Facilitating Transformative Practices

Bachelor Graduation Project

Sam van der Horst
- 0937873 -

Coaches
Jorge Alves Lino
Caroline Hummels

Februari - June 2018

Index

Executive summary 4
Prologue 6
Introduction 7
Design process 8

Transformative Practices Community: the background 9
The Designhuis 9
Background research 10
Similar projects 12

Transformative Practices Community: a system 14
The community 14
Project vision 16

Facilitating Transformative Practices: from responsive environment to chatbot 17
Five initial concepts 17
The Transformative Matchmaker: designing a conversation 20
The Transformative Mapping: bridging the gap between the physical and the digital 24
The system: where do you place the concepts? 28

Discussion 30
Conclusion 31
Acknowledgements 32
References 33
Appendices 34

Executive summary

Facilitating Transformative Practices is a project that focusses on the facilitation of the internal data access of the Transformative Practices (TP) community. Through assisting this access, the project aims to stimulate collaboration and cross-pollination between the organizations making up the TP community.

The community was explored from a systemic perspective. This led to the identification of several issues in the accessibility of the online data stored on the online community platform. To solve the identified issues two concepts were developed, an online chatbot assistant and a tangible data interface. These concepts were realized and tested in a Wizard of Oz setup with community members to validate assumptions and gather insights for future iterations.

The concepts bridge the gap between the physical and digital of the TP community and stimulate multidisciplinary collaboration. In the future the project will be continued and research will be done in the realization of the concepts and integration in the community.

Prologue

In my opinion design is about changing the way we behave and interact. It is an universal language spoken by anyone who likes to change things for the better. With all the complex systems surrounding us nowadays, the need for the ability to change these systems before they outgrow us becomes more and more necessary. Changing these systems, or better said, transforming them and learning from these processes is growing into an important field of design, transformative practices.

At the same time the line between the physical and digital aspects of society starts to fade with technology becoming more and more integrated in our everyday life. There is a large community discussing the role of design in the post-digital era (Zreik, Bouhai, 2017). This discourse focusses on the use of analog and digital products and systems and how to find the right balance between the two.

Over the past 3 years as an industrial design student my focus has shifted from product design to service/system design. I realized that to have impact as a designer the product is a means to an end, it is a part of the system or service that you are creating. Especially during my Internship at Afdeling Buitengewone Zaken, I was able to work on projects that really fascinated me due to their complexity and societal relevance.

The combination of Transformative Practices and the post-digital discourse is what brought me to the squad Connecting Realities. As the squad description, 'the impact of cyber-physical social systems on behavior and society', grabbed my attention. This sentence summarized the complexity and societal relevance of the topics I had been working on during my internship and related to my B2.2 research project, on Increasing awareness of mobile phone usage by peripheral interaction (van Driel, van der Horst, Moens, 2017). I approached Caroline Hummels for a handshake and after some discussion was tasked with the facilitation of transformative practices within the Designhuis.

As part of the new Squad Connecting Realities a space was prepared for the group of students at the Designhuis in the center of Eindhoven. This group of students would work on projects within the transformative practices realm. All these projects have different topics which are closely related to the transformations happening within society. At the same time the Designhuis houses the Fontys' Future Media Lab where different Fontys students work on transformative projects. Both the TU/e squad and the Fontys group are again part of a larger community working on TP which among other institutes include RISE Interactive and Philips design.

Within this community there is a need for the sharing of knowledge and experience to bring each other's project to the next level. This community of people functions as a system of itself and works with multiple stakeholders with different backgrounds towards a common goal. In order for this community to function optimally, facilitation is necessary.

Introduction

The new transformative practices (TP) lab or immersion lab located inside the Designhuis is a space where TU/e students can work on projects relating to societal transformation and the facilitation of transformative practices. Within this group of students there is a lot of individual knowledge and experience. As they work on different topics within the TP domain which most of the time overlap in some way, there is the opportunity to collaborate and share knowledge/experience. This opportunity to collaborate and share not only exists within the TU/e group but for the TP community as a whole.

The future of the Designhuis space is to become an environment where collaboration and creativity is stimulated between the members of the group and within the TP community. A space in which each person is able to place himself within the context of transformative practices and is stimulated to use the resources of the community. The past semester I have been tasked to design for the Designhuis and its TP occupants, I have analyzed the community on different levels, developed a vision for the Designhuis and created two design concepts to facilitate TP in a physical and digital way.

In this report I will go into the underlying theories that shape the TP community, I will reflect on previous projects that aimed on achieving similar goals and give a description of the community as a system. I will then introduce my vision on the community and its future. In the final section I will give an in-depth explanation of my design concepts, the Transformative Matchmaker and Transformative Mapping, and their role within the TP community on a systemic level.

Design Process

Transformative Practices Community: the background

In the following section I will look into the background of transformative practices and the relation to this project. I will discuss relevant theory, similar projects, and context factors to illustrate the underlying concepts.

The Designhuis

The Designhuis is envisioned to become a living lab, it will function as a home base for the TU/e squad, with the non-campus location offering an unbiased environment for both the students and their guests.
The location also houses two municipality related companies, studio 040 and stichting cultuur Eindhoven, as well as the future media lab from the Fontys Hogeschool which is part of the Transformative Practices community.

The diverse content of the building and its unique location provide inspiration and opportunities for the students working there. It is therefore a great opportunity to design around this architecture to facilitate the transformative practices within this structure.

image 1, Designhuis interior

image 2, Designhuis exterior ©thvl architecten

Background research

Transformative Practices Framework
Transformative practices and the concept of transformation are very complex. It is hard to form a clear definition of transformation that makes it understandable for everyone. The process of transformation is always one with the influence of multiple stakeholders, in order for transformation to happen it is essential for all those stakeholders to understand each other (van der Veen, 2017). Therefore it is important to not only look at these processes from a design perspective.

Transformative practices are a group of practices that, more than triggering change, aim at triggering fundamental transformations. Different stages of those transformations are explained the transformative practices framework (Hummels, Trotto, Lévy, Peeters, Alves Lino & Klooster, 2018). The framework aims to explain the different stages of transformations. Depending on the context of application, one or more practices will be appropriate.

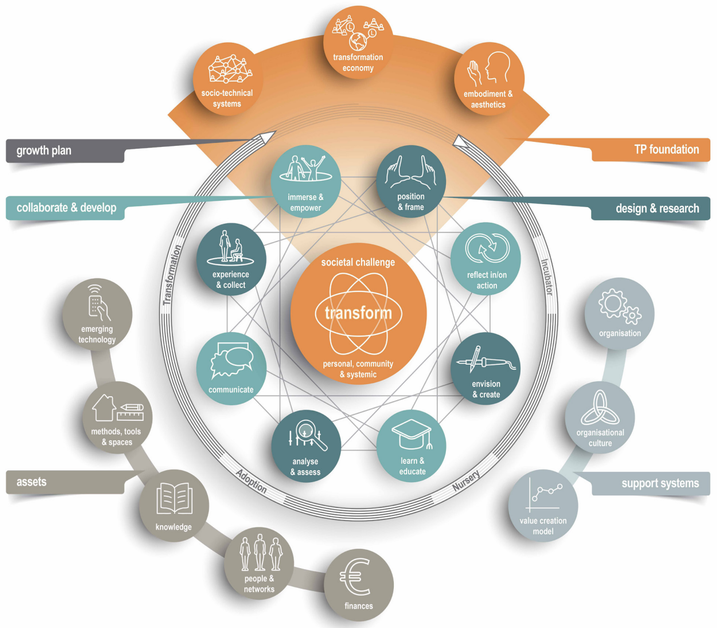

figure 1, Design Research adn Innovation Framework for Transformative Practices

Responsive Environment Framework
Responsive Environments are venues augmented with interactive technologies and enriched with digital content. They were defined as spaces enhanced with media and technology to provide a user experience (UX) that is interactive, rich, and changing; being engaging with their visitors and adaptive to them (Alves Lino, Salem, Rauterberg, 2010).

Taking the perspective of TP, the responsive environment framework (Alves Lino, Salem, Simons, 2010) is a tool to that can be used in the context of transforming digital and physical communities. Since this project aims to connect the online and digital community with its skills and the existence of that community in a physical environment (e.g. Designhuis) the framework of responsive environments is applicable.

When discussing some early ideas with Jorge Alves Lino, on the possibilities for the Designhuis. I was advised to read the papers written on Responsive Environments, for it might provide me with a tool to review my ideas and concepts.

With the inspiration I gained from the discussions with Jorge about the theory around Res. Env and the relation to TP I started working on the first concepts for the Designhuis. I used the framework to validate the concepts. These concepts I will discuss later in the report.

Collaboration
More and more studies show the relevance of multidisciplinary teams (Reynolds, Lewis, 2017)(Jeffreys, 2018). To have the ability as team to view a complex issue from multiple perspectives is essential to the transformative practices. But there is still a lack of cross-pollination between the communities organisations, teams largely exist of people from the same organisation. This functional bias is a problem for teams facing new uncertain and complex situations because, with little cognitive diversity, the team will have limited ability to see things differently, engage in different ways (e.g., experiment versus analyzing), or create new options (Reynolds, Lewis, 2017).

Therefore it is important that the process of creating multidisciplinary teams or the connecting of different backgrounds is facilitated within the TP community.

Similar projects

The future is pink
The future is pink is the final bachelor project of Rosa van Veen, just like me she worked on facilitating transformative practices. During her FBP she worked on the development of a collaborative workplace in Umeå, Sweden in cooperation with RISE Interactive.

She created the concept Collect to Connect, this concept is an automated co-creation curator where personal values, expertise, interest and challenges of individuals are used to connect people within the collaborative workplace (van der Veen, 2017).

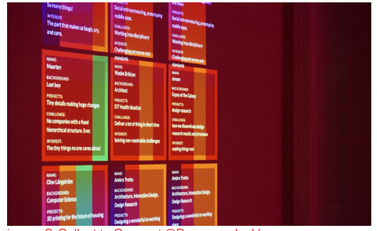
image 3, Collect to Connect ©Rosa van der Veen

It consisted of a visualization of the before mentioned categories of the visitors at the entrance hall of the building. It would be like a database were people would be able to look for specific skills or interests or just scan the information (van der Veen, 2017).

The Designhuis and its occupants can be seen as similar to the group of people located at the building in Umeå. Therefore the approach of this project is both inspiring and meaningful for Facilitating Transformative Practices.

Transformativepractices.eu
The TP community has access to an online platform. This platform functions as a database for the community and its researchers. It can be viewed as a Facebook for transformative practices members. On the platform users can update and keep track of their projects, they can search for papers, tools, and other users to facilitate them in their process.

Although the platform is already online it still has quite some teething problems. Despite of these issues the platform is already a great source of data for the members of the community. The data that this platform already holds is the reason why it's relevant for the project of Facilitating Transformative Practices.

(https://transformativepractices.eu/)

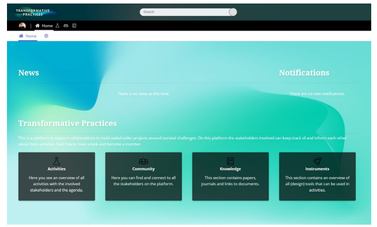

image 4, transformative practices platform

Time for a systemic approach

Transformative Practices Community: a system

To get a better understanding of the transformative practices community I explored its context and current stakeholders. Which platforms play a role? What relations are there? What data is publicly(within the community) available? How is data exchanged? These questions helped me develop my project vision.

The Community

The TP community is made up from people with expertise from many pillars of society. It consists of students, researchers, journalists, designers, etcetera. They are connected to organisations such as TU/e, Fontys, Philips and RISE Interactive. This group of people all work on complicated transformative processes that are related in structure or on topic.

To provide a platform for this community on which projects can be tracked, tools are made available and personal profiles would be public, the online platform transformativepractices.eu was created. This platform made it possible for the community members to track their projects and find information embedded within the community. It can be seen as a niche social media platform. Due to poor design and slow development the platform does not live up to its potential.

The community also has weekly or monthly meetings, unfortunately these are mostly limited to the organisations that are part of it. As a member of the TU/e group I realised that a lot of sharing takes place during these meetings. Relevant papers, contact details of people of interest, etc. are all exchanged during these sessions.

From the observations made on the platform and during the meetings, I realized that there is a need for easy sharing/access of information. To find the current bottlenecks in the community as an information system infographics were made to create a clear image.

There are three types of information sharing in the community as illustrated in figure 2.

A. Direct information sharing between community members. This mostly happens during meetings and is mostly exclusive to the organisation the members are a part of.

B. Member to platform and platform to member sharing. Members can contribute to the online platform by updating their profile pages and uploading papers. Members are also able to access all the information that is available on the platform.

C. Member to platform sharing through project updates. Members can update their project page on the platform by uploading results and giving progress updates.

Several issues were found on these three levels, analysing this data sharing system.

On level **A**, information sharing only takes place at set meetings and is mostly exclusive to the organisations.

On level **B**, the slow development of the platform still makes it impossible to upload relevant document. A second issue on this level is the amount of empty profiles. When a new member makes a profile on the platform he is asked to fill in their expertise, topics worked on, and specific key interest. Within these categories they are able choose from a large set of possibilities that are linked to transformative practices. This essential part of profile is not mandatory and therefore leads to empty profiles that don't contribute to the network.

On level **C**, the slow development of the platform makes it impossible to upload results to the platform at this moment. Members can add an infinite description and make a to do list. There still needs to be a possibility for the users of the platform to fully contribute to the projects pages. It is also seen as an extra task for the members to copy their results to the platform and the current complexity and non-user friendly UX makes them skip the task.

These issues need to be resolved in order to make information sharing within the community easier and more relevant.

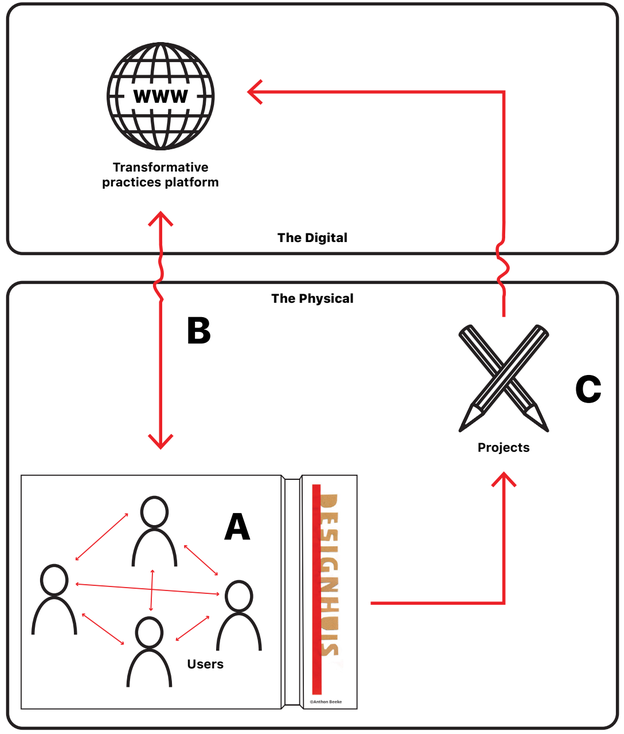

figure 2, community as information system

The presented issues are opportunities for facilitating transformative practices and are the base for following formulation of the project's vision.

With this project vision and a clear understanding of the issues I started working on the concept development phase.

Project Vision

Within the TP community, consisting of mainly students, researchers and designers from TU/e, Fontys, RISE Interactive, and Philips, there is an enormous amount of individual knowledge and experience. As the people in this community work on many topics related to Transformative Practices, there is the opportunity to collaborate and share their experience/knowledge to advance each other's projects.

This project on facilitating transformative projects aims to do just that. By analysing the community as a system and introducing possible solutions to enable the community members to easily access the necessary information and become more connected to Transformative Practices.

Three main issues as identified in figure 2

A Information sharing only at set meetings and exclusive to the organisations.

B Incomplete user profiles.

C Time consuming extra task to update project pages

Facilitating Transformative Practices: from responsive environment to chatbot

Five initial concepts

At the start of the concept development phase five concepts were created and validated with the Responsive Environment Framework(Alves Lino, Salem, Rauterberg, 2010). The concepts aimed at creating an environment within the Designhuis that would connect to the existing online environment that the TP community uses. The connection between the physical and the digital is considered essential as it can lead to relevant solutions for the discovered issues. The idea of Interactive spaces or Responsive Environments is the main goal of these concepts, where the space becomes an extension of the digital or vice versa.

When analysing the results of the use of the Responsive environment framework. It was decided on iterating further on the concept of the transformative matchmaker. Although this concept does not necessarily places itself in the Designhuis, it does aim to bring the community together in the physical environment.

As a next iteration the matchmaker would be redesigned as a chatbot. An AI operated matchmaker that could match the data available on the platform to the needs of the community members. This data would exist out of the openly available data on the platform. In the next subchapter "The Transformative Matchmaker" and its design process will be further described in detail.

Emotion lab
The lab shows the current emotion of the group working at the lab. The space registers noise and group connections, movement, etc. and adjusts lighting and visuals to match the ambiance.

Dimension	User centric
Overview	The lab literally comes alive and reacts to the people present.
Experience	The user gets placed in a room which expresses their communal emotion
Adaptation	The space adapts itself to the actions of the people present
Interaction	The user's actions determine the reaction of the room. This is not specifically mentioned and not every similar action will create the same reaction
Modalities	The attention of the user is not primarily focussed on what is happening with the room. It is focus on the actions within the room and their own activities
Media	Visual presentation on walls projected with the use of beamers as well as lightbulb that changes colour.
Technology	Sensors which measure activity, noise, amount of people, etc. and beamers and LED
Architecture	The space itself becomes alive, it is not designed this way but it can be used in its current form to host the liveliness
Res. Env.	An action reaction based work environment where the environment literally reacts to what is happing in the room

table 1, Res. Env. Framework Emotion Lab

Immerse yourself

The entrance of the Designhuis "immersion lab" will show a choice to its users, they will be able to choose as which persona they want to enter the lab. Depending on the persona, different information will be displayed.

Dimension	User centric
Overview	The users are giving the ability to enter the room as their preferred persona and its perks and abilities
Experience	The users' choose what kind of role they want to play within the space
Adaptation	The roles chosen define the dynamic within the space, users react to each other's personas
Interaction	The user interacts with the rooms dynamic and the groups dynamic by choosing a role
Modalities	Profile is selected by entering the room and taking a persona
Media	Visual presentation and physical check in system
Technology	A registration system which monitors the personas in the room
Architecture	The room function as the playground for the device and the actors in it
Res. Env.	Within the environment a dynamic is created by the users which influences everyone present

table 2 , Res. Env. Framework Immerse Yourself

Project overview

Digital Projects overview, beamers project a digital version of the transformative practices framework on the walls of the Designhuis. Within this framework visitors of the Designhuis can position themselves within the framework. They are able to add questions to their position and a small description of their current task.

Dimension	Content centric
Overview	An adaptive multiuser interface which displays activity in the workplace
Experience	The users are able to adjust the content displayed according to their current activity and progress
Adaptation	The content displayed changes according to the progress of the people present
Interaction	Changing content according to progress, with a focus on the big overview and its relation to others present
Modalities	Users address the content by looking at the projections, but also by changing their status
Media	Visual presentation on walls projected with the use of beamers
Technology	Web application to change content displayed, beamers to display overview
Architecture	Not designed with an aim on Res. Env., walls are large and useful for projections opportunity to change the existing environment with projections and technology
Res. Env.	A work environment with a constant unobtrusive overview of the groups' progress and relationships between projects which stimulates collaboration

table 3, Res. Env. Framework Project Overview

Transformative exchange

The transformative exchange, is a trading market for knowledge and skills within the Designhuis. Shaped like a stock exchange, having exchange rates based on the sharing activity of the members.

Dimension	Content centric
Overview	A physical trading experience of knowledge and skills within the squad
Experience	The users can provide and take knowledge and skills through an exchange mechanism that is similar to an exchange
Adaptation	The exchange and availability of skills and knowledge will be displayed live and will change as a result of the activity of the users present in the space
Interaction	The interaction exist of the interaction between the users and the interaction of the user with the system when putting in information
Modalities	The users register the activities they complete, and information and skills they offer
Media	A visual representation in the form of matrix board projections
Technology	Web application to change content displayed, beamers to display overview
Architecture	The interaction between users indirectly changes the environment in form of the displayed information but also the dynamic between the users
Res. Env.	A work environment with a constant unobtrusive overview of the groups progress and relationships between projects which stimulates collaboration

table 4, Res. Env. Framework Transformative Exchange

Transformative Matchmaker

Transformative Matchmaker, a matchmaking tool for the transformative practises community. It makes connection between community members based on their profiles, skills and weaknesses.

Dimension	User centric
Overview	A mix and match system connects people working in the immersion lab based on pre-set information on their personal projects and experience.
Experience	The user matches with the other squad members present with the best cards for collaboration. They have to maintain their profile updated
Adaptation	The users gets matched with others based on their content and will be encouraged to share knowledge and skills
Interaction	The user will be able to connect through an online application, the matches and topics matched on will be displayed.
Modalities	Matches will be displayed on the online application but also projected on the walls of the space
Media	Online application and projection by beamer
Technology	Online application and projection by beamer
Architecture	Not designed with an aim on Res. Env., walls are large and useful for projections opportunity to change the existing environment with projections and technology
Res. Env.	A work environment in which connection are proposed and collaboration is stimulated through a matching system

table 5, Res. Env. Framework Transformative Matchmaker

The Transformative Matchmaker: designing a conversation

The transformative matchmaker is an online chatbot assistant that serves the members of the transformative practices community. The Matchmaker facilitates the search for information in the form of papers, tools and people of interest. It uses the available information on the transformative practices platform as its database.

In order for the chatbot to function properly and stay up to date, it is important for the members of the community to keep adding information to the platform. To secure this flow of new information the chatbot is also a facilitator of updating profiles and project pages. Users can ask to change information, upload files and update a projects status.

Background

The process of designing the matchmaker started with research into chatbots. How do you create a chatbot? What is essential for making a chatbot? Which steps do you need to take? After doing research and trying to build a basic chatbot, the decision was made to work on the essence of the chatbot, the conversation. This conversation would be tested in a Wizard of Oz (WoZ) style setup and validated by asking the participants a set of questions after the WoZ session.

Test set up

A website was build (http://transformativepractices.samvanderhorst.com/) and a free messaging portal was embedded and styled to feel like a chatbot environment. This messaging portal had the option to create pre-set responses. This option was used to restrict me in conversing naturally. I had to use a flowchart with a corresponding script (see figure 2) for every conversation to create the illusion of talking to a chatbot.

The test group consisted out of ten members of the TU/e part of the TP community. A pre-conversation questionnaire was sent to the participants with questions on their role within the TP community and their project process. The questionnaire included an invitation to the test of the chatbot.

As a reminder of the chatbot test an email was sent to the participants. In this mail they were divided in different days. The first five members would partake on the first day and test the first iteration of the conversation. Adjustments would be made based on the test and tested again with the remaining five participants on the second day.

For the chatbot to be able to share the proper information with the participants a database was created based on the information that was freely available on the platform. All the profiles were ordered by expertise, topics worked on,

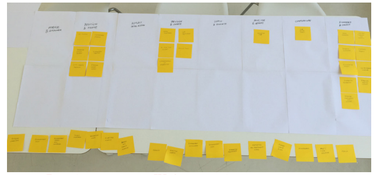

image 5, tools mapping to TP framework

/hi	Hello, welcome to the Matchmaker!
/help	What can I help you with today?
/explain	I can provide you with papers, tools, and people of interest related to your project, do you have any preferences?
/information	Can you provide me with some information about your project?
/no_info	I am sorry but I don't have anything related to those topics.
/search	Let's see what I can find for you :)
/found	I have found the following types of information: People of Interest, Papers, Tools. Would you prefer one of these or do you like to receive everything?
/gather	All right! Let me gather the information for you!
/present_all	The following people might be of use to you: ... The following papers might be of use to you: ... The following tools might be of use to you: ...
/present_k	The following papers might be of use to you: ...
/present_p	The following people might be of use to you: ...
/present_t	The following tools might be of use to you: ...
/direction_all	To get to the information pages on https://transformativepractices.eu/ take the these routes: Login > knowledge > papers Login > community > people Login > instruments > tools
/direction_k	To get to the Knowledge page on https://transformativepractices.eu/ take this route: Login > knowledge > papers
/direction_p	To get to the People page on https://transformativepractices.eu/ take this route: Login > community > people
/direction_t	To get to the Tools page on https://transformativepractices.eu/ take this route: Login > instruments > tools
/contact	On there you will be able to find their contact details
/content	Are you happy with the received information?
/help_2	What information do you still need?
/quest_outro	Thank you for using the matchmaker!
/error	Sorry I don't get it :(Could you please explain what you are looking for?
/conformation	Okay great!

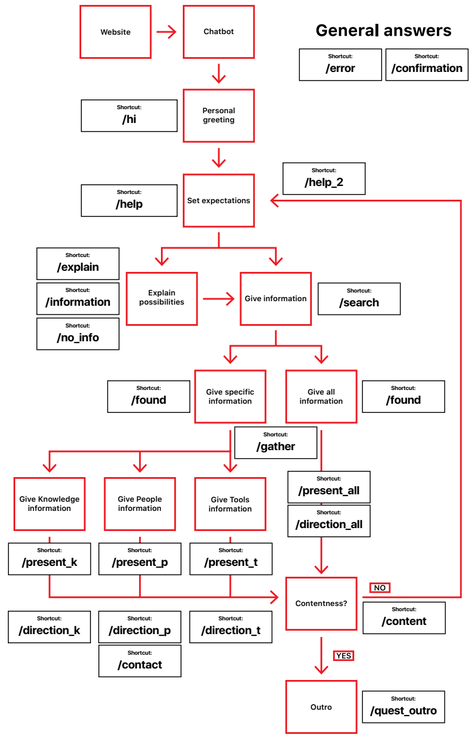

figure 3, flowchart and script for chatbot conversation

and specific key interest. The tools were analysed, mapped, and connected to the transformative practices framework. Since there were only five papers openly available they were not linked to specific topics or the framework.

The test consisted of them accessing the chat through the before mentioned website. They could then interact with the chatbot. Which was me with the flowchart and script (figure 3) sitting behind my computer trying to help their search for information. The participants were told that it was a real chatbot they could interact with to create a realistic and honest conversation as possible. At the end of each conversation the participants were asked to fill in another questionnaire to validate the conversation and to collect their opinion on the chatbot. Seven participants took part in the test and filled in the additional questionnaire.

Results

Form the questionnaire it was learned that the participants experienced the chatbot as a pleasant way to find relevant data stored within the TP community. Six out of the seven participants stressed confirmed that they would use this chatbot if it would be developed in a 24/7 available tool. They all experienced the conversations as pleasant although not yet useful. This lack of usefulness was blamed on the still primitive abilities of the chatbot. In the end only one participant realized he/she was talking to an actual person instead of a chatbot.

To demonstrate the function of the chatbot on demo day an animation of one of the conversations was made. The animation is based on one of the conversation that took place during the WoZ session. (right page)

All the results of the questionnaires are in appendices.

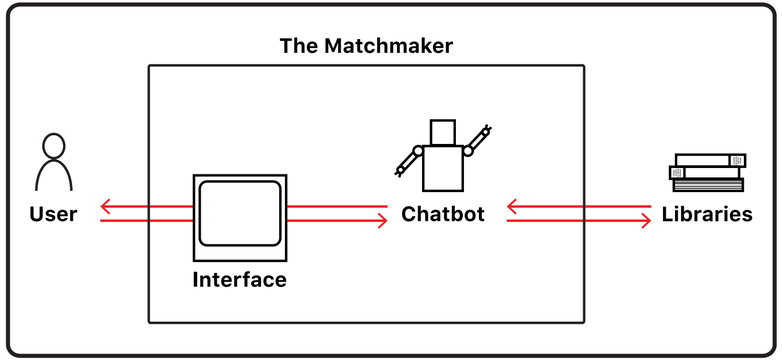

figure 4, information exchange on chatbot level

Conclusion & Future steps

The chatbot is a great way to assist the community in their search for useful information. In order for this concept to function and a chatbot to be built with an AI that is able to assist in the search for information there are some hurdles that need to be taken first.
The database of the platform needs to be accurate, up to date and complete. The platform itself should undergo a drastic UX redesign, to make sure users can access the proposed information easily.

If these steps are taken and the first function of the chatbot, information search assistant, is implemented there is the opportunity to give it more tasks.

A task that would be perfect for the chatbot is to manage the personal uploads of information to the platform. Information such as tools, papers or project updates.

Scan or click to view the video

The Transformative Mapping: bridging the physical and the digital

Transformative Mapping is an interactive installation that helps new transformative practices community members to create their profile for the transformative practices platform. The installation is a growing visualization of the skills and backgrounds of the members of the community.

When new members form their profile on the installation they use their hands to connect the categories that apply. This slows down the selection process and helps them to create a more accurate profile. While creating their profile physically, a digital version is created through the interaction. When finished they can collect this digital version and save it to the transformative practices platform as a profile.

Background

During the process of designing the matchmaker and creating the database it really annoyed me how many incomplete profiles there were on the platform. From the 111 profiles 25 were only a name with some minor contact details. This is issue was both caused by the carelessness of persons making the profile as well as the poorly designed UX of the profile creation page.

The concept of transformative mapping was created to create an interactive way to establish a basic profile on the transformative practices platform. To make sure the empty profiles would not occur in the future.

Using the principle of tangible interaction the use of rope as connector in the installation would have a positive influence on the profile creation process.

Test setup

To test the interactivity of the rope and make a grounded decision on the form giving of the categories on the installation a user test was set up. It consisted out of a scaled version of installation were the participants could use pieces of rope to create their profile in a linear way. This first part was created to both test the interactivity and the linear visualisation.

Following the linear (figure 5) version there were two paper version of a circular visualisation (figure 6) and a spider graph visualisation (figure 7). Participants would use a ruler and a pencil to draw out their profiles on the paper. To round of the user test and collect opinions a small questionnaire was filled in at the end.

Seven members of the transformative practices community participated in this user test. They were asked to first make the linear profile by using the rope provided. They were given minor instructions to have them create their profile in unbiased way. This was done to get the most realistic user insights. The same approach was taken with the following paper profile tests.

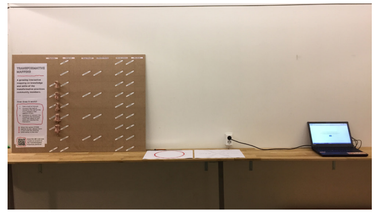

image 6, user test

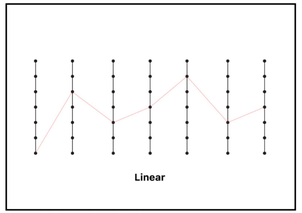

figure 5, linear visualisation

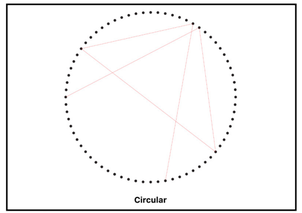

figure 6, circular visualisation

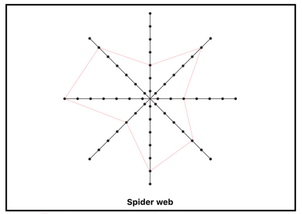

figure 7, spider graph visualisation

Results

Based on the results of the created profiles and the comments in the questionnaire it was decided that the visualisation should be circular. It gave the most freedom of expression and participants felt like they were able to create the most accurate profile this way.

The tangibility of tying the profile was perceived very positive by all the participants. They experienced it as a task that made them think more about their role within the community. The slowness of the process gave them the time to consciously make decisions.

Part of this iteration and test was to show the function of the concept as well. During the test it was explained that the user still had to fill in their own profile after creating it offline on the board. The participants commented that this was very extensive and still would not solve the issue of the empty profiles.

All the results of the questionnaire are in appendices.

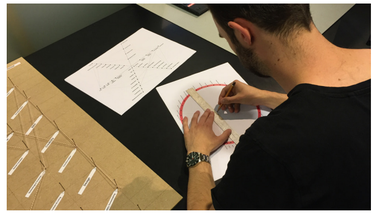

image 7, user test

image 8, user test

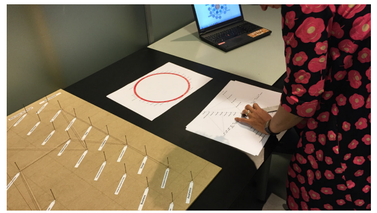

image 9, user test

Conclusion & Future steps

With the results of the user test a final iteration of the transformative mapping installation was created. It was designed as a circular mapping where users would start from the centre of the circle. They would take a piece of rope with the colour that would correspond to their organisation and use this to create an accurate profile. When finished they could collect the profile using their smartphones and upload it to the platform, solving the issue of having to fill in the profile again online. An example of a collected profile is visible on:

http://tpoverview.samvanderhorst.com/

With this installation the connection between the physical and the digital is still in a demonstrative state. For future iteration this aspect of the design need to be realised. The digitalisation of the physical profile can be done in multiple ways. For example the connection could be made with connective thread, or a webcam that scans the pattern.

Then there is the connection between the platform and the installation that need to be realised. On the platform the profile creation page should be changed in order for the data from the installation to be put in the created profiles.

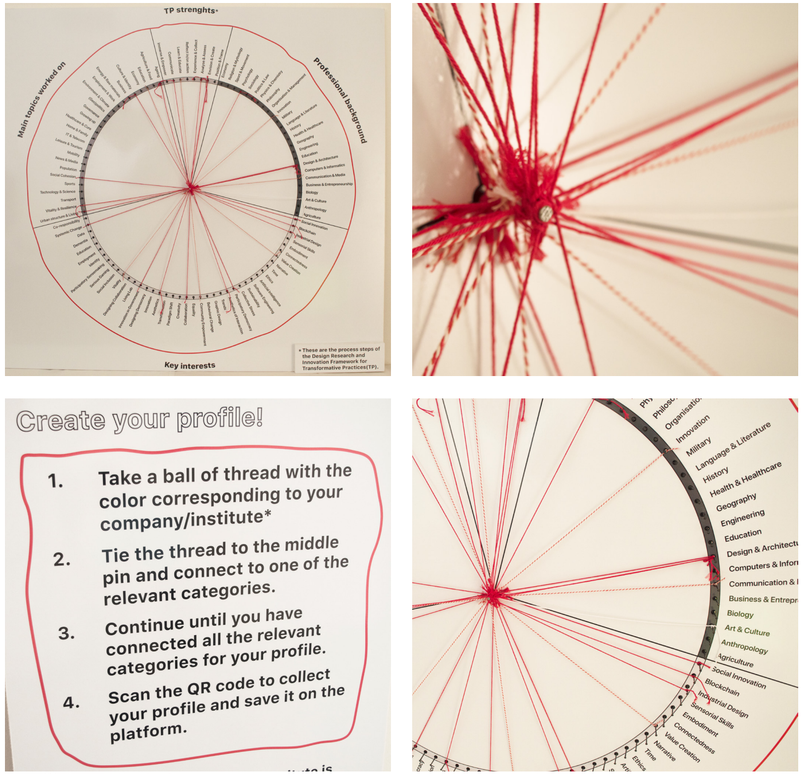

image 10, close ups final iteration

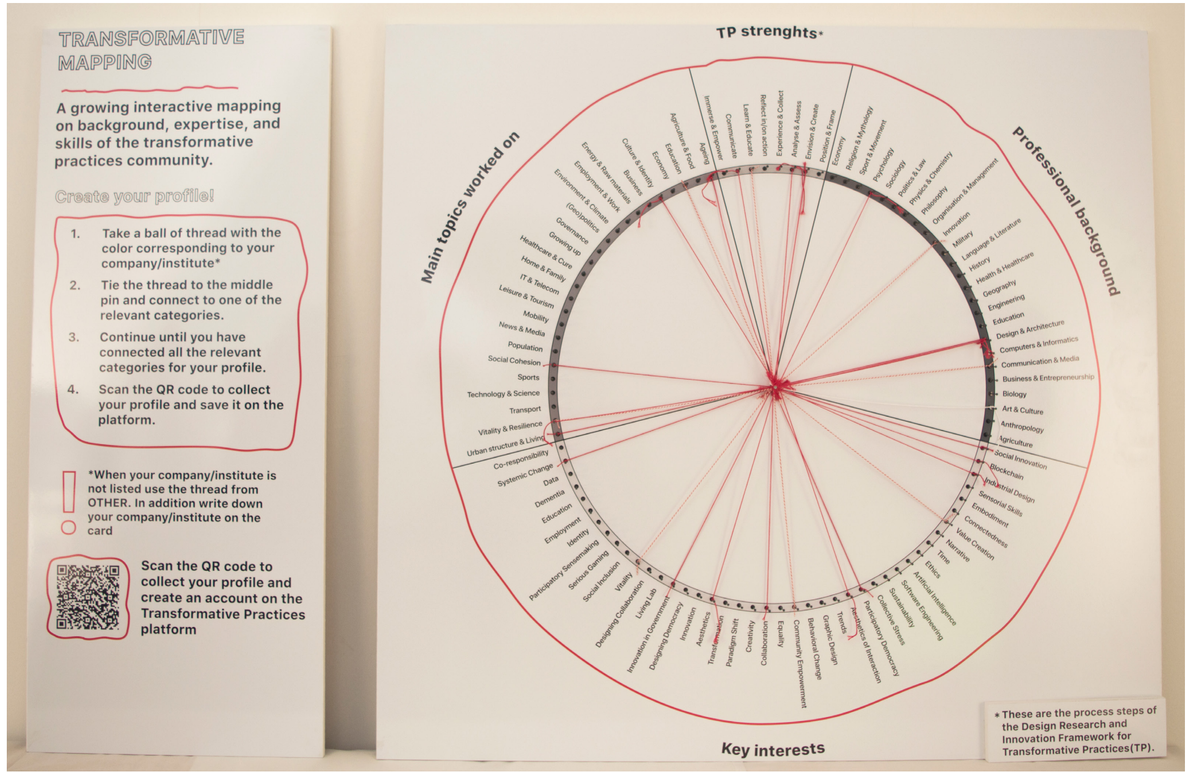

image 11, final iteration

The system: where do you place the concepts?

When considering the community as a data system as was done at the start of the project, where do we place the developed concepts. What is their final role within the community?

In figure 8 the role of the two concepts within the system is shown. On all three levels (A, B, and C) the concepts have a direct or indirect influence.

On level **A**, the exchange of information is encouraged through The Matchmaker's suggestions of people of interest. It is easier for the users to find the right person with the expertise they are looking for. The Transformative mapping influences this level through its ability to create basic profiles that include the necessary information for the bot to make the right suggestions. Thus providing a solution for the previously identified issue of empty user profiles.

On level **B**, the exchange of information is guided by the Matchmaker and the Mapping. The chatbot assists the community members in finding the right information in the data that is stored on the platform. The mapping makes sure that the data that is added in the form of member profiles is complete and therefore an addition to the database. The assisting role of the chatbot facilitates the meeting and exchange of information between members outside set meetings, solving the issue described earlier.

On level **C**, the Matchmaker will play a future role as an assistant that helps the upload of project relevant information for the members. When projects develop the user can ask the chatbot to update the project and sent it files to store on the project pages. When the platform further develops this function will solve the problem of the time consuming task of uploading and archiving.

The three levels of the system are where the essence of facilitating practices of this project comes into play. Facilitating the access to data and the assisting the addition of data. With the addition of the concepts a big step has been taken to solve the issues identified at the start of the design process.

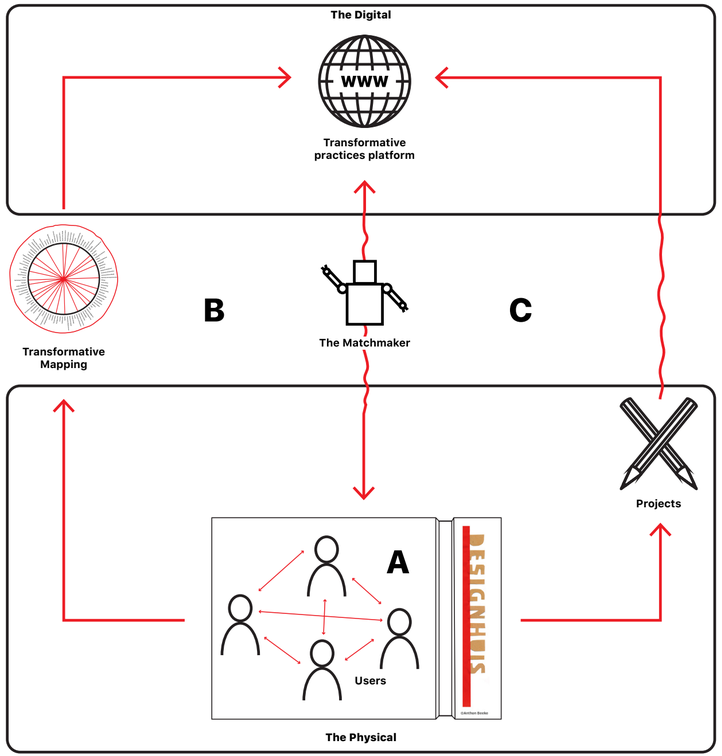

figure 8, community as information system with integrated concepts

Discussion

The perspective of the system has been very relevant for this project. This approach was essential for the analysis of the community and the search for issues.

If I look further into the project vision and if my concepts are in line with the previously established vision. The concepts are both possible solutions for the found issues. They both facilitate the easy access of relevant information and in doing so help the members to become more connected with the community and transformative practices in itself.

When considering the two developed concepts, The Transformative Matchmaker and The Transformative Mapping, you could say that they are still in a very early stage of development. I considered this as well in my search towards the satisfaction on the concepts. But their aim is correct, the designs were based on proper user tests.

About the user tests one could argue that they are not representative of reality, the tests were conducted to make grounded design decisions and gather more insights in the needs of the community.

This aim does not necessarily need a realistic approach. One flaw about the user tests is the lack of diversity within the test groups. The groups solely consisted of community members with a TU/e background. If you take a look at the possible future of these concepts more user testing will definitely be needed with a more diverse group of participants.

There is still a lot that needs to be done to realise these designs. But when they are put in practice they will prove their use to the community and transformative practices.

Just like transformative practices it takes time to change a system. But is done by using a systemic approach and developing smart solution for the relevant issues. Not only do the developed concepts need more time, but also the previous projects that are done to facilitate this community.

The Designhuis space has finally been realised and for the next semester students can really take advantage of the location and its open possibilities.

Conclusion

The Project of facilitating transformative practices has been about a systemic approach to the transformative practices community as a source information. This approach led to the identification of multiple issues on three levels.

With the introduction of the design concepts, The Transformative Matchmaker and The Transformative Mapping, possible solution to the issues on all three levels were introduced.

The Transformative Matchmaker is an AI based chatbot assistant that facilitated the search for relevant information enclosed within the community, such as people of interest, papers and tools. The chatbot will also be given the task to guide the community members in updating their project pages on the transformative practices platform. The Transformative Mapping is an installation that connects the physical and the digital, with its goal to have community members create their profiles on the digital platform in a physical way.

By introducing tangible interaction user are able create a basic profile that they can digitize and upload to the platform. The concepts bridge the gap between the physical and digital of the TP community and stimulate multidisciplinary collaboration.

In the future the project will be continued and research will done in the realization of the concepts into products for the community.

Acknowledgements

First of all I would like to thank Caroline Hummels for accepting my request for a handshake and pushing me in the direction of this project.

I also like to thank Jorge Alves Lino for his inspirational feedback and input as a coach, you were great!

Furthermore I would like to thank the students of the connecting realities squad and in particular Demi, Derek, Milou, and Veerle for the all the fun and interesting discussions.

Finally I want to thank Afdeling Buitengewone Zaken for helping me with the process of choosing an FBP topic.

References

Alves Lino, J., Salem, B., Rauterberg, M. (2010). Responsive environments: User experiences for ambient intelligence

Alves Lino, J., Salem, B., Simons, J. (2017). A Framework for Responsive Environments

van Driel, D.T.V., van der Horst, S., Moens, J.C. (2017). Increasing awareness of mobile phone usage by peripheral interaction

Hummels, C., Trotto, A., Lévy, P., Peeters, J., Alves Lino, J. & Klooster, S. (2018). Design Research and Innovation Framework for Transformative Practices

Jeffreys, T. (2018). Experiments in the Field: Why are Artists and Scientists Collaborating?

Reynolds, A., Lewis, D. (2017) Teams Solve Problems Faster When They're More Cognitively Diverse

Schlicht, M. (2016). The Complete Beginner's Guide To Chatbots. Retrieved April 24, 2018, from https://chatbotsmagazine.com/the-complete-beginner-s-guide-to-chatbots-8280b7b906ca

van der Veen, R. (2017). The Future is Pink: Bachelor Graduation Project

Zreik, K., Bouhai, N. (2017) Post-Digital Design

Appendices

Scan or click to view on Google Drive