

Impact Creative Toolkit

APPENDICES

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A. INTERVIEW GUIDE

Research topic

“What type of struggles do interns in the innovation hub encounter, when working with a non-familiar technology, following a design thinking methodology?”

Introductory script

(Make sure the consent form is signed before starting)

- Introduce myself.
- If it is ok with you I would like to record the audio of this interview. In the transcript of the session I will change your name so you will be anonymous.
- The reason for this interview is to understand the experiences of interns in the Innovation Hub, who get to work with a technology they are not familiar in a design thinking methodology. This research will be used for my master thesis, which is about mitigating the struggles of the interns of the Sprint Program.
- You are chosen because you were an intern in the program and your experience is very valuable for my research.
- The interview will take around 30 minutes and there are no right or wrong answers. I am here to understand your experience not to evaluate your work.
- Feel free to ask questions and let me know if you need to take a break at any point. If you feel uncomfortable with the interview just let me know, we can stop it anytime.
- The questions of this interview have been approved and meet EVERY's confidentiality policy.
- Ask the interviewee to introduce herself or himself.

Section 1

Understand the overall process of the project

Opening question

I want to understand your overall process and how you approached your project. Could you draw in this paper in some kind of a timeline your process during the Sprint Program? There is no right or wrong answer, do not worry.

Follow up probes

- What was the topic?
- What was the technology?
- What was the outcome? (e.g. concept, prototype, whitepaper...)
- What was your role? What was other people's role?
- How did the project start?
- How did your process look like? What happened in each sprint?
- What tools did you use? (e.g. trello, slack, post its...)

Closing question

Could you explain with the sketch what were your biggest challenges / pain points during the project?

Section 2

Understand the struggle with the technology

Opening question

I want to understand how it was to work on a disruptive technology. Can you talk to me about how was your experience with the technology of your topic?

Follow up probes

- How much did you know about it before the program?
- What did you know about the way in which the technology works?
- What did you know about the possibilities of the technology?
- How did you learn about it? (personal/group effort; resources, tools...)
- How was this experience for your team mates?
- Was there someone in charge of the technology part? Who? Profile?
- How did IH/EVERY help you in the process?

Section 3

Understand the struggle with design thinking

Opening question

I want to understand how it was to use design thinking as a methodology. Can you talk to me about working with the methodology?

Follow up probes

- How much did you know about design thinking beforehand? Can you tell me about your experience before the program?
- How did you learn about it? (personal/group effort; resources, tools...)
- How was this experience for your team mates?
- Was there someone in charge of the technology part? Who? Profile?
- How did IH/EVERY help you in the process?

Closing track

- I would like to thank you immensely for your time. This interview has been extremely helpful and is going to add so much value to my thesis.
- Like I mentioned earlier, I hope to translate my research into meaningful insights for my thesis. I would like to share the final result with you at the end of the project, if you are interested.
- In the meantime if you have any questions or suddenly you remember anything you would like to share with me feel free to get in touch with me.

B. INSIGHTS INTERVIEWS

Analysis of the insights from the interviews to former interns

Pain points

The analysis of the pain points started from the steps of Design Thinking, but this left some insights outside. Then the ones that did not belong to any step were organized in new clusters.

At the end, the pain points were clustered into ten different categories: lack of knowledge of the project topic, questioning role in the project, assumptions, interviews, problem definition, ideation, prototyping, testing, communication and technicalities. This latter one is not used further as it is outside of the scope of this research. The detected categories of the pain points were:

Lack of knowledge of the project topic

The sample interviewed consisted of a total of three different projects. None of the participants were familiar with their topic project before the program. A team worked with debt registry, a new system that got approved by the Norwegian government just before the program started. Apart from the text of the law that was passed, the only other source of information was the group of experts behind the new regulation.

“We were working on a topic that didn’t exist, we basically had to rely on people.” -N

Intern’s previous experience with researching about a project topic involved secondary research, as they were used to finding relevant

information on the internet or in academic papers. However, they had to grasp the knowledge about the topic with a completely new approach that they had to figure out while doing the actual research.

Another team’s project that revolved around AI applied to a reference project. The information regarding this reference project was not easy to access, as it was partly confidential. They had knowledge gaps that needed to be fixed. At the same time, their sources of information were using a technical knowledge that required previous knowledge about the topic itself.

“If we don’t know about what the other person is saying there is no added value” -R.

Even though the interns struggled when getting to know about their project topic, it is due to that fresh perspective from their own discipline which brings value to the project (Fay et al., 2006). However, providing interns with some support to deal with the uncertainty of their project topic without mitigating the positive effect of multidisciplinary could be helpful.

Questioning role in the project

“Why am I here in this project?” -R

At the early stages of the project, when the difficulties of grasping the knowledge of the project topic were unfolding, some interns wondered why they were part of the project. Their topics were not related with their backgrounds and therefore they had not any kind of knowledge about

it. They were feeling insecure about working with seniors on a field that they were completely unfamiliar with.

This uncertainty from an individualist perspective (Madsen, 2007), that some interns were experiencing, needed to be overcome in order to be able to add value to the project. Therefore it is inherent to the process. Interns could use some initial support so they can be aware that they could feel this way.

Consequences of the assumptions on the unknown

The interns received a lecture on DT at the beginning of the programme in which the process was explained and right after they started working on their projects. Most of the interns had never followed a DT process.

In such an environment surrounded with uncertainty, some assumptions were made by the participants regarding the process and approach. In the case of the designer interviewed, she assumed from the beginning that her teammates knew what a concept was. During the empathising phase, she realised that her teammates were having a narrow approach and at some point she realised they had a different understanding of what a concept was.

“BAs thought a concept means a product. I had to explain it can be a service, a strategy or a brand identity. This opened more doors” -N

In the same team, while the designer wanted to keep the exploration open, the BAs kept on complaining about finding uncomfortable having such

an open process. They wanted to have a set duration for the research phase, independently of what was the outcome of it.

“BAs had the preconceived idea that DT is about doing things quickly, but I wanted to focus on research. I tried to keep it open” -N.

In this case the designer struggled trying to translate the importance of taking a non-defined time for the exploratory phase, because her teammates found uncomfortable dealing with the uncertainty of just conducting research without a clear horizon.

On the one hand it could be beneficial to provide a more thorough learning of the DT process. On the other hand, there is a need to reduce in order to check assumptions and align team mates expectations at the start of the project

Mistakes when conducting user research for the first time

For several teams, talking to the end-users of their projects was challenging, mainly due to the research approach. They were novel to user-centred design and had never conducted user research. They prepared interview guides for their research, and after some unsuccessful attempts, they realised that the duration of the interviews were putting people off.

“It was hard to recruit people because the interviews were too long” -V.

Another team, due to their lack of experience in conducting research,

B. INSIGHTS INTERVIEWS

they recruited only employees from the company as a representation of a standard user. The team realised over time that their sample was unusually tech savvy and had to conduct a second round outside the company, which delayed their project.

“It was incredible the difference between NORDIK people and general people” -K

In both cases the fact that teams were not versed in user research delayed their project and made them feel they were not doing a good job, even though they were trying their best.

On another level, another interviewee explained that it was at the end of the project when her fellow interns realised how valuable was to understand the user in order to find needs that can lead to a solution.

Coming up with a problem definition
Once the projects had moved from the *empathize* step of DT, they started to define the problem to solve. Defining a problem statement is usually a difficult task for already experienced practitioners, and for a team that had never done it before it was definitely a big challenge.

“We spent two months seeing how could we narrow than the problem statement” -R.

As a consequence, the process resulted a little fuzzy and made them question in many occasions if they were properly following the DT process.

Another team had a different experience in the problem definition, as they would not find a problem to solve. They had some early ideas, but when they tried to validate them, they realised that they were actually not a problem. They had to return twice to the research phase in order to look for other directions.

“We got to a point where nothing was possible, until we heard about a new concept” -N

Besides that problem definition is tricky by itself, interns were struggling with the fact that DT is not a linear process. A better understanding of the process could be helpful for the interns to feel more comfortable during their project. This could be done by having a more detailed explanation of DT.

The need of support for ideation
When writing this section, a short conversation took place with the junior designers in the Innovation Hub, who are former interns of the IP. They have seen three editions of the IP taking place since they were hired. They expressed their point of view of the program based on their experience. They both felt there is a need of guidance during the ideation, as the teams without a designer struggle during this phase.

Teams are provided with the Google Sprint book and they are also handed a list of different online sources. The issue arises when they have to choose a method to move forward. As they lack any previous experience in design, they have no criteria for making a decision.

“A challenge was to decide what method to use and focus on” -P.

In the case of the team of this interviewee, they decided to use the two methods which they were doubting on. Part of their attention was focused on choosing the right technique and making sure they were following it correctly, therefore their performance was lower. Besides they kept on questioning the process during the whole ideation, because they were not completely sure of their decision.

DT tackles open problems that do not have a predefined solution. Creative Problem Solving is used in order to solve those problems, because it allows for generating innovative ideas. However, CPS is not present in the disciplines that are not creativity related. The role of the (creative) facilitator has been developed to help ameliorate the experience of using creative problem solving techniques, and to work with groups towards an agreed end, such as an open problem (Cruickshank & Evans, 2012).

In spite of the support that an initial crash-course on DT could bring, the ideation phase needs additional guidance while it is actually taking place. In this way, interns would not struggle as much due to their lack of experience in CPS.

Prototyping the wrong prototype

Some interns also experience difficulties in the prototyping and testing phases. In order to quickly validate their concepts, they followed the *fail fast* philosophy of DT (Brown, 2009) and they prototyped their

concepts by drawing screens on paper. However, instead of keeping it in the wireframe level –a word they had never heard of–, they overdid it and ended up drawing colourful mockups by hand, which was very confusing during the testing sessions. Unexpectedly, the users that were testing their prototype focused in the aesthetics of their prototype instead of giving feedback on the test itself.

“It was hard to listen to people saying it was ugly” -K

This lack of knowledge in interaction design also made the team to refine their prototypes a larger number of times than it should.

“A lot of iterations were because people didn’t know where to click” -K.

A better explanation of what is the goal of prototyping and building an MVP in order to test it, could be very useful to mitigate this pain point.

Testing (and validating) that value was not being created

During one of the interviews, an intern explained that she felt they had made a mistake upon arriving to the testing phase. They had defined the problem statement based on the need they have discovered from their research, and ideated from that problem statement. However, when testing their prototype, the feedback they received was that other features of their solution were reducing the value for the user.

“When testing our solution we realised it was causing struggle to the user” -K

B. INSIGHTS INTERVIEWS

They ideated around a problem statement that would only take into account a need of the user, and no other requirement was part of the statement. A better definition of the problem to solve would have led to a better solution with less iterations.

Miscommunication in multidisciplinary teams

One of the main challenges of multidisciplinary teams is working on a common language between the team members (Alves et al., 2007). One of the interviewed teams had big troubles with communication throughout the overall process. The struggle showed up early in the project, but they did not pay too much attention to it. At the last stage of the project it caused big problems that created a lot of tension between the teammates.

“Biggest pain point was communication in the team because of cultural differences, background and personality (...) It became a big problem. I would have gone earlier to the manager” -V

An early alignment of expectations of the project and some communication dynamics could have reduced the consequences of their communication issue. There is a need for improving communication among team members.

Strategies adopted during the project

During the interviews, former interns talked about different strategies they followed in order to cope with the challenges they encountered. These strategies have been clustered in three different categories: learning project topic, designerly approach and solution.

Learning project topic

In order to learn about the project topic the teams of interns adopted different strategies. They obtained information from looking for articles online, watching videos, going to events organised by people working on the topic field or talking with SMEs inside or outside the company. All the knowledge they gathered individually was summarised and presented to each other sharing their conclusions.

“It was a lot of mutual learning” -R

Some teams structured their research by writing down the questions which they felt they had to answer in order to understand the topic. They would seek the answers in their meetings or interviews. At some point they arrived to a level of uncertainty which was manageable and that allowed them to carry on with their project, even though they had not found all the answers.

“At the end we didn’t answer all the questions but we got to a point in which we felt comfortable. There were questions we needed and answer and there were other things that would be great to know” -N

They had reached the threshold of uncertainty that allowed them to innovate, sparking their imagination (Madsen, 2007) without causing them any struggle.

When gathering information about the project topic, there were different types of knowledge that interns needed to research on such as the technicalities or the functionalities of their topics (Jalonen, 2012). Participants went in different directions in a natural way, depending on their backgrounds. In one of the teams BAs focused on technicalities and the financial side of the topic while the designer focused on what it would mean for people and the impact on consumers. Each intern put the focus of the project on the elements that belong to their own discipline.

Designerly approach

When it comes to dealing with the Design Thinking process, an intern unfamiliar with the design field took a couple of courses in DT and in Interaction Design before starting the program. As he explained, it helped him immensely in understanding the user-centred approach.

Designing for the user by co-designing with the end user was particularly successful in one of the teams. They invited end users to their meetings and had regular checkups with them after the brainstorming sessions, to verify the solution made sense also for them.

However, novel practitioners of DT have preconceived ideas of what

the process should look like. One of the teams encountered difficulties with this issue – as explained in the pain points section – and during the interview the designer of the team knew how she would tackle this issue again:

“What I would have done different is making sure that we were all in the same picture about the (Design Thinking) process from the beginning”
–N

The shape of the solution

All the interviewed participants answered that their solution was not completely new. Some said it was a puzzle of current solutions put together, a solution taken from other field but applied differently, or even a current solution that just needed some changes in order to work

“We took a solution that was flooded and tried to solve the problems and added value to the customers” –N

B. INSIGHTS INTERVIEWS

Connecting pain points with strategies

There are some links between the pain points and the strategies extracted from the interviews:

- Interns found their own ways to solve the lack of knowledge of the project topic that struggled them at the beginning. Listing the questions that would come up along the process was a useful strategy. Even though they were not able to get all the answers, they arrived to a comfort level in which they could carry on with their project, which eventually made them stop questioning their role in the project.
- Knowledge about Design Thinking is not a requirement to enter the IP, and interns that felt the curiosity or the need to know about it were able to find the means to learn about the process.
- The initial assumptions whose consequences arose later in the project can be tackled by aligning the team members' expectations and perspectives about the project.

However, there were some pain points which do not have a clear strategy, and caused difficulties along the project:

- Conducting user research was a challenge for some teams due to their inexperience and they managed to learn it by trial and error, which ended up delaying their project.
- Problem definition was also a difficult milestone for some participants, that either took extra effort to narrow down the scope, or just had a hard time finding the right problem to solve. In both cases their struggle took time out of their project, but they ended up

with a problem definition they believed in.

- Ideation phase was challenging to the interns without any knowledge on design. They followed their intuition and were able to evaluate their decisions regarding the ideation process once the project was delivered. On top of this, the way the problem statements were defined was poor, in terms that it was only addressing the detected need and not taking into account the impact on the user.
- Prototyping required an extra effort for some teams, as they have never done it before. Again they learnt by trial and error, and it just took some extra time from their project.
- Communication was a big issue for one of the teams. As a future strategy it could have been reported earlier to the manager in order to find a way to tackle the problem sooner in the process.

C. WORKSHOP PROTOTYPE

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- golden rules
- session agenda
- start creating

golden rules

- role rigidity, trust the process & trust the creative facilitator
- respect the agenda
- start with a clear problem
- feel free and say anything you think of
- have fun :)



session agenda

- set the roles
- define the problem statement
- diverging
- reverging
- converging
- presentation



before we start creating...

- a creative session is a relaxed group experience for coming up with ideas
- feel free to take a bio break at any point.
- be yourself, don't judge and don't feel judged!



set the roles

For this session we need one participant to have the role of "creative facilitator". This person will be leading the session while at the same time still participating.

No previous experience is needed, she or he will be just managing the toolkit and translating it to the other participants, who should follow his lead.

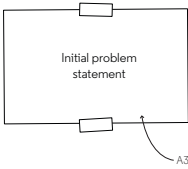
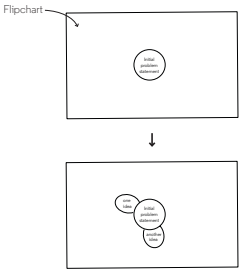
Any volunteers?

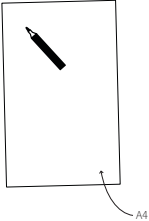
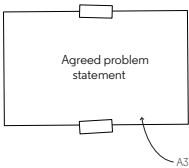



define the problem statement

—
understanding the problem to solve

C. WORKSHOP PROTOTYPE

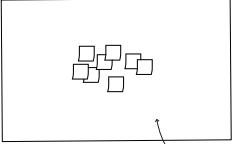
<p>write the problem statement</p> <p>creative facilitator:</p> <p>write on an A3 your initial problem statement and put it on a wall with some masking tape</p> 	<p>flower association</p> <p>take a flipchart sheet, place it in the table and write in the middle the initial problem statement and make a small circle around it</p> <p>everyone gets a marker and starts writing the words that come to mind when thinking on the problem as if they were the petals of a flower</p> <p>don't stop until everyone writes everything in their minds!</p> 
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<p>write your own problem statement</p> <ul style="list-style-type: none">· now every participant gets an A4 and get some time to write the problem with their own words in just a sentence <p>different ways of phrasing a problem can be:</p> <ul style="list-style-type: none">· a "how" question· "design a concept that..." 	<p>agree on a common problem statement</p> <ul style="list-style-type: none">· now every participant shares their problem statement with each others, and decide all together a common problem statement to solve in this creative session· once you have it write it down on an A3 and stick it on the wall 
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<p>diverging</p> <p>—</p> <p>coming up with loads of ideas to solve the problem</p>	<p>golden rules of diverging</p> <ul style="list-style-type: none">· postpone judgement, don't comment on others' ideas· the more ideas the better· look for crazy ideas· build on each others' ideas 
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empty your minds

- place a flip chart sheet on a flat surface
- start writing in post its solutions to the problem (each solution in one note) and stick them on the sheet
- you can either read them out loud when sticking them or not
- just do what feel more natural
- do not stop until you have thrown everything you can think of




Flipchart

personal analogy

think of your target user, if you were him:


- how would you solve the problem?
- what are the solutions that would be more ideal for you?

write any answer you come up with on post its, even if it is not feasible, and stick it on the flip chart




trends

- write on the white board all the trends that you have found on your research and any other actual trends in the world (5 / 10 min)
- now write on post its solutions to the problem that you can think of, based on those trends



devil thinking

- each participant gets an A3 and now is time to do some evil thinking, think of ways that the devil will solve the problem by making it worse and write them down in the A3. Do not share it yet with the other participants
- e.g. if the problem statement is "how to get to work?" the devil will find an evil solution such as "break all means of transport" or "tire the person"
- now give the A3 to the person on your left and write in post its the positive solution of the ones the devil would make. Stick the post its in the big sheet



reverging

—

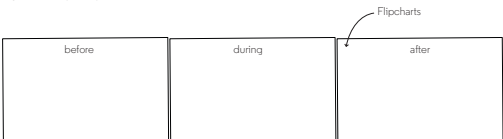
ordering the ideas and categorising them

cluster on a customer journey timeline

it is time to start clustering into groups

in order to do so:

- put three flip chart sheets on the wall making a big horizontal rectangle and mark them as "before", "during" and "after"
- start putting the post its in the timeline, in the spot you feel they should belong, when in doubt just ask your fellow participants




Flipcharts

C. WORKSHOP PROTOTYPE

cluster in categories

- now that all the post its are on the timeline, try to cluster them in categories
- name the categories and write their names on horizontal post its on top of each cluster



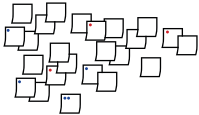
converging

selecting the ideas to solve the problem statement

dot vote

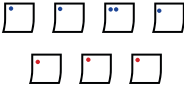
now that all the post its have been placed, it is time to vote for the favourites!

every participant gets 4 blue dots for best ideas and 1 red dot for a crazy idea, make them with markers



create your concept

put together all the chosen ideas and try to cluster them in categories



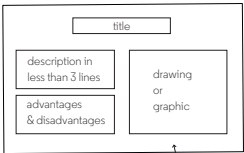
discuss with each other what ideas could be used for solving the problem statement

concept poster

now that the best ideas have been pointed out, it is time to do a concept poster with the final concept

in a flip chart write:

- title
- description definition in 1/3 lines
- at least 2 advantages and 1 disadvantages
- drawing or visual explaining the concept



flip chart

time to present

D. STRUCTURE WORKSHOPS

Structure of the first workshop

1) Observation of the interns solving the problem statement in their own. They were given the question and asked to solve it as if they were by their own. This phase was stopped when they started going in circles. During the first observation, the following questions were tried to answer:

- Do they follow an structure?
- Do they use any techniques or follow any methodology?
- (And particularly) what are their challenges and struggles?

Objective: understanding the working process and if there is a structure or methodology behind, and understanding their struggles and challenges in the project.

2) Individual interviews. Once the first observation was finished, individual semi-structured interviews to the participants took place. They were conducted individually in order to avoid any group dynamics that may bias the answers. The questions asked were:

- How do you feel about the session?
- Did you follow any methodology?
- What would have happened if I had not stopped you?
- What was your role in the project?

Objective: understanding their perception of the session and their process, and understanding any challenges that did not emerge or were not expressed during the session.

3) Facilitated session for solving the problem statement. Interns solved the problem statement being facilitated, while at the same time notes were

taken by me about their experience. They were given the question and facilitated to solve it using the same structure that the initial toolkit prototype had, which was:

- Problem definition – techniques: flower association + draw your problem
- Diverging – techniques: purge + personal analogy + trends + evil thinking
- Reverting – techniques: clustering on a timeline / customer journey
- Converging – techniques: dot vote + final poster(s)

Objective: understanding the working process when following a methodology and validating the suitability of the chosen structure; what are the new challenges they encounter along the way and if the is structure useful for solving such a problem statement?

4) Group interviews. Once the session was finished, a very short semi-structured interviews to the participants took place. Even though in a group interview group dynamics could bias the answers, the participants were too tired to extend any longer the workshop. The questions asked were:

- In one word: how do you feel about the facilitated session?
- What were the differences between the first session and the facilitated session?

Objective: understanding if the interns felt the session was useful and if they perceived any added value.

D. STRUCTURE WORKSHOPS

Structure of the second workshop

An iterated part 3 (the facilitated one) of the workshop was designed based on the the literature study, and the interviews and observations from the first workshop. The new structure focused on the relationship of the user and the project topic from the problem statement:

Structure:

1) Deepening on the project topic side

Steps:

- Write on sticky notes everything that is already known about the topic.
- Cluster it in three main groups: technicalities, functionalities and possibilities.
- Make also subclusters, if possible.
- Detect if there is some knowledge that they still do not have.

Objective: organising the already gathered knowledge about the project topic into technicalities and functionalities (Jalonon, 2012) for the purpose of arriving to the possibilities.

2) Focusing on the user side

Steps:

- Build a persona or personas (demographic, background, goals, motivations, pain points) with the data currently gathered about the target user.
- Detect what relevant information is missing at the moment.
- Try to make connections with the topic.
- Work on assumptions

Objective: connecting with the user at the personal level and identify what is the information still missing.

3) Making connections between user and project topic. Make future plans based on the missing information.

Step:

- Set a strategy on how to research for the information that is missing at the moment and validate the current assumptions.

Objective: ending the session with a research strategy and future steps.

Parts 1, 2 and 4 from the workshop were not changed, and remained the same.

E. INSIGHTS FIRST WORKSHOP

Solving the problem statement on their own (part 1 & 2 of the workshop)

Unstructured process

During the observation, it became evident that the interns were working without any kind of structure, as they were deciding on-the-go what to do next. When being asked about their feelings of the session, the three of them stated that they were going in circles without any clear direction.

This unplanned process implies that team members have unaligned expectations on what is going to happen during the working session. For example, as they narrowed down quite early in the process because one of them suggested to do so, and the others did not disagree, some interns felt the process should have been more open.

When asking the interns about their normal process, they all explained it was usually like the one that it was observed.

“Maybe it is a bit awkward because it is the natural flow of what we would do, maybe we don’t know how to turn” –C

By “we don’t know how to turn” the interviewee meant that they just follow a natural process of discussion that they do not steer or intervene on. There is certainly a lack of preparation for this kind of sessions. This can be due to their lack of experience in any kind of creative workshops, as they were all experiencing it for the first time. In future workshops it would be

important to make sure they have an structured process.

Some diverging, kind of reverging & no converging

The non-facilitated session started by diverging from the problem statement. Immediately they started writing their ideas individually. This process lasted over 5 minutes, and in total they produced 19 ideas to solve the problem statement. This was the end of their diverging state.

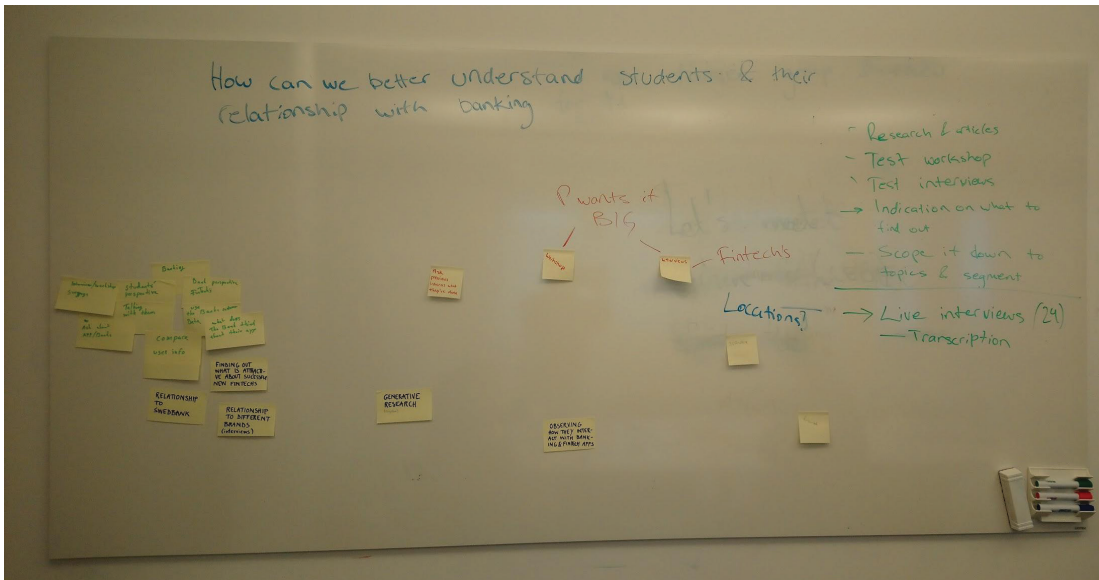
Then they explained each others’ ideas and stucked the post its on the whiteboard. Once they finished explaining, they started commenting on them without any clear purpose of clustering or selecting the best ideas. Richard was leading the session standing up with his hand in the whiteboard while holding the marker. He was the one stirring the conversation. After 30 minutes of discussing the post its on the wall with no clear direction, I stopped the session.

In the individual interviews the interns explained their feelings about the session.

“My mind is more and more closed because at the beginning I would think of all the options but now we are focusing on ideas and letting others go (...) Once you start going in one direction it is very difficult to come up with others [directions]” –D

As they stopped their diverging state too early, he was not able to give all his ideas and did not have a pleasant

E. INSIGHTS FIRST WORKSHOP



Picture of the board with their ideas

experience during the rest of the workshop.

A clear division between diverging, reverging and converging phase could ensure they maximise the outcome of each of them. This division should include guidance on how long or what should be the outcome of each phase.

Group dynamics

As there were no rules established for the first part of the workshop, their behaviour and their roles were the same as the one in their regular working dynamic. They found it very difficult to make a decision and that was one of the reasons for them to go in circles.

“We are three people, it is very difficult to someone take the leadership position cause then there is only two left”

The lack of rules also made one of the interns to question her role and attitude during the session.

“I feel sometimes I am a bit annoying because I always doubt the reasoning or if something makes sense or if it brings direct value... I feel sometimes I kind of bring ideas down with this attitude. But I think some ideas should not be developed further if they don't bring value” -C

This could have been avoided by explaining the rules for the diverging, reverging and converging. In this way she would not have felt out of place, and she would have had an allocated time during the workshop to express her concern and question the ideas.

Negative feelings

Last, one of the interns expressed his feelings regarding the workshop.

E. INSIGHTS FIRST WORKSHOP



Picture of their clusters in the reverging state

Solving the problem statement in the facilitated session (part 3 & 4 of the workshop)

Breaking the stiff barrier

They tried to behave very professional at the beginning. They had certain stiffness, until the trend activity in which they had to write down any trend they could think of. At that stage someone wrote “#metoo” on the flipchart and from that very moment they relaxed and it got more fluent in producing ideas.

It is important to give them the confidence and the space to feel free and not judged in order to become fluent and produce ideas. One way of achieving this is by explaining thoroughly the first golden rule of diverging: postpone judgement.

Following the golden rules

Even though they had been

introduced to the golden rules of creative facilitation they did not follow them properly. They were extremely influenced by any comment from others. I insisted a couple of times on the need of postponing judgement, but they hardly follow that suggestion.

This connects with the previous insight. It is necessary to translate them the golden rules properly, so they can properly go through the different states of the creative session. It is also important to change their mindsets during the different phases, as converging, reverging and diverging require different states of mind (Heijne & van der Meer, 2019).

Not a productive session

The final outcome was not a creative solution to their problem statement, it was just a research strategy. There may be two reasons for this: (a) the session was not properly designed;

and (b) they did not have a good knowledge on user research methods, which would have given them the ease to come up with non traditional approaches.

When analysing the data collected from the first workshop, it became evident that the structure of the facilitated session (part 3 of the first workshop) was not adequate for the kind of problem statement. It was designed for coming up with a concept rather than creating a strategy for empathising with the user. In order to have a more successful second workshop, part 3 had to be iterated and adapted to the problem statement of the workshop.

F. INSIGHTS SECOND WORKSHOP

Analysis of the insights from the second workshop

Solving the problem statement on their own

Confusing problem statement

Right at the start, the team realised the proposed question had two questions inside “how can we better understand the relationship between the user and the project topic?” could be answered with “doing research and interviews” or with a strategy for that research.

It is essential that the team starts with a clear problem statement, that everyone understands. The first diamond of the iCPS model would support the team in defining a problem statement that everyone agrees upon.

Besides, having a clear problem statement is one of the three golden rules of creative facilitation (Heijne & van der Meer, 2019). So it is essential to start a creative session with a very well defined and agreed problem statement.

No purge

The team did not start working on the problem statement by diverging ideas for the problem. First they wrote the names of all the stakeholders on the whiteboard. Then, they started writing the things they already knew about the three stakeholders, each of them focused one of them.

An initial purge of the initial ideas they had in their minds would have left more clarity to think. They were not

familiar with the technique so they would need to be guided through it.

The questions that structures the process

Lena started writing the questions that their discussion was arriving at, or others she would think of. These set of questions articulated the session, by them trying to find an answer. They were mostly “how” questions.

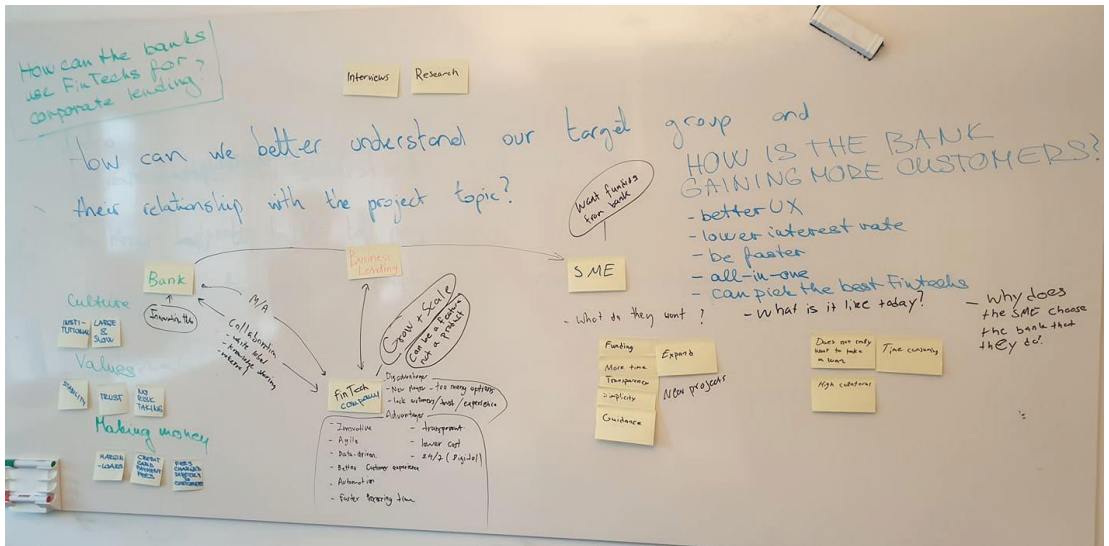
On the other hand, since the beginning of the session, Hank kept asking “why?” whenever someone made a new assumption. He explained in the individual interview that this other enquiry approach has been very useful for him during his university studies.

Even though they did not have an structured process, by using this list of questions, they entered in an enquiry based framework (Cardoso et al., 2016). They all said it was their normal process when working together. These “how” and “why” questions are high-level questions that help diverging and converging respectively when they are asked (Eris, 2004).

To conclude, posing high-level questions helped them to move forward with the project and to deal with the uncertainty that otherwise would affect the group dynamics (Slappendel, 1996).

Lack of structure distracts from the main focus

However, as the first team, the second team did not have an structured process when working on their own.



Picture of their board

Even though they kept the pace by answering to the questions that came on the way, they ended up also in circles.

Working in such a manner can make participants feel lost. As one of the interns expressed, the lack of a clear direction can drag someone’s attention in the process itself rather than in the activity they are working on. This could be avoided by facilitating a structured process that they would follow seamlessly without needing to be conscious of it.

Solving the problem statement in the facilitated session

Improved approach

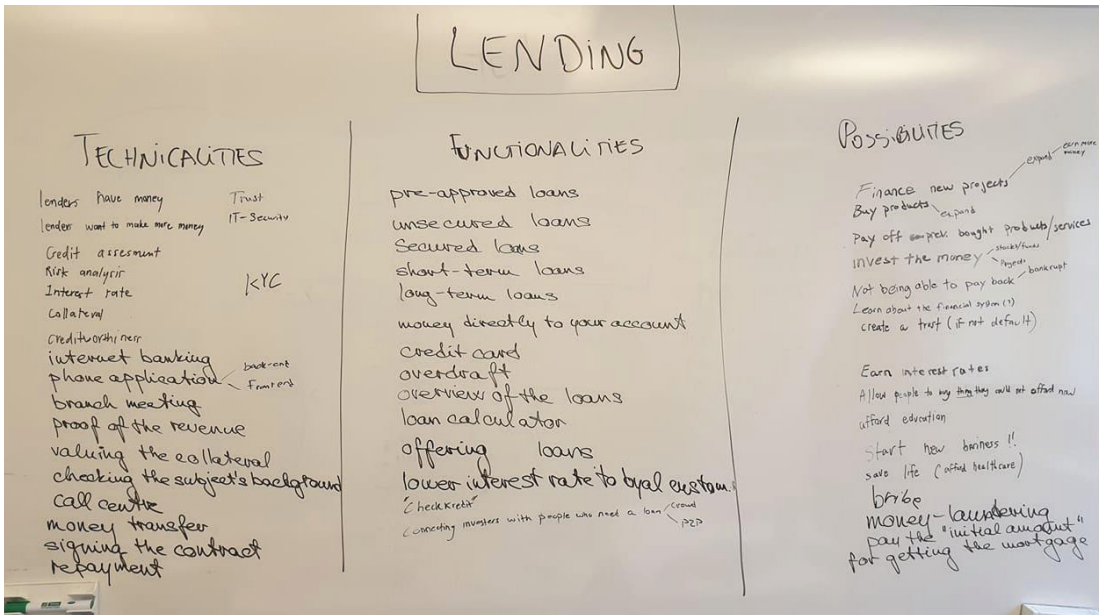
The second team of interns were facilitated using an iterated version of the toolkit. The iteration was made after the first workshop. It started with the “technicalities, functionalities and possibilities” technique for understanding the project topic.

The three participants agreed that this technique helped them with dealing with their topic but suggested to include a better explanation with some explanatory examples.

Finding the persona in the personas

The second activity of the toolkit was drawing personas out of the target group of users. It aimed at connecting the interns with their end users, understanding their pains

F. INSIGHTS SECOND WORKSHOP



Picture of the Technicalities, functionalities & possibilities technique

and checking if they still needed to research on further.

They appreciated the difference of their own of working and a structured session

“It was more interactive, more fun, more concrete. We got to connect at a personal level” -H

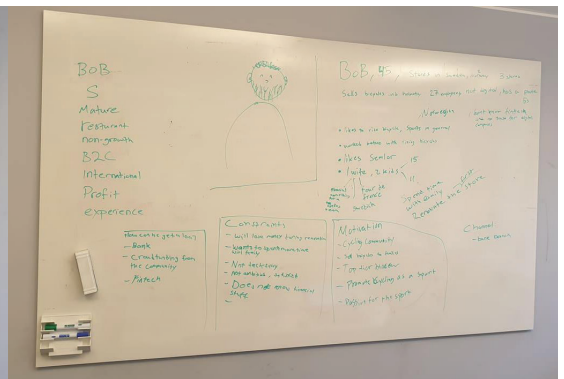
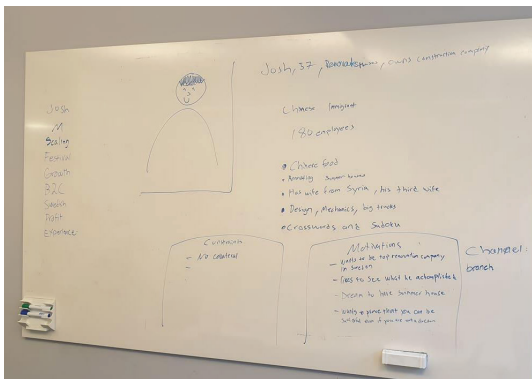
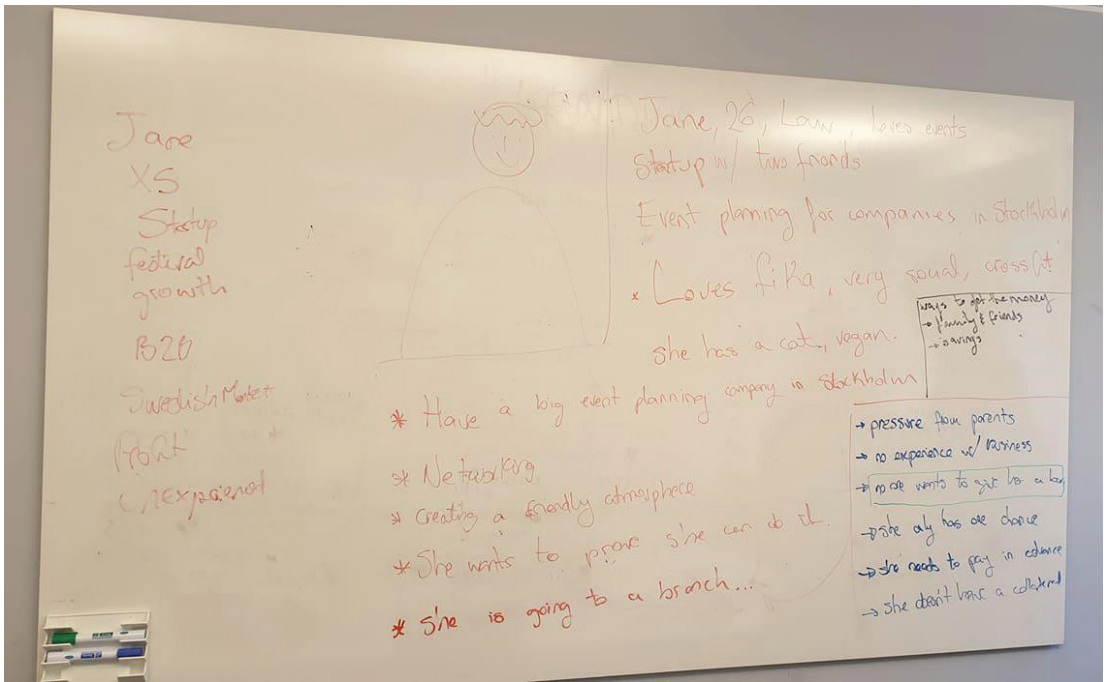
Translating what the user life is about grounded their perception on the user at a personal level. Including an activity to connect with the user could be useful at the beginning of a workshop.

Timeplanning

The session had planned a third step

in which a research strategy would be defined. However, explaining and doing the activities took longer than expected. During the session only one out of the three personas was done, and the rest it was done by the interns another day. It is important to take into account that the timing for non-designers is completely different to the people used to the creative techniques.

Better planning on the timing is needed. Independently how long an activity is, interns should be aware of the real duration, so they can open that timeframe in their minds, and put all the focus and creative energy on it.



Pictures of the three personas. The first one happened during the facilitated session, the last two were done by themselves outside of the session.

G. TOOLKIT INSTRUCTIONS

TOOLKIT INSTRUCTIONS

Read before starting

Impact Creative Toolkit is a set of three tools, meant for multidisciplinary teams, that guides through an ideation process from defining a problem statement to developing an idea. It focuses on the impact that a product or service has on the end user.

Impact is divided in three categories: benefits, the convenience provided by the product or service to the end-user; emotions, the positive feelings caused by the product or service to the end-user; and consequences, the negative benefits and emotions produced by the product or service on the end-user.

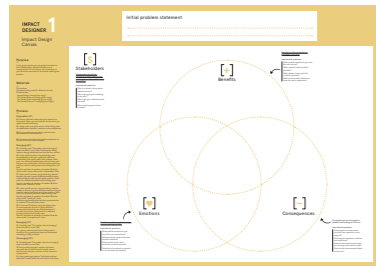
In order to start using the toolkit, an initial problem statement is required.

The toolkit is composed of three tools plus the golden rules, everything is described below.

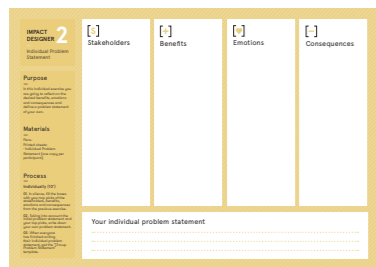
Tool #1 – Impact Designer

Impact Designer is a problem definition tool that besides defining the problem statement, it helps to decide on the impact that it is aimed on the user.

It consists of three templates:



Impact Design Canvas
One copy (A1)



Individual Problem Statement
One copy per participant (A4)

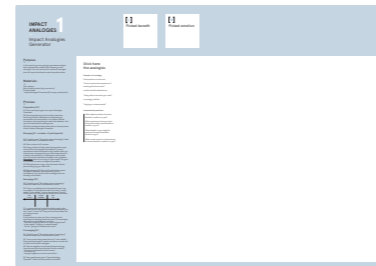


Group Problem Statement
One copy (A3)

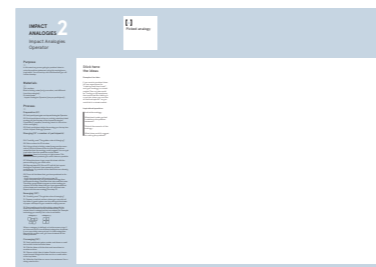
Tool #2 – Impact Analogies

Impact Analogies is an ideation tool. It stimulates the production of ideas by means of analogies of the desired impact on the user.

It consists of two templates:



Impact Analogies Generator
One copy per participant (A1)

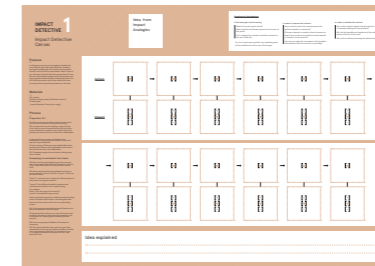


Impact Analogies Operator
One copy per participant (A1)

Tool #3 – Impact Detective

Impact Metaphors is an idea development tool. It combines roleplaying with posing questions that create a conversation around the desired impact on the user.

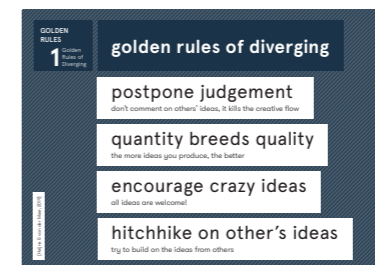
It consists of one template.



Impact Detective Canvas
One copy (A1)

Golden Rules of Creative Facilitation

The Golden Rules help setting the right mindset during the different states of the process. It consists of three sheets:



Golden Rules
Three pages, one copy (A3)

H. GOLDEN RULES

GOLDEN
RULES

1 Golden
Rules of
Diverging

golden rules of diverging

postpone judgement

don't comment on others' ideas, it kills the creative flow

quantity breeds quality

the more ideas you produce, the better

encourage crazy ideas

all ideas are welcome!

hitchhike on other's ideas

try to build on the ideas from others

GOLDEN
RULES

2

golden rules of reverging

use the inquiring mind

if needed, ask for clarification in order to understand the ideas

active participation

everyone has to be involved in the process

listen responsively

listen with the intent of understanding, instead of replying

move circular

start wherever and cover it all

GOLDEN
RULES

3 Golden
Rules of
Converging

golden rules of converging

use affirmative judgement

focus on the positive characteristics of the ideas

protect originality

treat the unfamiliar ideas with care and love

trust the hedonic response

follow your intuition and gut feelings

have action in mind

select the options you would like to work on yourself

I. IMPACT DESIGNER

IMPACT DESIGNER 1

Impact Design Canvas

Purpose

In this group exercise you are going to brainstorm about stakeholders, benefits, emotions and consequences. You will end up with a selection of your favourite ones that will be used for defining the problem.

Materials

Thin markers.
4 blocks of sticky notes (in different colours).
Printed sheets:
· Impact Design Canvas (one copy).
· The Golden Rules of Diverging (one copy).
· The Golden Rules of Reverting (one copy).
· The Golden Rules of Converging (one copy).

Process

Preparation (5')

01. Discuss with each other what you expect from the project. When you are finished, discuss what you expect from this workshop.

02. Assign each one of the colours of the sticky notes to: stakeholders, benefits, emotions and consequences.

03. Every participant gets sticky notes from the different colours and a marker.

04. Someone writes the initial problem statement on the box at the top of this template.

Diverging (40')

05. Carefully read "The golden rules of diverging" sheet and stick it on the wall. Distribute the sticky notes so every participants has from the four colours.

06. In the next 5 minutes, using the sticky notes for stakeholders, discuss in group the different stakeholders that participate in the problem. Write each on a different (stakeholders colour) sticky note. Everyone can participate in the discussion by writing their own ideas in sticky notes and reading them out loud.

Use the inspirational questions if needed. Stick the notes on the canvas close to the "stakeholders" title.

07. In the next 10 minutes, using the sticky notes for benefits, discuss in group different benefits that we could provide the user by solving the problem. Write each on a different (benefits colour) sticky note.

Use the inspirational questions if needed. Stick the notes on the "benefits" circle.

08. In the next 10 minutes, using the sticky notes for emotions, discuss in group different emotions that you want the user to feel when solving the problem. Write each on a different (emotions colour) sticky note.

Use the inspirational questions if needed. Stick the notes on the "emotions" circle.

Are there any benefits that could be connected with an emotion? If so stick them closer.

09. In the next 10 minutes, using the sticky notes for consequences, discuss in group different consequences that the user could experience if we solve the problem. Write each on a different (consequences colour) sticky note.

Use the inspirational questions if needed. Stick the notes on the "consequences" circle.

Reverting (15')

10. Carefully read "The golden rules of reverting" sheet and stick it on the wall.

11. In group, read out loud all the sticky notes in the boxes. If any participant does not understand something, clarify it to them.

Converging (15')

12. Carefully read "The golden rules of converging" sheet and stick it on the wall.

13. Each participant gets a marker and draws one small dot on their favourite benefit, one on their favourite emotion and one on their favourite consequence.

14. Every participant gets an "Individual problem statement" sheet. Follow the instructions from there.

Initial problem statement

.....

.....



Stakeholders

Stakeholders are all the people and organisations that participate on the problem and its solution

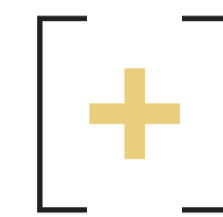
Inspirational questions

Who is involved in the problem besides the user?

Who is going to give something to the user?

Who is going to collaborate with the user?

Who would be great to have involved?



Benefits

Benefits are the convenience provided to the user

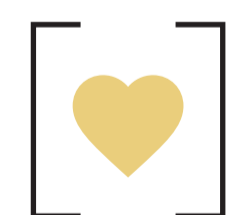
Inspirational questions

What positive benefits do you want the user to have?

What material needs could be satisfied?

What element in the user's life could be improved?

What are the positive effects we want the user to experience?



Emotions

Emotions are the negative feelings experienced by the user

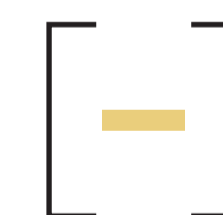
Inspirational questions

What positive emotions do you want the user to experience?

What emotional needs of the user could be satisfied?

What aspects of the user's emotions could be improved?

What kind of emotional connection so we want the user develop?



Consequences

Consequences are the negative benefits and feelings of the user

Inspirational questions

What negative consequences could the user experience in the daily life?

What negative emotions could the user experience?

What are the relevant user needs that we may not be able to meet?

What can be the unwanted effects on the user?

IMPACT DESIGNER 2

Individual Problem Statement

Purpose

In this individual exercise you are going to reflect on the desired benefits, emotions and consequences and define a problem statement of your own.

Materials

Pens.
Printed sheets:
· Individual Problem Statement (one copy per participant).

Process

Individually (10')

01. In silence, fill the boxes with your top picks of the stakeholders, benefits, emotions and consequences from the previous exercise.

02. Taking into account the initial problem statement and your top picks, write down your own problem statement.

03. When everyone has finished writing their individual problem statement, get the "Group Problem Statement" template.

[S]
Stakeholders

[+]
Benefits

[♥]
Emotions

[-]
Consequences

Your individual problem statement

.....

.....

.....

IMPACT DESIGNER 3

Group Problem Statement

Group problem statement

.....

.....

.....

Purpose

In this group exercise you are going to define a common problem statement and a desired impact on the user.

Materials

Pens.
Printed sheets:
· Group Problem Statement (one copy).

Process

In group (15')

01. Present the individual problem statements.
02. Together, define a common problem statement and write it on the top box.
03. Decide on the benefits, emotions and consequences that you would like the user to have. Bring to this sheet the sticky notes that contain them from the Impact Design Canvas or write them on sticky notes if you do not have them yet.



Benefits



Emotions



Consequences

J. IMPACT ANALOGIES

IMPACT ANALOGIES 1

Impact Analogies Generator

Purpose

In this exercise you are going to generate analogies that represent the context of the impact you are aiming for. You will end up with a series of analogies that will inspire the ideas to solve the problem later.

Materials

Thin markers.
Block of sticky notes (only one colour).
Printed sheets:
· Impact Analogies Generator (A1, one per participant).

Process

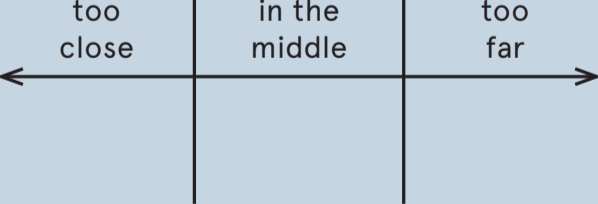
Preparation (5')

01. Each participant gets one Impact Analogies Generator.
02. Each participant picks two sticky notes from the Group Problem Statement corresponding to one benefit and one emotion. It can either be their favourite or the ones that just recall their attention. You can also duplicate the existing ones.
03. Each participant sticks their picks on the top boxes of their Impact Analogies Generator.

Diverging (5' x number of participants)

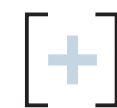
04. Carefully read "The golden rules of diverging" sheet and make sure it is somewhere visible.
05. Set an alarm for 5 minutes.
06. Using a block of sticky notes (everyone the same colour), think of analogies of situations / places / experiences where the benefit or the emotion that you have chosen are present for you. Write them down on a sticky note and stick it in the big box of this sheet. You can use the inspirational questions for guidance.
Remember: there is no wrong or right answer. The goal is to produce as much analogies as possible.
07. When the alarm rings, swap this sheet with the person sitting by you clock-wise.
08. Repeat steps 05, 06 and 07 until all the Impact Analogies Generator have passed by all the participants. Try to build on the analogies that are already on the sheet.

Reverging (15')

09. Carefully read "The golden rules of reverging" sheet and make sure it is somewhere visible.
10. Draw on a whiteboard an horizontal line as long as possible. On the left end write "too close", on the center "in the middle" and on the right end "too far". Divide the line in three sections like in the visual below.

11. In group, read out loud all the sticky notes in the canvases. Start sticking them on the line depending on how "near" or how "far" they are from the problem we are trying to solve.
Example:
If the problem to solve was "how to improve the experience of ordering food from home" the analogies depending on the distance would be:
· Too near: "ordering food via an app on the phones".
· In the middle: "buying on a street market".
· Too far: "going on a rocket to the moon".

Converging (5')

12. Carefully read "The golden rules of converging" sheet and make sure it is somewhere visible.
13. Focus on the sticky notes that are "in the middle". Each participant gets a marker and draws a small dot on their two favourite analogies.
14. Discuss together and choose the best analogy from the ones that have the dots. Use this criteria:
· Everyone understands what it means.
· It is inspiring.
· Everyone agrees to move forward with it.
15. Every participant gets a "Impact Analogy Operator". Follow the instructions from there.



Picked benefit



Picked emotion

Stick here the analogies

Example of a analogy

If the problem to solve was

"how to improve the experience of ordering food from home"

and the benefit selected was

"being able to see what you order"

a analogy could be

"buying on a street market"

Inspirational questions

What objects produce the same benefit or emotion on you?

What experiences have you had that produced the same benefit or emotion on you?

What situation in your daily life produces the same benefits or emotion on you?

What unreal scenario could produce the same benefit or emotion on you?

IMPACT ANALOGIES 2

Impact Analogies Operator

Purpose

In this exercise you are going to produce ideas to solve the problem statement using the analogies as inspiration. You will end up with the idea that you will further develop.

Materials

Thin markers.
Block of sticky notes (only one colour, and different from the analogies).
Printed sheets:
· Impact Analogies Operator (one per participant).

Process

Preparation (5')

01. Each participant gets one Impact Analogies Operator.
02. Each participant writes on a sticky note the picked analogy at the last step of the Impact Analogies Generator (if possible, the sticky note is in the colour of the analogies).

03. Each participant sticks the analogy on the top box of their Impact Analogy Operator.

Diverging (10' x number of participants)

04. Carefully read "The golden rules of diverging".

05. Set an alarm for 10 minutes.

06. Using a block of sticky notes (everyone the same colour), think of ideas of how to solve the problem statement that the analogy could suggest. You can get inspiration from the questions on the sheet.

Remember: there is no wrong or right answer. This exercise is about producing as much ideas as possible.

07. When the alarm rings, swap this sheet with the person sitting by you clock-wise.

08. Repeat steps 05, 06 and 07 until all the Impact Analogies Generator have passed by all the participants. Try to build on the ideas that are already on the sheet.

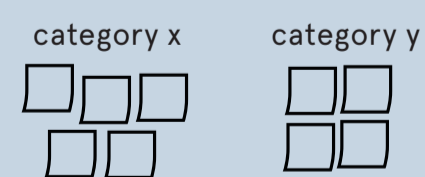
09. Count all the ideas that you have produced so far today:
· If you have more than 40 move to step 10.
· If you have less than 40, get another analogy from the Impact Analogy Generator that also received votes. The whole group needs to agree on what analogy to choose. Put all the ideas that you have generated out of the sheets and save them, you will use them later. Repeat with the new analogy from step 01.

Reverging (30')

10. Carefully read "The golden rules of reverging".

11. Prepare a vertical surface where you can stick all the ideas. A good system can be putting white sheets of paper with tape so you create an empty canvas.

12. Start reading out loud the sticky notes with the ideas and stick them on the vertical surface. Try to cluster them in categories that are related (for example: technology or nature), like in the visual below.



When a category is defined, write the name on top. If an idea could be in two different categories, duplicate it on a new sticky note and put it in both categories. Repeat this process until you have clustered all the ideas produced.

Converging (15')

13. Each participant gets a marker and draws a small dot on their three favourite ideas.

14. Pick the ideas with the dots and move them to another surface.

15. Discuss which idea is better. Decide on an idea to move forward. Maybe the idea can be a combination of the top ideas.

16. Write the final idea on one or two sentences. Use a sticky note for this.

[a]

Picked analogy

Stick here the ideas

Example of an idea

If you want to produce ideas for new experiences for "ordering food from home", and your analogy is a street market. Then an idea could be "having an AR experience that would feel like walking in a corridor where you can see all the food options" as you would do in a street market.

Inspirational questions

Look at the analogy...

What does it make you feel in relation to the problem statement?

Think of the scenario of the analogy...

What ideas could it suggest for solving the problem?

K. IMPACT DETECTIVE

IMPACT DETECTIVE 1

Impact Detective Canvas

Idea from Impact Analogies

Questions for the detective

If the team gets stuck enacting

- What is the next logical action?
- What would be the dream scenario for the user at this point?
- Try to change the context to another moment on the user's daily life

Tip: do not get super specific (e.g. explaining each of the interactions of the user with an app)

In order to improve the solution

- How could we invert the consequences into positive benefits or emotions?
- (Choose a benefit or emotion from the previous steps) How could we include the chosen benefit or emotion to the solution?
- How can we make the user aware of the benefits and emotions that this solution is providing?

In order to validate the solution

- Why is this solution better than the way the user is currently dealing with the problem?
- Why do the benefits and emotions of the solution improve the life of the user?
- Why is this solution producing the desired impact?

Purpose

In this group exercise you are going to develop the idea. Even though if you start with just a sentence, during this exercise you will all have a conversation about it and will build on each others' ideas. Some of you will enact the idea while the person that will have the role of the detective keeps track of the action and poses questions that will help to develop the idea. You will finish the exercise with a clear idea of the user journey and the impact that produces on the user.

Materials

- Thin marker.
- 2 blocks of sticky notes (of different colours).
- Printed sheet:
 - Impact Detective Canvas (one copy).

Process

Preparation (5')

- Stick on the top box of this sheet the idea which has been the outcome of the previous activity.
- In preparation for the roleplay, assign the role of the user to one of the participants, the role of the impact detective to another one, and the rest of the participants assume the role of the other stakeholders.

In the case there are more participants than stakeholders, the participants without a role would help the impact detective.

On the contrary, if there are more stakeholders than participants, the ones with stakeholders role assume the role of more than one stakeholders.

- The detective gets the two blocks of sticky notes and a marker.

Roleplaying (no estimated time frame)

- Start enacting the idea that you have come up with. It may seem a little difficult if the idea is still just a line. Talk a little about it, what would the user do first?

- At the same time the Impact Detective writes on sticky notes the "actions" and the "impact", which are put on this sheet.

"Action" is what the user is doing, the different steps of the process of using the solution.

"Impact" is the different benefits, emotions and consequences that the user is experiencing.

For example:
Action: "the user pays for the service"
Impact: "consequence: pay money"

Action and impact go each on different coloured sticky notes. Put them on this sheet in chronological order.

Note: not all the actions will have a corresponding impact.

- If the team gets stucked the Impact Detective can pose the questions in the box below.

- Approach this activity as an open discussion and iterate on the idea as many times as necessary. Use the questions for improving and validating for this purpose.

- Use as many Impact Detective Canvases as necessary.

- The exercise finishes when you have your idea represented on the canvas and the emotions, benefits and consequences identified. Try to explain it now in a couple of sentences and write it on the "Idea explained" box.

Action

Impact




		→		→		→		→		→		→

→		→		→		→		→		→		→

Idea explained

.....

.....

 human perspective dimension	 experiential dimension	 creative dimension
high-H ●●● Prompts empathic insights where participants embody diverse perspectives.	high-E ●●● Uses immersive, extraordinary, multi-sensorial, and aesthetic interactions	high-C ●●● Prompts abductive and lateral thinking. Produces novel design material.
medium-H ●● Invites participants to articulate different perspectives.	medium-E ●●● Interactive, applies metaphors or symbols, playful.	medium-C ●●● Invites abductive and lateral thinking. Builds on existing design material.
low-H ●●● Addresses issues from diverse perspectives.	low-E ●●● Accessible, provides ambience or has a peripheral presence.	low-C ●●● Allows for reflection, feedback and critique to evaluate design material.
no-H ●●● This dimension is not addressed or is not relevant.	no-E ●●● This dimension is not addressed or is not relevant.	no-C ●●● This dimension is not addressed or is not relevant.

Aguirre et al., 2017

M. PROJECT BRIEF