kind of spiritual needs. I think governmental organisations have to embrace the *meaningful mindset* and use an individual centred decision-making.

I want to create valuable and meaningful interactions between individuals and organisations within a collaborative innovation ecosystem. I think designers can contribute to this kind of interactions by creating powerful methodologies and transform their tools and processes. Studying Design science can educate me in these tools and processes thereby developing myself in the roles of designer, leader, engineer and craftsperson.

Objective in the master Industrial Design

In the post academic study on chain management F. Königs talked about his approach on solving complex social challenges. I want to refine this methodology *Navigate on values*[4] from a design perspective in a governmental organisation like the Ministry of Defence.

The first step in this methodology focuses on creating a personal and corporate story to establish the identity of the individual and the collective. According to Klinkers et all this gives the user a *license to represent* and a *license to operate.* The last step is the (re)design of the models, the processes, the technical and social architecture and the communication and competence of the professionals, which gives the user a *license to design.* Design science, design thinking and design tools are useful in this stage[5].

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[1] Interventions in complex environments towards a social result without hierarchical power

[2] Gardien, P., Djajadiningrat, T., Hummels, C., & Brombacher, A. (2014). Changing your hammer: The implications of paradigmatic innovation for design practice. *International Journal of Design*, *8*(2), 119–139. https://doi.org/10.1111/j.1948-7169.2011.00139.x

[3] Own experience during last four years with Innovation within the Royal Netherlands Army.

[4] Klinkers, L., Bosboom, F., Königs, M., & Robertus, H. (2014). Navigeren op waarden: nieuw gereedschap voor complexe opgaven. Bestuurswetenschappen.

[5] Inspired by 2008, C.K. Prahalad, M.S. Krishnan, The new age of innovation.

Therefor my focus in this master is to redefine the methodology *Navigate on values* and add meaning- and value-focused thinking with humanistic science. In order to design in the context of persons and governmental organisations who are moving towards the Transformation Paradigm.

Professional development

To achieve the described objective I develop my knowledge and professional skills in the four identified roles, namely leader, engineer, designer and craftsperson. As a designer, I want to translate thoughts, ideas and concepts so users, providers, facilitators and producers can understand and co-create new transformations. As a leader, I want to inspire meaning and value to people's life, empower strength in people and orchestrate collaboration towards an enriched society. As an engineer, I want to create human-friendly products, systems and methods to improve interaction with people and (governmental) systems. As a craftsman, I want to embrace complexity and use it to design beautiful and understandable services and (organisational) systems.

Therefore I subscribed to different academic activities like this design project in the squad Connecting Realities - Transformative Practices. In this design project I set the goal to creatie an interactive collaboration tool in context of meaningful life. The concept design question was: How can we create an interactive tool which identifies core values of all stakeholders and creates a story, which gives the *license to represent* and *license to operate*.

Professional interest

In the learning experiences so far I concentrated on leadership in different forms and context. Engineering in the fields of mechanical-, plastic- and civil-engineering and craftsperson as a manager, soldier and diplomat in my function as military engineer officer. This made me even more interested in System theory, Multi-actor-network theory, Evolution theory and NetForce concept[6].

The theory on Transformative Paradigm and Transformative Practices are closely connected to these interests. The time spent on studying the Transformative Practices did increase my knowledge and skills already and will further develop my professional identity and insights on interconnected agents[7] in an evolving environment.

To get more experience and insights on the way agents behave and connect I wanted to create an interaction tool for the Transformative Practices.

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[6] New concept of the Royal Netherlands Army on future Force Design, see Appendix.

[7] Unless it is explicitly stated an agent, actor or stakeholder are used for the same subject.