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FMP

prep



Brainport

connects

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INTRODUCTION

“Diversity is being invited to the same party; inclusion is being asked to dance.” – I hear, while watching Verna Myers’s TED Talk from behind the laptop screen. The inclusion strategist and author tries to captivate her audience with this metaphor aimed at teaching others about their unconscious bias [1]. Among the many biases we have when it comes to people who are different from us, she mentions “We want that first-generation immigrant to act like they’ve been chilling in this place forever.” – and I start to wonder: how is this problem tackled in the Eindhoven area?

With 200 to 250 new employees every month, ASML has a growth that cannot be satisfied by the Dutch labor market. As a consequence, with 102 different nationalities working for the company, half of the employees’ nationalities are not Dutch [2]. However, this is not an isolated case. The internationalization of the Eindhoven area is no stranger to any of its inhabitants. Anywhere you go, cafes, bars, shops, on the streets, English is present as a spoken language in the everyday life more and more every year.

Why is this? With its strong economy and abundant pool of jobs, Eindhoven is one of the most preferred cities in the Netherlands for expats. While 22.6% of the Netherlands’ population are first- or second-generation immigrants, in Eindhoven, the figure is 33.5% [3]. Because of so many growing tech companies, new talent is needed and “imported” from other countries, and, along with it, their families. Unofficial studies show that two thirds of the expats bring along their families, a phenomena called “adaptive migration” [4] [5]. The spouse is then faced with a different situation: they are not following their career or their dream, they are adapting for someone else’s. Therefore, the organizations in Eindhoven (starting from companies to cultural organizations and stichtings, ONGs, etc.) are faced with a new responsibility: the inclusion and integration of these “newcomers”. On the one hand, in the working environment, on the other hand, in the everyday life.

The solution space for this integration problem is a chaotic “warzone”. An in-depth investigation into the system has revealed numerous organisations and institutions, funded and unfunded, driven by their own subjective opinion about what integration of this minority means: is it about learning the language,

your way around Albert Heijn, or learning how not to be alone anymore? Companies, stichtings, cultural organizations, neighborhoods, businesses, the municipality they each have organized activities for these people.

So what is the problem? Most organizations do not collaborate with each other in creating a collective initiative for this minority. As a consequence and an insight from the conducted interviews, there tends to be a finger-pointing situation among organizations regarding which approach is flawed and why. In the meantime, the expat minority continues to suffer the loss of their social capital and fail to call Eindhoven “home”. Secondly, and most important, the majority of these solutions are exclusivist and one-sided: they only target the expat community. And whenever they target the Dutch as well, it is either about learning Dutch, or about building future working relationships. This does not allow the relationship to evolve in a relaxed environment: the participants are either there to teach, learn or work. What about connecting in the leisure time?

As a consequence, expats are mostly treated as a separate customer sector (exclusive medical care for expats, exclusive activities for expats etc.) and so, their tendency is to form close ties to other expats, mostly of the same nationality as them.

On the other hand, Dutch locals do not have interest in interacting with the expat community of Eindhoven (source: interviews). Trends have shown that more and more Dutch families are moving out of certain neighborhoods around the area because of the rise of expat tenants (according to the words of Monique Mols, head of Corporate Communications, ASML). Research has shown that minorities which exclude themselves will also be excluded by the rest of the society [6]. In the long run, this will not only affect the economic progress, but also the social structure of the inhabitants of the Netherlands. Social network theory strongly supports weak ties (i.e. relationships beyond shared identity – e.g. acquaintances, colleagues) between members of a society. They are a benefit that allows actors to bring about critical social changes and strengthen social cohesion [7].

Brainport Connects is a digital tool aimed at the cultural leisure scene of the Eindhoven area. It encourages creating these ties through face to face interaction among expats and Dutch locals.

It also maintains the ties virtually for future encounters, hoping to make them more sustainable. Brainport Connects treats its users equally, and, through its non-randomized algorithm, ensures the Dutch mingle among the expats. Its aim is to break bias, create empathy and a broader social network between the two communities. By being as personal as a mobile application, it encourages the members of the communities themselves to initiate contact. This aims at giving event attendees the courage to break barriers themselves and invite each other “to dance”.

In the following sections and subsections, the preparation phase of the project will be presented through a timeline (“Approach”). In the first quartile the following took place: the context of the initiative, the choosing of the topic and the investigation of existing solutions, followed by social network theories which back-up the problem, to a short solution space. In the second quartile, the ideation process, followed by the prototype and the first iteration were conducted. The “Method” section lists the means through which information and data were collected, as well as frameworks which were applied in the process. Future plans are presented in “Next semester”.

GLOSSARY

Stichting = a Dutch legal entity with limited liability, but no members or share capital, that exists for a specific purpose;

Taalcafe = A gathering of people who share the interest of talking in Dutch; the audience is divided in two groups: Dutch speakers and non-Dutch speakers; the aim is for the Dutch speakers to teach Dutch to the non-Dutch speakers through casual conversation;

PEP team = Professional Empowerment Program team; a team of expat spouses with certain professional specializations who are given a company assignment to complete; has the aim of professionally empowering expat spouses and creating potential links for future job opportunities;

Expatriate = An immigrant knowledge worker, or a spouse of an immigrant knowledge worker; according to the standard definition, an expatriate is bound to stay on average for 2-3 years; however, lately, trends have shown that expatriates who come to Eindhoven, come to stay for longer, even forever (source: Ed Heerschap);

Minimum viable product = a fraction of the app which includes all its functions and will be used for testing;

APPROACH

Quartile 1 - The first quartile was dedicated to getting to know the Fieldlab and their requirements, defining a general problem, investigating the current system in order to narrow the problem space down, doing literature research, finding a design opportunity and a research question, finding a problem owner, gathering requirements for the design and quickly ideating to present at the Fieldlab launch.

Fieldlab Constraints and choosing a topic

As stated in the approval brief [8], the project has been initiated in collaboration with the Effenaar's Social Cohesion Fieldlab. The Fieldlab would act as an incubator for the experiment and would monitor the process of the experiment. The experiment would aim at researching how a technical solution can solve a societal problem regarding social cohesion.

For the project to be eligible for a funding grant from ClickNL, the experiment would be conducted with the help of four stakeholders: a research partner, a conceptual partner (problem owner), a creative industry partner and a technical partner [9]. In this case, my role would be of the researcher, but also of the designer and the initiator of the project.

Because the topic choice was up to me, I wanted to make sure the solution I would come up with could have a real impact in the area of Eindhoven. In my previous brief, there was a conflict between gender inequality in tech and the integration of expats in the Dutch community. Because it was personally more close to my family situation, I chose the latter.

Investigating how the existing system works to narrow down the problem space

The interviews & knowledge meeting

Almost half of the first quartile was strictly dedicated to investigating the problem, namely:

- what integration solutions there already are,
- how expats are approached by these solutions,
- what and how the initiators of these solutions think in this situation,
- what are the problems within these solutions.

Since I have been living in Eindhoven for the past four years, as a student and an employee, I had a first-person perspective on the matter. On the other hand, having my family move here and my mother as an expat spouse, as well as many of my friends being knowledge workers, I also experienced a second-person perspective on what the dynamics of the existing integration solutions were. However, a third-person, more objective perspective was needed.

The search for information first started with scientific articles, but there were no officially published ones about the Eindhoven area or the Netherlands. Very few online articles about the inflow of expats and the Brainport region, however, numerous online articles about how to adapt as an expat in a new country have been published.

Therefore, a heavy set of interviews and investigations into how the expat minority is treated in Eindhoven and what the existing movements are began. In almost four weeks, I managed to talk to a wide variety of organization coordinators and people who work with expats. The interviews did not have a fixed set of questions and were initiated by a synthesis of information I have already gathered from previous interviews. I aimed, however, to gather inspirational data about: their motivation, their goals and what their opinion on the general matter is.

The list of interviewees is, in chronological order (some names were shortened for privacy reasons) :

1. **Lotte de Haan** – Founder of Sam Sam Taalcafe
2. **Anneke** – English teacher at the Language Institute
3. **Lijliana Predragovic** – founder of New in NL
4. **E1, E2, E3, E4** – expat spouses
5. **Carola Eijsenring** – Owner of INDIGO-WERELD and founder of the ‘Get in Touch’ program
6. **Kavitha Varathan** – Co-founder at Expat Spouse Initiative
7. **Susan Lambriks** – Professional Development Coordinator for Support Staff at TU/e
8. **Lidy Lathouwers** – Director of UIT IN EINDHOVEN
9. **Ed Heerschap** – Program Coordinator Living In Programme (Expat Center South)
10. **Claudia Evers** – Manager regio Oost & team activities Korein Kinderplein

Knowledge meeting Culture Connects – At a later date, on the 27th of November, I also attended a knowledge meeting at the Designhuis between all the founders and directors of all the important organisations (cultural, political and humanitarian) in Eindhoven (e.g. the Municipality of Eindhoven, the Expat Center South, VanAbbe Museum, Muziekgebouw Eindhoven, the Eindhoven Library, Expat Spouse Initiative etc.) as well as the employers who are dealing with great numbers of international employees (TU/e, Philips and ASML). This meeting was organized by Culture Connects, a collaboration between the Expat Spouse Initiative and UIT in Eindhoven, and it was a presentation of a program they came up with to engage internationals in cultural Eindhoven, called “Rumours – Eindhoven’s cultural parade”.

The insights

The relevant themes of interest that surfaced from the interviews and the meeting were the following:

What solutions are there already?

The expat integration solutions in Eindhoven are initialized by different stakeholders. From the roughly four-week investigation, six categories of stakeholders were noticed: companies who import talent, stichtings, cultural organizations, neighborhoods, businesses and the municipality.

Companies mostly provide periodic activities with the employees such as sport activities or social gatherings. The spouses are also invited to these activities. Big companies also subsidize Dutch language classes for the employees. However, their number is limited and the mother is not allowed to bring her infant.

Stichtings (non profit organisations) such as Rode Kruis, Ik wil, New in NL, the Get in Touch Program, are, most of the time, non-profit organisations which organize language courses, coaching, workshops, gatherings and voluntary work for immigrants belonging to any social status, no matter their time in the Netherlands, for free. They are, unfortunately, under-funded and poorly advertised. Also, they have limited places since they work with volunteers.

Cultural organizations such as the Hub, VanAbbe Museum and the Expat Spouses Initiative offer services (events, consultations, workshops) to expats, most of the time, for monetary compensations which guarantee a certain experience or exchange of information. The Eindhoven Library, on the other hand, offers free taalcafes to immigrants.

Neighbourhoods – during the four week search, only one neighbourhood organization has been discovered in Meerhoven [10]. There, because of the big concentration of ASML employees, a community of expat families has been formed. This community has organized itself to help new expat members to socialize and integrate in the Meerhoven area.

Businesses, or profit organizations have timidly started to take a stand to addressing this minority. For example, at the Anne&Max Café on Kleine Berg, an expat-exclusive table has been designated. Here, expats can come and “enjoy the company of other expats in a cool setting and get to know new expats in Eindhoven.” [11]. In the medical field, SGE medical clinics have built a new branch in Eindhoven called the SGE International, especially for internationals. In the financial department, a new firm exclusive for internationals opened its doors, Persone. In the real estate and the legal departments, the Dutch firms have adapted accordingly, making sure their services can also cater English-speaking newcomers [12].



“My expat table“ at the Anne&Max Cafe [11]

How do these solutions approach expats?

The most often expressed concern by the interviewees, especially by the cultural organisations, was that they do not know how to approach expats.

“Cultural organisations don’t know how internationals think and act: they are not connected and don’t know how to connect”, says Lidy Lathouwers. Being the director of Uit in Eindhoven (the bridge between all the cultural institutions in Eindhoven, responsible for advertising the cultural scene), Lidy has worked with many institutions in order to promote culture and bring people together at these events.

“We want to organize activities for them...but how? We don’t know how.” says an employee of the Bibliotheek to me in a break at the knowledge meeting.

“We have employees at the school who are insecure about how to approach expat parents..and it shows.” says Claudia from Korein Kinderplein.

After a while, it appeared that their “design process” did not include the “user” at all. They were talking about not knowing what expats think and feel, but they did not talk about any research they could have done to find that out. In a room with approx. eighty people, at a meeting about internationalizing the cultural scene in Eindhoven, there were barely ten internationals sitting in those chairs.

Moreover, “companies only come up with solutions because they are afraid of losing money”, says one interviewee. In truth, companies could be more involved in the process of integration and could subsidize organizations to take care of the integration process from the beginning.

After having gathered all these insights, the intention of the organizations is there, but the motivation is lacking, in my opinion. Changing the advertising language into English and labeling events as “expat” or “international” does not equal really getting to know a group of individuals with different beliefs, different backgrounds and who just started a new life from scratch.

What and how do the initiators of these solutions think in this situation?

As observed from the knowledge meeting, and according to the insights given by one of the interviewee, cultural organizations do not wish to change their policies. Their structure is very rigid and they are reluctant to changing their program to adapt to the internationalization.

From this, follows another issue: organizations are not very willing to collaborate. Therefore, “there is no coordinated strategy for reaching the public”, says Lidy. Organizations are not comfortable enough to adapt their programs in order to come up with a strategic, collaborative plan to make the cultural scene of Eindhoven appeal more to the international public.

What are the problems of the existing solutions?

A multitude of problems uncovered from all the drawn observations.

First off, the assistance for mothers during the language classes and the voluntary activities is limited. Expat mothers E1 and 2 have mentioned that they do not trust people here enough yet to leave their children under their supervision. Therefore, their attendance to integration programs during the day is limited.

The information about all these initiatives and solutions is scattered all over the Internet. There is no centralized platform where all the activities can be found by categories. Eindhoven News claims to have this centralized platform, however, they only include the leisure activities. Moreover, the under-subsidized organizations are poorly advertised: they do not have their own website, most of the marketing happens through spreading the word and Facebook. This is a problem since many (especially middle-aged) expats do not own a Facebook account.

There are many more things to learn when being an expat apart from the language. Dealing with a new bureaucratic system and learning how to deal with cultural differences should also be tackled in the existing solutions.

And last, but not least, most of the solutions are one-sided and exclusivist. From the cultural events labelled “Expat Potluck Dinner”, “International Comedy Night” to the services dedicated exclusively for expats, this minority is treated as a separate customer segment. Very few solutions include the Dutch in the equation, and when they do, the initiators act as temporary bridges between the two communities (e.g. the Expat Spouse Initiative acts as an intermediate facilitator of the temporary interaction between a PEP team and a Dutch company). **With the eager attitude to cater for the expat minority, organizations forget what the ultimate scope is: integration.**

Narrowing down the problem

From this whole set of information, the following questions had to be answered:

- What system flaw can I address as a designer in order to make the integration of expats an easier process?
- How can I look at the problem from a perspective from which it has not been considered?

By using the Transformative Practices Framework to analyze all the factors that could affect the integration of expats [13], a decision was made to not try and change the approach from the organizational point of view, but from the people’s point of view. Instead of finding a solution for the way organizations approach integration, try to give expats themselves a tool which facilitates their integration.

By looking at the interviews conducted with the four expat spouses and the insights from the investigation, it was concluded with common sense that certain reactions from the expat community were motivated by them being isolated by the existing solutions.



Because the Dutch and expats are not given opportunities to meaningfully interact, especially in the leisure time, expats will then create a close group of expat friends. This group acts like a protective shell in which the protégées will always be strangers to a culture in which they will be living for a long time, if not, forever.

In order for this logical line of reasoning to be validated as a real problem, literature research has been conducted on social theories.

Conducting literature research to validate the problem

The aim of the literature research was to validate the fact that because the expats and the Dutch are not given enough opportunities to interact outside their working/learning environment, it could constitute a problem from the societal point of view.

Social Network Analysis theories and how the problem relates to social cohesion

Social Capital and Structural Holes

Once arrived in the Netherlands, expats, especially expat spouses, find themselves in a situation where they do not know (almost) anybody. Because all their human relationships have been left in another country, on the Dutch territory expats have lost all their social capital – all the resources embedded in social relationships [15]. These resources allow people to facilitate action (e.g. because I know a neighbor who is passionate about photography, I can get good tips on what camera to buy)[14].

Social capital is of three types: bonds (formed with people with shared identity such as other expats, especially the ones with the same nationality), bridges (links shared beyond shared identity such as acquaintances, colleagues or neighbors) and linkages (between people belonging to different levels of the social ladder) [14]. For this project, the first two types of social capital were relevant.

A structural hole is an “empty space” in the network between two groups of actors that do not otherwise interact closely (though they may be aware of one another) [17]. A bridge is a link formed across a structural hole and the strategy of locating a position at the edge of two groups and building relations between dissimilar people is called brokerage [16]. Burt says that “structural holes separate non-redundant sources of information, sources that are more additive than overlapping”.

How does this affect the individual?

Closed networks (with many bonds and little bridges connected to the “outside”) are called cliques [16]. These cliques have a dense structure, little structural holes and a high redundancy of information. On the other hand, loose networks (with a high number of bridges and a low degree of bonds) are called “entrepreneurial networks”. These networks have a sparse structure, a high number of structural holes and a low redundancy of information [16].

Because expats are not exposed to interacting with the Dutch on many occasions, they tend to form close bonds with other expats – “We are a close group of Brazilians and we do everything together. I have never actually had to talk to a Dutch person outside my group.” says E3. Therefore, within their expat “clique”, new information does not circulate often. However, even if it did, the most useful information about how to get around and adapt in the new environment could only come from the Dutch locals living in Eindhoven with whom they do not have many links. This limits their possibility of accessing valuable information about opportunities of doing something meaningful with their time .

“I have lived in Eindhoven for three years. I mostly find out about language courses or voluntary activities from Dutch acquaintances who know somebody who know somebody...” says E4.

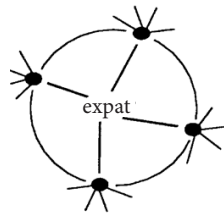
closed networks

“clique network“

(e.g. “We are a group of

Brazilians, and we do everything together“)

- dense, flat structure
- interconnected relations sustain one another
- no structural holes, high information redundancy, creates social support but minimal information and control benefits [16]

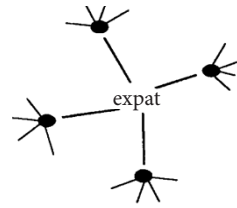


loose, heterogeneous networks

“entrepreneurial network“

(e.g. more diverse friends/acquaintances who are not necessarily related to each other)

- sparse, flat structure
- independent relations sustained by the expat
- abundant structural holes, low information redundancy, creates information and control benefits [16]



How does this affect the society as a whole?

Having expats spend time in “expat only” surroundings, can trigger a magnetic repulsion effect:

“Tightly knit communities, such as some immigrant groups, have strong social bonds, with individuals relying heavily for support on relatives or people who share their ethnicity. [...] Their lack of social bridges can turn them into eternal outsiders from wider society, sometimes hindering their economic progress. [...] Tightly knit groups may exclude themselves, but they may also be excluded by the wider community.” [6]

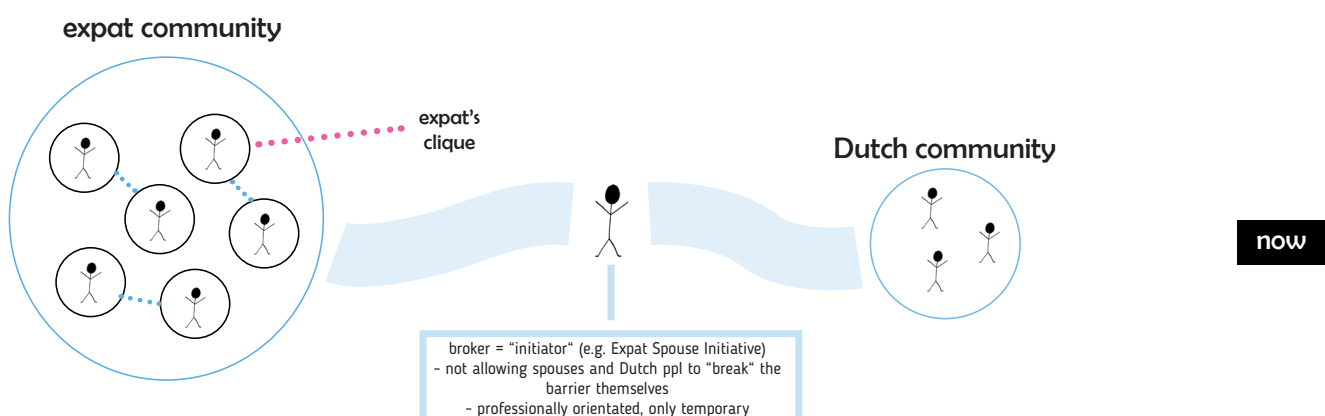
Not only expats suffer from this lack of interaction. Literature argues that ‘bonding’ social capital consisting of strong network ties is negative in excess quantity as it can lead to the enforcement of social norms that hinder innovative change. On the other hand, ‘bridging’ social capital consisting of weak network ties is a benefit that allows actors to bring about critical social changes [7]. With Eindhoven being a highly innovative area, the lack of weak ties between the two communities could hinder attaining its full developmental potential.

How does this relate to social cohesion?

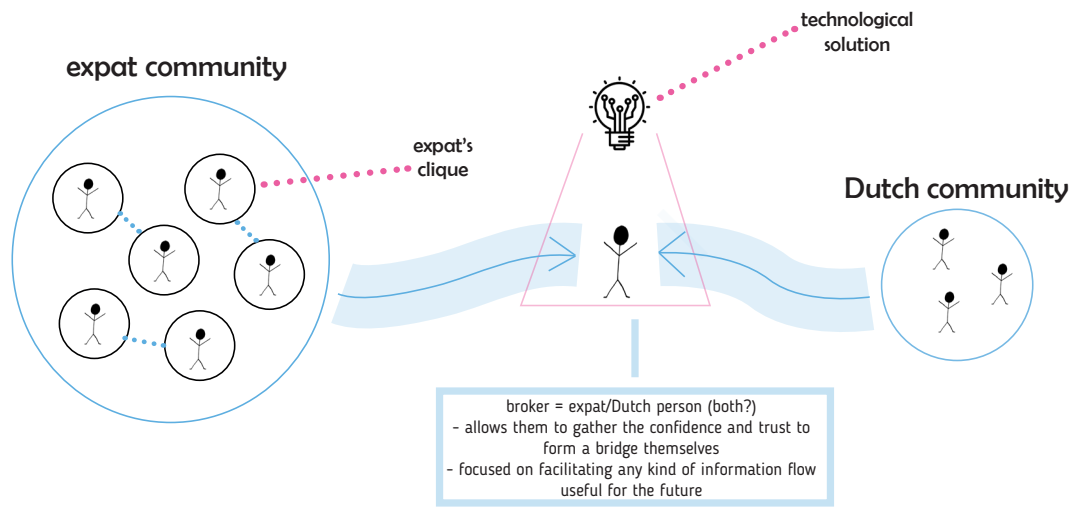
Social cohesion is formed by social capital, social inclusion and social mobility [18]. Since bridging the structural hole between expats and the Dutch would increase the social capital of both and the social inclusion of expats, this topic highly relates to the theme of the Fieldlab.

Design opportunity, preliminary research question, finding a context and target group

Based on the literature review and the interviews, a design opportunity was offered: instead of allowing initiators to be brokers between the two communities, why not use technology to empower individuals from both sides to be brokers and meet “halfway the structural hole”?



next

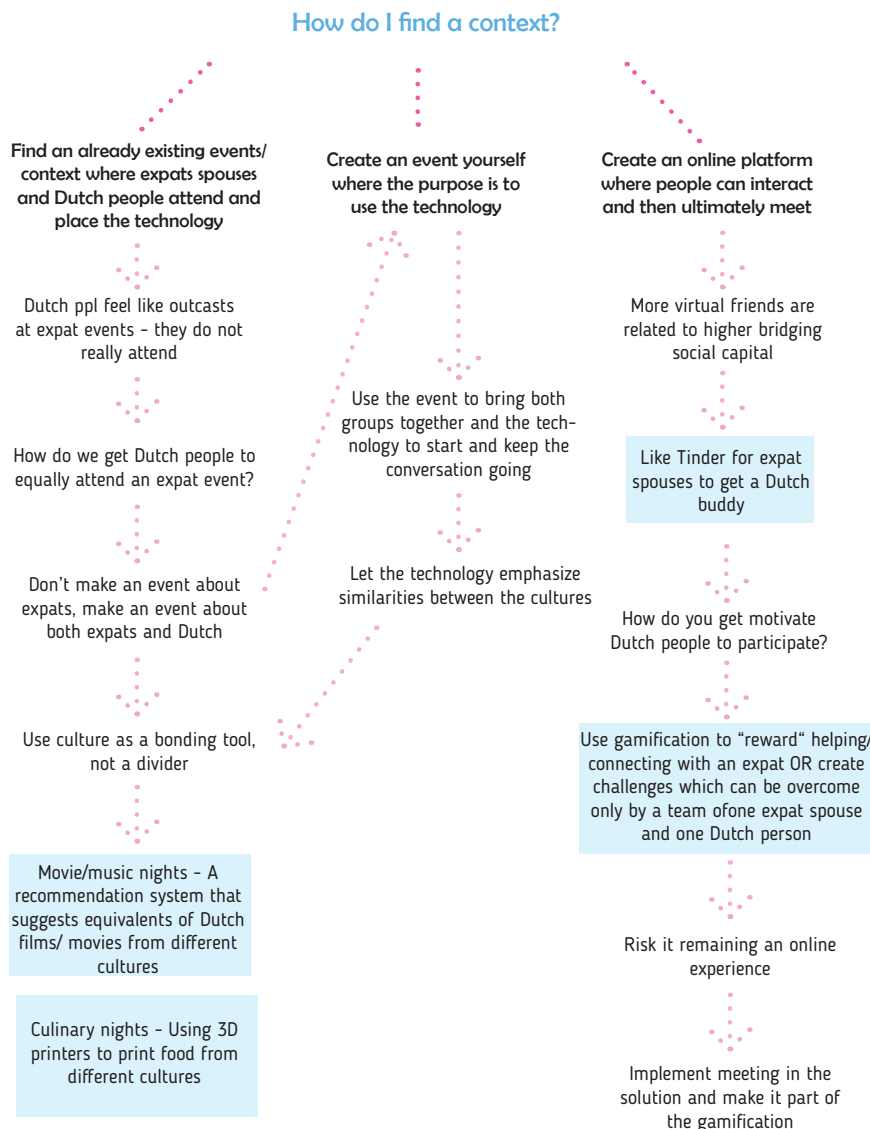


Therefore, an initial research question and sub-questions without having a certain context were:

Can a technological product facilitate bridging structural holes between the Dutch community and the expat spouses community, in order to increase the social capital and social inclusion of the later (in the context of...)?

- How can we find common denominators between nodes of the two communities with the help of a new technology which can be used to form bridges across the structural holes?
- How do we find a connection between the two groups which makes the actors feel safe enough to form a bridge across the structural hole with the help of a technological solution?

In order to decide upon a more certain physical context in which the technology would be used, the following rationale has been used:



However, exclusively creating a context designated for the use of the technology (middle column) was not in the scope of the Fieldlab. Therefore, using existing contexts (first column) in which the technology could be used was a viable choice. Because Culture Connects has agreed on being the conceptual client, cultural events (movie nights, comedy nights, potluck dinners, exhibitions etc.) have been chosen as a context for the usage of the technology. One of the things they stress is how big of a role a cultural organization plays in creating a warm and inspiring community. A research study, done in the Balkans on how “viable multiethnic societies” can be rebuilt in the area, has focused on bridging structural holes by encouraging people to engage in interethnic cooperation. One of their conclusion stated the following:

“ [...] venues need to promote repeated, mutually dependent interaction among individuals from different groups. This helps to build trust, even if the initial interaction is mistrustful and the relationship remains acquaintance-based.” [19]. This strengthened the fact that cultural events were the right choice for a context.

The target group has become, then, expats and Dutch locals from the Brainport area who attend cultural events in the agenda of UIT In Eindhoven.

Fieldlab launch

On the 5th of November, the official launch of the Social Cohesion Fieldlab has taken place. There, with another five ongoing projects, we pitched our ideas in a project market with the scope of collecting feedback and potential partners. The feedback was positive. However, because I did not have a clear concept, I used the audience of the market as an inspiration tool for ideas.

Quartile 2 - The second quartile was dedicated to the concept creation, prototyping and the first iteration, as well as to finding a technical partner and a creative industry partner and applying for the Fieldlab subsidy.

Creative process

Requirements

In order to ideate with a clearer start, the requirements from all the stakeholders have been noted down.

TU/e	Fieldlab	Conceptual Client	Me
<ul style="list-style-type: none"> -Reliable design (can be deployed in the field for a longitudinal study) -New technology - real innovation (showing the prototype as it is at a key exhibition) -Complex/adaptive/intelligent aspect -Creates value, has meaning 	<ul style="list-style-type: none"> -Uses gamification elements -Using technology as a means to an end -Socially relevant -Promotes social cohesion -Guarantees an answer to a research question -Makes sure the formed link between two people is not lost after the event 	<ul style="list-style-type: none"> -A solution that can be taken further and used in the future; not a “one time thing” -Something feasible and adaptable to different contexts 	<ul style="list-style-type: none"> -Aesthetically pleasing -Allowing for a meaningful/memorable user experience -Allowing for the technology to spark the interaction but not overpower it

Rumours

As mentioned above, “Rumours – Eindhoven’s cultural parade”, is a pilot intervention launched by Culture Connects (collaboration between UIT in Eindhoven and Expat Spouse Initiative) which aspires to make the Eindhoven region more friendly, adaptable and a cultural hotspot. In a series of 12 recurring cultural events, the campaign will aim at, together with cultural organizations, assigning teams of internationals to work together on audience building for these events.

On top of that, Culture Connects talked about assisting Cultural sectors in Eindhoven to influence their international “flavor” by defining, among other methods, a Cultural Toolkit for internationalization. This Toolkit consists of: Translator Teams, Communication teams, Activator teams, **Digital Platforms (Content Driven)**, Organic Connected Communities. The second to last one was inspiration for the solution.

Brainstorming Solo

Starting from the requirements, the problem analysis and the program that Culture Connects had in mind, I started looking for inspiration into what a social game could revolve around at a cultural event for adults. The game also had to intelligently make sure the Dutch interact with expats.

Simplest three culturally tainted topics on which people can easily start a conversation were: food, music/film, humor. Inspiration was drawn from games such as POZE (my M1.1. design project [21]), Guitar Hero, the AR Escape Room at the Effenaar Smart Venue but also from the “Social Design” section of the Design Academy graduation show at the Dutch Design Week. Initial ideas can be observed in the Appendix, section A.

Refining the list of ideas on the mindmap into one concept that would wrap all the requirements perfectly seemed impossible. Moreover, I initially wanted to steer away from the mobile app concept since all solutions are turned into apps nowadays.

However, by iterating through the “Realize Change” circle of the zoomed in TP Framework [13], I reflected upon the list of existing Products and Systems which were aiming at bridging gaps among groups of strangers were all mobile applications (MeetUp, Nearify, Bumble etc.). I then, drew a small description, according to the framework, about how the aesthetic and functional qualities, in materiality and interaction, elevate (transform) personal and social ethics and the related behavior of the target group [13].

This tool would:

- bring more Dutch attendees at expat events and vice versa
- playing a cultural game that might result in a funny experience can break the trust barrier between the two groups and enable them to talk
- by continuously reminding people about this experience and suggesting similar experiences, they will remember the connections they made and maybe keep coming back to them
- use culture and art to emphasize the diversity but also the resemblance between the individuals

In order for the solutions to remind people about the experience and suggest similar experiences to make the connections sustainable, I realized I could not steer away from an app as much as I wanted. Moreover, as attractive as a token with aesthetic qualities could have been, manufacturing it for the attendees of a whole event is not feasible in the close future. From here, I drew a storyboard that would encapsulate the envisioned experience with the following steps:

1. The visitor of the event downloads the app (the “token”).
2. The visitor makes simple account with name and country.
3. At the event, a “main activity” is happening. The activity is a cooperative game on a main screen (e.g. puzzle games about cultural humour/art/folklore).
4. User can “interact” with the main activity by using their phone.
5. After the event, the app sends notifications to the user (e.g. fun facts about different cultures) and notifications about certain cultural events in town.

Ideas for the “main activity”:

- a group of users trying to puzzle a very known art piece/folk song; the stand-byers can send hints with their phones on the screen

- getting a “comedy passport” by being shown different culturally nuanced jokes and using face detection to check where you smiled
- each visitor gets a token which can be scanned with a phone by any attendee; the attendees try to find their “pair“
- a digital mirror which combines features of the both users
- playing Mad Libs with stories from the history of the cultures present at the event

Group brainstorming session

In order to not get stuck in my own ideas, I organized a brainstorm session with five others Industrial design students to get input and ideas on the materials that I already had.

The participants were presented with the mindmap, the storyboard and a shortened list of requirements.

The braindump technique was used. Each participant was speaking out loud their ideas and noting them down on post-its. Most input was gathered from own experiences such as related projects or game nights they have attended.

Concept

By using all the input I gathered, the requirements and the information about the “Rumors” program, Brainport Connects was created.

The technological product consists of a mobile application which contains cultural events from the Uit in Eindhoven agenda. The event selection will be from five areas: food, art, technology, music and comedy. The event selection can also be done through the “Explore” function which provides random events, one by one, which the user can choose to dismiss, or add to their interest list. Because the testing phase will be limited (April-May), only a selection of events will be used from that specific period. The events will be selected according to the preference of the focus group.

Each user will have a simple profile with a picture, the name and the nationality. Each user can indicate whether they plan on attending an event. Depending on that and the theme of the event, the application will invite attendees of a certain event to engage in social games together, at the same time, once arrived there.

The application will notify the attendees, at the right moment of the event, with what they need to do in order to all play a certain game. Almost each game proposes an output shared screen for a motivational boost to engage in the play. By knowing the nationality of each user, the app will make sure Dutch and expats mingle. Last but not least, the application will ensure there is a connection made not only during but also after the event: it will suggest new events based on the attendance of connections made at past events.

The application will encourage: a) face to face engagement between culturally diverse attendees through collaborative games and b) the maintenance of formed links for further events. The technology will spark the interaction at a certain moment during an event, but it will not overpower the experience. In this way, connections are initiated in real life and are maintained virtually until the next face to face encounter.

If Brainport Connects proves to be a useful tool in boosting socializing at cultural events, it could be used as a digital tool by the “Rumors” teams of organizers. The series of 12 events could be listed into the app and the application could offer templates for games to the organizers which they can personalize according to the team and the audience of their event.

The next two weeks were utilized to quickly prototype the application and make it testable on the phone with the help of Adobe XD.

Link to the video of the demonstrator (if clicking does not work, please copy paste link into browser):

https://drive.google.com/drive/folders/1RZHF5CCfyc9cxCig_sxd5bF5xWlhtPNs?usp=sharing

Concept framing, screenflow diagram and games

Appendix B, C, D

Technology

A prototype consisting of an Android mobile application (the minimum viable product) will be developed for the research. Android is easier and cheaper to develop for, deploy and test. A selection of three templates of social games will be included in the prototype: treasure hunting for people, puzzle games and collaborative games. The algorithm of the app will make sure that, when making teams, the Dutch will have an expat partner and vice versa. Each game will have a shared output screen or projection containing feedback which will encourage participation. Data will be communicated in real time between the shared screen and the app: whenever two people have found each other (treasure hunt), whenever one attendee has solved a puzzle game and whenever a team of players are collaborating in a game.

Location tracking will also be used in order to monitor the movement of the people in the room. Their position changing during the event is relevant to the research knowledge.

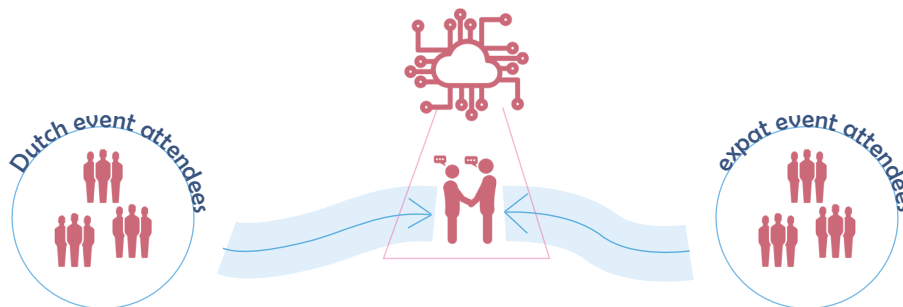
The graphic elements and the richness of the interaction will play a key role in the communication of the concept

Final research question

Therefore, the final research question which is posed for the Fieldlab experiment became:

How can we facilitate bridging structural holes between the Dutch community and the expat community through a technological product which:

- uses social games as an add-on to cultural events with the aim of creating weak ties and
- encourages engagement at future events based on the formed ties in order to make them sustainable?



First iteration

The concept was first tested with the help of the prototype in a user test session combined with a co-creation session on the 14th of December. The focus group was formed by three expat spouses (U1 – female, Poland, 36 yo; U2 – female, Brazil, 25 yo; U3 – female, Brazil, 27 yo) and one Dutch local (U4 – female, 24 yo). They all attended cultural events varying from one time a week to one time a month.

The session started with an introduction about what the scope of the meeting was. The subjects were asked to then introduce themselves shortly. Then, the session was divided in two parts:

User testing the application (without the games)

U2 and U3 reviewed the application on an Android phone while U1 and U4 reviewed the application on an Android simulator. They were freely allowed to use the application while I was observing and taking notes. The users expressed feedback out loud regarding the interaction and the graphics of the application. One major change that they suggested was making the profile of the user more personal: “Maybe use a small description about what you like to do and what events you like”, says U2. “Yes, and also a link to a contact page...like a phone number or a Facebook page”, says U1.

The on-screen notifications through which the application notifies the users about the games were also reviewed. Users suggested that a clear option for not wanting to participate in the game would be a good idea. Also, instead of using location to confirm that the user is there, have the user indicate the app whether they are already at the event: “Have a button that says “I’m here!” and only when I pressed it can I play”, suggests U4.

Co-creating new games

The existing games were presented to the users and they were urged to make modifications or come up with new games.

The first ones to be presented were the treasure hunt games. One suggestion was to have a more general hint that would fit multiple people and not one specific person to make the search easier. One user did not agree and stated that the specificity is what makes the game exciting. A strong suggestion was introducing a button for meeting a new person if the first one was not to their liking.

The second game that was presented was the randomized game. One user suggested having a simple set of questions instead of a joke or having the game trigger at the end of the show, not during it.

The third game template was the multiplayer musical game. The users appreciated this game and proposed other options such as mixing a cocktail together or organizing the teams during the event, not before in order for the choice of song to be made together.

The fourth proposed game was the puzzle game. The users appreciated the shared screen which shows who solved the challenge: "You can see who solved it and go after them!", says U3. They also suggested other puzzles such as sceneries, body language signs or riddles.

Overall, the whole concept was highly appreciated and the users said that it sounds very much like a fun way to engage, especially for introverts who are not as socially active when it comes to talking to strangers.

The proposed games can be seen in Appendix E.

Finding a creative & technical partner and applying for Fieldlab subsidy

In the meantime, I have had consultations with firms in order to find a creative industry partner and a technical partner.

A creative industry partner has been found, the founder of the Sam Sam language cafe, Studio Lot de Haan (<http://www.lotdehaan.nl/>).

A technical partner has not yet been found. Consultations with Fortress, Centillien and StudyPortals have been attended but there is no certain result yet. A software requirements draft document has been written (see Appendix F). However, because the budget and the time are not enough, a new document has to be drafted for the minimum viable product. The search will continue from now on.

The Fieldlab forms have been completed and submitted before the deadline (31st December 2018). The admission for the subsidy will be announced before the 1st of February 2019.

METHODS

Interviews

As mentioned in “Approach”, an extensive series of interviews was used to gather information about the existing integration solutions for expats in Eindhoven. The qualitative data was analyzed after each interview and it was added to a synthesis of information which consisted of different themes. The insights can be read in the “Investigating how the existing system works to narrow down the problem space” subsection.

Survey

A Google forms Survey was created to investigate the behavior of residents of Eindhoven when it comes to selecting and attending cultural events. The survey was created to back-up assumptions that I had about this behavior and validate the design choices that were made. The survey had 31 responses (80% expat, 20% Dutch).

Relevant results showed that most expats find out about events off Facebook, while Dutch people find out about them from mostly newsletters, magazines and friends. With that, and the fact that all respondents admitted that a centralized platform with all the events is needed, proves that an application like Brainport Connects could benefit both sides.

Another interesting finding was that a lot of internationals admitted that they mostly attend expat events because they want to meet other people, because of the language barrier or because they want to get to know other cultures. The fact that Brainport Connects is in English and it promotes fun facts about cultures could, then, be helpful for boosting the international audience of the Dutch events.

A curious fact was that almost half (48.4%) said that there are times when they want to attend an event, but they have no one to go with, so they do not go either. In this case, the recommendation system depending on existing connections could be a good solution for these people.

All in all, 48.4% said they would find it more motivating to meet new people through social games, the same percentage said they are not interested, and a small 3.2% said they would still be too shy to participate.

The results can be observed here (if clicking does not work, please copy paste link into browser):

https://docs.google.com/forms/d/1ktoMzjx4OpgR8etAl8BFUGJ4bRqCSWFeTUWc_MehbAg/viewanalytics

Focus group & (Participatory) Observation

As described in the “First Iteration” section, having a focus group formed by 3 expats and a Dutch person was used for the user testing and co-creation session. To collect insights, observation (objectively observing how they use the application while not being involved) and participatory observation (role-playing the games with them and co-creating with them while taking notes) were used.

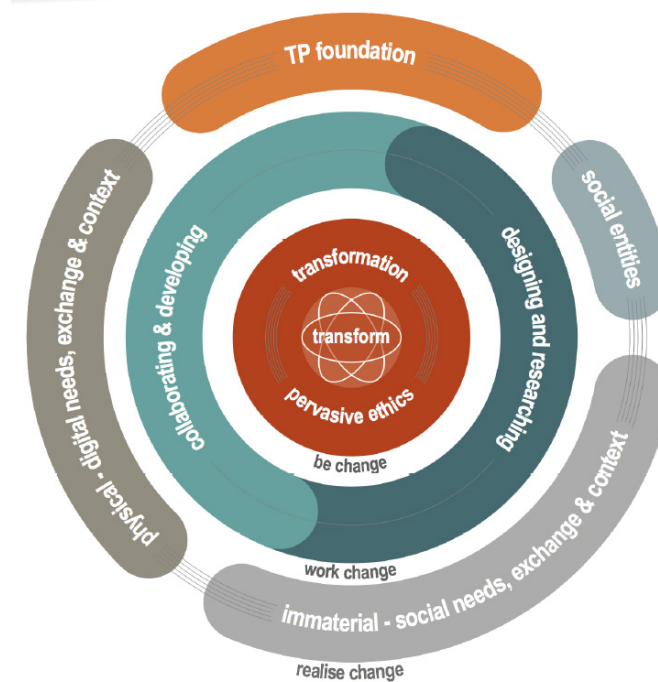
Transformative Practices framework

The Transformative Practices framework is in ongoing development and will be published in 2019 by C. Hummels et. al. [13]. The framework aims at helping multi-stakeholder teams research, design and innovate transformative practices to tackle societal challenges. The authors describe transformative practices as “shared relative steady ways of living and working with others, or as Freeman et al. (2011) indicates, specific configurations of actions, norms and knowledge, focused at addressing our societal challenges, by transforming (elevating) our personal and social ethics and related behavior. Through design research and innovation we work towards social-culturally, environmentally and economically sustainable communities.”. The framework was designed using the transformation economy paradigm where societal challenges are addressed locally, through multi-stakeholder collaborations [13].

This framework revolves around long-lasting “change” of values, ethics and related behavior of a person, group or a society and it has three levels:

- **Realize change** - elements necessary to create value propositions,
- **Work change** - ways for the development team to become competent in the transformation paradigm and work towards change and
- **Be change** - feeling the change, living it and being it; it refers not only to the people who we are designing for, but also for the people we are designing with.

For each level, the framework provides a “zoomed-in” version with the necessary elements and activities to help, on a practical level, design for transformative practices.



Therefore, because Brainport Connects is a multi-stakeholder project aiming for changing the way in which Dutch people and expats interact at cultural events, the TP framework is a good tool for framing the project and reflecting upon certain decisions that are made. A few iterations were executed through the zoomed-in framework during the research phase and the ideation phase in order to overcome certain uncertainties and creative blocks.

Realize Change

With the help of the outer circle, I managed to pinpoint the exact existing and desirable conditions for the change to happen. These revolve around the social entities involved, the immaterial social needs and the material social needs. Below one can observe one of the iterations that were done in order to filter all the gathered information and find on what this project should focus on.

If, in order to cooperate, the activity asks the participants to actively engage with each other, than a connection can consciously be made. The actors have a reason to talk about and break the "unknownness".

-existing services and programs enable expats to explore the Dutch world by isolating them and they are also poorly marketed and advertised

This tool would:
 -bring more Dutch attendees at expat events and vice versa
 -playing a cultural game that might result in a funny experience can break the trust barrier between the two groups and enable them to talk
 -by continuously reminding people about this experience and suggesting similar experiences, they will remember the connections they made and maybe keep coming back to them
 -uses culture and art to emphasize the diversity but also the resemblance between the individuals

-by placing the activity in a leisure events, the atmosphere around the users is already relaxed, therefore, allowing for a easier interaction
 -the interaction enables both sides to benefit from the exchange of information on long term occasions -> the expats to create a broader network and understand the local community and the Dutch people to understand and empathise with the expat community
 -both groups are educated on the social qualities of the other groups
 -the activity enables people to break the ice by working together in a fun and relaxed environment, while the app keeps reminding them about the bridges they built and allows them to continue the cooperation in real life

-knowledge about both cultures would be displayed in order to fuse the conversation
 -further info about events in Eindhoven would notify the users in order to keep the bridge going after the main event

Expat spouses - Brainport Region
 -followed their spouse's dream
 -are in the integration phase
 -are looking for something meaningful to do with their time
 -do not know Dutch yet
 -stick with other expats/co-nationals
 -are between 18 and 40 y.o.
 -come from a Western/Non-Western culture (most from Non-Western but there is no statistic to confirm) -- this results in high PDI, UAI, LTO and MAS and low IDV
 -attend cultural events such as comedy nights, pub quizzes, dance nights, movie nights etc.

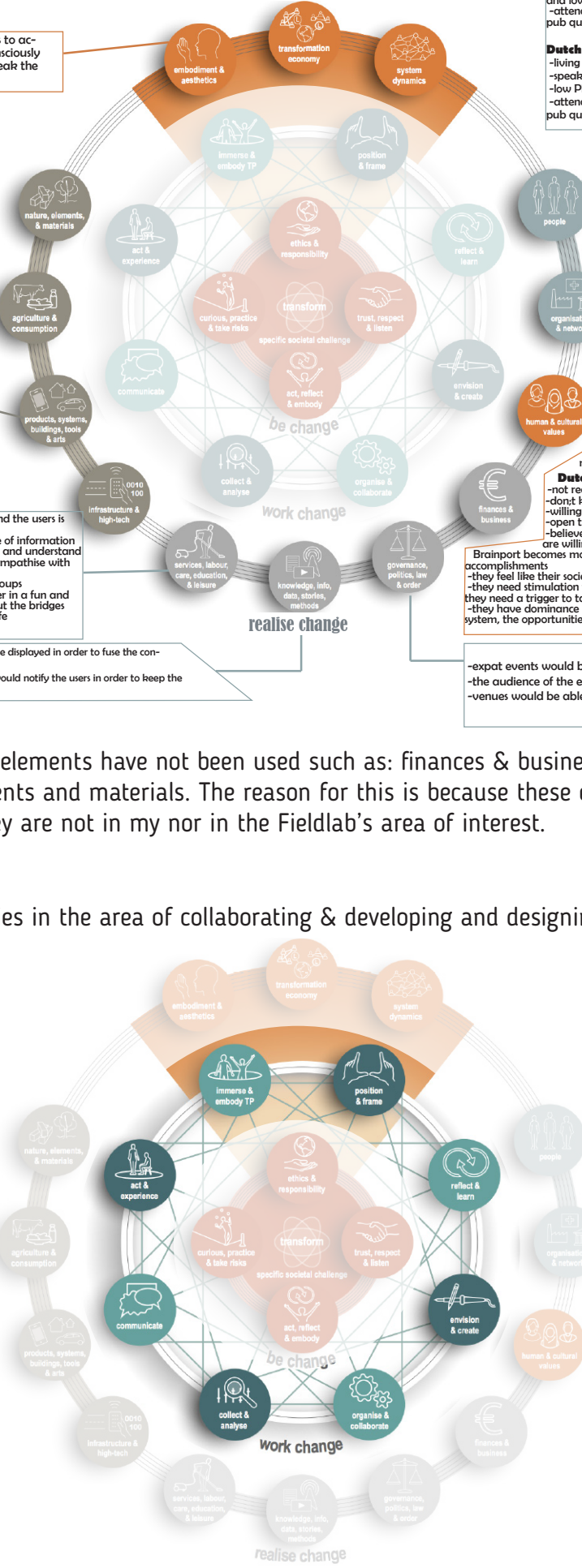
Dutch locals - Brainport Region
 -living their own life
 -speak English
 -low PDI, UAI, LTO and MAS and high IDV
 -attend cultural events such as comedy nights, pub quizzes, dance nights, movie nights etc.

Dutch Initiators
 -organize events/workshops/language cafes/activities for expats/expat spouses
 -they let the expats experience the Dutch world
 -they keep expats in their bubble and if not, they act like
 -attend cultural events such as comedy nights, pub quizzes, dance nights, movie nights etc.
 -treating expats like a customer segment

Expat spouses
 -shy when it comes to asking the Dutch for help
 -feel uncomfortable to talk to strangers
 -feel more comfortable to talk to people they relate to
 -respect hierarchy, low individualism - more polite than honest, avoid uncertainty (what is different is dangerous), high sense of shame, respecting tradition is important, protecting your "face", stability is needed
 -they lost their societal security
 -they need stimulation (openness to accepting the change of their "safe space" and the fact that they are not in full control anymore)
 -they are in need of resources (power) - to be in control of their lives again
 -humble, they are dependent on their spouse
 -they are limited to take action to self-direct because they miss information and the social bridges

Dutch locals
 -not really curious about expats
 -don't know how to empathise
 -willing to help if asked
 -open to talking to strangers
 -believe everyone is equal, high individualism - more honest than polite, are willing to embrace change-BUT some still have to accept that the expat becomes more internationalised, low sense of shame, respect comes with accomplishments
 -they feel like their societal security is threatened because of immigrants ("the Dutchness")
 -they need stimulation to accepting the change that happens in the Brainport society - they need a trigger to take action to talk to these people
 -they have dominance and resources (they have the power) because they know the system, the opportunities and the news in this area

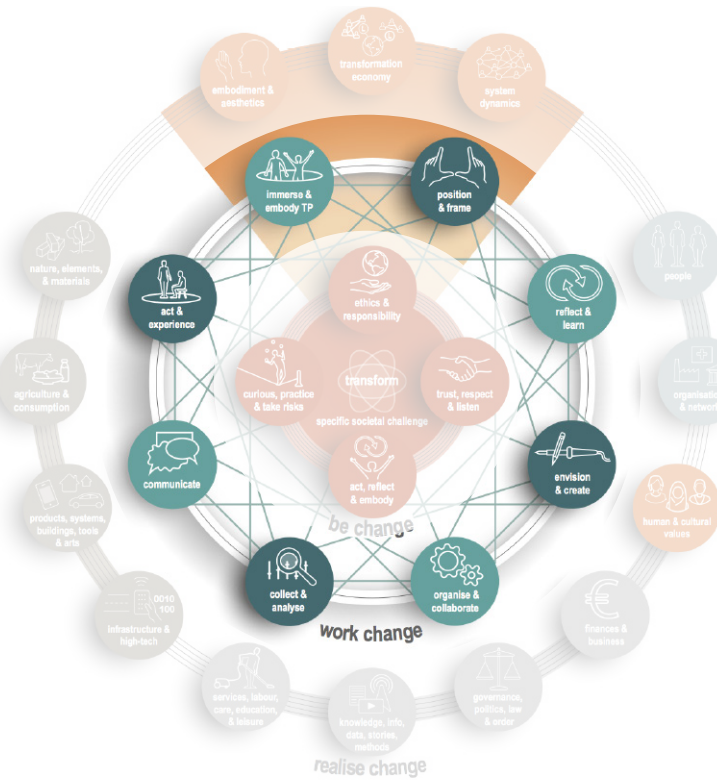
-expat events would be marketed for the Dutch as well
 -the audience of the events would be more engaged
 -venues would be able to cater their events for expats as well



One can observe that some elements have not been used such as: finances & business, agriculture and consumption and nature, elements and materials. The reason for this is because these elements are out of the scope of the project and they are not in my nor in the Fieldlab's area of interest.

Work Change

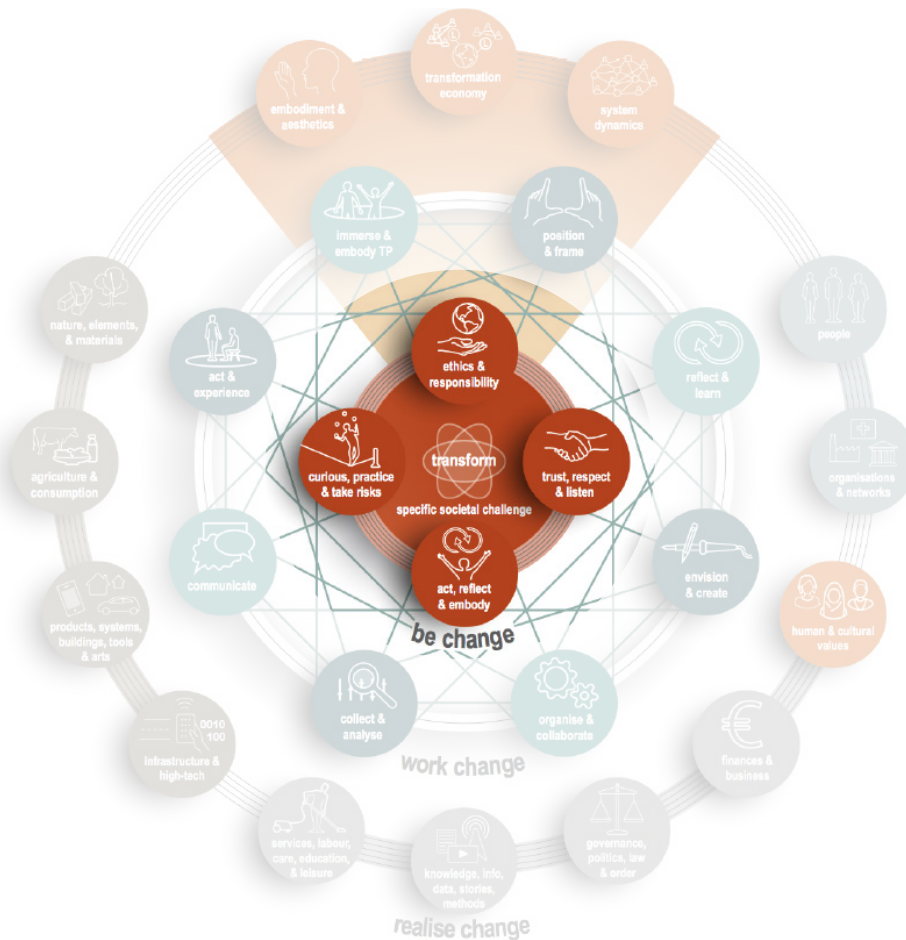
This level consists of activities in the area of collaborating & developing and designing & researching.



- **Position and frame** refers to finding a specific challenge that has some kind of social relevance. The first quartile has been dedicated to this phase and most of the elements of positioning are part of the “Realize change” phase.
- **Immerse and embody TP** refers to the practitioners being trained to be and embody change. Indeed, all the stakeholders in this project are able to empathize, connect, be comfortable and vulnerable [13] since they all are used to working with a wide variety of people and they represent cultural organizations. The aim of this activity is to create an explorative canvas where people can engage from a 1st, 2nd and 3rd person perspective [13]. I strongly believe that we have been able to do so. Speaking for myself, I live the life of an expat outside the University (1st perspective), I have witnessed and paid attention to my mother’s experience as an expat spouse for three years (2nd perspective) and I observed their experience through the eyes of the experts that I interviewed (3rd perspective) [20].
- **Act and experience** refers to getting one’s hands dirty and starting dialogues with stakeholders and prospective users and seeking out design opportunities from there - activities described in the “Approach” section.
- **Communicate and Organize and Collaborate** are all about keeping communication alive during the project among stakeholders and making sure various areas of expertise are involved in the process. Since the beginning of this project, weekly meetings with the manager of the Fieldlab have been planned. Moreover, I have managed to keep almost all interviewees close to the project for future collaborations by keeping them up to date about the progress once every month and planning occasional meetings with some of them throughout the process. Many of them have “pitched in” with advice, new connections, recommendations and making my project known to prospective users. I believe I have built a good, diverse network during this semester.
- **Collect & analyze** refers to gathering insights into the situation and overall context, as well as into the behavior of people involved and their experiences. This was done through qualitative and quantitative methods (interviews and survey) but also through reflecting upon own experiences and the experiences of my friends and family. Descriptive and desk research was not necessary in this case since I took advantage of the experience of the people I interviewed, and I made sure their opinions were valid by interviewing a reasonable number of experts.
- Regarding **Envision & Create**, this framework proposes the concept of technological mediation - i.e. using technology as a means of changing one’s behavior. Having social games between strangers, a shared screen which encourages people to play, suggestions of events based on virtual connections, these all are design decisions aiming at making the two communities more open towards each other and towards socializing at cultural events. Moreover, the framework talks about “intentional technology” which aims at a specific functionality to reduce or amplify certain aspects of reality. The fact that the app suggests certain connections to the user while choosing an event, minimizes the fact that the two users, in reality, know each other very little, for example.
- **Reflect and learn** aims at the refinement of the challenge through learning from past actions and mistakes. By re-iterating through this framework and reflecting upon my decisions and ideas constantly, I managed to overcome a few milestones during this project. I managed to become better and better at talking to an expert, pitching my ideas and my research and making information as visual and understandable as possible to a possible collaborator. I also figured out a way to please all the stakeholders with the existing concept and figure out why the initial concepts did not work (they were short-term solutions, not easily adaptable to other contexts and not producing enough knowledge for a proper experiment).

Be Change

This level revolves around activities related to transformation and persuasive ethics. Higher consideration will be given to some of these activities during the second semester.



- Ethics and responsibility** – the values of the two involved communities have been noted down in the “realize change” phase. However, a very attentive and detailed analysis has not been made since it deemed not to be necessary for the challenge at hand. Socializing in the leisure time is not tackling any major ethical issues. As far as the application is concerned, privacy questions can arise. However, the design offers the user multiple possibilities of denying certain functions that might seem intrusive (deleting a connection from their list or refusing to play a game). Further thought should be given to this topic in the next phases.
- Trust, respect and listen** refers to the fact that in a dialog conversation, curiosity and empathy are the main drivers for cooperation and exchange of ideas. I believe that all interviews and conversations I had with all the stakeholders have been more than question–answer sequences. They were all honest (some even heart-to-heart, sensitive) discussions in which both parts shared opinions and experiences on the topic of being an expat and integration. Having had the 1st and 2nd person perspective on this and working with some really dedicated people to the cause has managed to make it really easy in finding a common ground where trust, respect and listening were crucial elements.
- Curiosity, practice and ability to take risks** – according to the framework, what has really gone well this semester was me managing to play with ambiguities, working with resistance, being curious, empathic and practicing diplomacy. Having to work with many stakeholders with a lot of experience in the domain, their opinions were quite strong as well as their demands sometimes. This, and some other small conflicts were solved by learning where to make compromises and where to stand my ground. On the other hand, part of taking risks is going out the “on the field” and exploring the situation you are designing for. I have done this from a 1st person perspective. However, I believe doing this from a 2nd and 3rd is necessary as a next step.
- The Act, reflect and embody** aspect refers to experimenting and iterating. As for this semester, the time was mostly dedicated to researching and ideating. Next semester will focus more on experimenting and going through more iterations.

NEXT SEMESTER

Activities within the project

There are two main parts which need to be designed: the front-end and the back-end.

The back-end of the application is formed by the database containing all the events and the users. The back-end will only need software testing.

The front-end includes the content that the user sees (the events and the games visible during the events) and the interaction between the user and the application (the selection of events the user takes part in and the play). The front-end needs user testing. The feedback from the user testing will be implemented in re-designing the front-end through multiple iterations.

Considering this, two aspects will be researched: the bonding during the events and the bonding after the events.

The bonding during the events depends on the interactions during the play. Each of the three games will be tested in three case studies at a selected event at the beginning of the research period. The interactions of the attendees will be monitored through multiple methods: participatory observation (infiltrating in the group of attendees and proactively observing their interactions), analyzing the data provided by their location tracking (e.g. whether they made efforts to move from their group or not) and by the database (analyzing the behavior of expats vs. Dutch attendees), and interviews at the end of the study. All the collected data will prove the efficiency of the games towards forming ties among strangers.

The bonding after the events (whether connecting with a person at an event will encourage a user to engage with them further at a future event) will be tested with the help of longitudinal studies on a period of one to two months.

Planning

At the moment, the first iteration of the UI and UX design has been completed. User tests for the interface and the user experience are performed. After this, the input will be implemented in re-designing the interface, as well as the proposed games.

In January, a simulation of the existing games will be performed with the help of low-fi prototypes and the interaction between the players will be recorded with the help of methods described above.

In February, the development of the application will start and it will be done by March/April. In the meantime, the search for a focus group will be performed and the selection of events presented within the application will be made based on their usual event choices.

In April/May the research of the game experience as well as the app experience will be performed at cultural events, respectively in the user's private time (when the selection processes for the events occur). The collected data will be analyzed in a research paper during the month of June. At the beginning of July, the project will end.

Expected result

This project aims at observing whether the cultural leisure scene of Eindhoven can empower its attendees to make connections and break out of their social bubbles with the help of an intimate technology such as an app.

The long-term aim is to open up networks for expats and create understand and empathy from the Dutch locals. By emphasizing cultural similarities through fun, collaborative social games targeted at each event attendee, we aim at investigating how the social spirit of the Brainport region can be boosted.

How will the knowledge be relevant?

If creating a bond between culturally diverse event participants (expats and Dutch) at the event but also after the event prove to be efficient in creating weak ties between the two communities, then this concept has a huge potential of helping build a generalized tool for increasingly internationalized areas.

It can be adopted to not only Eindhoven, but also other areas of the Netherlands where the intake of expats is rising. Moreover, it could be extended to fit not only cultural events but also other social contexts such as team building events for culturally diverse companies.

Last but not least, the knowledge can be used to build a tool for event marketers and organizers. This tool would allow them to design the games themselves according to the audience they are expecting and to the aim of the event. In this way, they could engage the attendees more and boost the cultural diversity of their audiences.



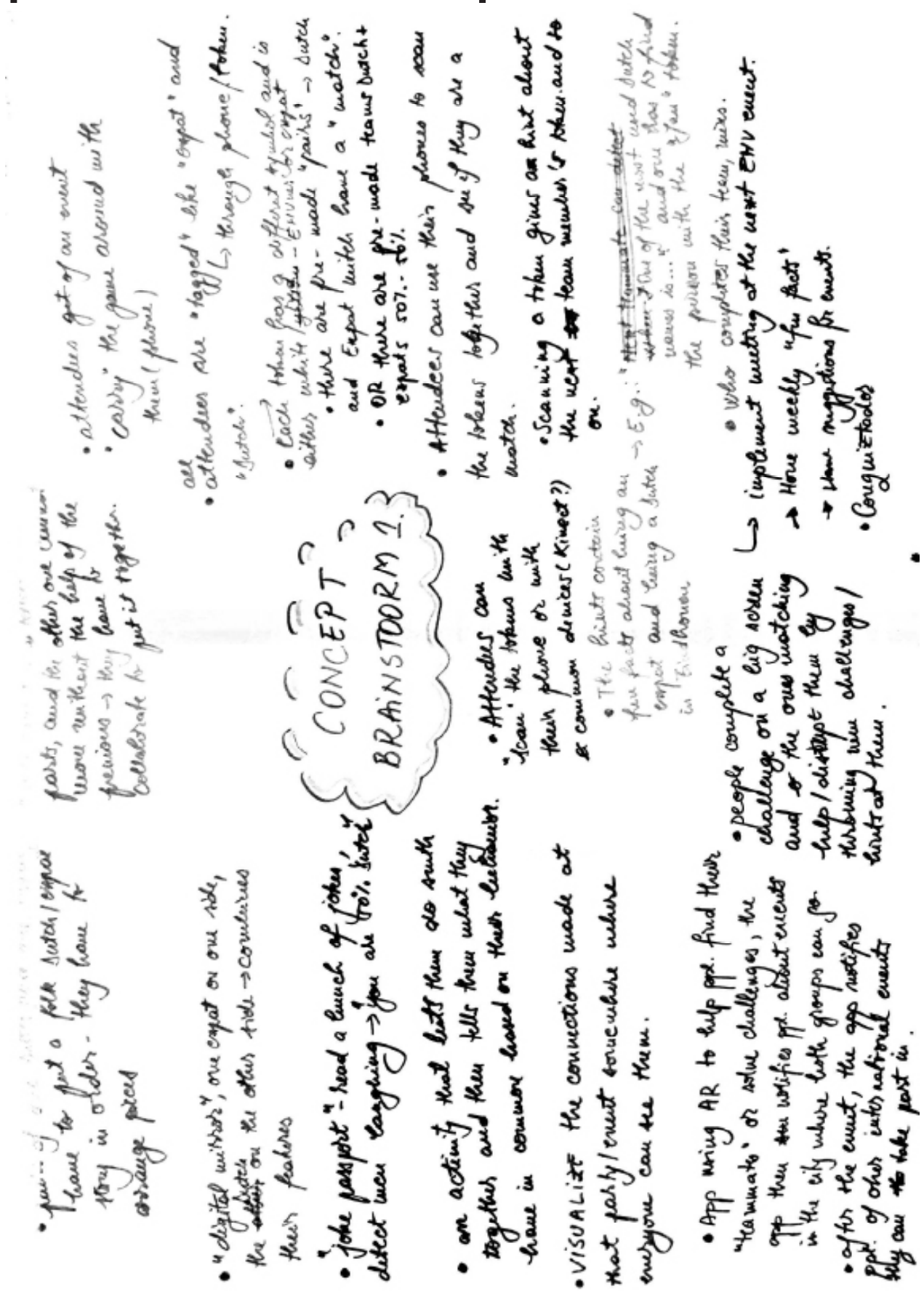
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APPENDIX

Appendix A - Mindmap brainstorm



Appendix B - Concept framing

Irina Bianca Serban - Master Thesis, Sem. 1, Concept framing

Target Group: Expats + Expat Spouses + Dutch locals who attend cultural events

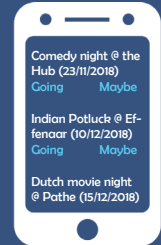
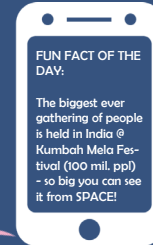
Goals: a) Make a connection between the two groups and encourage them to engage in the future as well.
b) Make each group feel welcome in the activities of the other.

Solution: Brainport cultural events app which encourages: a) face to face (f2f) engagement between culturally diverse attendees and b) the maintenance of formed links for further events. The app notifies the user about any cultural events in the Brainport region and "prepares" small social games tailored for each event to ensure the interaction between attendees. Let the app spark the experience but do not allow it to overpower the experience.

1. Download the app and make a simple account with Name, Picture and Nationality



2. The app sends notifications such as the Fun Cultural fact of the day, and reminders of different cultural events (International AND Dutch) from the Brainport Region. It also contains a list of all the cultural events in Eindhoven. Users can indicate whether they want to attend.



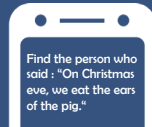
subtly emphasizing the cultural diversity and making everyone feel included by bringing all events to everyone's attention

encouraging f2f interaction

3. Before the event, the app already creates virtual bonds among the attendees. Once at the events, the users can use the app to play different bonding games (related to the theme of the event).

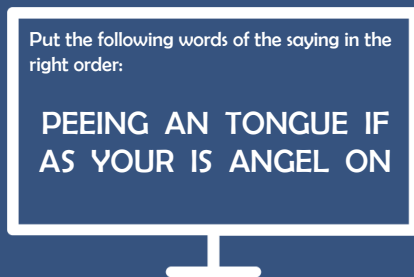
Game examples:

- a) Have the app assign random seats (just like in a plane) to attendees of a stand-up comedy show (make in such a way that the Dutch are mingled among internationals) and urge everyone to tell a joke to the neighbour to their right.
- b) Have the attendees input a weird food from their country before a potluck dinner ("On Christmas eve, we eat the ears of the pig."). At the event, the app tells people to find the person with a certain weird food:

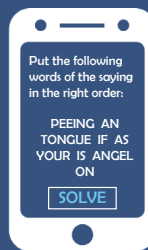


Show the quotes on a screen for general enjoyment and motivation. In order to find that person, users need to go and talk to people they do not know. Even though the challenges will not be completed, the discussion will be sparked.

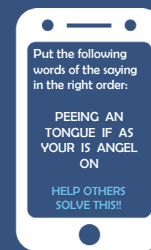
- c) Have quests projected on a screen that can be solved from the phone at the drinks after a movie night; make the quest about a certain country and don't allow people from that country to solve it; in this way, they will have to help the others in order to solve it;



- Dutch saying "Alsof er een engeltje over je tong piest" = "As if an angel is peeing on your tongue"



OTHERS' PHONES



DUTCH PPL'S PHONES

- d) Let the app make teams of different nationalities previous to the event and have the teams complete a quest during the event:
E.g. Have them in pairs: 1 Italian and 1 Dutch. Use sensors for body detection. Make them virtually cook an Italian meal. However, the Dutch is the only one who can touch the ingredients, so the Italian has to guide him through the process.
E.g. Have a culturally diverse team: use the app so that each phone makes the sound of one instrument. The teammates have to follow instructions on the screen to play the hymn of one of their teammates;

beneficial for long term linkage - the app knows more or less with who you interacted at certain events

4. Based on the events a user attended and the people he was teamed up with, the app shows the user what familiar people are going to attend future events. It can also suggest events based on potential acquaintances from previous events.

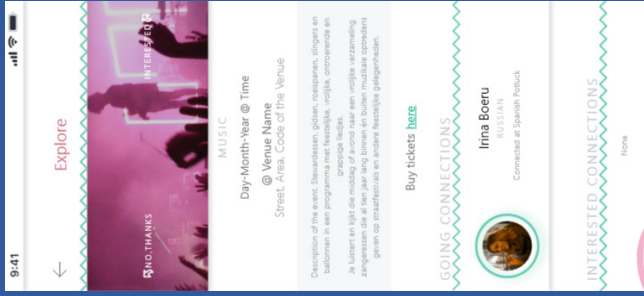


encouraging future engagements

Appendix C - Screenflow diagram

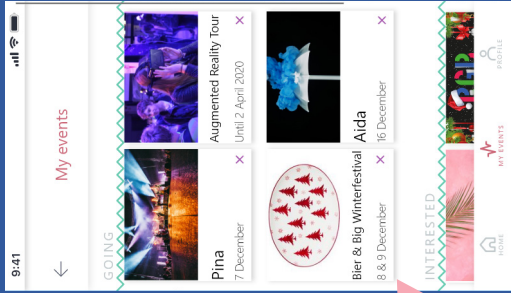
Brainport Connects - screen flow diagram

Explore

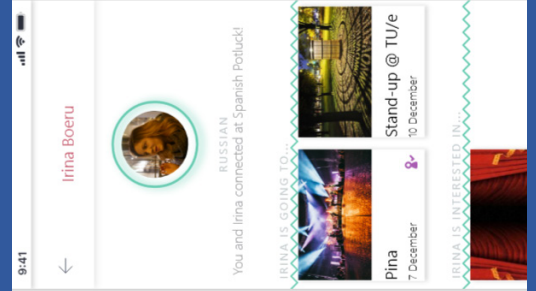


The "Explore" page shows the user random events. The user can choose to swipe left if they are not interested, or swipe right if they are interested. The interesting ones are added to the "My events" category in the "Interested" category where the user can go later and decide whether they are going or deleting the event.

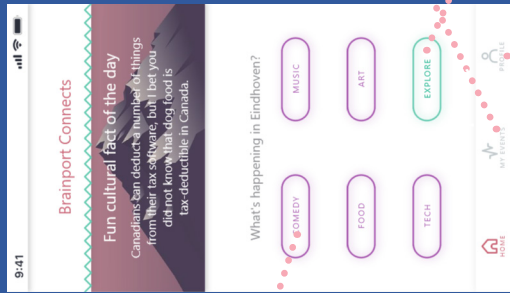
My events



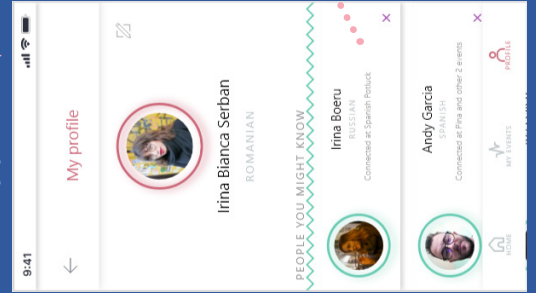
Connection Profile



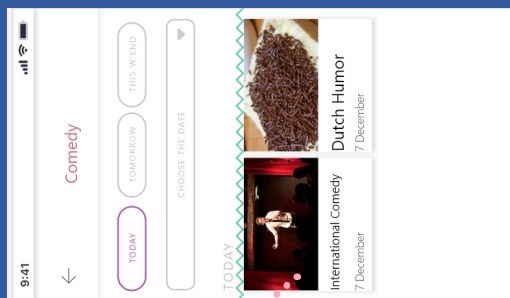
Home



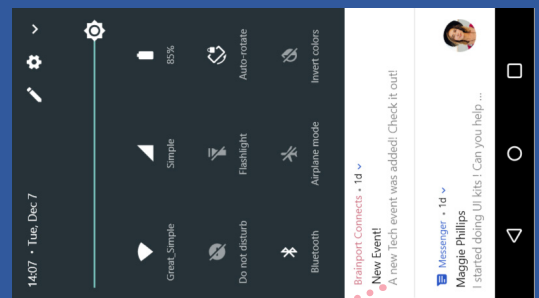
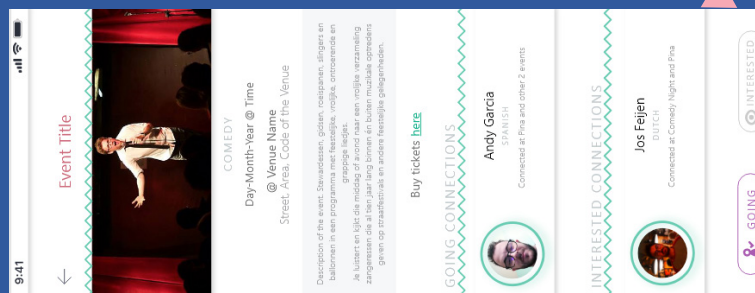
My profile



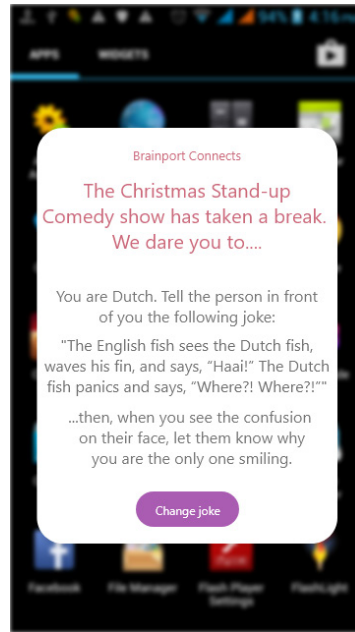
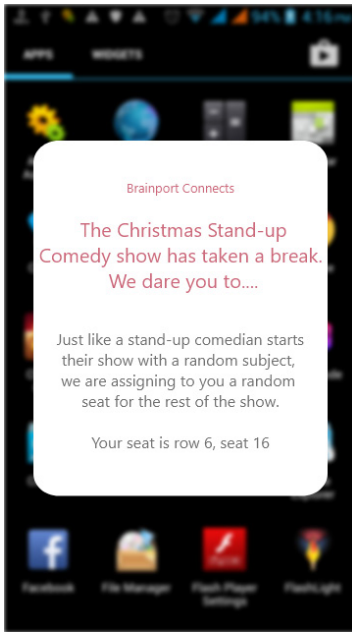
Event Category



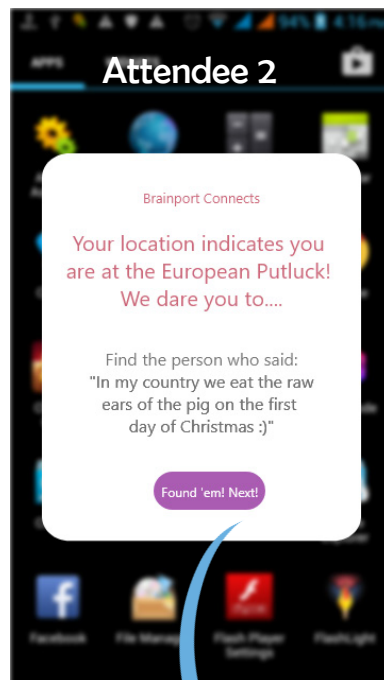
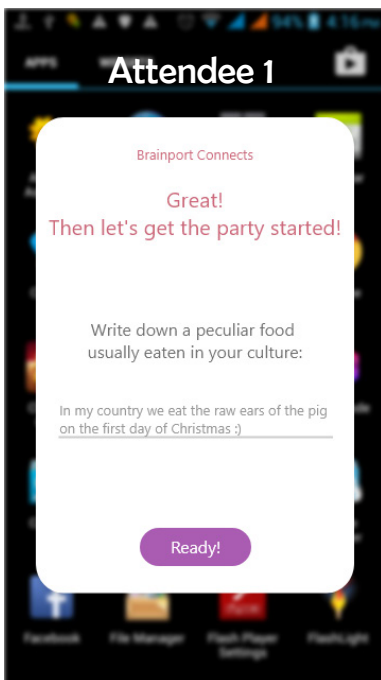
Event Page



Appendix D - Initial game examples



Randomized games



Treasure hunting for people

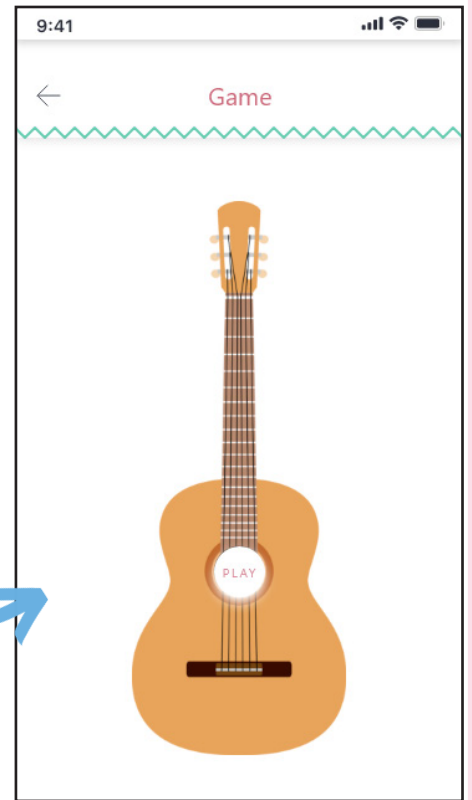
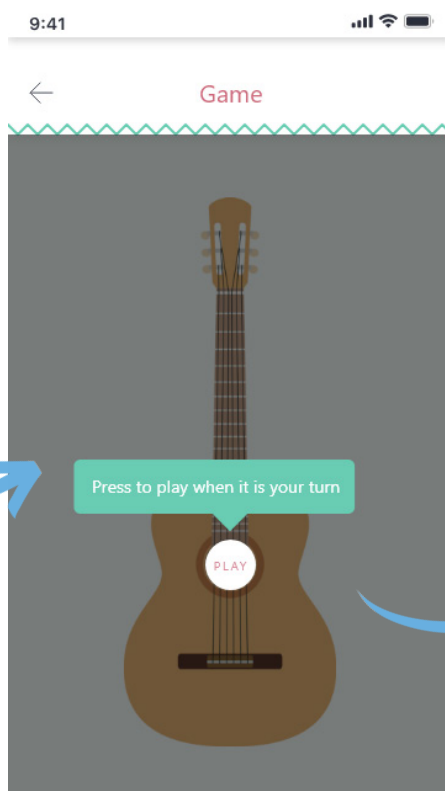
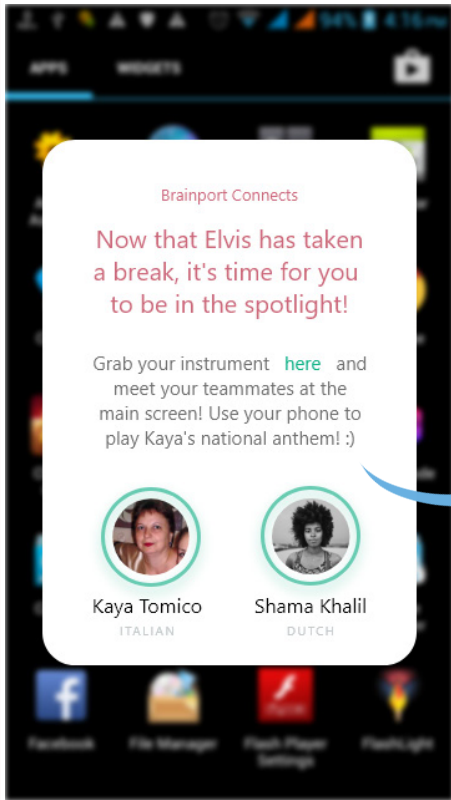
Let's see what funky foods were discovered out here...

"In my country we eat the raw ears of the pig on the first day of Christmas :)"
- Romania

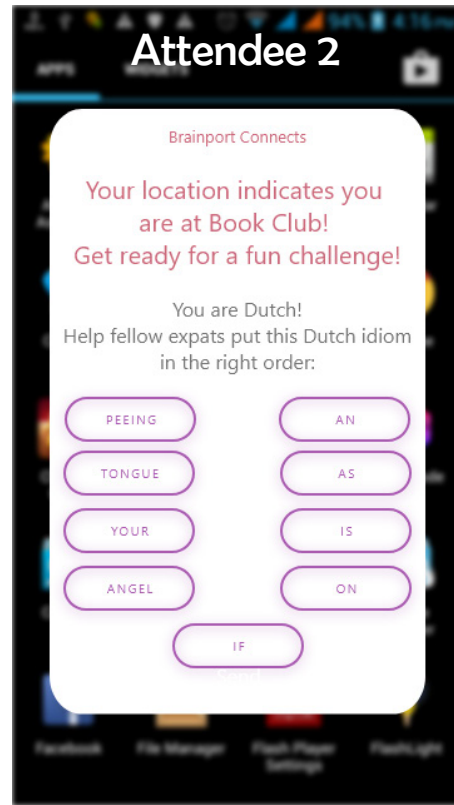
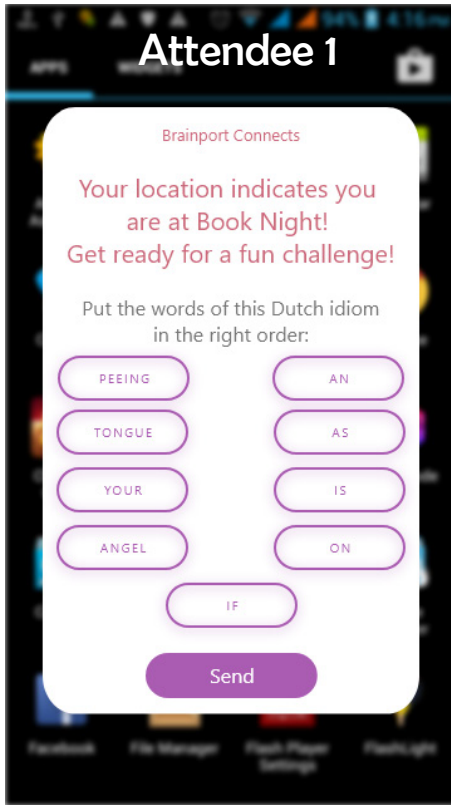
"My mom cooks this every Easter: A sheep's heart, liver and lungs minced, cooked inside the animal's stomach"
- Scotland

"As a kid, we loved eating the milk skin."
- Poland

A shared screen visible to all the attendees



Cooperative
team games



Put the words of this Dutch idiom
in the right order:

PEEING

TONGUE

YOUR

ANGEL



IF

AN

AS

IS

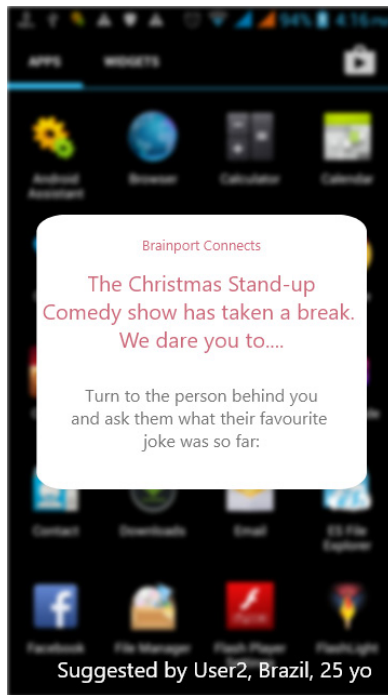
ON

Solved:   

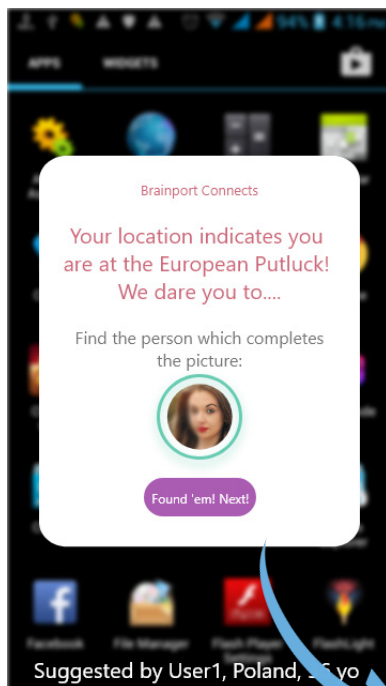
A shared screen visible to all the attendees

Puzzle game where one certain nationality can
only help but not participate

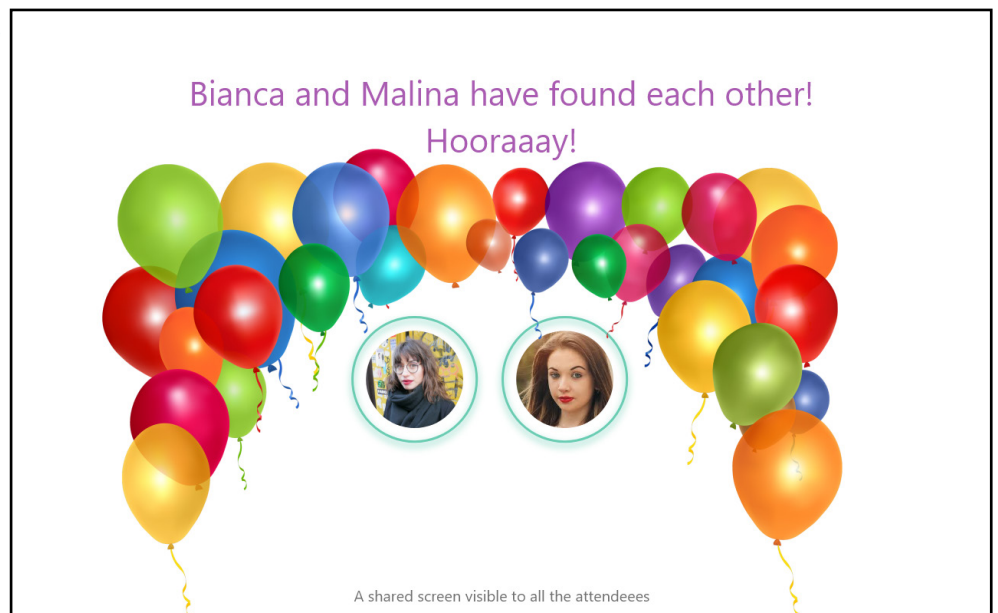
Appendix E - Games from co-creation

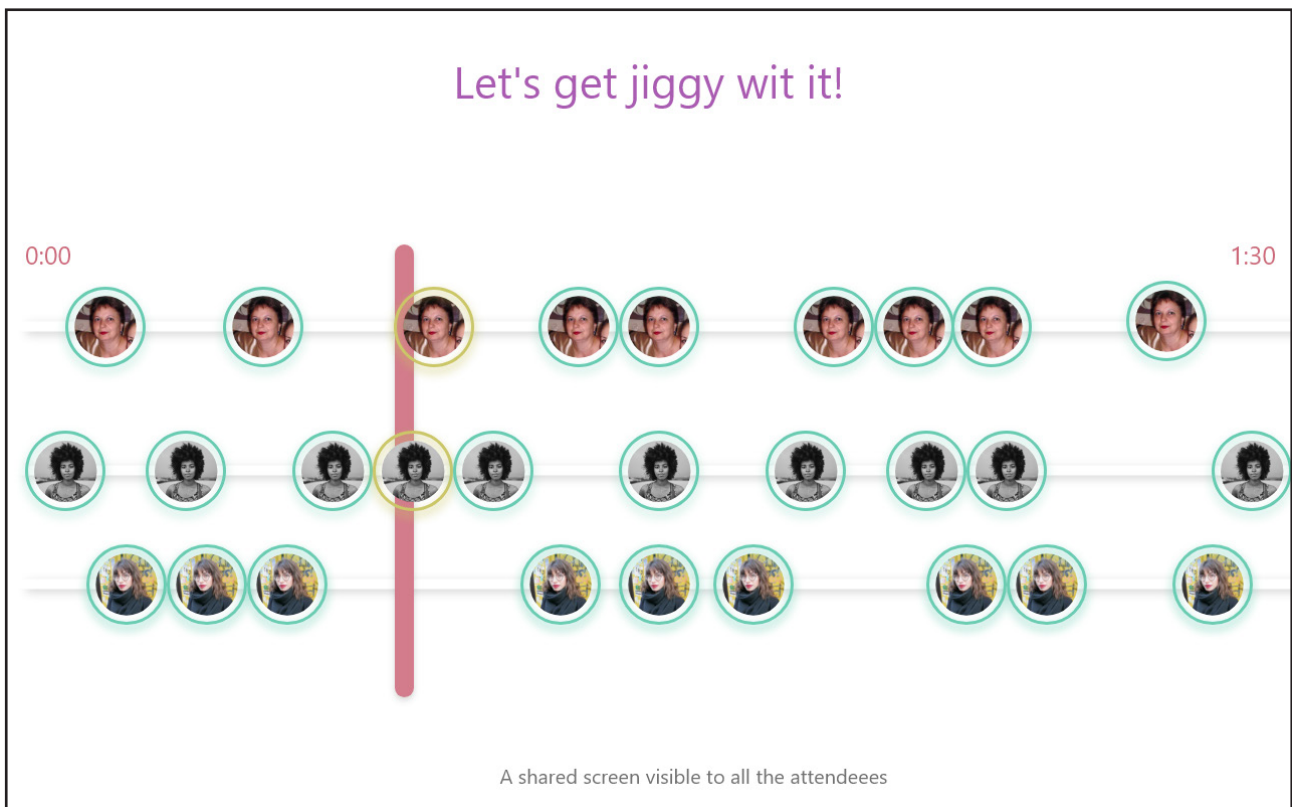
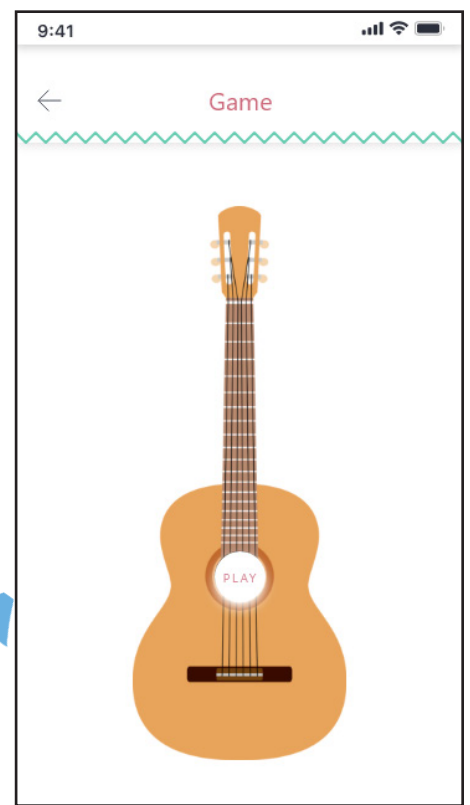
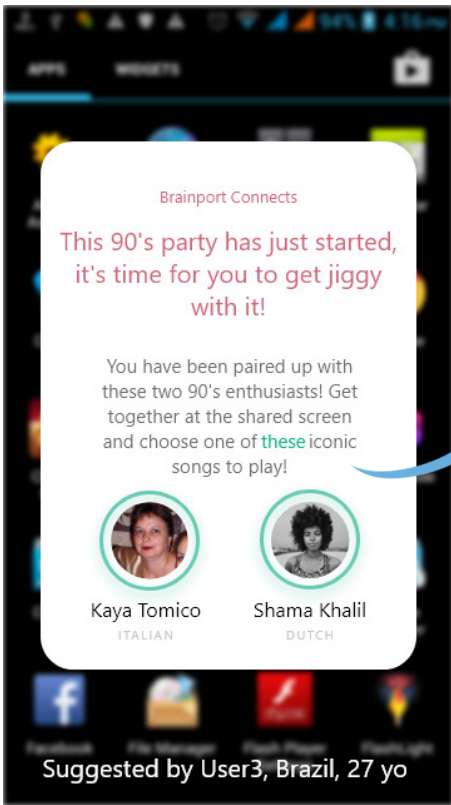


Randomized games

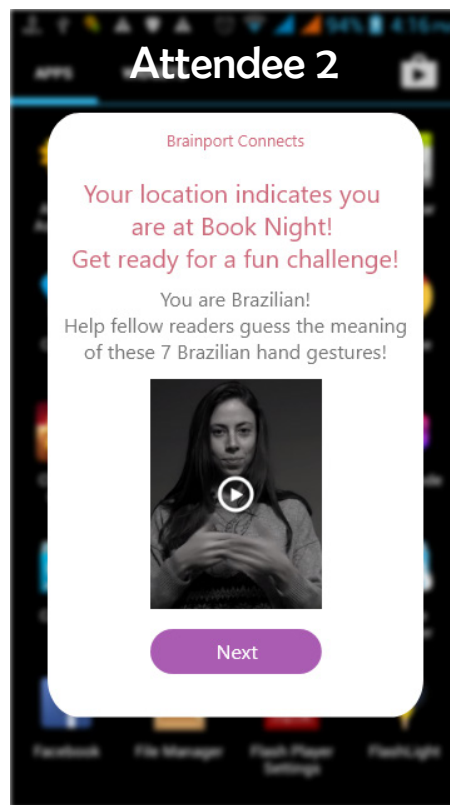
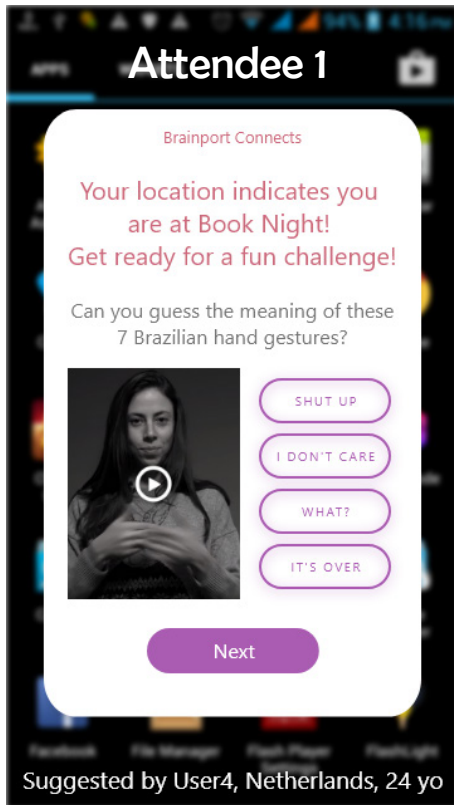


Treasure hunting for people





Cooperative team games



Can you guess the meaning of these 7 Brazilian hand gestures?



A shared screen visible to all the attendees

Puzzle game where one certain nationality can only help but not participate

Appendix F - Software requirements draft

Brainport Connects - System Requirements Document (Draft)

Abstract

This document provides a draft of the user and software requirements for the Brainport Connects application, developed in the context of the Fieldlab Social Cohesion powered by the Effenaar and ClickNL.

This document is aimed at informing potential technical partners about the requirements for developing the software behind the application: general capabilities and back-end.

It is recommended that prior this document, the reader should also take a look at the following documents: Flyer Fieldlab Sociale Cohesie, Projectaanvraag Brainport Connects, Concept Description Brainport Connects and Screen Flow Brainport Connects.

At the moment, user research is being performed on the existing mock-ups. Once the feedback has been collected and the final functionality list has been decided upon, new, updated requirement documents will be created (January 2019) according to the ESA software standards [1].

1. General User Capability Requirements

1.1. Account

R-1.1.1. A user has an account with a profile picture, their name and their nationality.

1.2. Events

R-1.2.1. A user can view a list of cultural events happening in Eindhoven by category : comedy, music, tech, food or art.

R-1.2.2. Each event has a title, a location, a date, a time, a description and a link where tickets can be bought.

R-1.2.3. A user can apply filters to a list of events depending on the date they are taking place on such as: today, tomorrow, this weekend or they can choose a date themselves.

R-1.2.4. A user can use the “Explore” function of the app which provides a random list of events.

R-1.2.5. A user can indicate whether they are “going” or “interested” in an event.

R-1.2.6. A user can see a list of all the events they are going to.

R-1.2.7. A user can see a list of all the events they are interested in.

R-1.2.8. A user can eliminate events from the lists mentioned in R-1.2.5. and R-1.2.6.

R-1.2.9. The app asks the user for an attendance confirmation 60 minutes before each event starts.

R-1.2.10. The app uses each attendee's location to confirm they are present at an event.

1.3. Games

R-1.3.1. The app includes all present attendee of an event in the game.

R-1.3.2. The app can make teams of attendees from different cultures for a game.

R-1.3.3. The game can also require an additional shared screen for the output (see screen flow document).

R-1.3.4. The game is somehow linked to the theme of the event.

R-1.3.5. The game makes sure the nationalities of the players are evenly distributed in teams (no teams of two Dutch people or two Italians).

1.4. Connections

R-1.4.1. The connections suggested by the app during the game are saved.

R-1.4.2. The saved connections show up on each user's profile.

R-1.4.3. A user can eliminate connections from their account if they deem them false (e.g. the app made a team of person A and person B at an event but they never played the game; therefore, person A can delete person B from their connection list).

R-1.4.4. For each connection, the app shows what events they are going to and what events they are interested in.

R-1.4.5. For each event, the app shows which connections are going and which connections are interested.

1.5. Notifications

R-1.5.1. A user is notified 60 minutes before an event starts.

R-1.5.1. A user is notified when a game is about to start and what the rules are.

R-1.5.2. A user is notified whenever a new event is added in the application.

1.6. Extras

R-1.6.1. The main page of the app shows a different "fun cultural fact" every day.

2. Back-end Requirements

2.1. Account

R-2.1.1. The app contains a database with all the user accounts.

R-2.1.2. Each user account has a name, a profile picture the nationality and an ID.

R-2.1.3. For the prototype, no account security is needed.

2.2. Events

R-2.2.1. The app contains a database with all the cultural events in Eindhoven labeled by the five genres: comedy, art, music, food and tech (The application can make use of the Uit in Eindhoven agenda API).

R-2.2.2. Each event has a title, a location, a date, a time, a description and a link where tickets can be bought.

R-2.2.3. For each user account, the app retains a list of events marked as “going” or “interested”.

R-2.2.4. The app uses location tracking for each user confirming attendance.

2.3. Games

R-2.3.1. Contains a database with five different type of games.

R-2.3.2. The app can create temporary teams for the length of an event.

R-2.3.3. The app ensured the cultural diversity of the teams.

R-2.3.4. The app uses the ID of the players to control the output on a shared screen.

2.4. Connections

R-2.4.1. The database saves all the suggested connections during an event for each user.

2.5. Notifications

R-2.5.1. The app uses a notification service to send notifications to the users.

2.6. Extras

R-2.6.1. The database contains a finite list of “fun cultural facts” depending on the length of the user test.

References

[1] ESA PSS-05-0 Issue 2, Software requirements and architecture engineering process, February 1991