



Designing Communication Triggers for the Flexible Office Setting

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Preface

We have many different mediums for communication nowadays; mobile phones, computers, countless apps and programs to satisfy the different motives of interpersonal communication. As these mediums enter our lives, they change the way we manage our relationships and our daily businesses, such as the way we talk to our friends, the way we make announcements, the way we organize our days. One of the important aspect these mediums change, is our work life. Now that we are able to send and receive information from colleagues via connected products and conduct our work with computers, everything that an office represents is now compressed into our laptops. In other words, nowadays, the office is where the computer is. This transformation not only changed our perception of office but also the characteristics of the actual physical offices. With the rise of the remote working opportunities, offices are slowly becoming emptier and emptier and it becomes less convenient to save space for everyone everyday, since that means saving a lot of empty space. Because of this, a concept called "flexible office" is introduced into our lives.

I first experienced the concept of flexible office during my five month-long internship in Rotterdam. I remember that it took me quite a while to figure out who is who since I wasn't good with faces or with names. Being the "user" back then, I found ways of coping with it and learned a lot by observing my colleagues to see how they maintained their relationships with the flexible office setting.

When I saw the graduation assignment that explores the design opportunities emerging from the flexible office setting, all the experiences I had came back to me and I instantly felt connected to this subject. I decided to experience the setting from the other end of the journey, this time as "the

designer".

Being a people person, I was drawn to the interpersonal relationships in the flexible office setting. My research led me to designing communication triggers for colleagues, so that they can communicate their fun selves as well as their work related selves. This was important to establish a sense of belonging and community.

The nice part of designing to help people have fun is that, I as the designer, had a lot of fun myself. The tests and the conversations I had with the people at the AMS Institute Office always brought joy to me and I tried to channel this positive feelings to you through my design. I hope you enjoy reading my process as much as I enjoyed going through it!

Executive Summary

With the rise of remote working opportunities, the definition of office is changing [1], and the number of flexible workspaces are increasing [2]. This practice has benefits in terms of economic and spatial aspects. The new arrangement of the offices redefines the work life well-being of the employees and it may have several hindrances [3].

One of the aspects that are being hindered is the communication between colleagues [3]. **Colleagues spend less time being physically together** with the flexible office setting and as a result it becomes harder for them to form deeper relationships with each other. As a consequence, they **end up communicating with each other less.** With the high number of shallow relationships present in the context, the three motives of communication are hindered: Inclusion, affection and pleasure. Because the majority of the employees are constantly on the go, communication in general requires too much effort, so they tend to **limit their communication to what is necessary to get their work done.** Therefore, their communication stays restricted to their immediate work circle and does not easily expand.

The project has the design goal to autonomously motivate people to engage in pleasure and inclusion motives of communication in order to strengthen the feeling of community. This is done with research through design. It is conducted at the AMS Institute office in Amsterdam. The process starts with contextual interviews and a co-design workshop. The outcomes of these two activities form the two design interventions that in the end evolved to the final concept.

The end result is a digital platform that is placed at the common facilities in the

office. In this context, the common facility that is chosen is the coffee machine in the office kitchen. The platform is displayed on a screen and it presents communication triggers to the users while they are getting their coffee. Communication triggers are conversation starters that are generated with the data that comes from different sources. These are the office calendar, the AMS Institute website, weather services and date&time. These four types of data are transformed into triggers about colleagues birthdays, internal office events, external events, weather, lunch and weekend. The triggers are characterised as people related and situation related triggers. Users can react on these daily generated triggers and see the reactions of others via this platform. The end result aims to provide a platform where people can broadcast their opinions and messages to amplify the effect and of the already existing conversation starters in the context.

The research helped defining guidelines for designing communication triggers in the flexible office setting. For triggers to work successfully, most importantly they need to be fun. They also need to be relatable in order to make people recall a story that they would like to tell, targeted and not vague, supporting autonomy of the users and dynamic to keep the novelty element. The outcomes also showed that people related triggers are better at motivating people to react on them.

The end result is the minimum viable product to achieve the desired effect. It can still accommodate deeper use flows and richer interactions to magnify the desired effect. The concept was developed and tested in the same context. So further testing in different offices is still needed to determine the non biased success rate of the end product.

Acknowledgments

This 20 week long graduation project has been a challenging yet rewarding process. I learned a lot and had very valuable experiences that I will carry with me for the rest of my life. With its ups and downs, from time to time I lost the sight of the light at the end of the tunnel. Luckily I had many people walking this path with me, who enlightened my way with their wisdom, knowledge and kindness. I would like to thank these people for helping me throughout this journey.

First of all, I would like to thank my chair Tomasz Jaskiewicz for providing this subject for me to work on and my mentor Jacky Bourgeois for always helping me to achieve my learning goals. I was very lucky to have two supervisors that always had time for my questions and had spot on feedbacks to help me go further with my project. Your ideas and guidance helped me unclog my mind and for that I am very grateful.

Thank you AMS Institute for funding and contributing to my project. Also for providing a context for me to test and observe to further develop my project. Also a big thank you to the employees at the AMS office. You were always eager to help me with my questions, I was very lucky to design for such visionary people. Your enthusiasm on the subject kept me motivated throughout the project. Without your input and contribution the project wouldn't be the same.

I would like to thank my family, without them none of this would be possible. Thank you mum for always being there for me, without you as my role model, I wouldn't have the courage to embark on this journey on my own. Thank you dad for always being the optimist in my life and for supporting me to achieve my dreams. I would also like to thank my aunt for being very involved in this journey with me from the very beginning. I look up to you for your intelligence and hardworking nature, you keep me motivated to always set high standards for

myself.

Also a big thank you to my friends is in order. Yağmur for being the best roommate ever. I was very lucky to go through this journey with you, our endless conversations on design but also life deeply fed me spiritually and intellectually. I can see how this transformation reflects on my work and on me as a person. Thanks to you I am changed for "good".

Ezgi and Bahar for being so far away yet so nearby. You showed me that distance is not an issue when heads decide to come together to attack any obstacle. Thank you for answering all my random questions and being there during my times of crisis. In the past two years you really showed me what true friendship is.

Finally, last but not least, I would like to thank my friends here in Delft for being there for me. Our discussions over every coffee and lunch break helped me expand my horizon. Every contribution you made was very valuable for me. Thank you for making these two years amazing and memorable. This will always be a period of my life that I will cherish. Now it is time to see what the next chapter of my life brings!



1.0 Introduction

This chapter includes a general introduction to the subject and to the AMS Institute context. Project scope, the aim of the project and the structure is defined and the different perspectives that will be used throughout the project are stated.

1.1 Problem Definition

1.1.1 Flexible Office Setting and Communication

With the rise of remote working opportunities, the definition of office is changing [1]. This is also affecting the way that we shape our offices. Nowadays, more and more companies are switching from the traditional offices where everybody has a designated desk to flexible workspaces [2]. This means no longer assigning desks to individuals but having clean desks that belong to everyone. This type of practice has many names [3] but for this project it will be referred to as "flexible office".

Although this practice has benefits in terms of economic and spatial aspects, the new arrangement of the offices redefines the work life well-being of the employees and it may have several hindrances [3].

For example, let's think of a researcher named Sally at the AMS Institute. She doesn't live in Amsterdam and only comes to the office once in a couple of weeks. Her visits are for meeting with the people that she works with to discuss her project. Every time she comes over, there are different people in the office and they are sitting in different places. As a result she has a hard time remembering who is who and what their role in the institute is. Therefore, she finds it hard to start conversations with the people outside her team simply because she doesn't have enough information. So, her conversations stay limited to her immediate project team. Now imagine that there are many Sallys working with the AMS institute, researchers, Phd students, master students from the floor below... These people don't interact with the people outside their immediate team and they are clueless about each other. Apart from the fact that people don't bond as much with their colleagues, they also miss the possible collaboration opportunities between the colleagues simply because they don't have conversations (Figure1).

As you can see, one of the aspects that are being hindered is the communication between colleagues [3]. The dynamic nature of the flexible office requires the employees to be constantly on the go. Because of this situation,

colleagues spend less time being physically together. As a result it becomes harder for them to form deeper relationships with each other so they **end up communicating with each other less.** According to Graham&Perse [4], the motives we have for interpersonal communication is highly affected by the level of our relationship with the other person. As the relationship becomes deeper, the number of communication motives also go up (Figure 2). With the high number of shallow relationships present in the context, the three motives of communication are hindered: inclusion, affection and pleasure. The combination of these two situations affect the feeling of community in a negative way. Because the majority of the employees are constantly on the go, communication in general requires too much effort, so they tend to **limit their communication to what is necessary to get their work done.** Therefore, their communication stays restricted to their immediate work circle and does not easily expand.

Currently, there are mediums presented for the three types of communication motives that are hindered such as Slack or Whatsapp where the employees form chat groups to revive the feeling of community. However these mediums are very limited and they are not adopted by the majority of the office employees. There are a limited number of people who are motivated to share content and react on each other's posts. This situation forms a vicious cycle within the office where people do not share because nobody responds and where nobody responds because too few people share.

These intentionally and unintentionally formed groups or teams at work are the building blocks of organizations that give a sense of identity and purpose to individuals [5]. This sense of purpose eventually contributes to the way employees approach and feel about their work. Therefore, deepening the relationships by enabling more communication motives in the office is valuable for the overall work well-being. This is why the design goal of this project is:

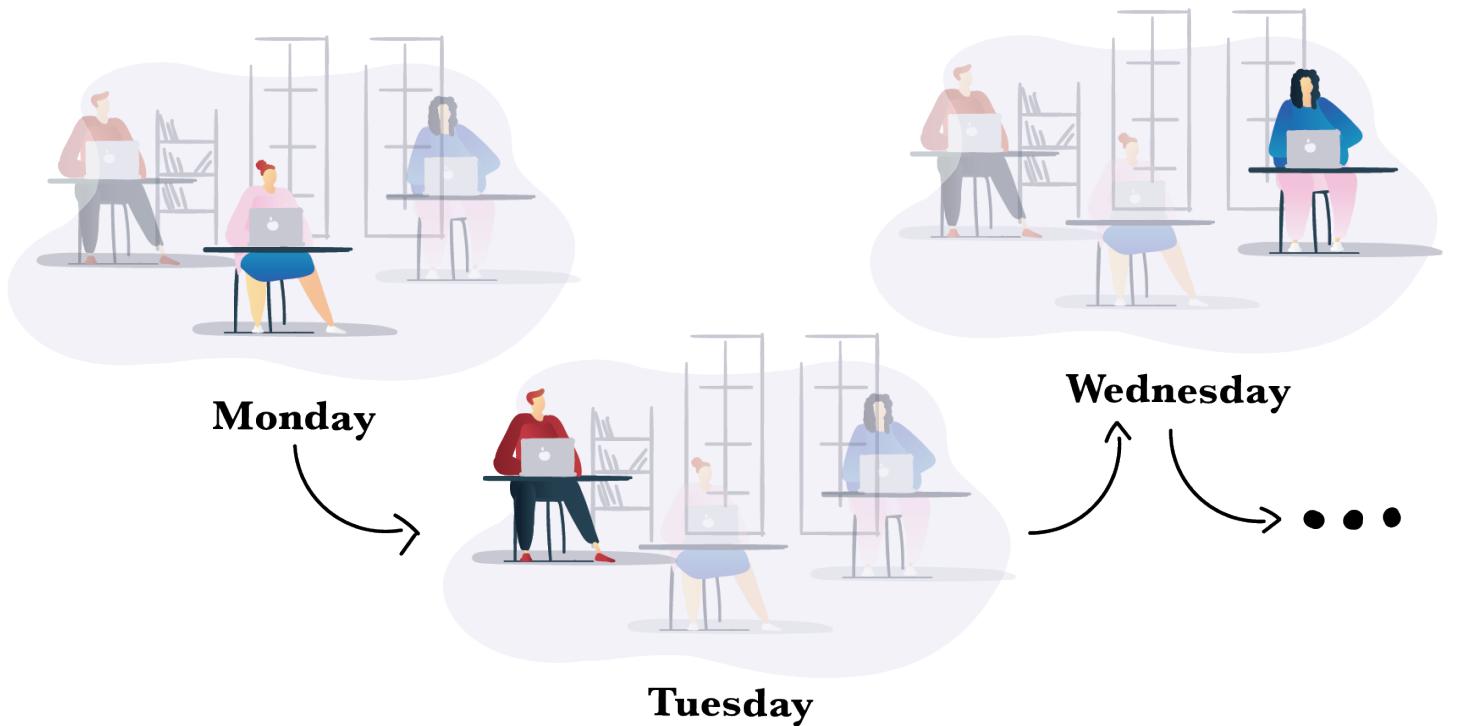


Figure 1: With different individual schedules at the office, some colleagues don't even get to properly know each other. Therefore, it becomes harder for them to start a conversation, mostly due to lack of information.

To autonomously motivate people to engage in pleasure and inclusion motives of communication in order to strengthen the feeling of community.

that individuals have six motives in interpersonal communication: Pleasure (having fun and being entertained), inclusion (need to include and be included) escape (need to be diverted from other activities), affection (need to express appreciation), relaxation (need to relieve stress) and control (need to gain compliance). The motives people have for communication varies depending on the relationship depth with the person they are communicating with [4].

1.1.2 Theoretical Background

The project explores the interpersonal communication motives and their presence in the workplace setting. Throughout the project, design interventions seek ways of motivating people in engaging the hindered aspects of the communication motives. Thus, the basis of the project builds on the two following theories:

1. Interpersonal Communication Motives

The interpersonal communication motives theory of Martin and Rubin [6] gives an effective grouping and understanding of the intentions behind the interactions taking place between the employees. The research states

2. Self Determination Theory

The autonomous motivation aspect of self determination theory was used to offer ways of turning the desired communication activity into a habit [7]. According to the theory, the needs for competence, relatedness and autonomy are basic and universal.

Arnold & Schneider, [8] defines these needs as:

“Competence: Feeling that you are very capable and effective in your actions rather than feeling incompetent or ineffective.

Relatedness: Feeling that you have regular intimate contact with people who care about you rather than feeling lonely and uncared for.

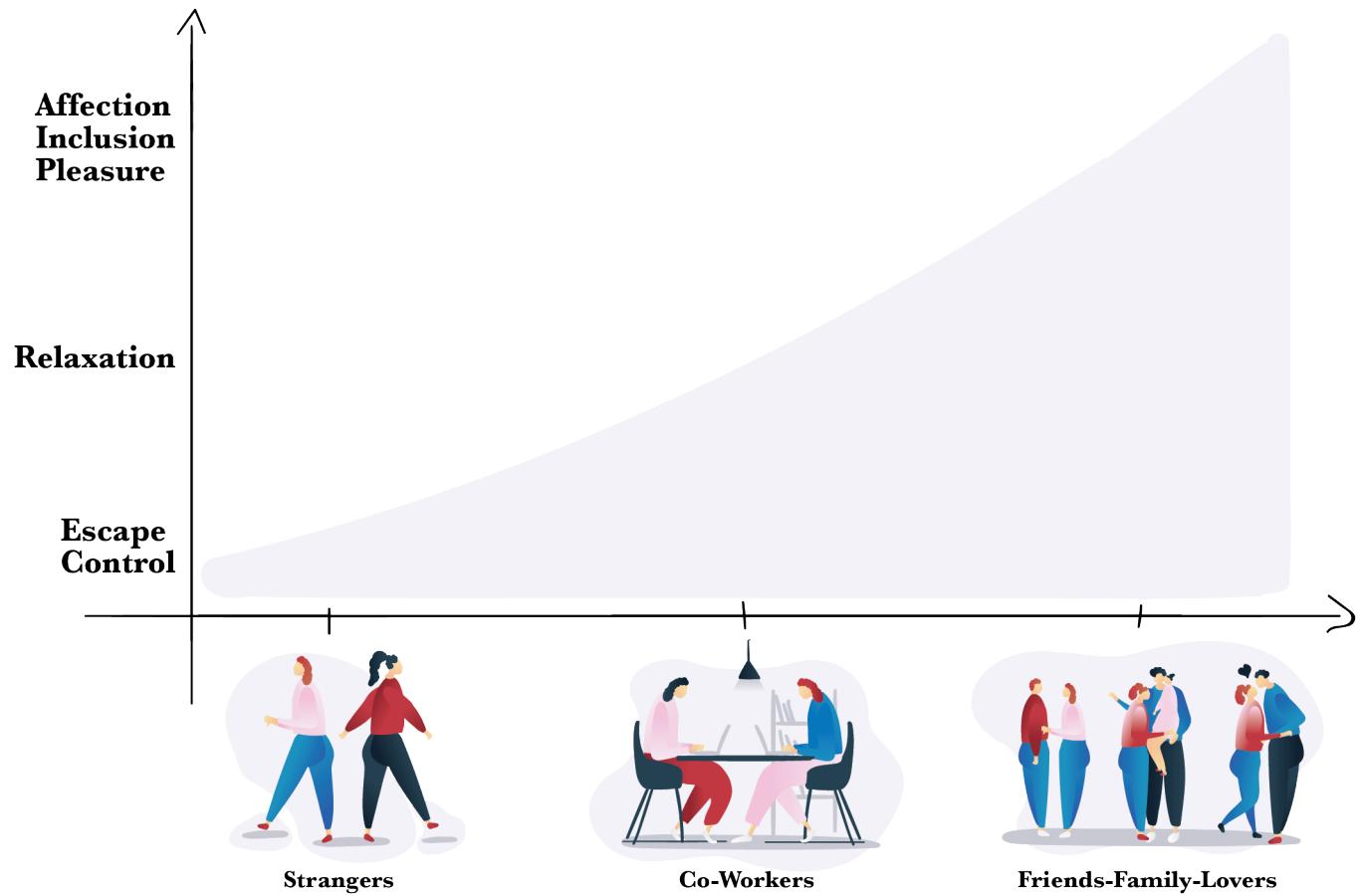


Figure 2: The number of communication motives go up as the relationship between two people becomes deeper.

Autonomy: Feeling like you are the cause of your own actions rather than feeling that external forces or pressures are the cause of your actions" [8]. With the ongoing satisfaction of these three basic needs, individuals can develop strong autonomous motivation.

1.1.3 Implementation of the Theories in the Design Process

Throughout the design process, the interventions that took place built on these two theories. The interpersonal communication motives theory was useful for determining the different communication intentions taking part in the office. Later this knowledge served in generating the content of communication starters that would serve as conversation triggers related to the pleasure and inclusion motives of communication.

The core function of the design concept takes the 3 basic needs as an evaluation criteria. In order to end up with an engaging platform, the core function aims to support competence relatedness and autonomy.

1.2 Project Context: AMS Institute

AMS institute was founded in 2014 by Delft University of Technology, Wageningen University&Research and Massachusetts Institute of Technology. Their aim is to develop an understanding of the city, design solutions and integrate them into the city life [9]. The institute is situated in Amsterdam, and their workspace is a flexible office where permanent, part-time and project based professionals come together. The office life is shaped by the circulation of these various teams and individuals. This situation creates a rich context that thrives with many design opportunities.

The office is situated on the second and the third floor of the building with several facilities such as a kitchen, toilets and meeting rooms. The workspace has an open setting, an overview of the building can be seen in figure 3. The first floor of the building is reserved for the master students of the institute.

Currently the Living Office Design Lab under Delft Design Labs is working with Amsterdam Institute for Advanced Metropolitan



Figure 3: AMS institute has a three story building. The first floor is reserved for the students, the second and the third floor is a collaboration space for the office employees. The common facilities are placed on the right side of the building.

Solution to address these opportunities emerging from their flexible office setting. AMS is offering their space for testing the design interventions. For this project, all research and interventions are conducted in this context as well.

1.3 Project Scope and Approach

1.3.1 Project Scope

The project examines the effects of the flexible office setting on the relationships and the communication between the co-workers, focusing on the various teams in AMS.

Being in the same physical space with your colleagues is definitely an advantage, especially if you are working towards the same goal [10]. It facilitates idea sharing, brainstorming and the colleagues get a chance to monitor each other to effectively coordinate their actions. Through this constant interaction, as a byproduct, team mates get to know each other and develop deeper relationships. These relationships include having knowledge about each other's features such as; personality, life

events, likes and dislikes. This knowledge, over time, serves as a conversation trigger between employees, making communication easier and more natural.

Currently, there are still many conversation triggers in the context. These triggers can be very simple things such as a colleague's funny socks, the unusual weather or a birthday celebration taking place. However, the triggers that are present in the context fall short in serving as a conversation starter. The main reason for this is that the triggers are mostly time and space related, meaning that for them to work, the colleagues need to be in the same place at the same time. This can be a liability in a flexible office since its nature is so dynamic with the various schedules of the employees. In other words, when a person can't see the funny socks of a colleague because they are not in the office that day, naturally the socks can't start a conversation.

Throughout the process, the project explores how to create triggers to enrich the conversations colleagues have with each other

and how to design them in a way so that they can surpass their schedule differences. For this, I will be examining the regulation of teamwork, communication, collaboration, exchange of ideas, calibration and personal connections from a communication perspective in the flexible office setting. The main focus is to evaluate design interventions with the use of responsive/interactive interventions by building on the results of this initial research.

1.3.2 Approach

The project adopts an iterative design approach to address the opportunities emerging from the flexible office setting. This approach is based on placing design interventions in the context and assessing their effect.

As seen in Figure 4, there are various research activities used in this project. Each of them is built on the one that came before it. The literature research helped me understand the boundaries of the project and generate relevant research questions. To find answers to these questions, I interviewed the users. The co-design workshop with the employees shed light on their approach to the design opportunities that emerged during the interviews. The outcomes of these two sessions evolved into two interventions one of which later constructed the design concept.

As seen in the project time line Figure 5, after an initial research and immersion phase, an exploration phase starts addressing the findings of the first phase. The exploration phase examines how different interventions affect the context. The outcome of the exploration phase later evolves into the product concept.

1.3.3 Making Use of Data

The project aims to use data as means to address the opportunities emerging from the flexible office setting. The goal is to take the data produced by the office, employees and their surroundings, turn it into something meaningful for them via design and let them react on this data through connected systems to enhance communication between individuals. In this scope, data is used to create "conversation triggers". The project explores what type of data can stimulate conversation

between the colleagues.

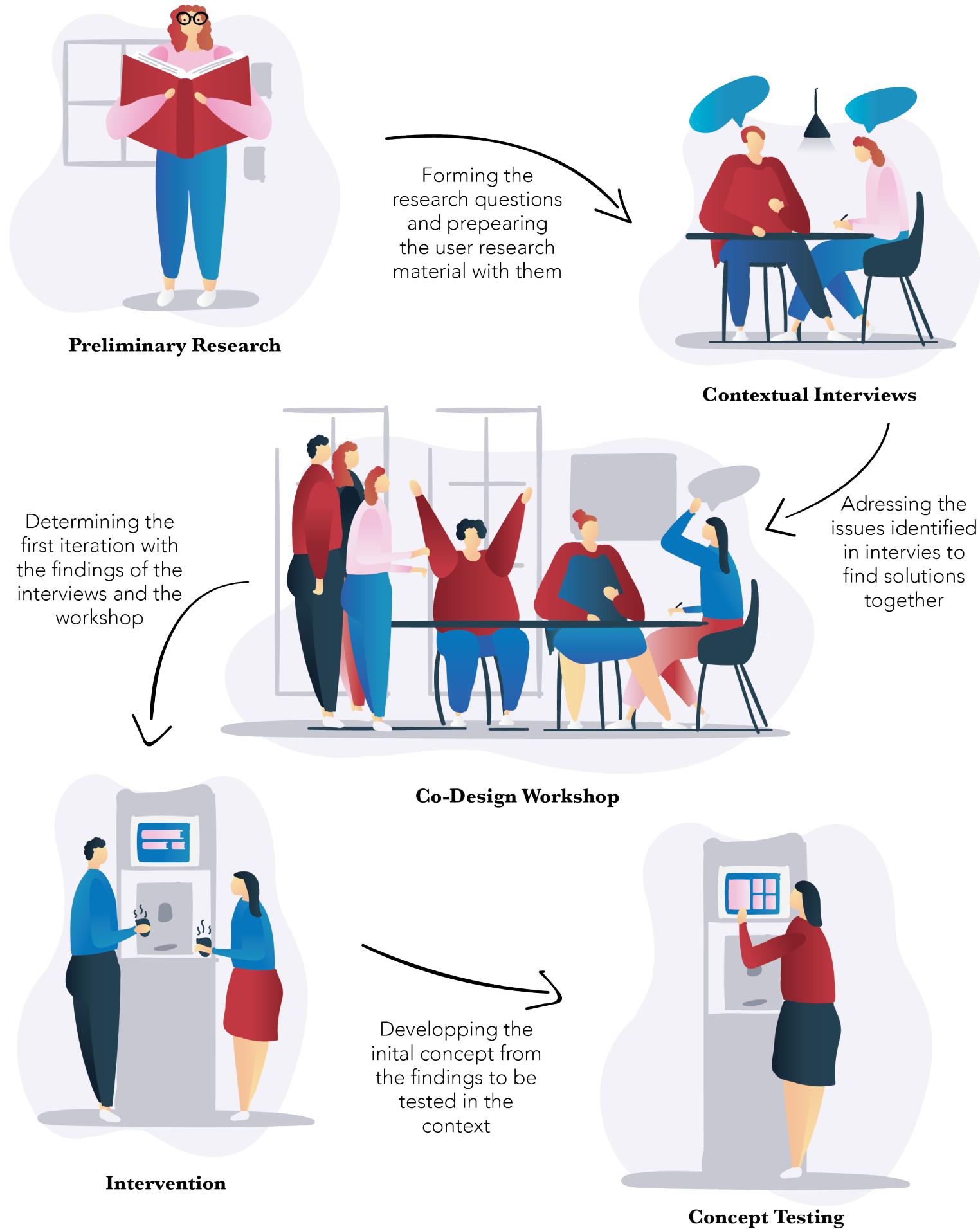


Figure 4: Five main research activities of the process. The outcomes of each activity feeds the next one in terms of designing the research props.

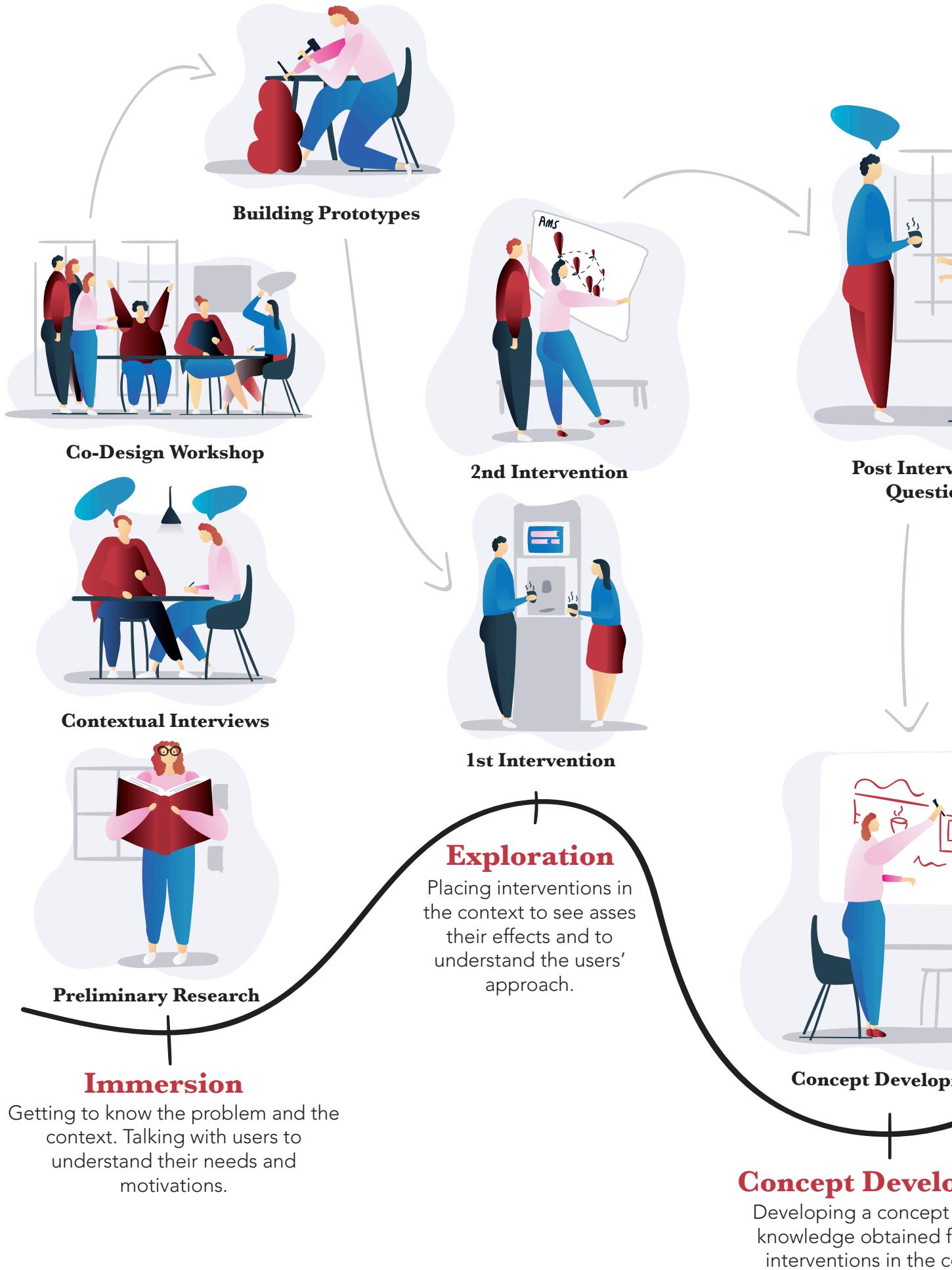
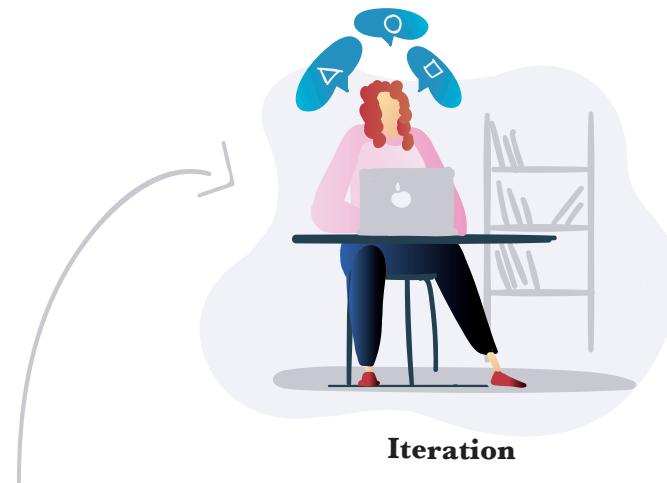


Figure 5: Project timeline, with the chronological phases of the project and the activities they contain.



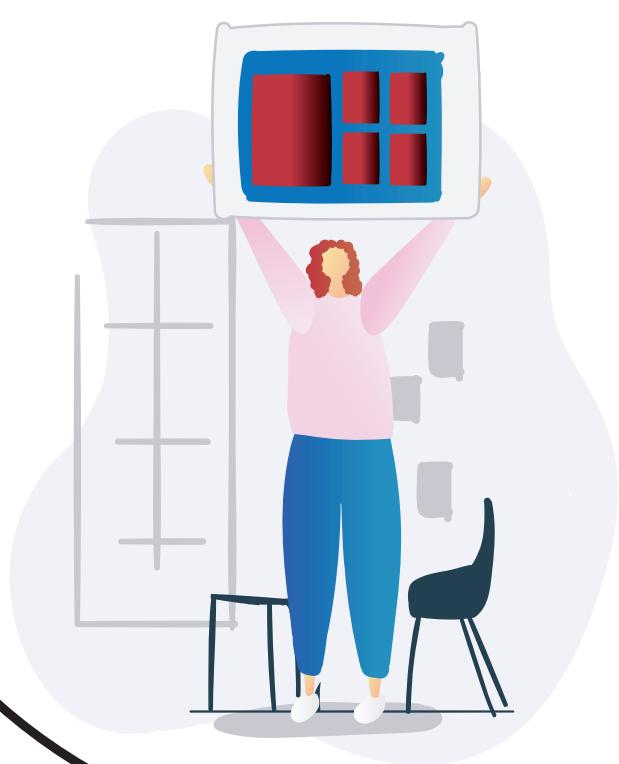
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Iteration



Concept Testing



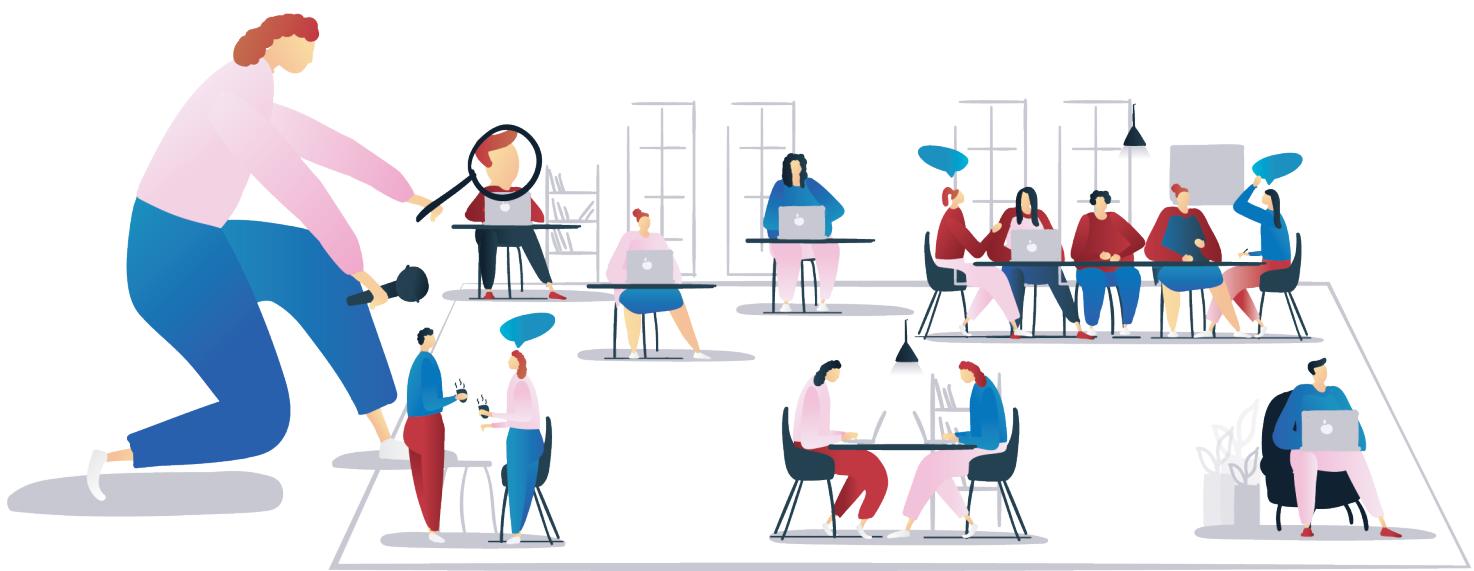
Final Design

Evaluation
Placing the initial concept in the context to validate assumptions and eliminate the possible frictions.

Implementation

Iterating on the initial concept with the findings from the concept testing. Obtaining the final design and defining the communication trigger guidelines.

Development
with the
from the
context.



2.0 Places and Moments for Triggers

This chapter explains the preliminary research activities and their origins in the project. It shows the initial outcomes from these activities and discusses the use of these outcomes in the project.

2.1 Meaning and Importance of Communication Triggers

As a consequence of the dynamic nature of the AMS office, the circulation of the employees is not synchronized. People have various schedules and intervals of visiting the office, as a result there are many colleagues that are affiliated with AMS but have spent very little time being physically in the same place. In this aspect, AMS office can have similar characteristics to a public place setting when it comes to interpersonal communications, since there are still co-workers who are almost strangers for each other.

In a public place setting such as the street or the train, people usually need a trigger to start conversations with each other, something that breaks the usual flow of things. This trigger can be a small incident on the train or an interesting installation on the street.[11] These unusual instances serve as an ice breaker and encourage people to react on it. This reaction ultimately ends up connecting people through the act of communication.

In the AMS office setting, cleverly

placing and designing such triggers can have a similar or even stronger effect on the employee communication. These interventions that they can react on, can serve as a spark for a communication that can lead to a deeper understanding and knowledge of each other. Thus, building deeper relationships.

2.2 Research Method

2.2.1 Interview Sessions

The project started with conducting interviews with 3 people from the office. The interview session had two main parts: the first part asking questions about the way they maintain their teams and their routines of work(See Appendix A for the research questions and B for the interview props) while simultaneously mapping their team structure in order to examine the different types of relationships they have within their teams. (Photo 1) The second part examined the team interactions taking place within a week with a set of cards with possible team activities serving as inspiration for participants(Appendix B). The participants placed these activities on a weekly time line(photo 2) while talking about the way

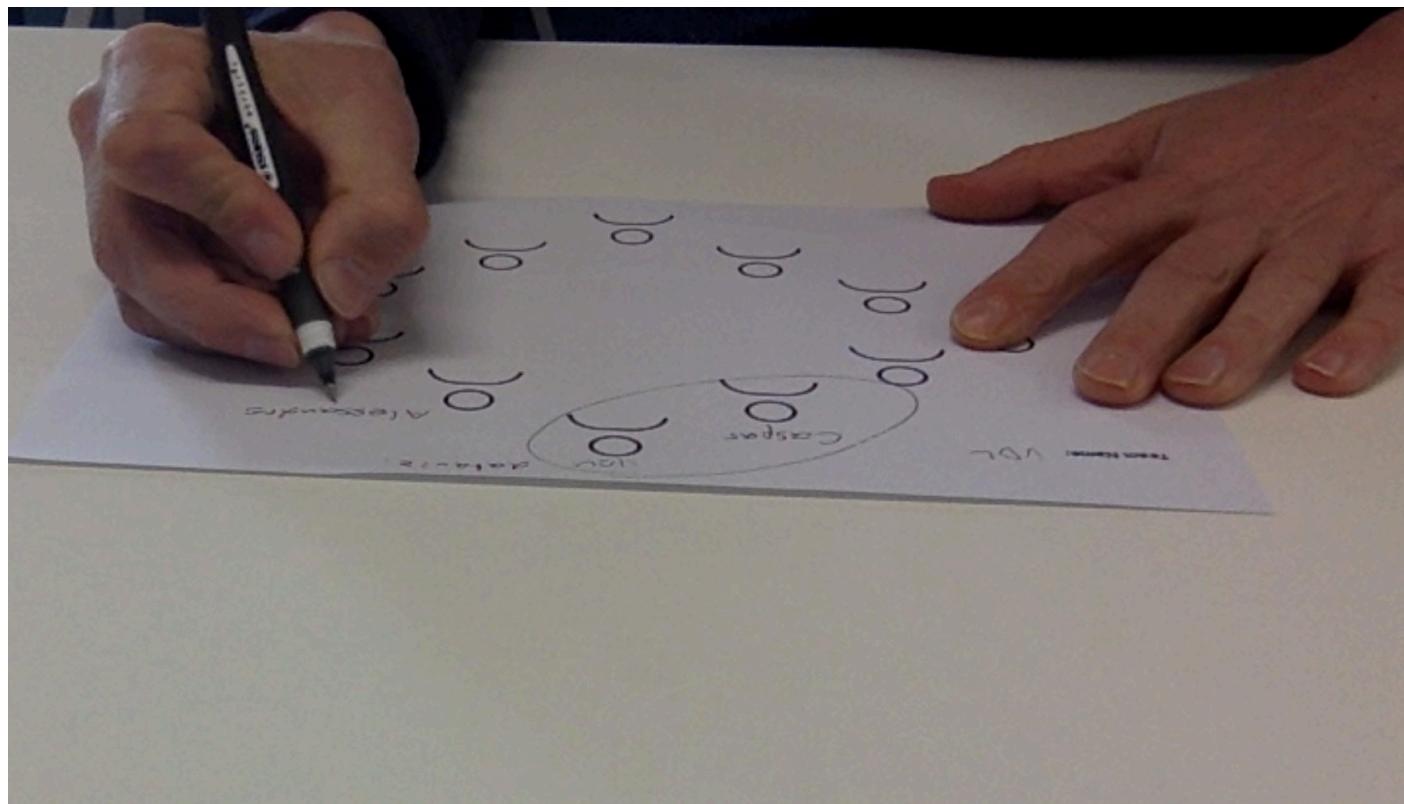


Photo 1: Participants illustrating the team and the relationships within the team during the interviews to map out the team interactions.

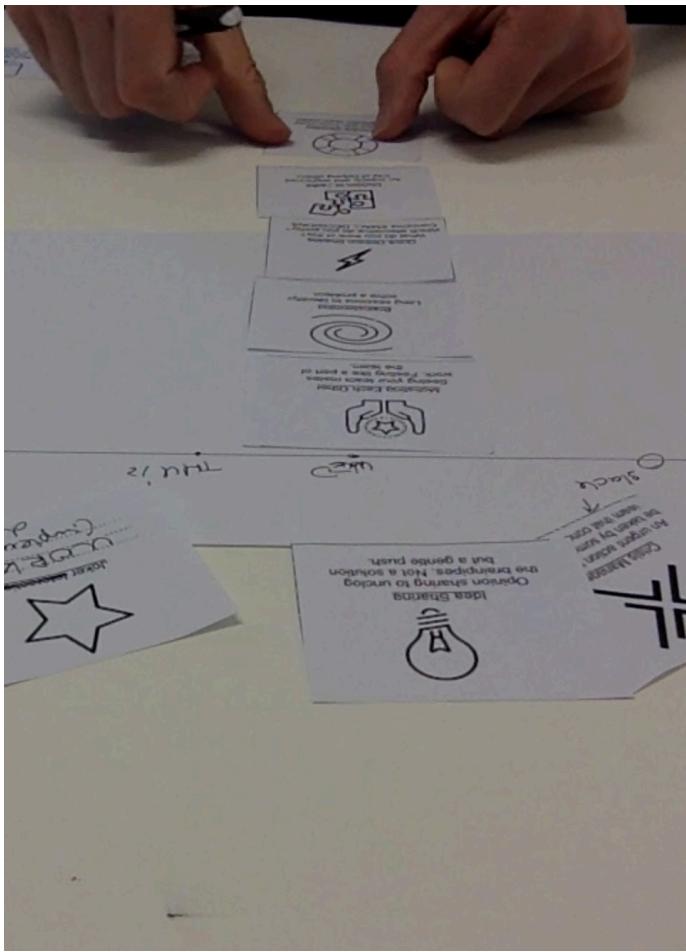


Photo 2: Participants placing the team interactions on a time line covering one week at the office to discuss their frequency.

they arrange these activities and their routines around them. This activity aimed to understand the nature of the team interactions and their order of importance/frequency to determine how colleagues handle the different types of communication.

2.2.2 Co-Design Workshop

After the interview sessions that I've conducted, we did a Co-Design workshop including the AMS Institute employees with the two other graduation students working in the AMS context. The workshop involved an hour long co-creation session with four main steps (Figure 6). In the first step, the participants visually represented their day at the office with the provided props(Photo 3) (Appendix C). After this step, they switched the time lines with each other to make opportunity based improvements in them. At this point, the participants discussed with each other to identify the possible intervention points in their workday. For the third step participants reviewed the proposed solutions and voted for the one that they think is the best and for the one that they liked the most. For the final the step, they discussed the ideas that got the most

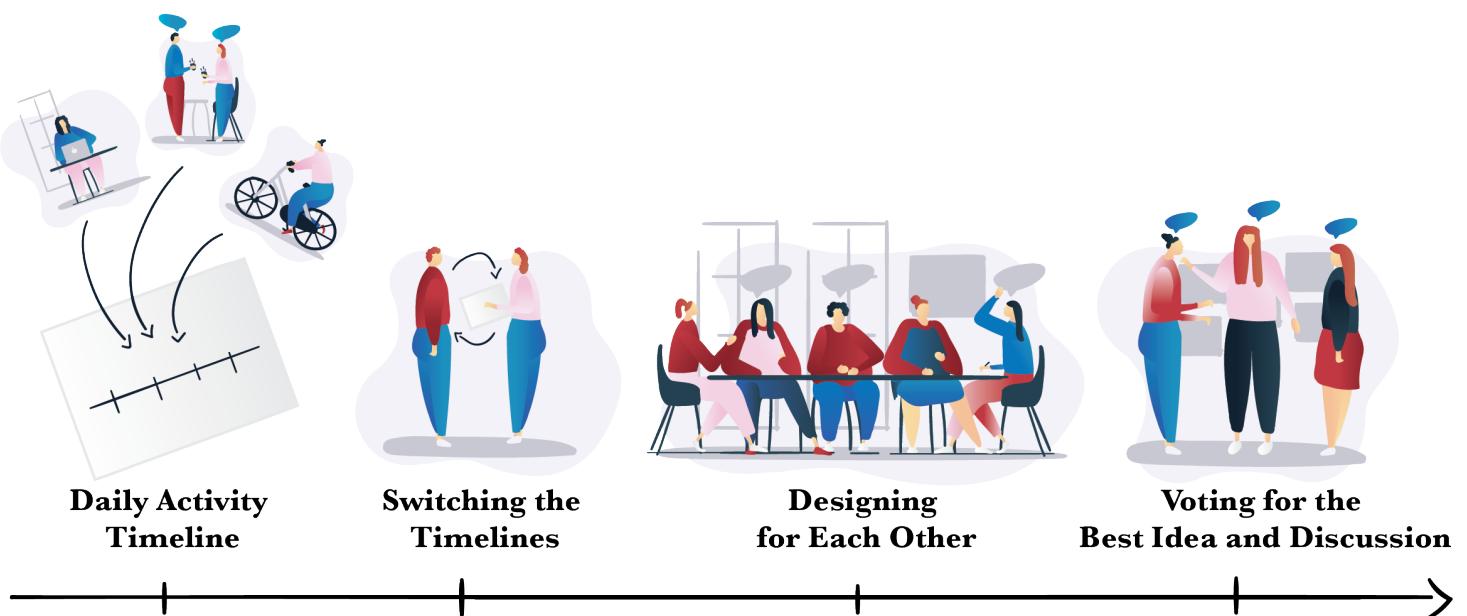


Figure 6: The 1-hour long co-creation session had four steps.

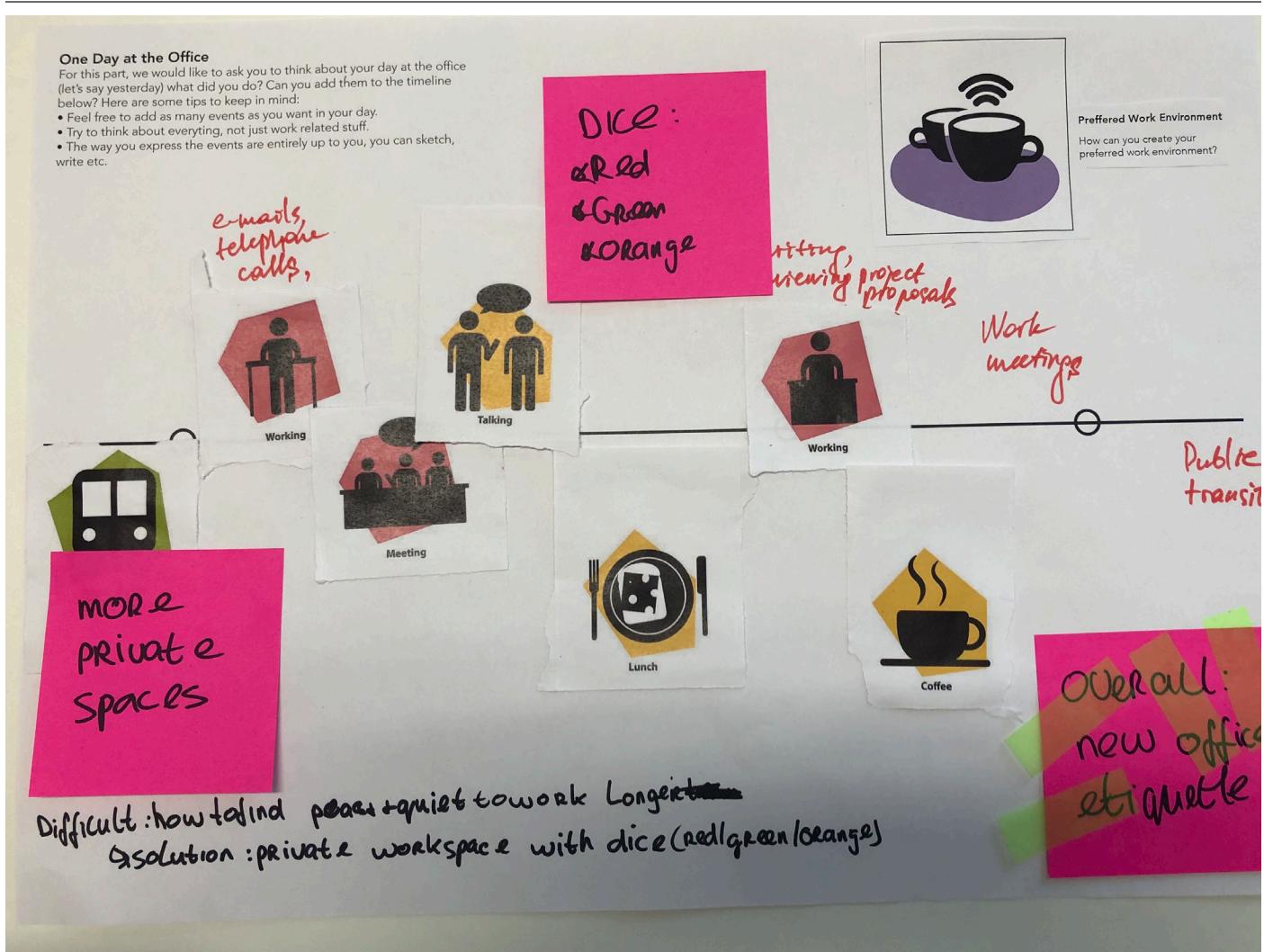


Photo 3: Participants visualized a day at the AMS office to discuss the opportunities that may emerge from them.

number of votes in order to help us understand the reasoning behind them (Photo 4).

With this session we understood the possible intervention points in the daily routines of AMS employees and identified the opportunities that emerge from the flexible office setting. The session helped us see the colleagues' perspective and solution approach to the issues emerging from the context.

2.3 Results

2.3.1 Analysis Approach

For the analysis, I made statement cards (Appendix D) from the findings of interviews and co-design workshop using the relevant quotes in these sessions (Photo 5). Afterwards, I grouped these cards according to their relevance to each other. These groups formed a meaningful narrative and helped me effectively grasp the situation.

2.3.2 Results

As seen in Figure 7, the flexible setting of the AMS Institute office contains a rich array of interactions. These interactions can be examined under 3 categories:

Interactions Within Permanent Teams: I define permanent teams in this scope as people who always work together regardless of the project that they are assigned to. These teams are not time sensitive, meaning that these individuals continue working together as long as they are a part of the AMS community. There are mainly 2 categories of interactions within permanent teams: scheduled and unscheduled. Some interactions take place strictly during scheduled meetings on a fixed day of the week such as, mentoring, consensus forming, brainstorming, work monitoring, help/troubleshooting, motivating each other. Depending on the number of participants, colleagues do activities such as urgent actions,

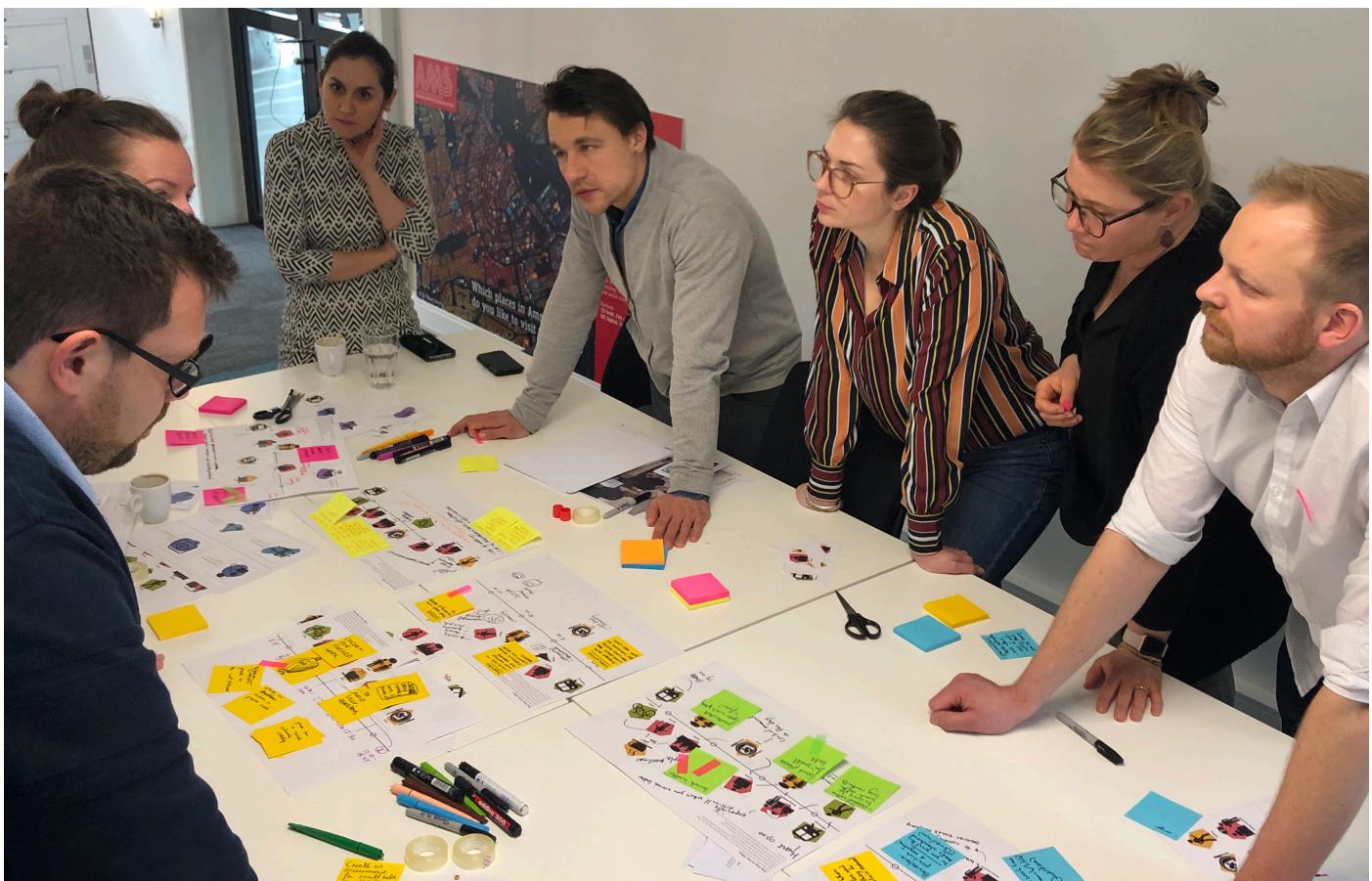


Photo 4: Voting and discussion of ideas at the co-design workshop to understand the reasoning behind people's choices and solution proposals.

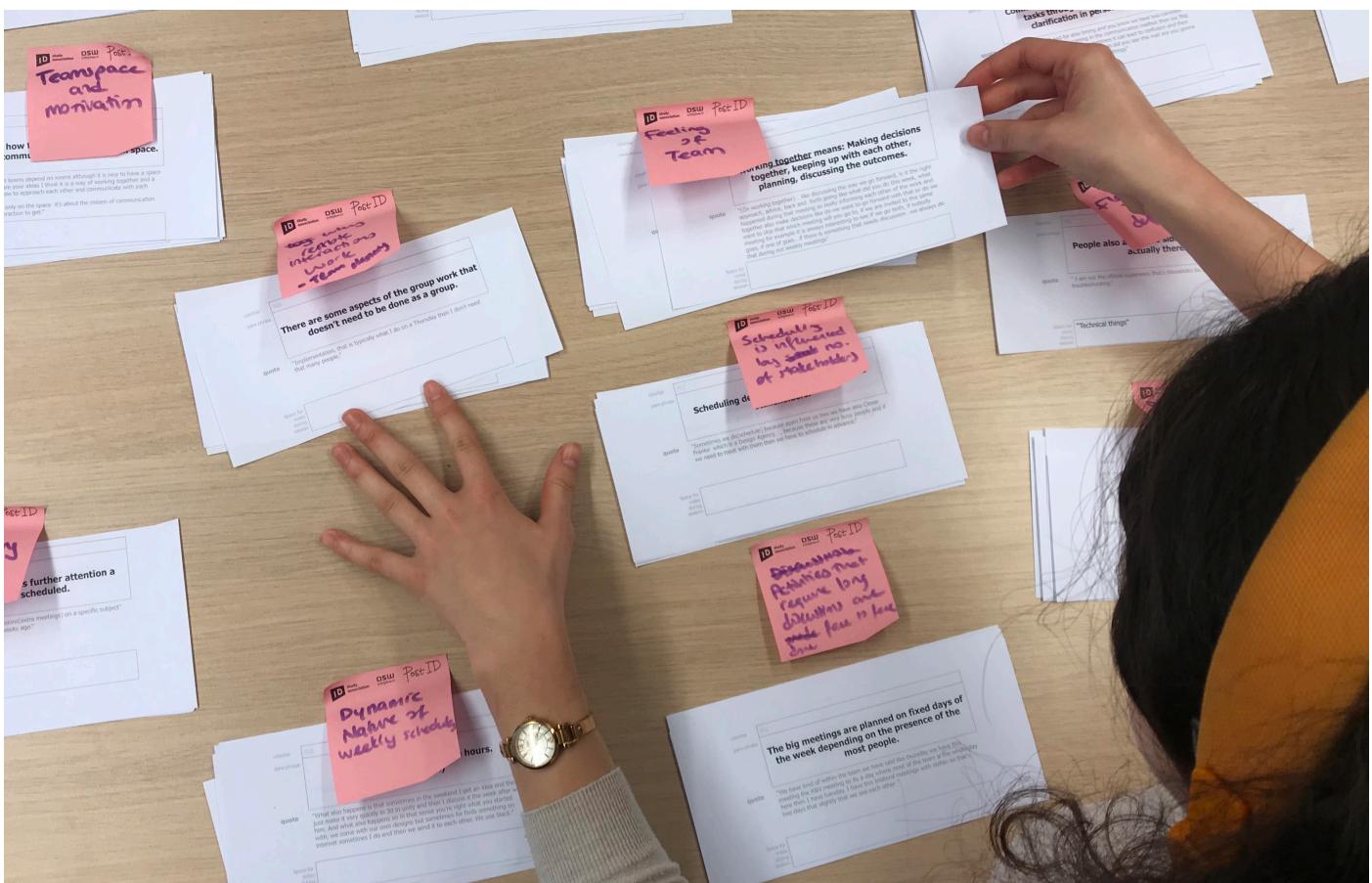
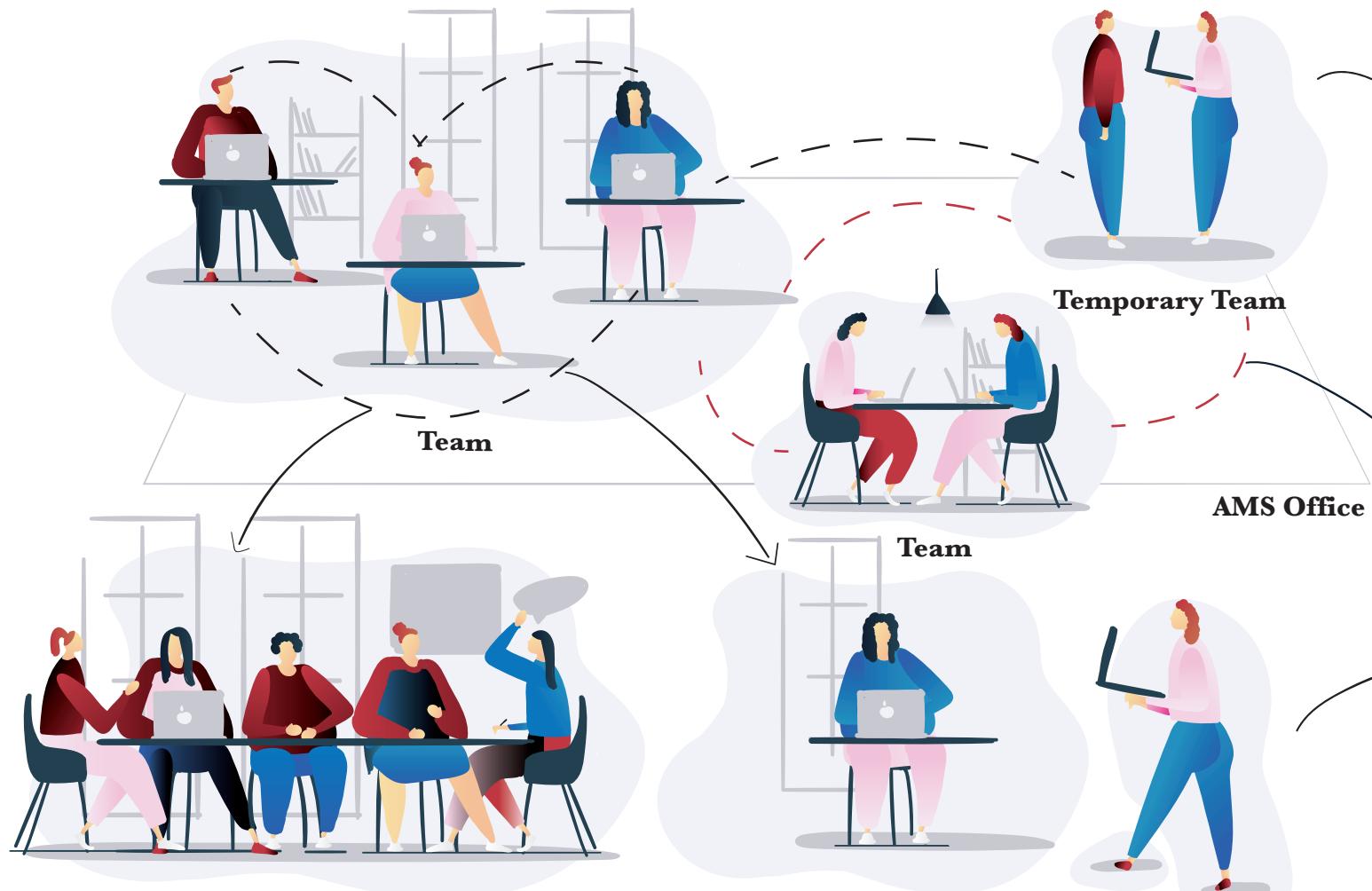


Photo 5: Statement Cards for the analysis of the findings from the research activities. They formed a meaningful narrative for the insights and determined the intervention points.



Scheduled Interactions

Weekly activities on a fixed day of the week. Generally meetings. Mentoring, Consensus Forming, Brainstorming Work Monitoring, Help/Troubleshooting, Motivating Each Other

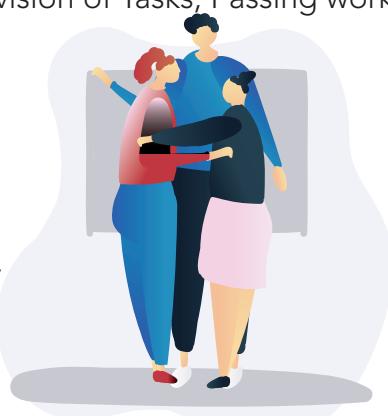


Problems

The flexible office setting causes some issues within the team. Not knowing who is gone when, workflow gets stuck when team mates are not responsive, locating each other can be problematic, feeling of team is harder to capture

Unscheduled Interactions

Interactions that happen all the time throughout the week. Urgent Actions, Quick Opinion Sharing, Idea Sharing, Division of Tasks, Passing work on



Feeling of Team

Still there are things that make people feel like a team: Doing the same thing, Personal connection, Caring for each other, Topic of interests.

Figure 7: AMS office contains a rich array of interactions. These interactions take place within teams, across teams and with tem



● Common Facilities



● Locating Others

Constantly changing seats and schedules cause several problems cross-team interactions. When employees don't exactly know who does what, looking for a person for a specific task becomes harder. Sometimes people only notice that someone is in the office later in the day because they are sitting in a place they don't know.



● Team Space

These aspects reflect on their understanding of teamspace. Knowing how to approach each other, Sharing their point of view, Personalization, Being together

Temporary teams have people from different teams that work together on a usually time sensitive project. These are dynamic structures that disappears once the job is done. In case of a communication or location problem, people go to the common places where a lot of people can be found together to get in touch with the person they are looking for. These can be coffee machines, lunch table, etc.



● Motivation

These cross-team interactions also serve as a motivating aspect. People like sharing their work with others who are outside their team.



● Remote Working

To deal with the physical separation, employees make use of communication mediums such as Slack, Whatsapp, Email, Phone call or cloud services. Each medium serves a different purpose in terms of urgency and content. The choice of medium changes according to the contact person. Responsiveness of the person influences the medium choice. Remote communication hinders the directness (personal contact) and the speed of the interaction. If the team is responsive, these mediums are satisfying.

quick opinion sharing, idea sharing, division of tasks and passing work on without scheduling. If the number of participants are less than 3, the activity is more likely to be unscheduled. The flexible office setting is especially hindering for the unscheduled activities. Since they happen without planning, the people need to make sure that their colleagues are in the office and locate them. When this step is problematic the rest of the work flow may get stuck as well. Also for the new employees, the feeling of team is harder to capture because of the physical separation.

However, despite of this situation, employees still manage to feel like a team. Some of the things that influence this feeling is: doing the same thing, the personal connection they have, taking care of each other and the common topic of interests they share. These things that contribute to the team feeling also form their team space where communication, togetherness and personalization is crucial.

These groups can also be non-work related. Observation showed that colleagues form different types of "groups" other than the work teams that were assigned by the institution, such as the lunch group or the yoga group.

Across-Team Interactions: Across-team interactions take place when two teams need to work on a project or the work of a team is about reporting on another team's work. In cases like these, team schedules become important since they can determine the project deadlines and planning. In across-team interactions, the issues arising because of the flexible office setting is similar to those happening within teams. Also, because people know less about the colleagues that are outside their teams, it becomes harder to locate the people they need since they may not know who does what.

Temporary Team Interactions: Temporary teams are groups of employees that work together on a certain project. These are time-sensitive groups that disappear once the project is finished. These teams have a very dynamic structure since they are like "side-teams" next to the permanent teams. Their schedules work next to the schedules of permanent teams so the members are always on the go. This is because when such a team

is formed, the members make use of different kinds of locations in the office other than the desks or the meeting rooms. Common facilities become an important meeting point in such cases.

Colleagues tend to communicate heavily with the people that they actively work with. The majority of communication they have stays limited with their inner circle at the office. As a result, many little social groups emerge from the setting that are not connected to each other. This detachment also have reflections in the work aspect. For example the permanent full-time employees don't know what the researchers that are affiliated with AMS are doing and vice versa.

2.4 Outcomes and Opportunities

2.4.1 Communication in the Office

The research showed the communication motives present in the office context and determined their content. These were:

Inclusion: asking for help from colleagues, communicating issues they have, needing other people.

Escape/Pleasure: to get away from the things that they are doing, having a brake, small talk.

Relaxation: Communicating the stressful situation to get feedback and find relief.

Control: telling each other what to do or exchanging information.

According to the research outcome, control motive of communication is more work related, whereas pleasure is a motive that takes place in the leisure time. Escape, relaxation and inclusion can take place in both aspects of the workplace setting. The pleasure and inclusion motive requires a somewhat personal connection.

2.4.2 Effect of the Flexible Office

After the research, the results revealed that the communication types existing in the office are affected by the flexible setting in the following way:

Inclusion: This type of communication has two aspects. The work related aspect gets hindered because the location and the schedules of the

employees are constantly changing. Keeping track of the schedules and whereabouts of the colleagues add a cognitive load on individuals. This can, from time to time, disrupt the work flow.

The second aspect is the high number of superficial relationships. Since there are a lot of employees that spend very little time at the office, they don't get the opportunity to deepen their knowledge of each other. Thus they become more reluctant to communicate with each other with the inclusion motive. This motive helps people get to know each other better outside the work scope, eventually helping them communicate more effectively in other aspects as well.

Escape/Pleasure: Again as a consequence of the shallow relationships at the flexible office, it becomes harder to connect on a personal level that allows this motive of conversation.

Control: This is the aspect of communication that has the least issues. This type of communication is mostly limited to the scheduled interactions a team has in the meeting that they have on a fixed time of the week. According to the user interviews, this seems to work effectively for the work flow as well.

As the inclusion, escape and pleasure motives of communication become harder to maintain, they need triggers to be stimulated. If these communication motives become more common they will also contribute to the sense of community, enabling colleagues to share more and receive more.

2.4.2 Where and When to Place the Triggers

The research also showed the possible places that a trigger can be put. The red dots on Figure 7 indicate these points and instances.

Common Facilities: With the circulation in the office, sometimes even though employees know where the person they are looking for is sitting, they have a hard time locating each other. In cases like these they spend time around common facilities like the coffee machines or wait for lunchtime to run into the person that they are looking for. My first intervention will be exploring how to effectively make use of these facilities for communication. However, people

tend to spend short periods of time in such places so this would be a strict limitation on the triggers can be placed there. This intervention aims to primarily focus on the inclusion aspect of communication.

Unscheduled Interactions: During the research I noticed that there is a pattern in how people execute their team work. They have weekly meetings and these meetings are scheduled on days that all the team members are at the office. There are several team interactions that are specifically reserved for these time slots. These interactions (see research outcomes) will be out of the scope of my project. For one of the interventions, I want to focus on the unscheduled interactions and the communication frictions within them. These interactions are: Urgent Actions, Quick Opinion Sharing, Idea Sharing, Division of Tasks, Passing work on. This intervention primarily focuses on the inclusion and control aspects of communication. This can be a valuable moment to place triggers as two colleagues are already together. Nevertheless this type of communication mainly has the control motive, taking the communication out of its scope can be frustrating. Also, these triggers would not push colleagues to start communicating with people that are outside their work circle.

Locating Others: In relation with the "common facilities", the research shows that the employees are mobile within the office as well. They walk up to their colleagues, discuss things and they don't mind doing that if they can easily locate the people they need. In this case there are two issues, one is knowing where the needed person is and the second is knowing who the needed person is. This can also be an opportunity to start conversations because during the search phase, a person comes across many colleagues and passes them by without talking to them. Placing triggers in this moment can help them start conversation and also get information from each other about the location of the person that needs to be located.

Team Space: Team space and team feeling goes hand in hand. By helping create team space, I aim to strengthen the bond between team mates. I intend to do this by addressing the aspects of team space definitions given by the employees. This intervention aims



Photo 6: Coffee machine (on the left) that hosted the intervention to keep people busy while getting coffee.

to primarily focus on the inclusion aspect of communication. These created team spaces can be a valuable place to host triggers. This mostly will benefit the temporary teams and the cross-team communication.

Motivation: As the flexible office makes it impossible to have a physical team space, the motivation that comes with it also gets lost. In the research, people mentioned that being able to share their work with people outside their team motivates them. This is mainly due to the feedback they get from others. This project display itself can also serve as a conversation trigger among colleagues while contributing to their work motivation. One of the downsides of this trigger is that it relies strictly on the content created by the user, which sometimes can be very hard to collect.

Remote Communication: Because AMS employees have been dealing with the flexible

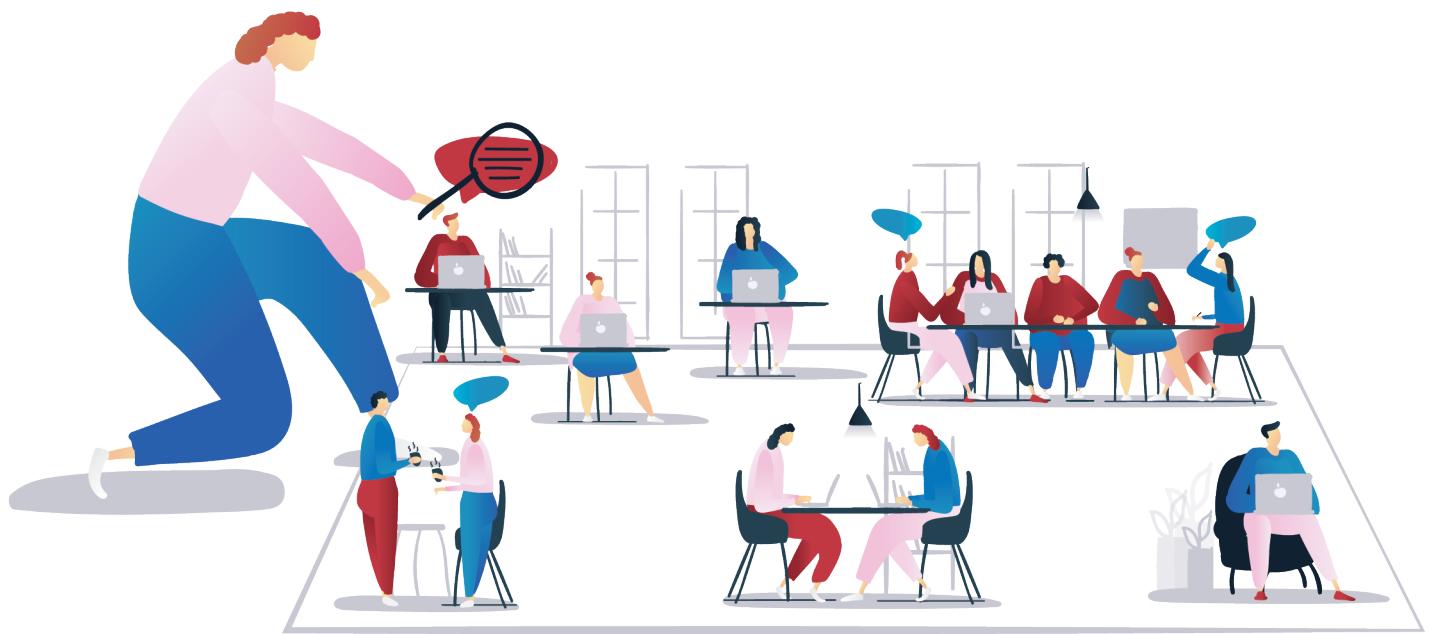
office setting for a while, they have developed ways of using the remote communication effectively to get answers as soon as possible. For this, they are using tools such as Slack, WhatsApp and e-mail. These can also be valuable platforms for placing triggers because their main purpose is for communication. The motivation behind it can be determined by using smart triggers. A challenge for this point is making sure that these triggers don't interrupt the concentrated work period of the colleagues. This could result in a learnt unresponsiveness to the triggers.

Among these places and moments I picked the common facilities and unscheduled interactions. To get more information about the unscheduled interactions, you can see Appendix E , this intervention is discontinued due to lack of user engagement.

The common facility I picked was the

coffee machine in the kitchen (Photo 6). There are two reasons for that: First, I observed that the act of getting coffee is composed mostly of waiting time. People walk to the coffee machine, they make their choice. After that starts a waiting period that includes brewing and delivering the coffee. It takes about 30 seconds, which may seem short but I noticed that people walked back and forth, looked outside the window and tried to keep themselves entertained while waiting for their coffee to be delivered. This is why I thought coffee corner is a valuable place to put the trigger as people already were looking for something to interact with during the delivery time. Second, looking at the other places and moments I've identified, this was the one that did not include a prior communication motive. Thus, adding a communication motive to a context that doesn't contain one seems more feasible than adding next to other motives or changing the existing ones.

This intervention had the purpose to transform the coffee machine into an indirect communication spot where people can leave and receive messages. The intervention aimed to evaluate if this was a trigger that is strong enough to push pleasure and inclusion motives of communication.



3.0 Nature of Communication

This chapter explains the intervention in the office context. The findings and the outcomes of the intervention is discussed.

3.1 What Type of Communication is Needed More?

The design goal of the project is to autonomously motivate people to engage in pleasure and inclusion motives of communication in order to strengthen the feeling of community. The intervention can help this in the following ways: The first one is for the work-related aspect of the inclusion motive. As this motive includes asking for help from colleagues, the intervention can serve as a trigger that makes this easier by providing a platform where people can ask for help from the people that they normally wouldn't go to. Thus connecting colleagues that are not connected by the AMS administration. The second one is for the pleasure motive which is a less common motive in the workspace. This motive includes communicating for fun, without a certain agenda in head. The coffee corner can also serve as a trigger for fun conversations by providing a platform where you can indirectly upload content and react on them. Similar to the previous one these reaction can later be used as in-person conversation starters.

To determine which motive of communication colleagues engage naturally, the intervention was designed as a non-leading communication spot, to be placed on top of the coffee machine.

3.2 Testing Method

The intervention on top of the coffee machine, turned the coffee corner into a communication spot with the help of an iPad displaying the AMS Slack workspace. The intervention used Slack for two reasons: First, a couple of months prior to the test, the employees of AMS Institute decided to carry their e-mail traffic to this platform. Therefore, a high majority of the employees already had an account and they knew about the purpose of the product. Second, because this is such a new transformation, the Slack workspace was adopted by only a part of the AMS Institute staff. Therefore, the other part that did not use Slack were left out of the conversations that are going on in the platform. By placing the Slack channel into a spot where everybody interacts with, the intervention aimed to include

the people who were not active users of Slack. Thus, enlarging the community and spreading the conversation to a bigger crowd.

The intervention took place via a new Slack channel called "#prototypes", created specifically for this task, in order not to spam people with coffee corner messages while they are working. To get real time notifications from the coffee corner, users could choose to join the channel.

Photo 7 and Photo 8 show the installation setting of the intervention. There were two explanations next to the iPad. The first one explaining the purpose of the prototype Photo 8 with an illustration (Figure 8) and the second one (two post-its) explaining how to interact with it. I also posted informing text from the "#general" Slack channel (Photo 9) to inform the employees beforehand.

The iPad stayed there for two weeks in order to observe what sort of communication took place between the employees and their engaging rate with it. During this period, I remotely observed the activities in the Slack channel. At the end of two weeks, I asked for the feedbacks of the people who have interacted with the prototype for further iterations. You can see the research questions for this intervention in Appendix F.



Photo 7: For the first intervention the and ipad displaying the AMS Slack workspace was placed on top of the coffee machine.

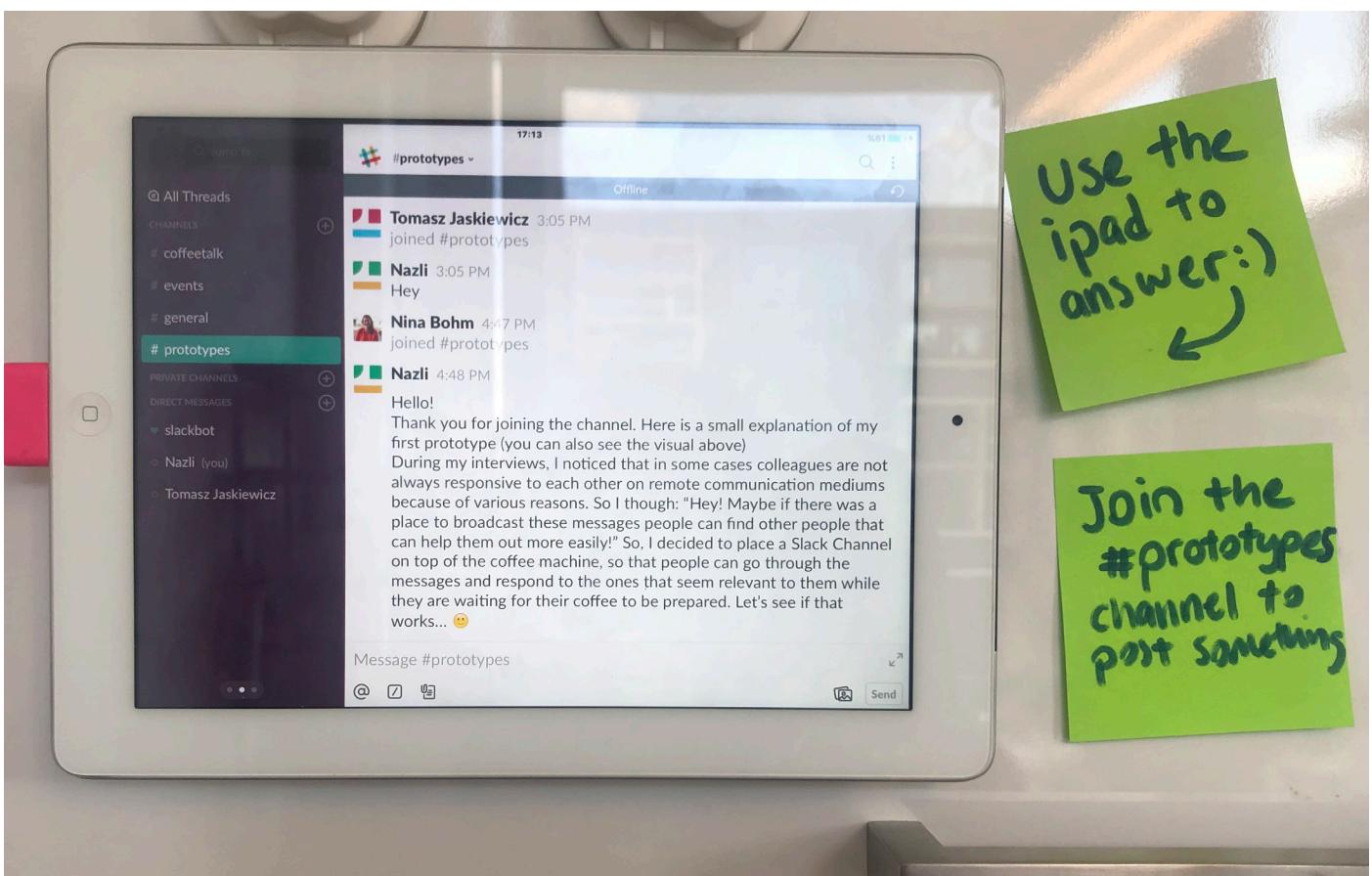


Photo 8: The intervention came with a message and two post-it explanations.

HAVING TROUBLE LOCATING OR CONTACTING COLLEAGUES?

Join the **#prototypes** Slack channel to know more and to participate!



If you are having difficulty with getting in touch with some colleagues or you have a question but you're not sure who you can ask it to, this channel can help you.



Just post your question/request like "I am looking for John" or "I need information about different kinds of birds.", these will be visible on the screen that is placed on top of the coffee machine via the **#prototypes** Slack Channel.



When someone is getting coffee, they can use the waiting time to take a look at the messages and answer the ones that seem relevant to them via this screen.

Figure 8: A visual explanation was shared with the office employees.

The screenshot shows the Slack interface for the 'Amsterdam Ins...' workspace. The sidebar on the left lists channels: #general (selected and highlighted in blue), #prototypes, #coffeetalk, #events, and Threads. The main area shows the #general channel with a message from Nazli:

#general

Nazli 4:46 PM

Hello Everyone,

This is Nazli, I am one of the graduation students from the TU Delft involved in the AMS Living Office Seeds project. For the scope of my project, I will be placing prototypes around the office, see how you interact with them and figure out if they are actually helpful. I created a Slack channel called **#prototypes**, which is a part of my first prototype (the other part is an iPad placed on top of the coffee machine in the kitchen) which is the first step of my exploration on communication patterns here at AMS. If you are curious about what is going on or want to help me with my research, place join the **#prototypes** channel to know more. Any help is appreciated! 😊 Also, please feel free to write to me for any feedback or complaints about my project.

2 thumbs up reactions

Thursday, April 11th

Friday, April 12th

Photo 9: An announcement was sent to the **#general** Slack channel to inform everyone.

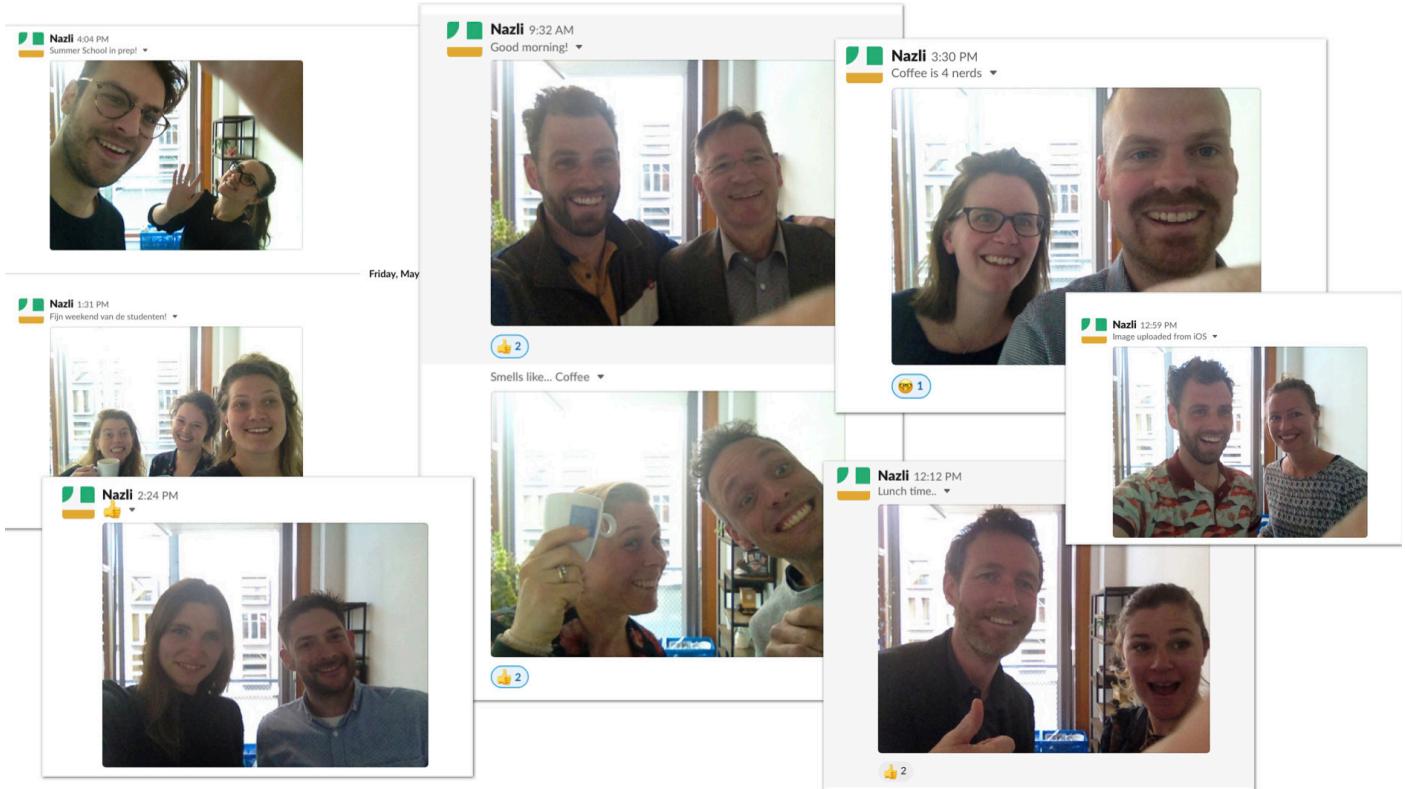


Photo 10: People posted selfies to the Slack Channel.

3.3 Takeaways

3.3.1 Results

During the two weeks period, the results revealed that people were indeed looking for something to interact with while they were waiting for their coffee. The participants used the platform for mainly non-work related messages. They mostly posted messages that are in photo format (selfies) with 1-3 people. These messages aimed to broadcast chitchat messages to their colleagues (Photo 10). Other than one message that was a request about the office, the posts were cheerful content that did not specifically aim to get anything done. Participants added captions about the scene in some cases. You can see the content shared in the platform in Appendix G.

The posting pattern showed that there were intervals of hours where people were more active in generating such content. The number of posts went up between 9:00-9:30, 12:00-13:30 and 15:00-16:30. Which were consequently the arrival time, lunch break and the end of the day.

The users were not shy while interacting with the intervention. In fact they were switching between channels and posting messages to the ones that they think are more relevant for such content. The other channel they posted selfies was #coffeetalk , where they shared less serious content such as interesting projects, news they came across or non work related announcements.

The shared content also showed that the prototype was mostly used by the people who were frequently spending time at the AMS Institute office. So, the conversation was mostly limited among the people who were familiar with each other even though it was open to everyone. The intervention invited the non Slack users to contribute to the conversation but failed to include the low-frequenters of the AMS Institute office.

3.3.2 Collecting Findings and Analysis Approach

After the two weeks period, I identified the people on selfies and contacted them to ask some questions about their use of the intervention. Two of these people responded to me and we had a short discussion about their intentions behind using this platform. They also gave me feedback on their needs and the reason behind them. You can find the question list in Appendix H.

After the findings from the discussions and my observations, I listed my findings and looked for ways of turning them into design implementations.

3.3.2 Design Outcomes

The results revealed that people used the platform for pleasure motive of communication and not for the work related aspect of inclusion. This can be mainly due to the nature of the coffee break concept. As this is an interval of pause from work, people were

more inclined to create content that are more fun and light. Thus they stayed away from the work related subjects.

The platform was successful in performing as a trigger for the people who were the core team of the AMS Institute office but failed to include the non-frequenters. This showed that people needed more targeted and clear triggers in order to start conversations with a larger crowd.

The majority of the posts included photos about colleagues' feelings and reactions about the activities that they are doing or the time of the day. Such as selfies with thumbs up while getting coffee, good morning messages, wishing a nice weekend on Fridays with smiley faces. There were also messages that followed the theme of the previous message, such as, a good morning message was followed by a coffee post (Photo 11). This suggests that a trigger design approach that would invite people to share/show their thoughts and feelings on a certain subject serve as a good trigger.

Finally, according to the feedback received from the users during unofficial conversations revealed that people needed community feeling in the AMS Institute context. With the high number of research going on in AMS Institute, it becomes hard to keep track of the kind of subjects that are being studied and who is doing what. This lack of knowledge is also a result of weak ties and it hinders the possible collaboration opportunities between colleagues that would benefit the overall research outcomes of the AMS Institute. The triggers that would also address this need would be beneficial not only for the social ties in the institute but also the work aspect.

3.3.3 Evolving the Findings to a Design Concept

The test showed that the design concept needs to contain stronger triggers in order to include the individuals that are outside the core team of the AMS Institute. These triggers need to address their feelings and reactions on subjects that are relevant to the office environment but not about getting their work done. This means that colleagues did not discuss work related inquiries in an open

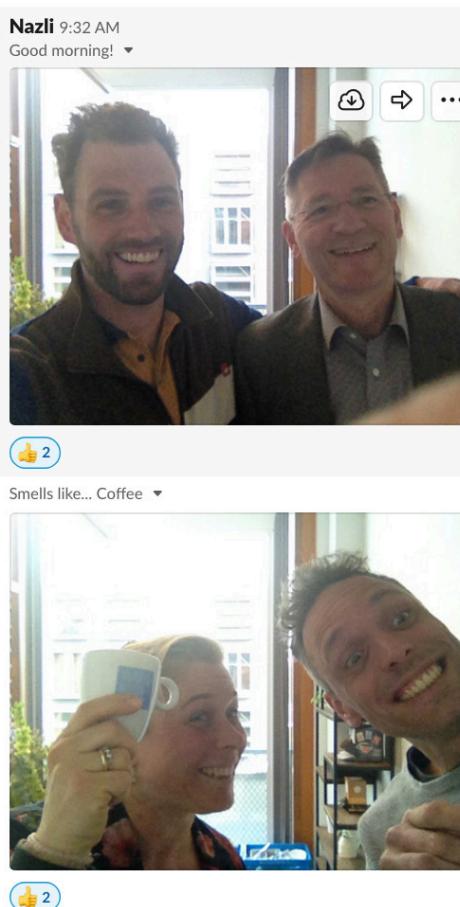


Photo 11: Some posts formed conversation threads on the channel with people responding to each other.

platform such as this one. The triggers can also serve to inform people about the work that their colleagues do and invite them to share their own work in order to contribute to the community.



4.0 Designing a Triggering Platform

This chapter explains the design process and the initial concept. The evaluation of the concept and the outcomes of this evaluation are discussed.

4.1 Design Approach

In the design approach, two things were crucially important. First, the platform needed to motivate people to share messages in order to start a conversation. Second, the information architecture and use flow of the concept needed to be simple enough for people to figure out within 45 seconds (coffee brewing interval).

4.2 Design Concept

4.2.1 Elements in the Concept

After the findings of the intervention test, it became evident that the platform needs to provide support for building a community by giving information about interest and common points of the AMS employees, enable collaboration opportunities by promoting the work that is being done in affiliation with AMS and finally building relationships by providing a platform where colleagues can show pieces of their personalities. To enable these, the design concept needs to have five elements. These are:

1) Three types of information to be displayed: From the feedbacks given after the intervention test, three types of information emerged that were relevant for this platform.

The first one is the quick reactions and messages shared just for fun. This type of information is important because as seen on the intervention, people are inclined to share it. Also it gives hints about people's personalities and can serve as conversation starters among colleagues. This type of information sharing requires low threshold action meaning that it doesn't require much cognitive load, planning and time. Also some people are already willing to share this information.

The second type of information is about the identity of the people in order to know which reaction belongs to whom. The identity in this sense is name and maybe the position in AMS so that the reader can position the person in their head when they see a reaction that is posted by them. Also it is beneficial for know who is who in the office. This requires medium threshold action.

The third type of information is the

research and the projects that people do. This information is important for creating a database in order to enable collaboration opportunities. This information is already available on the website but people don't actively look for it. Presenting short summaries of research in the coffee corner can be a nice way of informing people and encouraging them to initiate conversations about their research with people outside their circle. This type of information sharing requires high threshold action since the person who shares it needs to do some editorial work to provide content.

2) Active Triggers: These are conversation starters that are encouraging people to react on them. They need to have a dynamic nature so that they don't become a routine for the users. The element of surprise is an important aspect here. These triggers aim to serve similarly as the "unusual incidents" taking place in public spaces that pushes strangers to interact with each other.

3) Data: As the project aims to make use of the data, it can be used to generate triggers. Its dynamic nature enables making triggers also dynamic and takes away the content creation load (Figure 9).

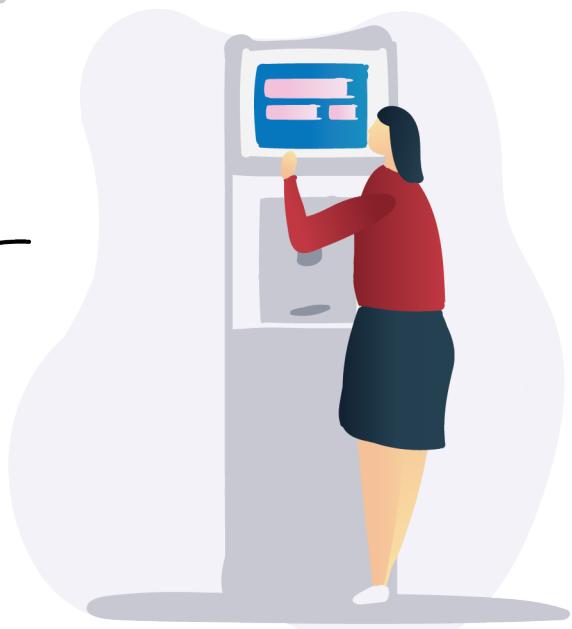
4) Peak Hours: There are 3 time intervals in a day where the sharing traffic is higher. This can have an influence on the system to optimize the input the system receives(the reactions) and the output it gives(users reading the content int it).

5) Projects/Research: To support the community feeling and to enable the collaboration opportunities, displaying projects and research in the platform can be useful.



The data generated by the office and the surroundings are transformed into meaningful conversation triggers

Data

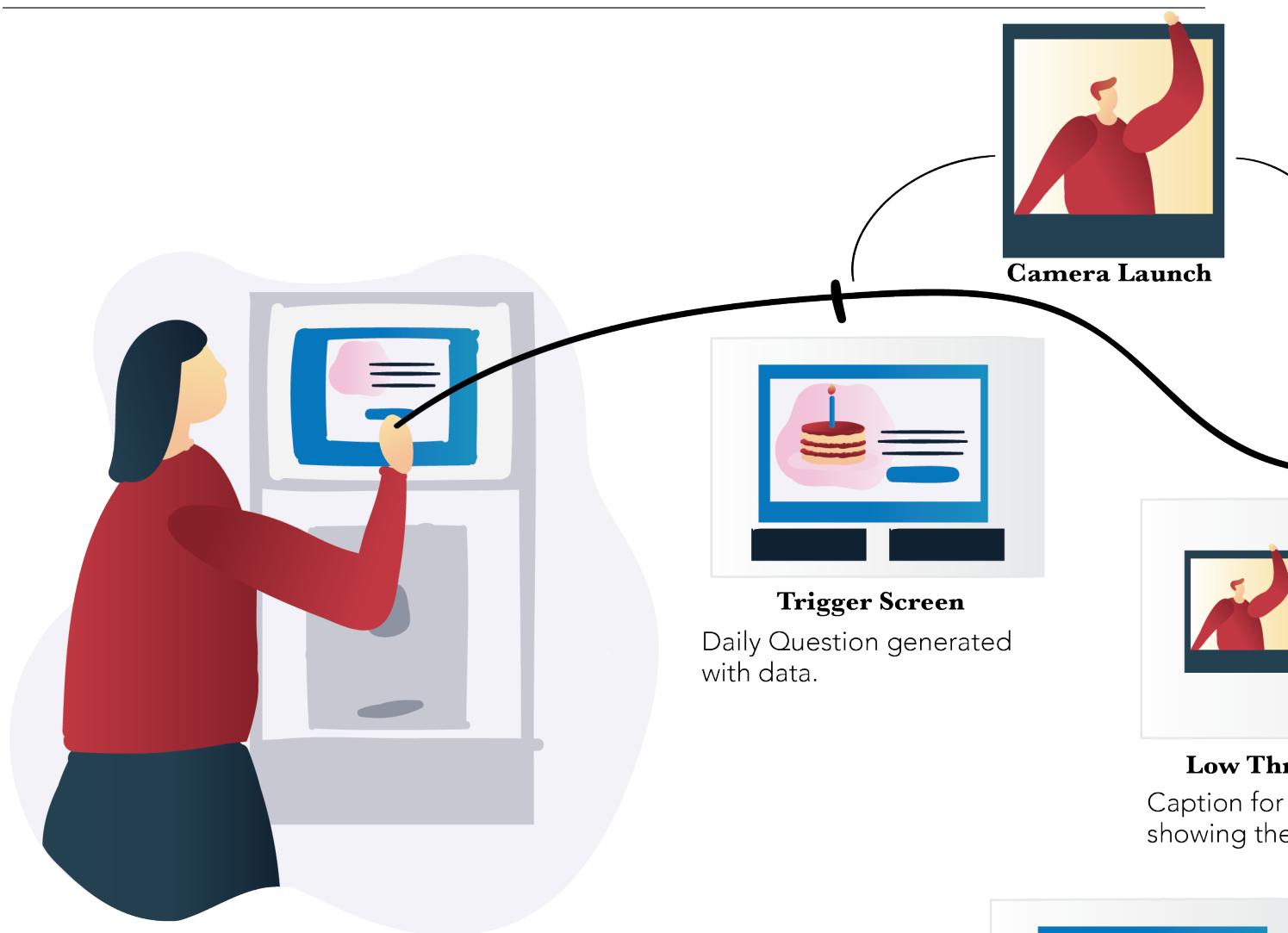


Platform



Conversation Starters

Figure 9: Data can be used to trigger people to engage in inclusion and pleasure motives of interpersonal communication.



Platform at the Coffee Corner

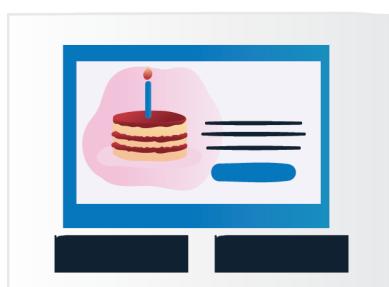
Trigger Screen

Daily Question generated with data.

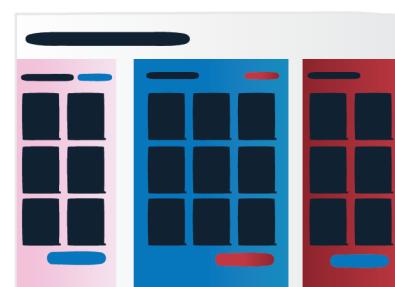
Low Thr

Caption for showing the

Two Screen Modes:



Trigger Mode



Display Mode

Trigger Mode

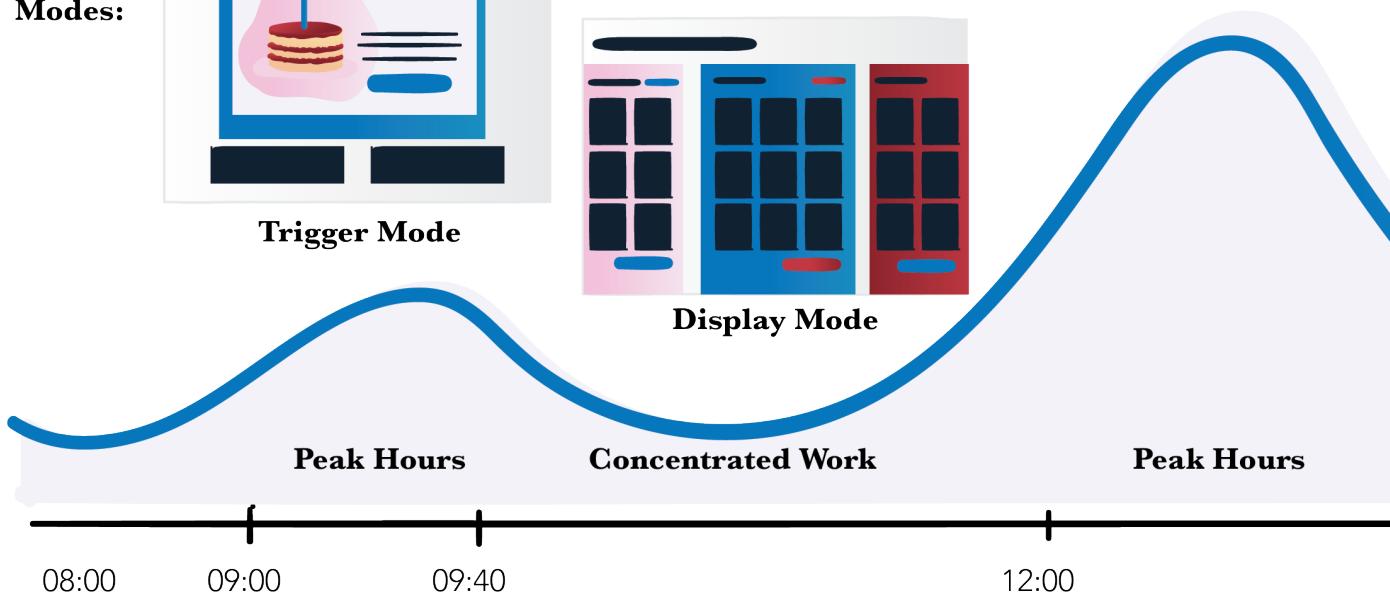
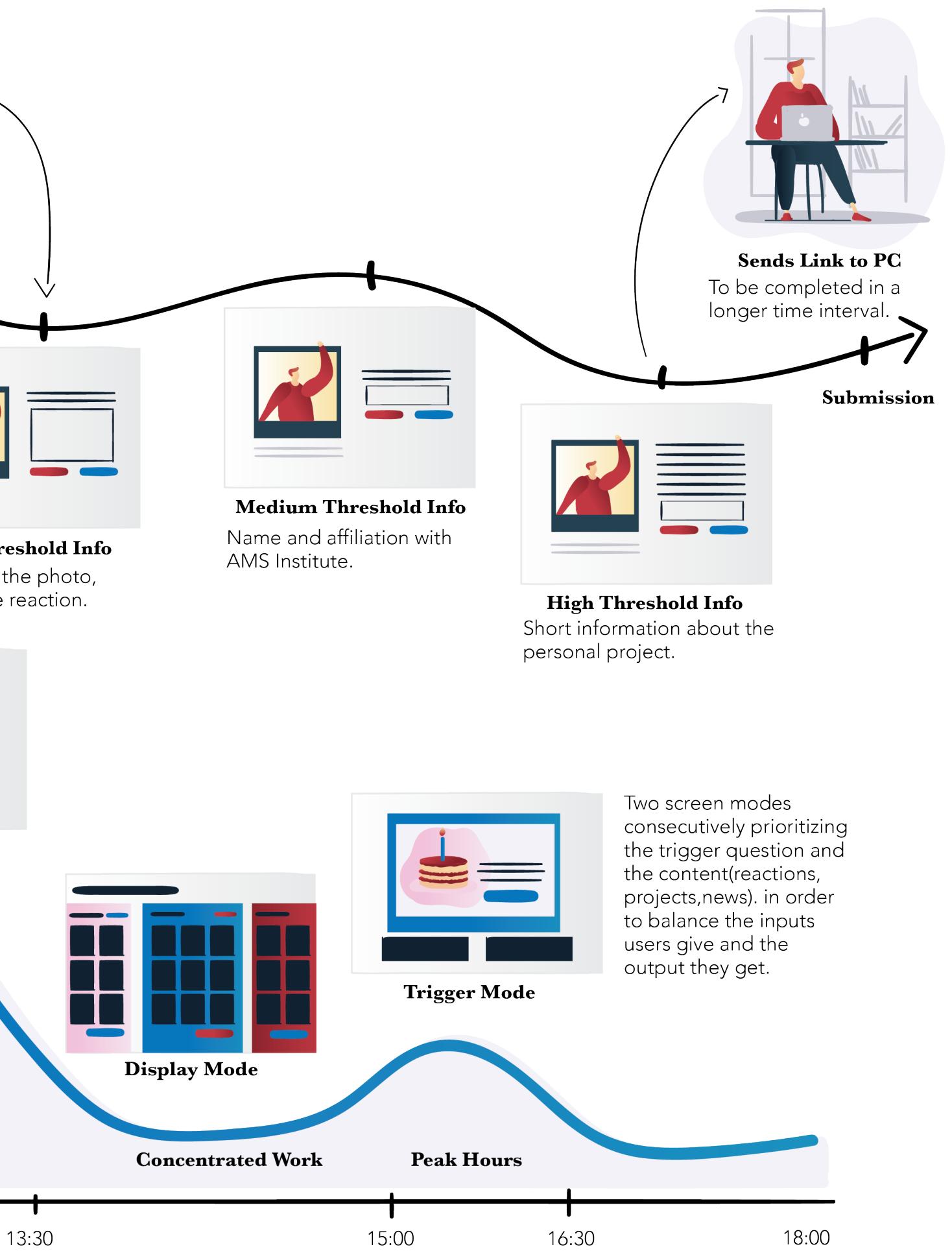


Figure 10: Concept overview showing the flow and the display/trigger modes of the platform.



4.2.2 Interactive Coffee Corner Design

Previous tests showed the benefits of having the triggers at the coffee corner, so I decided to build the concept on that. Figure 10 shows and overview of the concept.

The challenge in this step is to keep the colleagues engaged in sharing the three kinds of desired information. For this, I made use of the autonomous motivation aspects from self determination theory while designing. The system aims to satisfy the 3 basic needs: relatedness, autonomy and competence in order to engage users.

As seen in Figure 11, the system collects the information with a funnel-like process. It starts with a trigger that pushes people to react. In this case the trigger will be a question generated from four kinds of data: the calendar of the office: internal events and birthdays, data from platforms such as Eventbrite. Urban related events happening in Amsterdam and data from social media: recent posts and mentions of AMS. These triggers serve as an invitation to react. After the trigger, comes the low threshold action, which is the simple, fun answer to these daily triggers. This, with other

people's reactions contributes to relatedness. This step is followed by the medium threshold information, asking about name and occupation information of the colleague so that people know who is who and get a hint about their personality with their reaction to the trigger question. Finally the high threshold information is requested by inviting people to share information about their project through another platform accessible from their personal computers, carrying the higher threshold action to a medium where there is more time and freedom. Being able to share their work and showing what they do contributes to competence. The system allows user to skip each step supporting the autonomy aspect of autonomous motivation.

The system has two modes: trigger and display. The trigger mode is active during the peak hours mentioned earlier (9:00-9:30, 12:00-13:30 and 15:00-16:30). These are the intervals of time where people are more open to sharing because they are in a break state of mind. For the rest of the day, the display mode will be active where he reactions, projects and highlights from the office are displayed. During this period, when people are in a concentrated

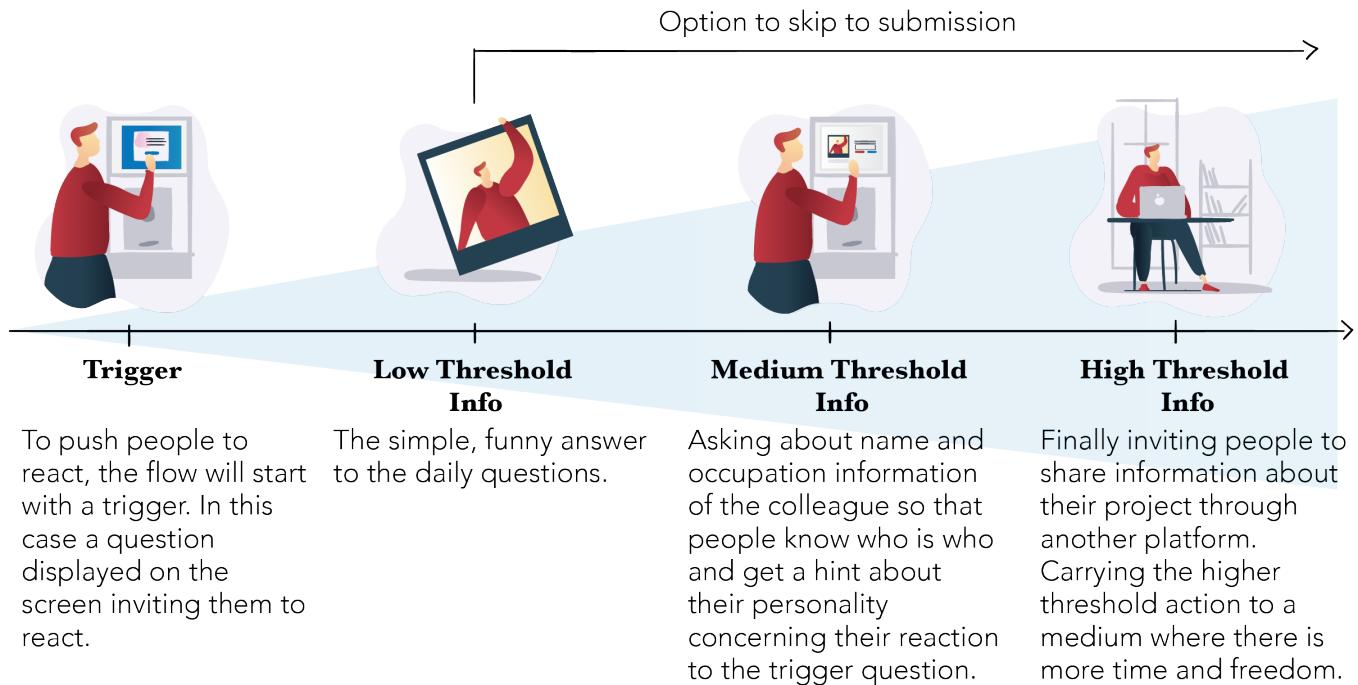


Figure 11: Information is collected with a funnel like flow, starting from the simplest step and developing towards the most complicated one.

work mindset, the system prioritizes the content to encourage the users to browse through the platform while waiting for their coffee. This is to make sure that they receive as much information as they share.

4.3 Use Flow

4.3.1 Platform Architecture

The platform is based on information collection via a trigger screen and a display screen as seen in figure 12. All functions are accessible at all times but their priority varies according to the time of day. This has two reasons: first is to again establish autonomy of the user because it is one of the core characteristics of the system. Second is to enable the user to share whenever they want in order to collect as much content as possible. The form displays one question in each screen to avoid scrolling, a progress bar is always visible to inform the user about what to expect.

In the flow, when the user chooses to react on the trigger and taps on the CTA button, camera is launched. The user can then take a photo and enter a caption to it in the next step. The step after asks them to sign this message with their name so that people know which reaction comes from who. Also this can be beneficial for associating faces with names for the people who are new comers or who are not at the office too often. The final step informs user that the system needs research and project content to be displayed. The platform asks the user to give their email to receive a link where they can fill this content in if they want to. All the steps after the caption are optional. You can see the full list of the screens in Appendix I.

Trigger Mode

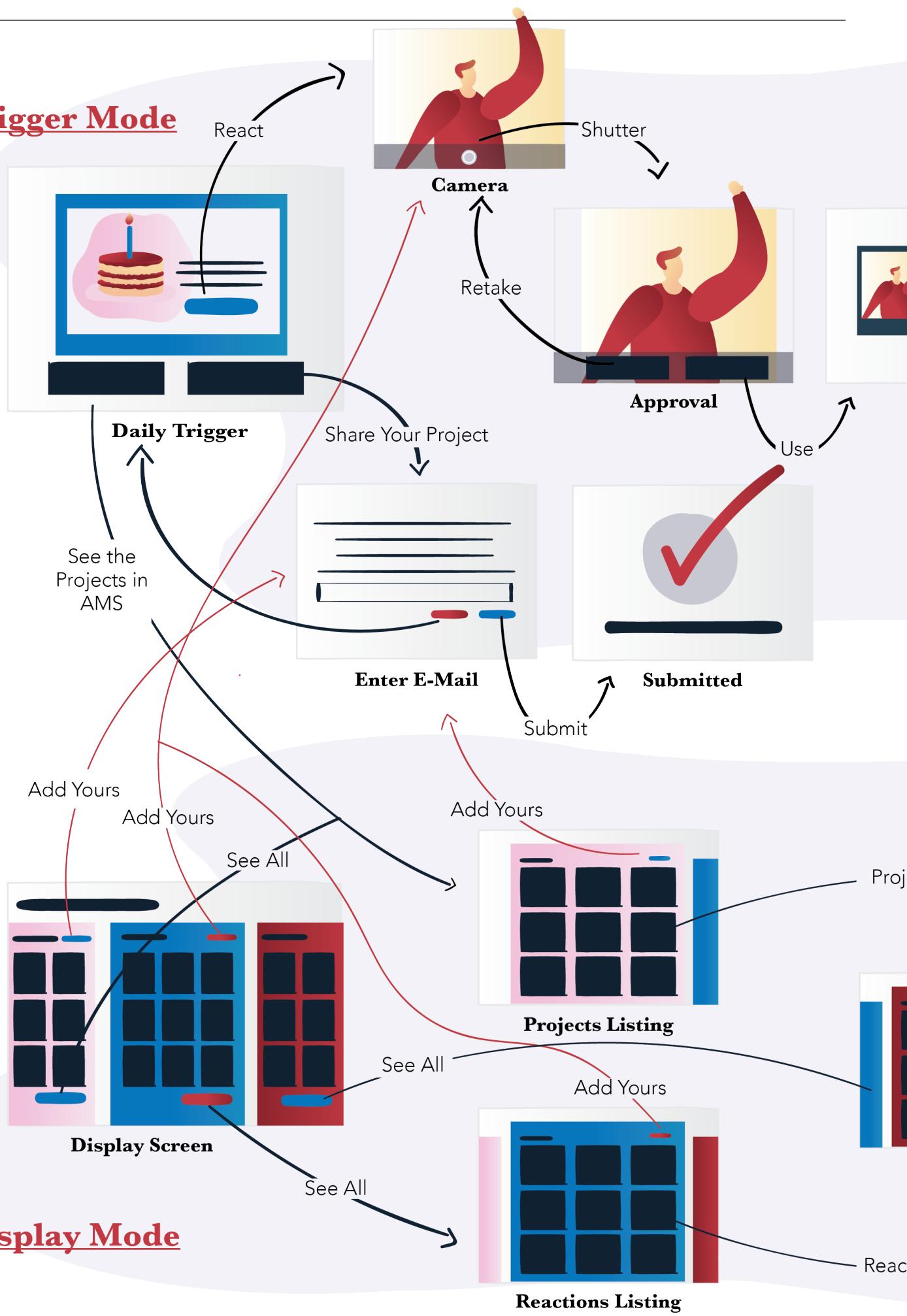
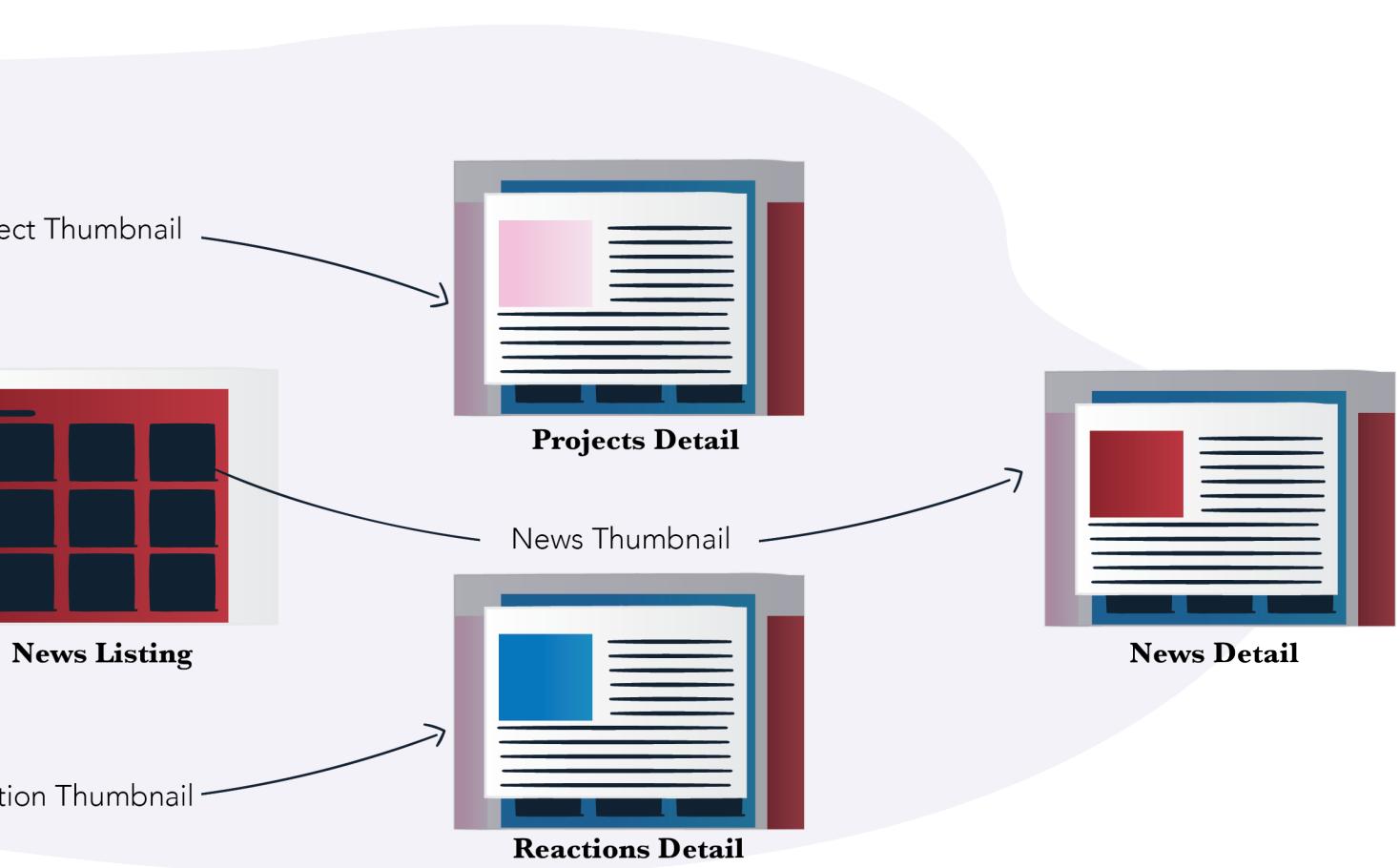
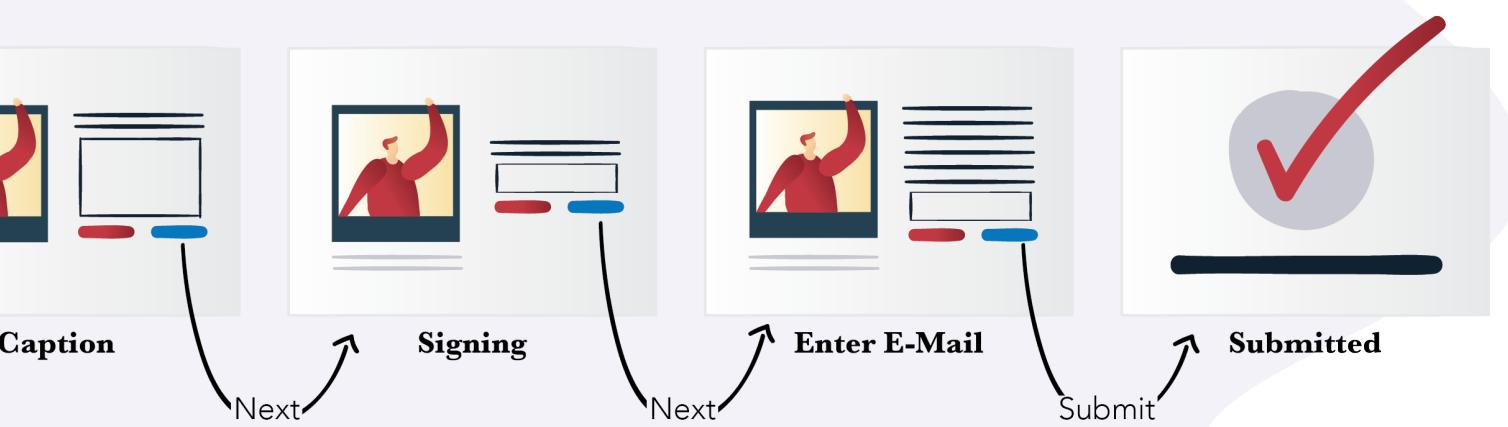


Figure 12: Platform architecture shows the relationships between two modes and the flows between the platform screens.



4.3.2 Interface Screens

The interface has a portrait orientation in order to make space for the keyboard while typing. For testing purposes, the prototype uses iPad screen resolution which is 768x1024.

For UI, there are three important things. First one is achieving a fun-feeling interface to fit the leisure time that is associated with the coffee break. For this I chose vivid colors, informal wording and visuals. The interface aims for a friendly and not-so-serious vibe.

The second important element is the 2019 UI trends [12]. These are typography, illustrations, colors, gradients and layering. The titles and backgrounds include adjustments with the typography so that it has a pattern like feeling. This design provided hierarchy and playfulness. Friendly illustrations accompanying the questions helped achieving a playful feeling. Overlapping effect gave a deeper feeling to the interface. This made the interface look more layered and dynamic. Some example screens can be seen in Figures 13-18. See Appendix I for all screens.

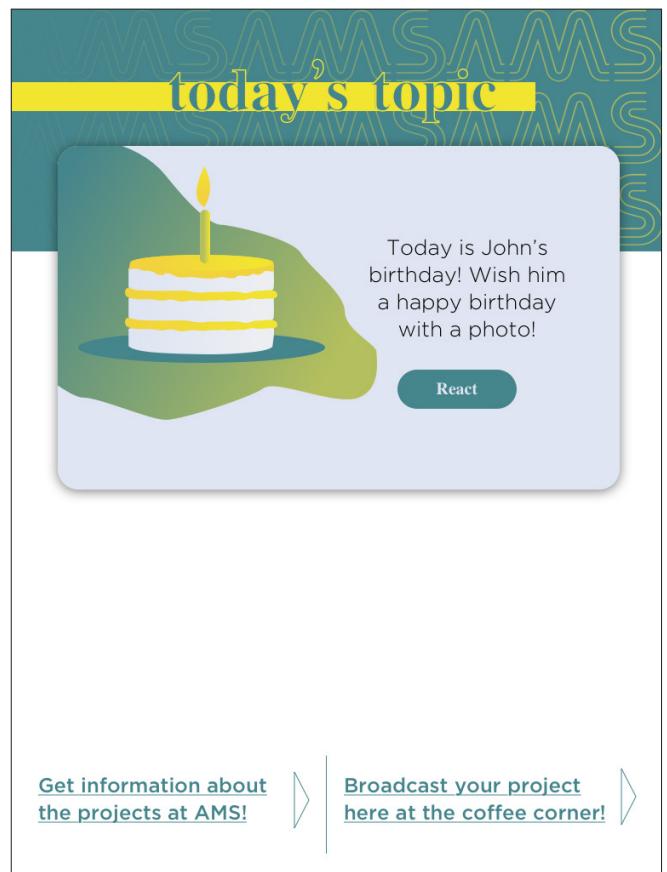


Figure 13: An example trigger for a colleagues birthday.

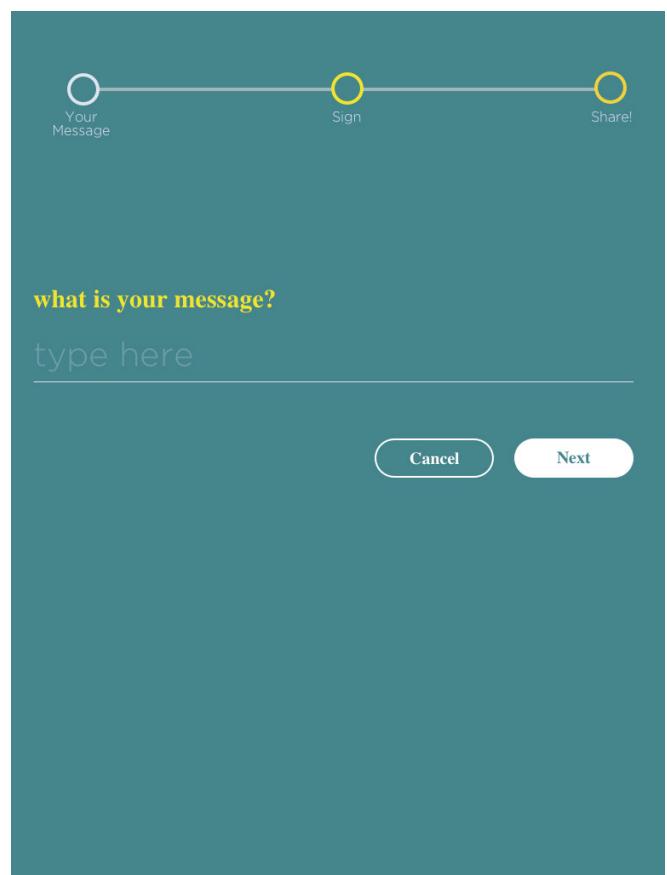


Figure 14: Users can write a caption with or without a photo.

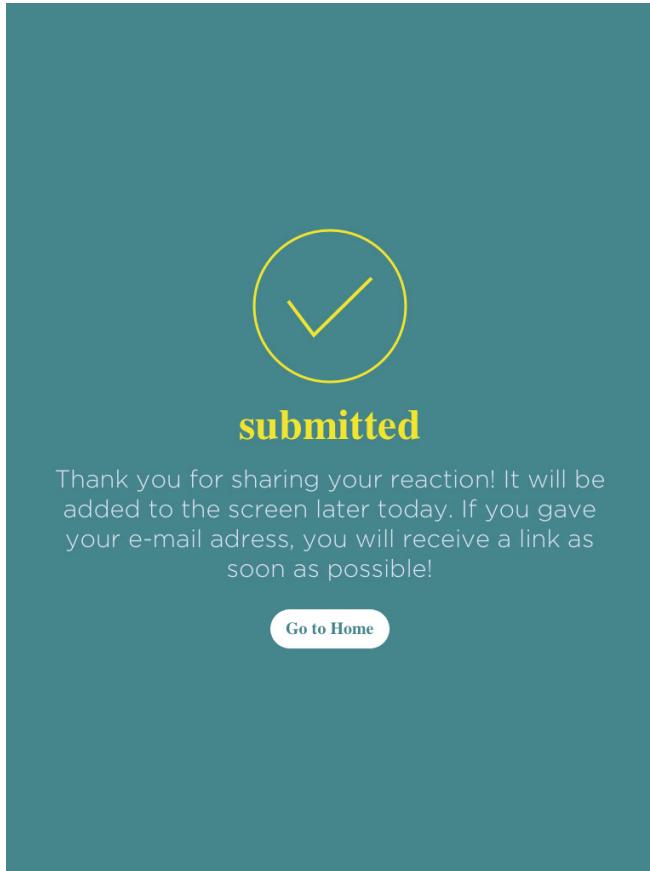


Figure 15: Submission page provides more information how the rest of the process will work.

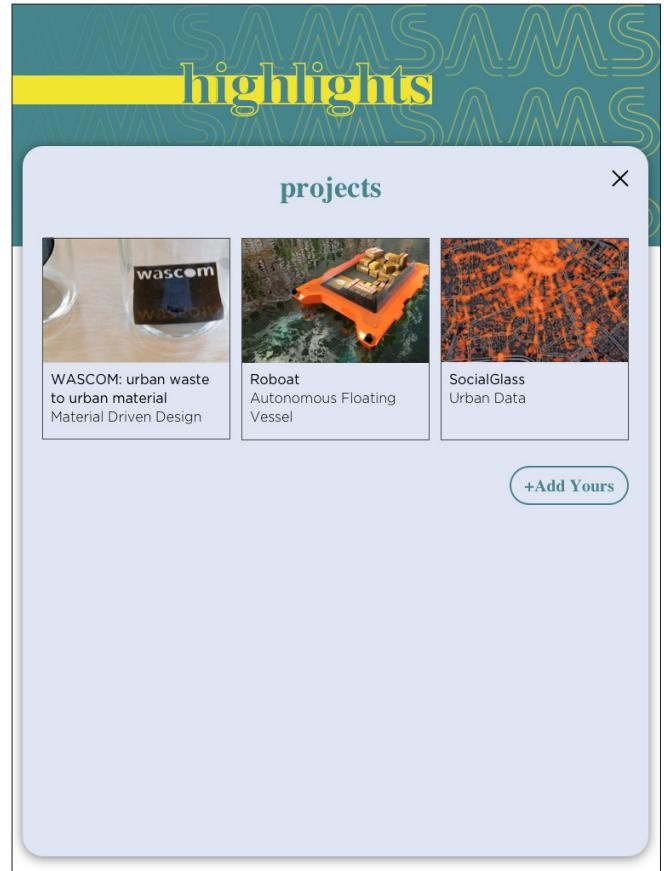


Figure 17: Project listing page

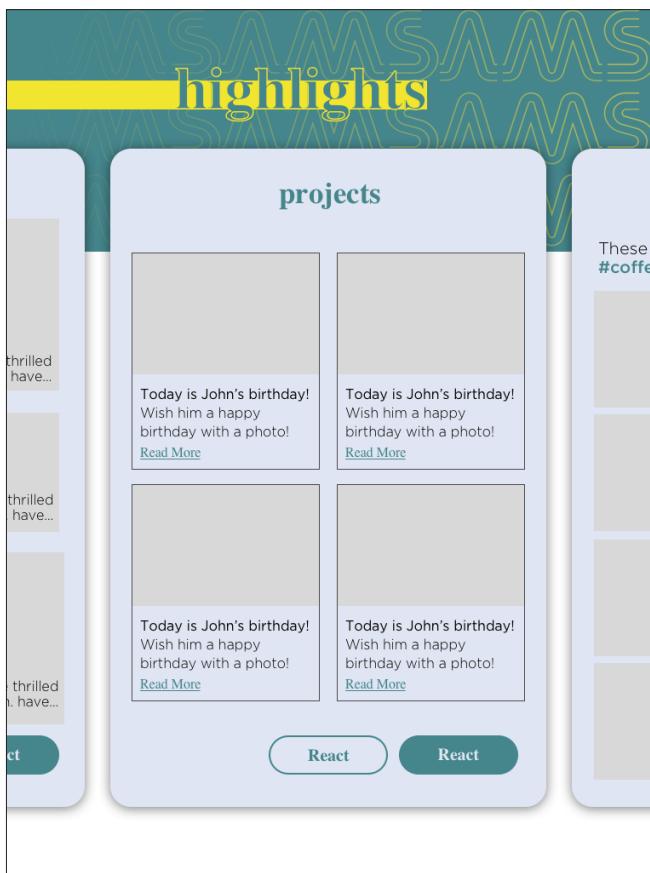
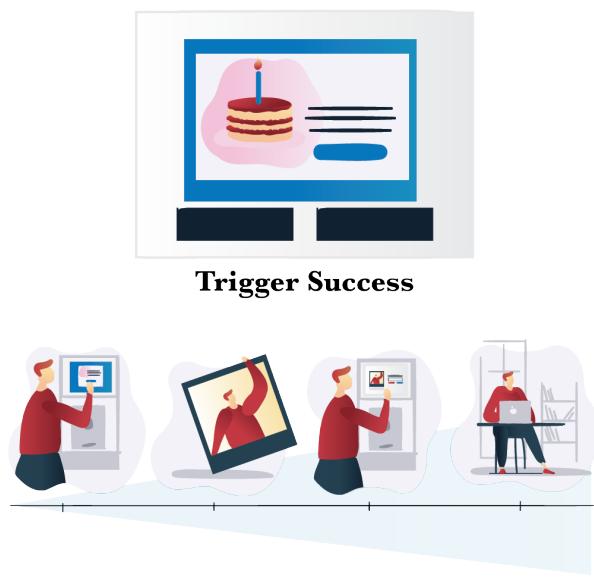


Figure 16: Display screen shows projects, reactions and news. Users can swipe between these.



Figure 18: By tapping on thumbnails they can read more about the projects.

Phase 1(Day 1-2)



Phase 2(Day 3-4)

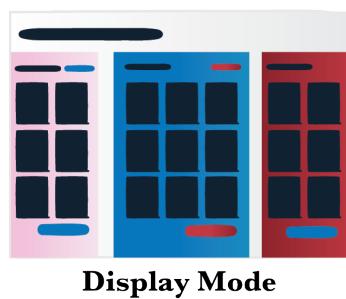


Figure 19: Testing took place in two phases, the first one examining the triggers and the second one the display mode.

4.4 Evaluation

4.4.1 Goal of the Evaluation

The testing in the AMS context validated the design decisions in the concept. There were three primary purposes and one secondary purpose of this test. The first primary purpose is to see if the active triggers are working in capturing the users' attention and encouraging them to act on it. The second one is to understand if the users go through the "funnel" of information collection, the steps they skip and the reason behind it. The third one is to assess if the "funnel" is responsible in collecting the desired information. The secondary purpose is to see if the users interact with the platform even when they don't share content. In other words, whether they browse through the available content and use the platform as an information source while getting coffee. You can see the research questions for this prototype in Appendix J.

4.4.2 Prototyping and Testing Approach

Parallel to primary and secondary research goals, there were two phases in testing

(Figure 19). During the 4 day testing period, I made small iterations each day depending on daily findings (Figure 20). The first phase focused on the information collection flow. As this is the core of the system, having a phase that is focused on this would be beneficial for feedback collection and fast iterations. The second phase focused on testing the whole platform and seeing with part people interact the most as well as finding usability issues.

4.4.3 Test Set-up

The testing involved an offline digital prototype that is placed in the context (Photo 12). An iPad screen that is hung on top of coffee machine displayed the design. I built the prototype by using a tool called "Origami Studio" because the prototype needed camera integration and typing function for effective assessment. There were two prototypes in total, one made for peak hours and one for concentrated work hours. The prototype switched manually between these stages during the second phase of the testing process.

To detect the flows and the content

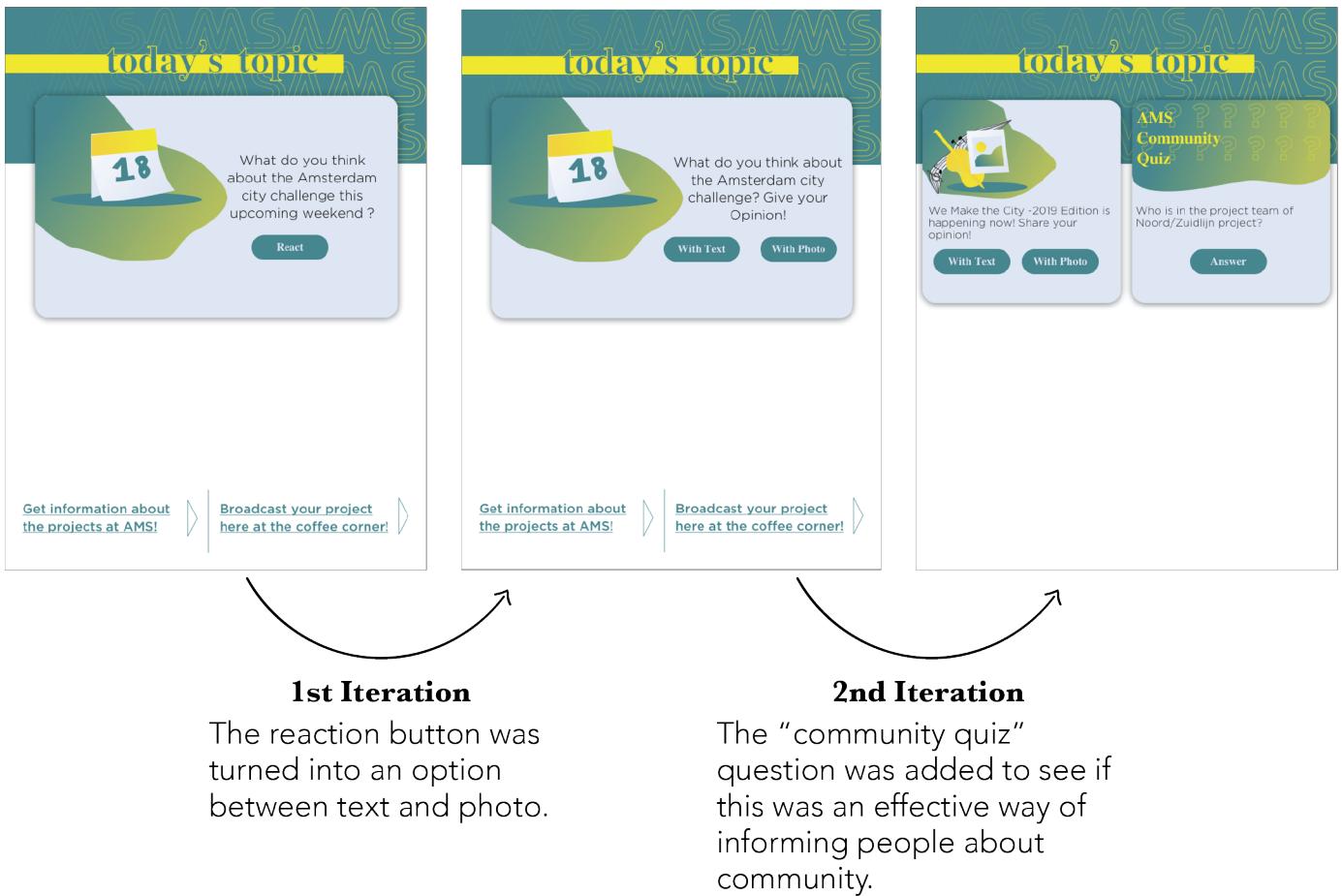


Figure 20: At the end of each day small iterations were made to the interface with the initial daily findings.



Photo 12: Concept prototype is placed on the top of the coffee machine in the context.

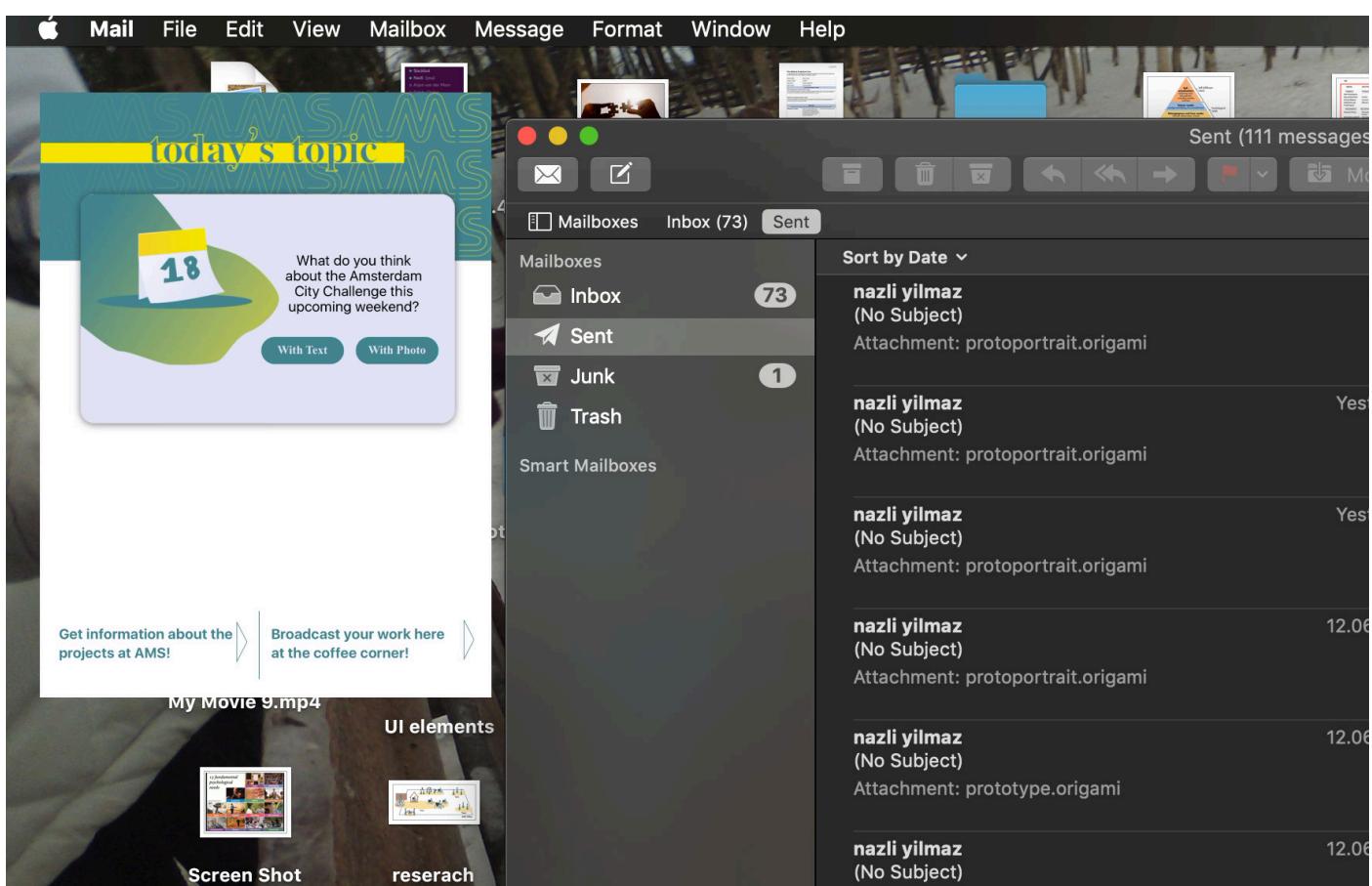


Photo 13: The iPad screen is mirrored to the personal computer to be watched and assessed.

submission, I used a mirroring software to mirror the iPad screen to a remote computer. I watched the screen throughout the testing period. (Photo 13) Whenever a user starts a session, I recorded it and added the content to the platform. This also served useful for analysis. At the end of each session, I contacted with the users and asked for feedback about the experience. An illustration of the setup can be seen in Figure 21.

As this is an offline prototype, I did all content adding and outgoing connection managements manually.

4.5 Design Outcomes

4.5.1 Insight Collection and Analysis Approach

The test setup included post questions about the experience people had with the prototype. These questions examined people's feelings about the concept and their general feedback. The questions aimed to understand the motivation behind their choice of posting or not posting, their thoughts on the effectiveness

of triggers and the type of triggers that they would respond to with the reasoning behind it. The question sessions took place on the spot and in an informal way.

The findings from these conversations indicated the problems and possible improvements about the system. Three improvement aspects were in mind while analyzing these findings in order to implement them to the final design concept. The first one was the trigger feedbacks (ways to improve and design the triggers). These feedbacks were useful for formulating the trigger guidelines. The second one was the use flow feedbacks. These were important for validating the necessity of the types of information that I aimed to collect and the way of collecting them. The final one was the general feedbacks about the platform. These feedbacks were important in order to understand how to increase the adoption rate of the platform. These three groups served as intervention points for the final concept.

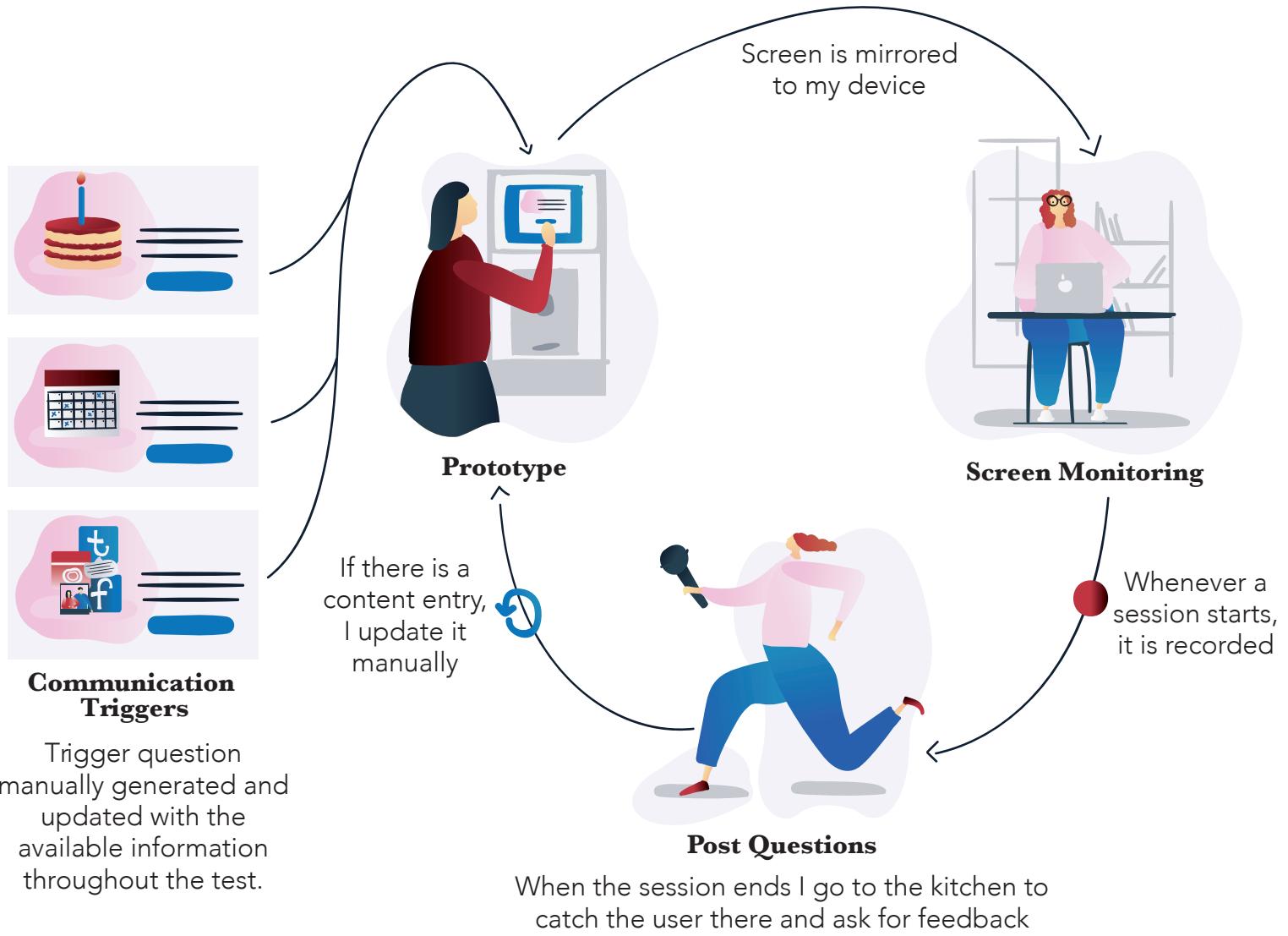


Figure 21: Test set-up for the concept testing.

4.5.2 Results

The results revealed that people liked the idea of having questions about AMS Institute because they felt like they had a personal connection with the platform. With that said, they still had criticisms regarding the design.

As feedback for triggers participants had four remarks. Firstly, they found the trigger questions too abstract. Phrasing the questions as “what do you think about...” sounds too general and becomes less triggering. The users mentioned that sentences should be phrased as they would be phrased in a conversation between two people. Second feedback was about the familiarity of the users with the trigger that is being displayed. Participants mentioned that they did not have an opinion about the trigger on the display so, it would be nice to have more than one trigger, so that they can

pick the one that is the most relevant for them. The third feedback was about the content of the trigger. Participants mentioned that triggers that are related to a person would be a better motivation for them to react because it's nice to direct these messages to someone in the office. The final feedback was about the content displayed on the main screen. Participants mentioned that seeing the response that were submitted by other people also serves as a trigger for them to take action because it made them feel like there was a conversation going on.

As feedback for flow, a lot of people mentioned that the three step funnel is too long for a coffee break. None of the users completed the e-mail submission and identification step. Some of the users skipped even the caption step. They also mentioned that they don't really want to think or read about the projects during

their coffee break.

As a general feedback, some participants had trust issues with platform because it is an unfamiliar interface. Also, the fact that they can't see the previously posted photos made them wonder to where the photos they uploaded were gone.

During the testing period, the observations showed that giving people the choice to react with a photo or just with text made the number of engagements go higher. Also, during the display mode, people browsed through the content to pass time while waiting for their coffee.

Colleagues were generally excited about this concept but to increase the adoption rate the above mentioned feedbacks were of crucial importance. This is why they served as stepping stones in the improvement process of the initial concept.

4.5.3 Trigger Platform Characteristics

The analysis showed that different types of triggers contained different characteristics

that stimulate people to take action in different levels (Figure 22). The following are the three types of triggers that the research have identified.

People Related: These are triggers with the content that are related to people such as birthdays. These types of triggers are the strongest to motivate people to take action. Feels more like a conversation between two people because it actually addresses a person.

Situation Related: These are triggers that are asking opinions about a situation or something that have happened such as the weather in that day, traffic status or events. These type of triggers have medium strength in motivating people to take action. This is because situation related triggers are relatable to people and they bring stories with them. These type of triggers can also be in a static state asking people about their weekend or their lunch.

Content Related: These are the weakest triggers of all three types. Their knowledge based nature makes people feel like they



People Related

Strongest triggers, feel more like a conversation because it addresses a person.

e.g. Birthdays

Situation Related

Medium triggers, because they are relatable and bring stories with them. Non data related static questions can be added here such as "How was lunch?" or "How was your weekend?"

e.g. Weather, Events

Content Related

Triggers with really low stimulation. Because it is knowledge based, feels like a test.

e.g. Projects, Themes

Figure 22: The three types of triggers. Each of them has their own characteristics.

are taking a test. It also sounds too serious, therefore they are reluctant to answer in case it turns out to be wrong.

These outcomes revealed that people related and situation related triggers are more useful when it comes to creating an engaging platform. Therefore these two types of triggers formed the basis of the content that could be used as a trigger.

4.2.2 Implementing the Data

Determining which types of triggers are relevant for the platform helped identifying the data that is useful for the design of the triggers (Figure 23).

Data from the internal calendar of AMS Institute can be used for generating two types of triggers. The first one is a people related trigger, which is the birthday triggers. Birthdays of the people who work at the AMS Institute office are already manually added to the calendar so the birthdays need to be updated regularly by the office manager. This is a type of information most people are comfortable with sharing (except for the year in some cases). The second type is the events trigger which is a situation relevant one. In order to send an event to all the members of the AMS Institute community there are three e-mail addresses that they use. These are AMS-staff@ams-institute.org, ams-externalstaff@ams-institute.org, amsresearchfellows@ams-institute.org depending on the grouping of the employees. Events like these are usually general events like a presentation, workshops or celebrations. The triggers can ask people to give their feelings and reactions about an event that had recently happened.

Data from the website is also a good resource for generating a situation related trigger. External events that are open to everyone such as hackathons and challenges are broadcasted in the AMS Institute website. The invitations for these events are not sent from the internal calendar. The events usually require preparation on the AMS side as well so there is an interest both before and after the event. The data from the events page on the website of AMS-Institute can be used to ask if the colleagues feel excited about it. Also after the event, there can be triggers asking how the

event went.

Data from outside sources such as weather and traffic can also be used for generating situation related triggers. These are daily things that we encounter but whenever there is something unusual about these circumstances people also have unusual experiences. For example, commuting to the work with your bike is usually an uneventful situation when the circumstances are the same as everyday. But whenever there is an extreme condition such as very hot weather or very heavy rain, the commuting activity becomes different than your routine because of the effect of the different external conditions on it. These types of situations create experiences that people want to share, sometimes in form of complaints and sometimes stories. This is why extreme conditions become valuable. Such as weather temperature above 25°C, heavy rain, snow or traffic that is near the office and busier than usual. Of course, these triggers are very context specific, meaning that giving triggers about snow in Moscow would not be much of a conversation starter since it is a very usual happening over there.

Finally, the date and time data is always at the base of the platform. First of all they serve for determining the trigger and the display mode intervals. Depending on the rush hours (9:00-9:30, 12:00-13:30 and 15:00-16:30, see 3.3.1 Results), the platform prioritizes the triggers to collect as many reactions as possible. The rest of the day, the collected content is displayed to ensure that people see as much content as they share and to present something new for the second time visitors as people generally drink more than one cup of coffee or tea during the day. Date and time can also be used for generating static situation related triggers. Questions about weekends or lunchtime can be generated to see if people had an interesting experience that they wanted to share with the office.

Determining these aspects of the triggers enabled making the guidelines for designing them. These guidelines can serve as recipes for future iterations and for generating triggers to be used in other contexts and with different content.

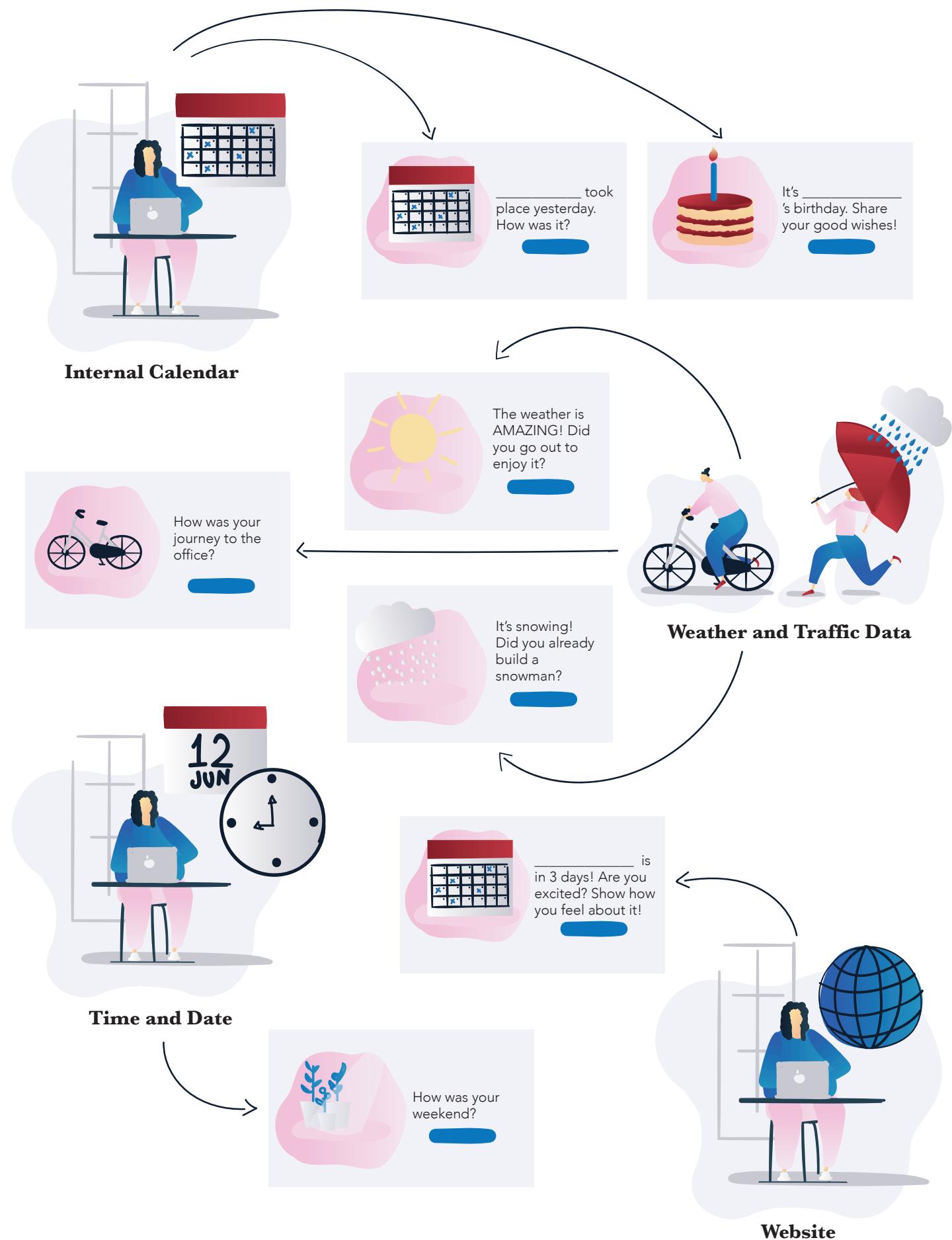


Figure 23: Data from the internal calendar, website, weather/traffic services and date&time can be turned into trigger cards



5.0 Guidelines for Communication Triggers

This chapter explains the guidelines for triggers and gives information on the interface and the implementation of the platform.

5.1 What Makes a Trigger Work?

A successful trigger is very much similar to a successful conversation. It motivates people to give their opinion about a topic or a situation by providing stimulating elements. There are certain aspects of a trigger that makes it work.

The relatability of a trigger has crucial importance. This requires for user to identify with them. The feeling of familiarity that a trigger evokes helps people recall stories, feelings and opinions that they would like to share with others [13].

The fit of the trigger with the context that it is placed in is the second aspect that influences the success of a trigger. In this case, since the trigger is placed in the coffee corner of the office so the triggers need to be in fit with the coffee-break mindset. Which means that starting serious work related discussions would not be adopted by the users.

The third important aspect of a trigger is its ability to connect people. It needs to provide a way of sending a message from one to another or a basis on which two or more individuals can give their opinions on. This feeling of group or reciprocity motivates people to act on triggers.

Finally, the last important aspect is the element of novelty. The triggers need to stay dynamic to keep triggering people. If a trigger stays the same, it becomes a part of the usual day of the user thus losing its ability to serve as a conversation starter [14].

Triggers can serve as successful conversation starters with the help of these four aspects. Just as the conversation taking place between two or more people, these aspects help them to stay interesting and appealing to the users.

5.2 Trigger Guidelines

Identifying the characteristics that make a trigger work enabled generating guidelines for triggers. These guidelines (Figure 24) can serve as a blueprint to design new triggers in similar contexts and with different content. These guidelines are handled in three groups, must have, should have and could have. These

groups signify the importance of each of them.

Fun content for fun time: Since the trigger aims to stimulate pleasure and inclusion motives of communication and it is placed in the coffee corner, it needs to be fun. People need to have fun while interacting with the platform containing the triggers in order to easily adopt that. There are several important things to keep in mind in order to achieve this. First of all the use of a friendly language in triggers can be helpful. Use of bright colors and illustrations can support this feeling of friendliness [15]. This guideline is context relevant so this is an aspect that the trigger could have.

Research revealed that it is best to avoid questions with right or wrong answers since it makes people like they are being evaluated which is usually not so fun. With that said, questions that are easy to answer should be placed. These questions should not have high cognitive load and should be answerable within 45 seconds. So, questions that might include sensitive subjects or political opinions are definitely not the way to go. Because this is a public broadcasting platform, this is an aspect that the trigger must have in order to keep people engaged.

Relatable questions: The questions should include people and situations that users have encountered or could encounter. So using Beyoncé's birthday would not serve as a strong trigger, since it is highly unlikely that the messages will ever be received by her. Similarly, the situations need to be the ones that users have experienced recently or will experience soon so that they don't have to put too much effort to recall or anticipate. Asking about an event too much into the past or future would be a weak trigger. Also, asking about opinions on situations like Rio Carnaval or northern lights would not stimulate much of a reaction since they most likely are not relatable for people who live in Amsterdam. To evoke curiosity and motivation this is an aspect that the platform must have.

As targeted as it can be: It may be hard with the data generated content to ensure this guideline but it is nice to have questions that resemble to the questions that you would ask in

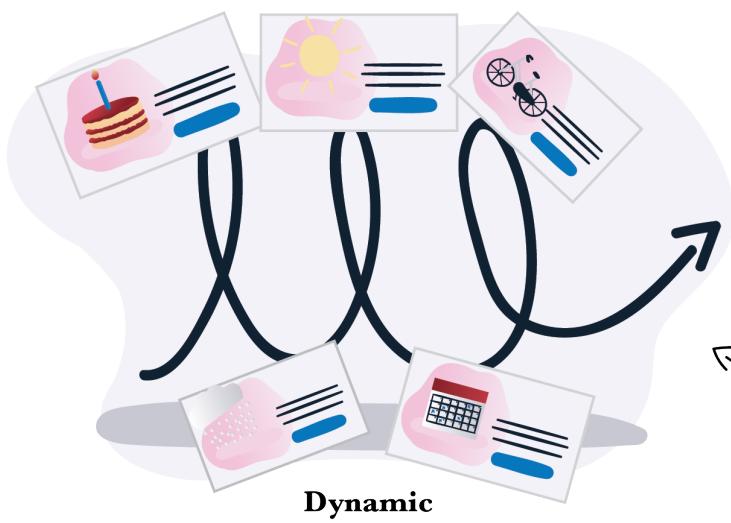
a conversation. So instead of saying "what do you think" all the time, try alternating between "how was?" or "are you excited about?", "Did you enjoy?" type of question structures to sound more targeted. Since this is a way of transferring the content that would actually capture the user's attention, it is an aspect that a trigger should have.

Connecting: The main goal of the triggers is to stimulate communication between colleagues so it is crucial that they actually connect people. A triggering platform needs to clearly show that there are other people involved in the conversation. Since situation related triggers also work this is an aspect that a trigger should have whenever it can.

Not forcing but inviting: A triggering platform needs to support anatomy of the user. It is good to give the users different options of self expression and freedom to skip in order to evoke sympathy toward the platform. In order to build the autonomous motivation, this is an aspect that a trigger must have.

Generated with the right type of data: It is important to keep the content of the triggers new to evoke sustainable curiosity and generate novelty. In this platform the content is generated by using data, since it is too much work to create daily content manually. The choice of data is important in order to ensure user participation. Keeping in mind that the triggers need to be relatable, the data that is used to generate needs come from the context that users belong to. It needs to be concerning the city they live in, things that have direct influence on their life, office they work in or the general interest they have. They need to be given in a format that is meaningful for the user (in this case questions) to stimulate people. Depending on the target audience, it is possible to design triggers with the data that comes from another context. For example data that relates to a common interest. This is why this is an aspect that a trigger should have.

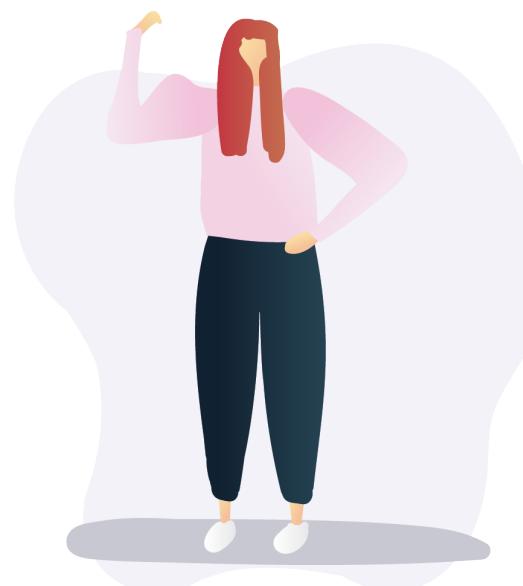
These guidelines can be useful for generating more types of triggers to stimulate pleasure and inclusion motives of communication. For other types of



Dynamic



FUN



Autonomous



People Related

Person related, knowing that someone out there is listening.

Figure 24: The most important guideline for a trigger is that it needs to be fun. There are other guidelines that help to make a trigger effective.



trigger work better.

communication, more analysis in context and content is necessary.

5.3 Design Implementations

5.3.1 Final Concept

After the test, the results revealed that the number of the functions in the platform need to be reduced and the information collection flow needs to become simpler. With that in mind, the new concept kept one crucial function that is in the center of the concept and one supporting function that helps the design goal. The trigger mode and the display mode remained in the concept to keep the second time visitors interested and to provide content. The storyboard of the final concept can be seen in Figure 25.

The crucial function of the platform is the conversation triggers. They are used to motivate people to engage in pleasure and inclusion motives of communication, which is also the design goal of the project. Thus, the final iteration of the concept focuses more on the triggers. First of all, in order to include more colleagues, up to four triggers are displayed at once on the screen. The number of simultaneously displayed triggers are limited to four since people can only hold up to four things in their working memory [16]. Therefore, limiting the maximum number of triggers to four ensures that the product put too much cognitive load on users while picking the trigger that they want to react to. The final triggers are focused on chitchat and fun, aiming to make the users smile as this is also a good way of bonding [16]. The content of triggers also increased after the feedbacks of the participants. Participants mentioned that subjects like birthdays or weather also motivates them to start a conversation because of their personal and story recalling characteristics.

The second big element that changed after testing is the information collection flow. It became shorter after the testing since the participants were not interested in giving the project or identity information. So the final flow is limited to capture of the image, optionally writing a caption about it and signing. This way, the trigger mode no longer aims to inform

people about what their colleagues do or the highlights of AMS institute.

The display mode shows the user generated content with the news and projects information from the website. The platform enables not only for users to scan the user reactions but also get information about the things that are going on at the AMS Institute. If there is a shortage of reactions or the reactions are not interesting for the user they can browse through the website content to pass their time while waiting for their coffee. This also provides an opportunity to subtly inform people about the highlights of AMS, so that this kind of information can serve as a conversation starter among colleagues as well.

The aspects that proved to be working well, such as the placement of the platform or the use of data to generate triggers, remained in the final version of the concept. All these aspects evolved into the final detailed design.

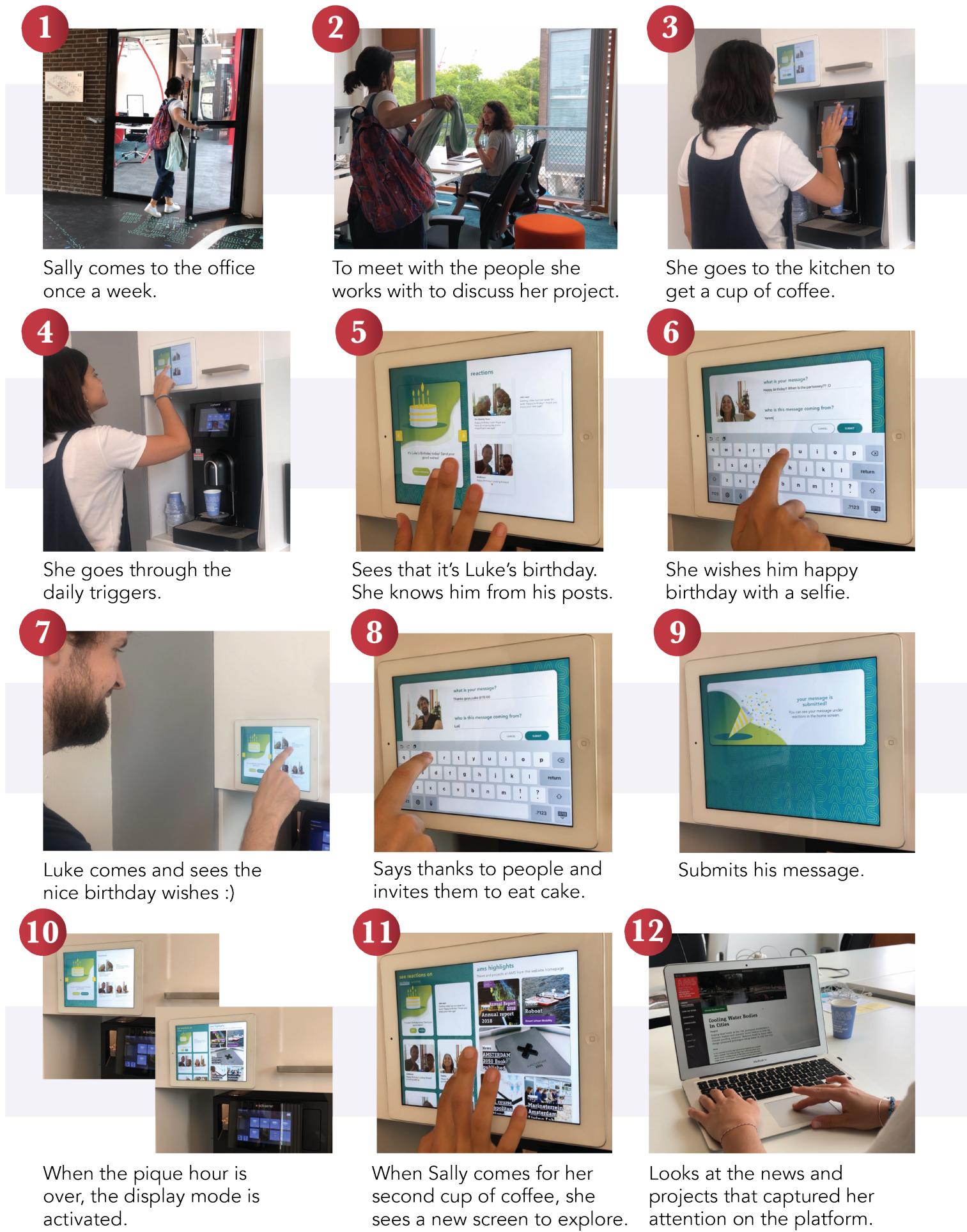


Figure 25: Storyboard of the final concept.

5.3.2 Task-flows for Use of Data

The task flows in this chapter explain the connection between the triggers and the data. They show the logic behind the trigger generation and the blueprint of the triggers. These flows can be used to understand the prioritization of the triggers and the crucial elements for the system to work. The legend of the flows can be seen in Figure 26.

As seen in Figure 27 the general task flow of the system is based on the display and trigger modes of the platform. The system checks the time of the day in order to know if its peak hour or not. If the time interval is within the pique hours the system displays the trigger screen. In other time intervals, display mode is on where the content is prioritized over triggers.

Figures 28, 29, 30, 31, 32 show the logic behind the trigger generation process. In these task flows, people related triggers (so birthdays in this case) are prioritized. The system starts by questioning if there are birthdays in the outlook calendar of AMS as birthdays are manually entered events (Figure 28). This is the first trigger to be generated and displayed on the screen because the research showed that people related triggers are the strongest when it comes to motivating people to react on them.

The system continues by checking the internal events that took place again by scanning the outlook calendar of the office (Figure 29). The “invited” list is of crucial importance in this search since the presence of the three general emails shows that this was an event that included everyone in the office. Birthdays are excluded from this search. This was chosen as the second trigger since internal office events are more personal and informal than external ones.

The third step of the trigger generation is the external events trigger (Figure 30). Unlike the internal events, these triggers are displayed both before and after the event. This is because external events are organized by AMS and they are open to everyone. Thus, usually they require some preparation beforehand. This preparation atmosphere also causes some excitement within the team therefore creates a good atmosphere for the triggers. External events

triggers are situation related triggers that are less personal than internal events and more dynamic (as each event happens only once) than weather triggers. This is why they come third in the priority rank.

The forth step is the weather trigger (Figure 31) which is also a situation based trigger. The logic behind this trigger is to detect the extreme conditions that would affect usual course of the user’s daily life. These ruptures in the routines of the users usually result in stories that they would want to share with others, thus making these types of triggers eligible to be a conversation starter. The weather trigger needs norms that are determined according to the context. So, in Amsterdam, temperatures over 25 °C, snow and rain between 10-50mm(which classifies as heavy rain) would be unusual phenomena. The weather trigger is a semi-dynamic trigger because it changes according to the conditions but always asks the same question. This is why they rank fourth in priority.

The fifth and the final trigger group is the date and time triggers (Figure 32) which are also situation based. These are static triggers that can be generated every week or every day when there are less than 4 triggers. They rely on weekly and daily happenings such as weekends and lunch. These triggers are generated according to the date and time data, checking the day of the week and the time of the day. Since their generation period and content is constant, these triggers rank with on the priority scale because they have a lower stimulation impact compared to the other triggers.

Figure 33 shows the task flow of getting content from the website to the platform. Figure 34 shows the general task flow of the platform after the trigger generation is done. The flow shows the system and the user actions taking place during the use of the platform. During the interaction, the user picks a trigger, reacts to it in the format that they choose and submits the reaction. The reaction is added to the platform. During display mode, the user can also browse through the reactions and the content from the website. The details of the content from the website is not available in this platform. This part is designed to give a general information about what is going on in the AMS office and to evoke user’s curiosity about the

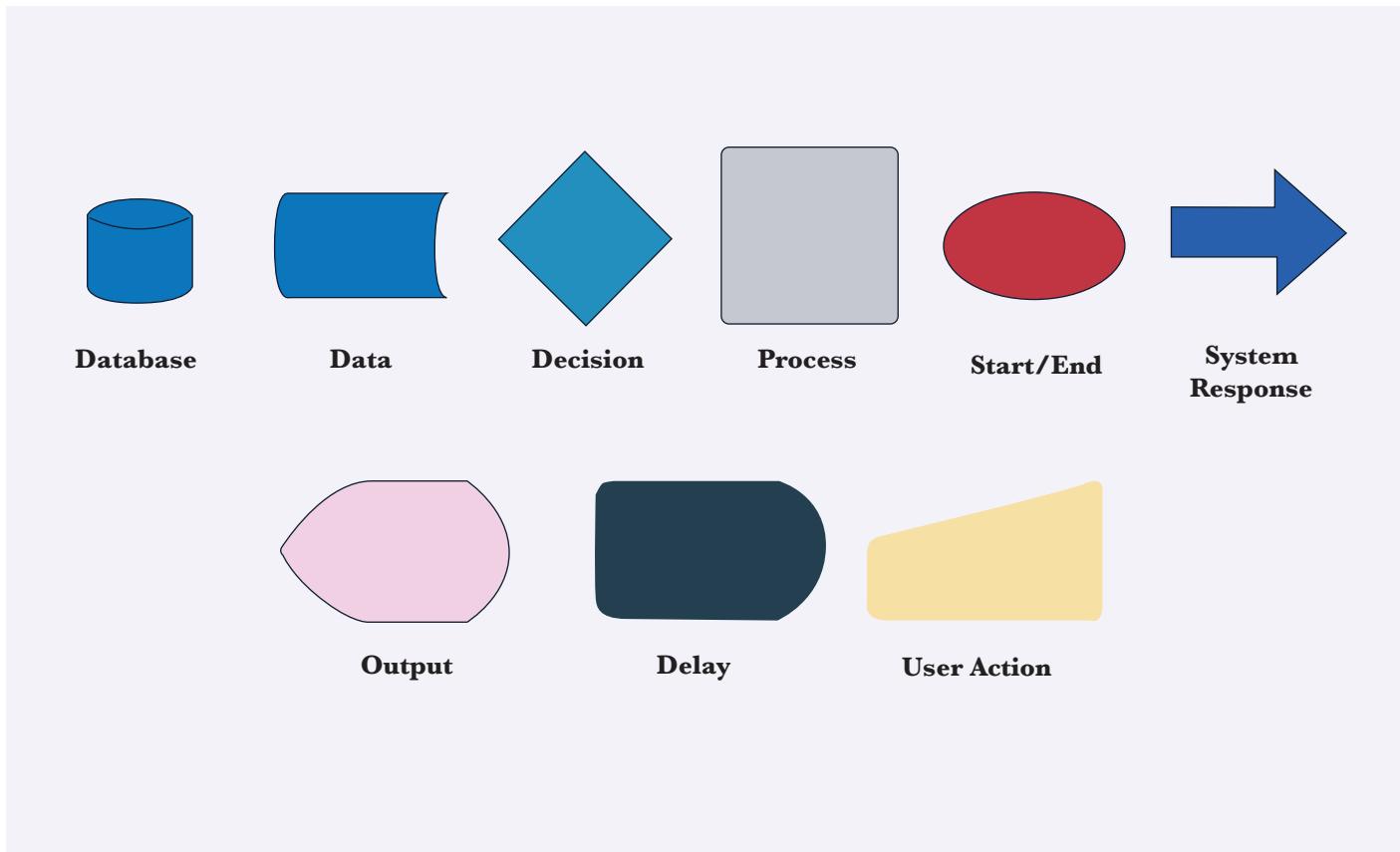


Figure 26: Task flow legend

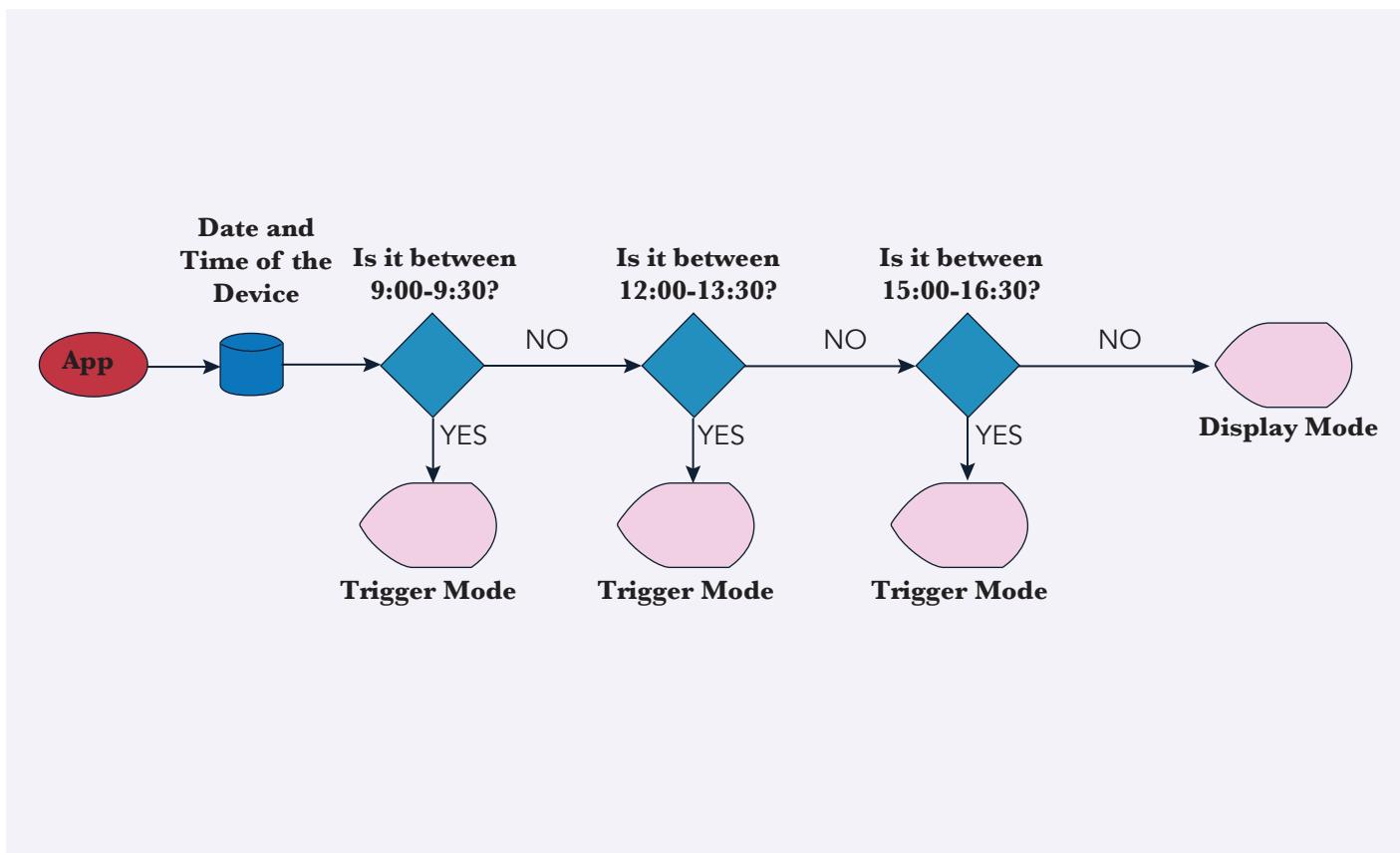


Figure 27: General Task Flow, the system switches between display and trigger mode by checking the time.

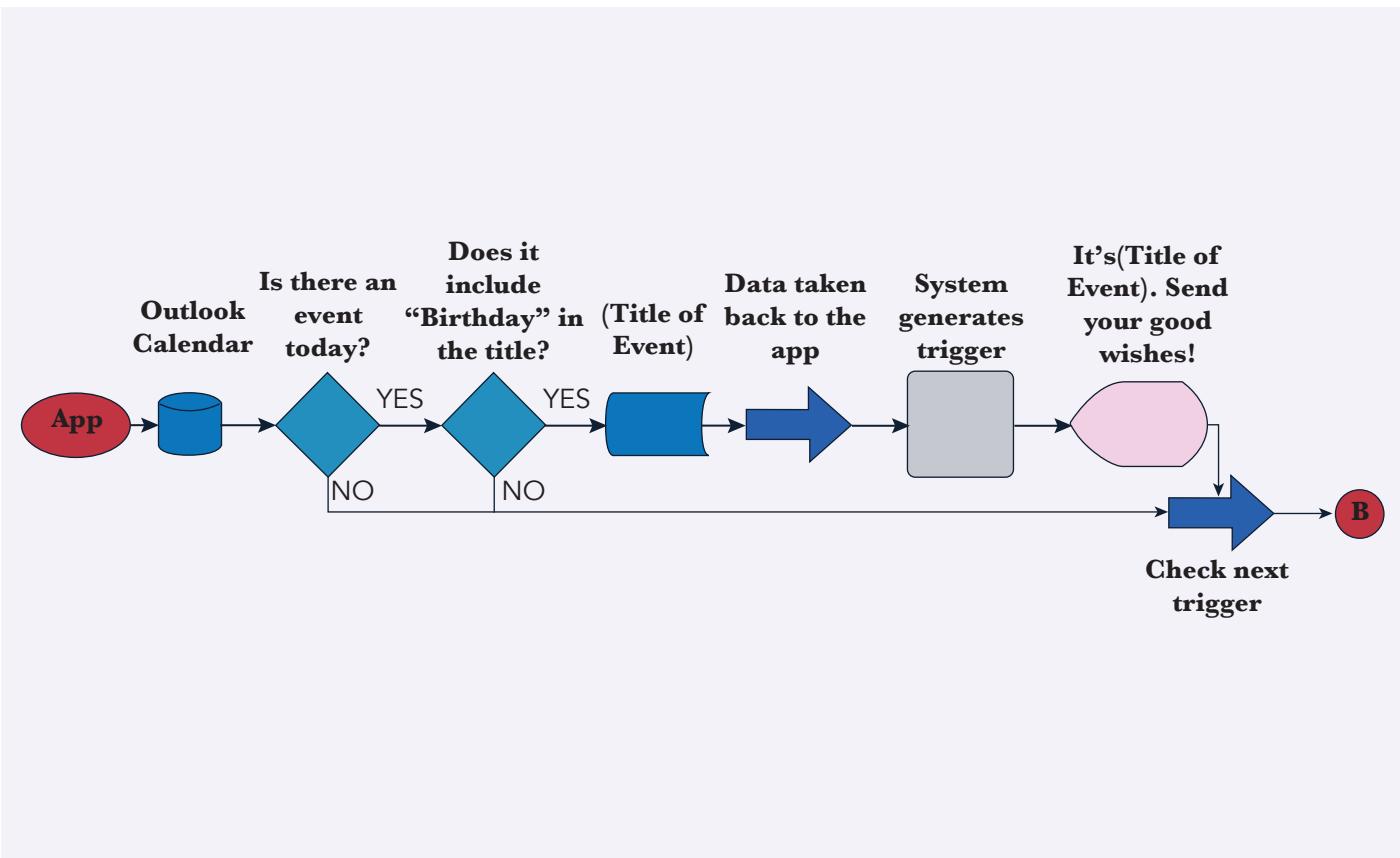


Figure 28: The system checks for birthdays in the internal calendar to generate a trigger. Birthdays are the first triggers to be checked since it is a people related trigger.

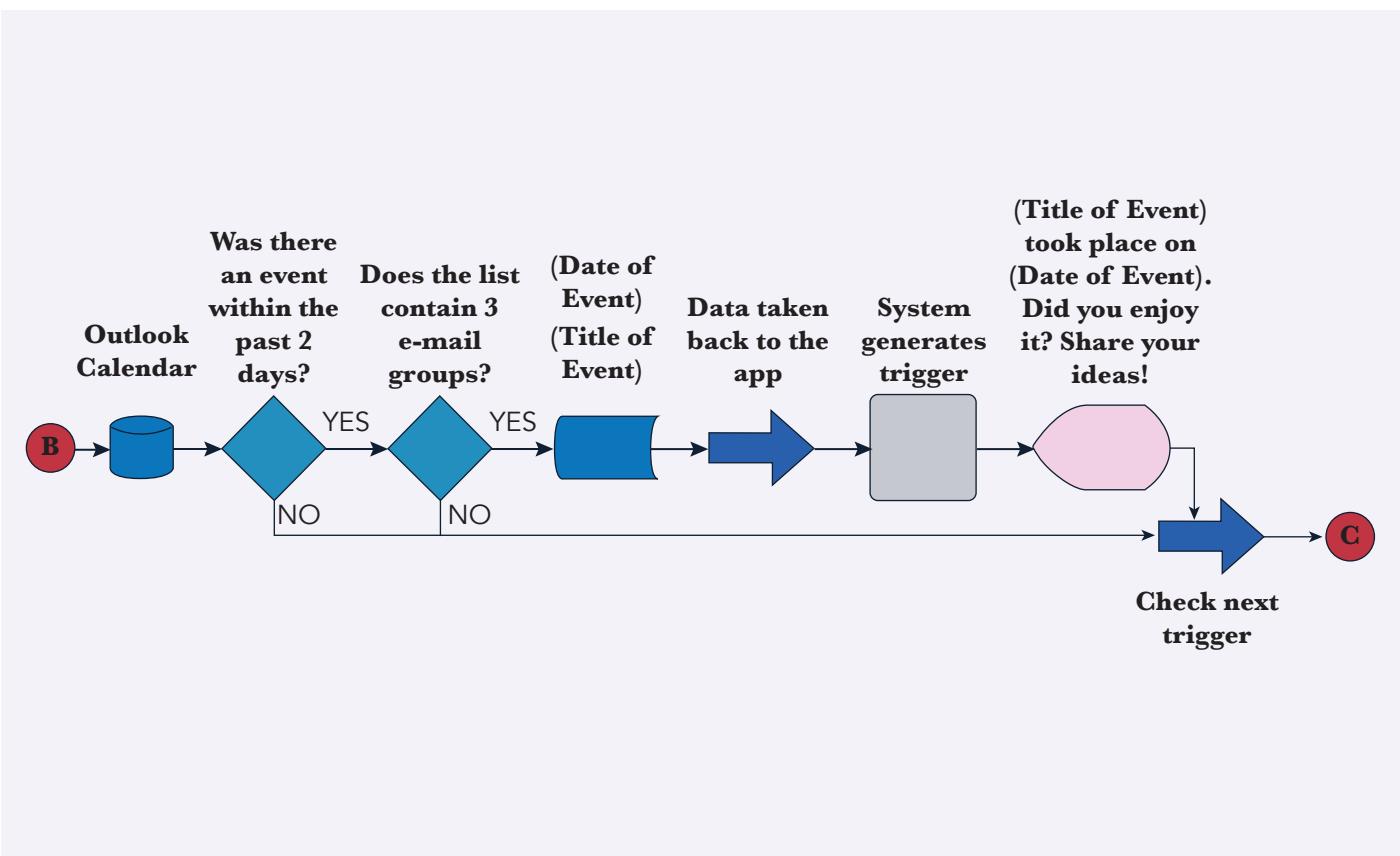


Figure 29: The system checks for events in the internal calendar. It looks for events with the 3 general e-mail addresses to determine if it was a general office event.

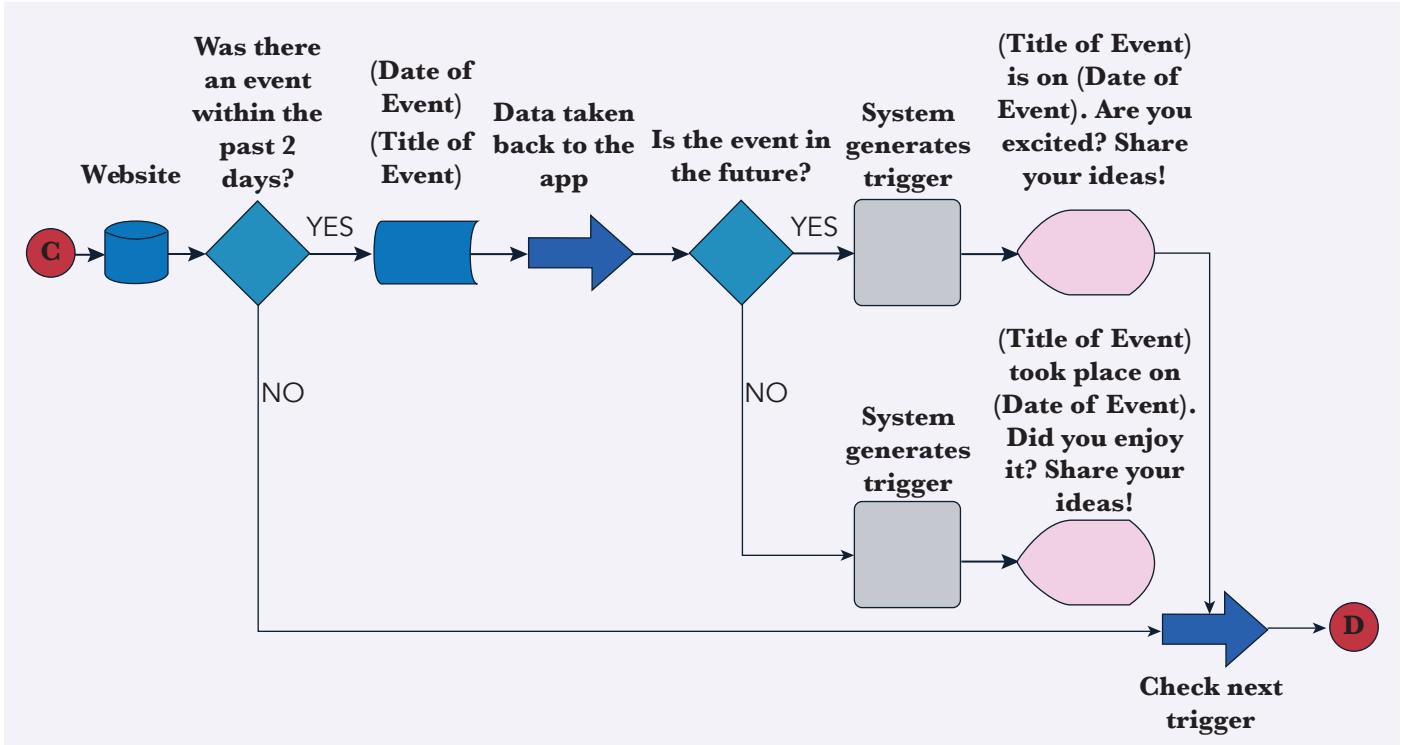


Figure 30: External events trigger checks for the events page of the website.

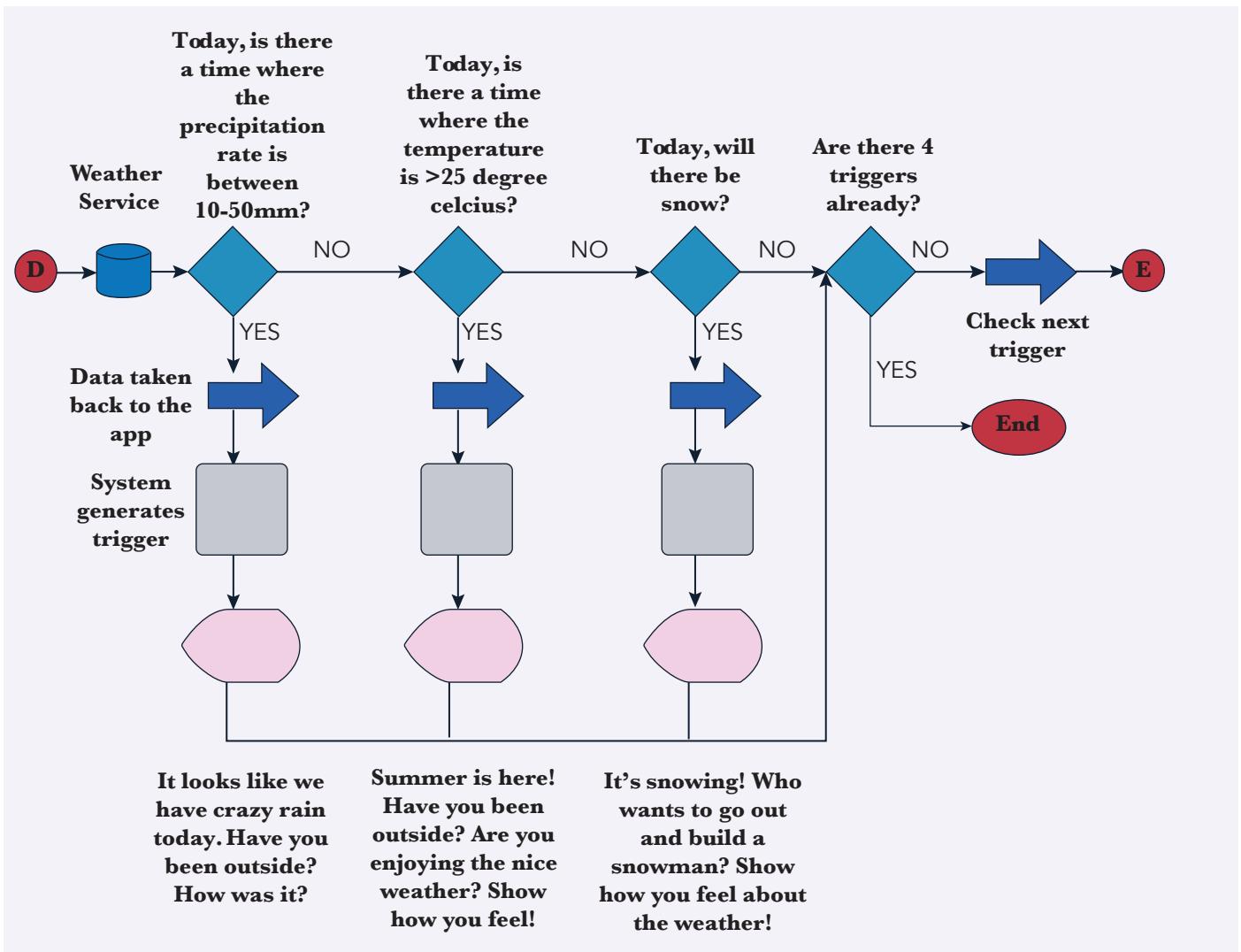


Figure 31: The weather trigger checks for the unusual weather conditions.

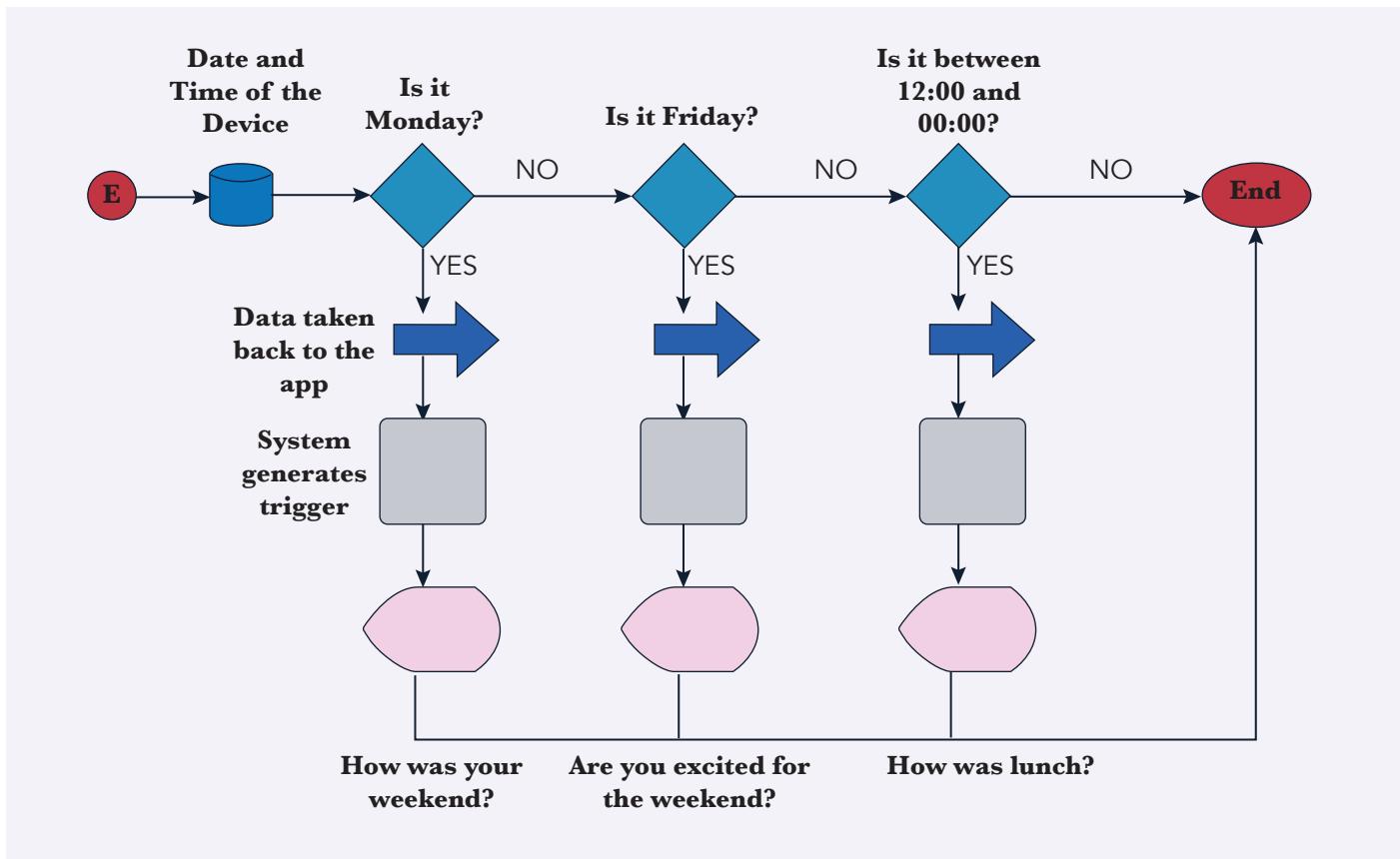


Figure 32: The date&time trigger checks for the day of the week and the time of the day to generate relevant triggers.

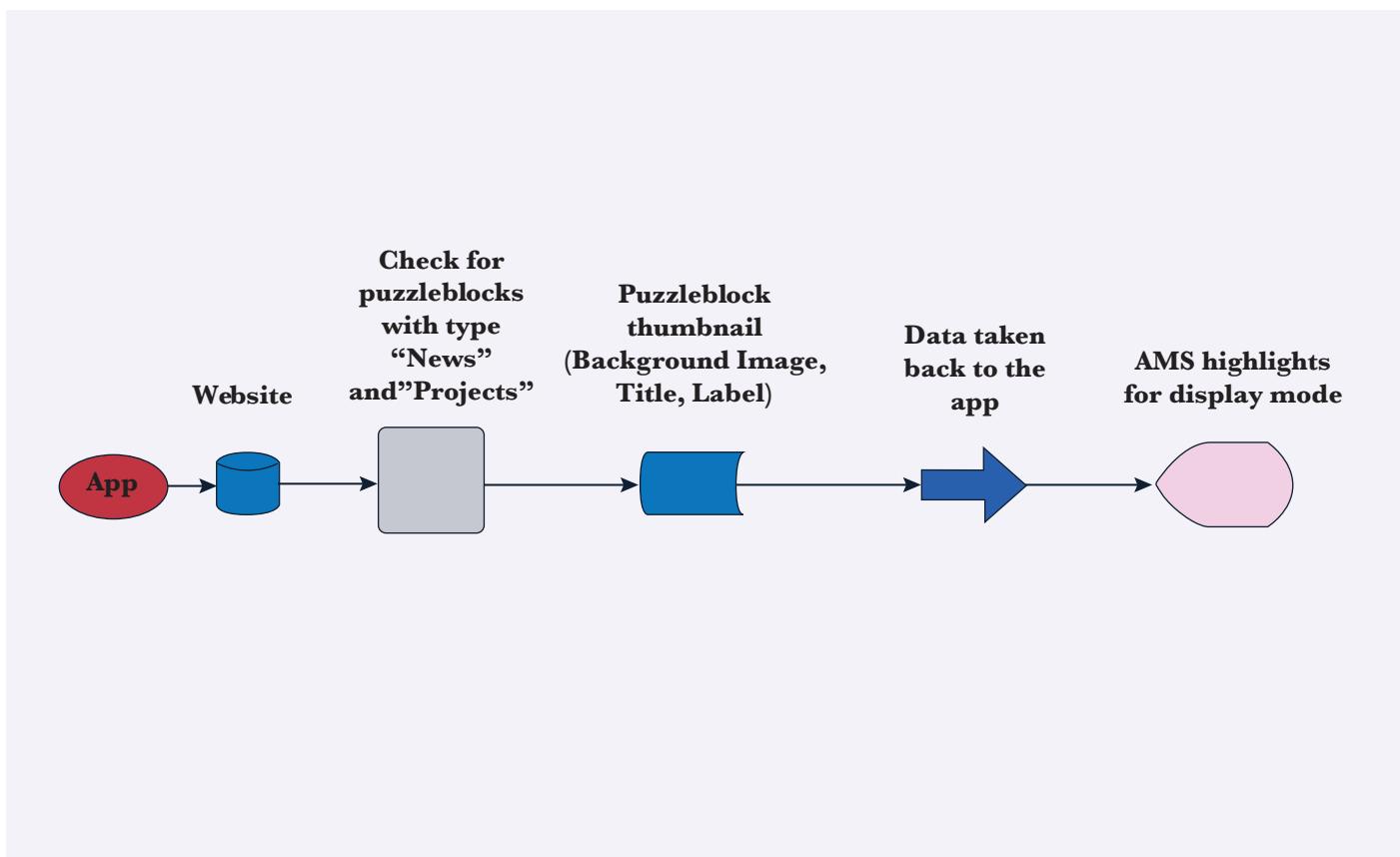


Figure 33: The display mode highlights section looks for news and projects in the AMS Institute website homepage.

projects and news of the AMS Institute.

These flows helped determine the UI and the screens that need to be in the platform to ensure a wholesome use flow for the users. With the content and the visual elements, they evolved into the final interface of the concept.

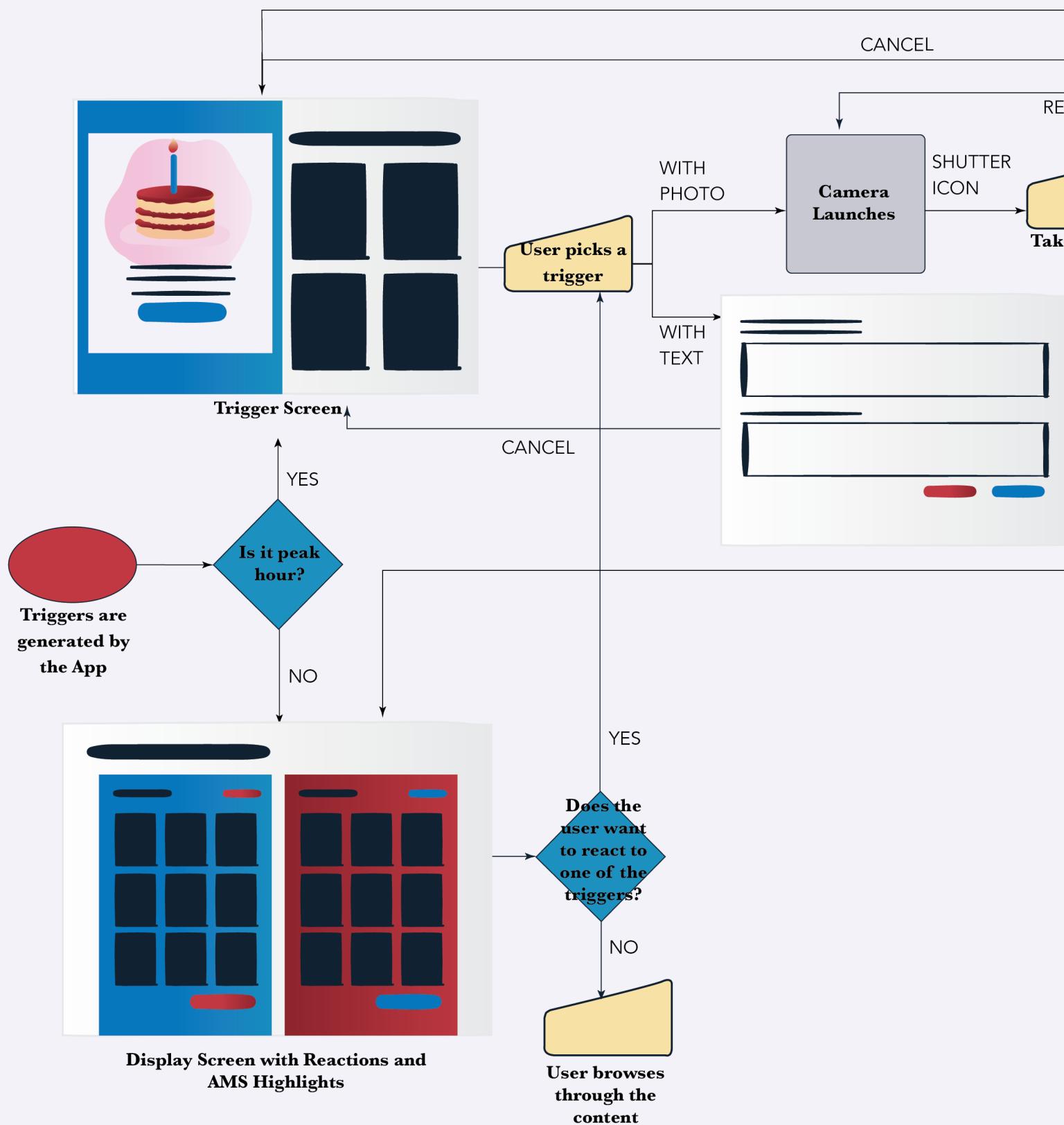
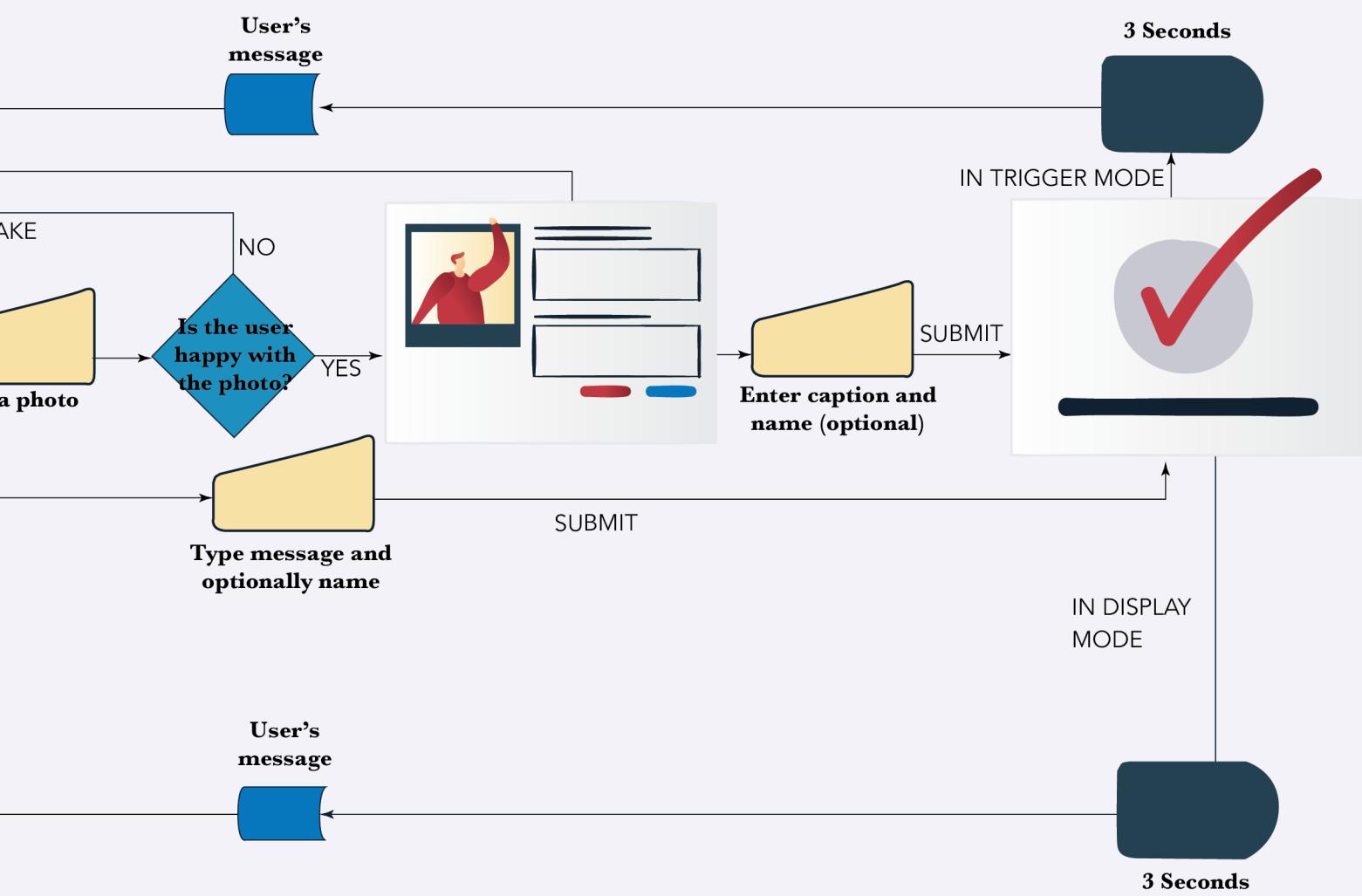


Figure 34: User Task/Use flow of system shows how the user actions and the system responses work together.



5.3.3 Final Interface

Figures 35-51 show the visual design of the UI. With the iterations on the concept, changes took place in the final interface as well. The orientation of the interface changed from portrait to landscape in order to ease the photo capturing action. With the portrait orientation, the camera location was too high for the users. So the camera captured mostly the surroundings rather than the user's figure. This caused some difficulties when users tried to capture a specific composition. The first prototype used landscape orientation and this was not observed as an issue so the final interface went back to the landscape orientation.

As seen in Figures 35-41 the screen is split into two sections: the one on the left for displaying the trigger and the other one on the right for displaying the reactions. The trigger side is a slider where the user can browse through up to four triggers. The reactions on the right change according to the trigger that is being displayed on the right side.

The bright colors and illustrations remained to support the friendly and playful vibe of the interface. The final illustrations contain more details to make the interface look more refined. The number of the illustrations also went up as the number of triggers increased after the concept testing and user feedback. The final interface aims to give users a smile and a pleasurable coffee break.

5.3.4 Recommendations

The final design in this project is the design of the minimum viable product to serve as a communication trigger. Considering that this is the first version of the product, this platform can still accommodate more functions, outcomes and deeper flows. Following are some recommendations to further develop the product. The effect of these recommendations still needs to be tested to see if they have the desired outcomes.

User generated triggers: For now, the platform only displays the triggers that are generated by the system using the data available to it. However, just like in a face to face conversation, people's questions or

thoughts can also serve as triggers. This is why user generated questions can be a valuable addition to the platform. Providing users more ways to express themselves next to photo and text, such as video or polls can also result in a more inclusive system. This way people can use the platform to get information that they want about their colleagues or to reach their own goals concerning (for example voting for an office activity) the office environment.

Deepening the flows: In the current design, the trigger flow ends when the reaction is submitted. This flow can be made deeper by allowing users to react on each other's reactions or respond to them. This can open a door to world with richer interactions among individuals making the leap from the digital world to the real world much smoother and easier.

Use of data generated by the platform: The current system uses data that is generated by other sources to generate triggers. The platform itself also generates data which for now, is not considered after the related trigger disappears. The ways of putting the data generated by the platform itself to use can be a valuable addition to the design. This data can be used to generate triggers as well to turn the system into a self sustaining entity. Moreover, ways of detecting groups in the workspace, friendship prediction and situation reasoning can be examined by effective analysis of this data. This can be useful to proactively encourage people to reach out to each other by providing targeted tips for them.

Details, error screens: The simple flow of the system leaves little room for errors and almost no need for help. However, as the system gets more complicated, error and help pages can become a necessity. This can also be an important part of the design to endure the user engagement. Additions to smoothen the usability issues can be introduced such as a countdown timer for the camera.

The final design is a platform that affords the needs of the user with minimal effort. The system still has a lot of room for improvement. As interpersonal relationships are never as simple as one flow, implementing these improvements can contribute to the effective enrichment of interpersonal interactions.

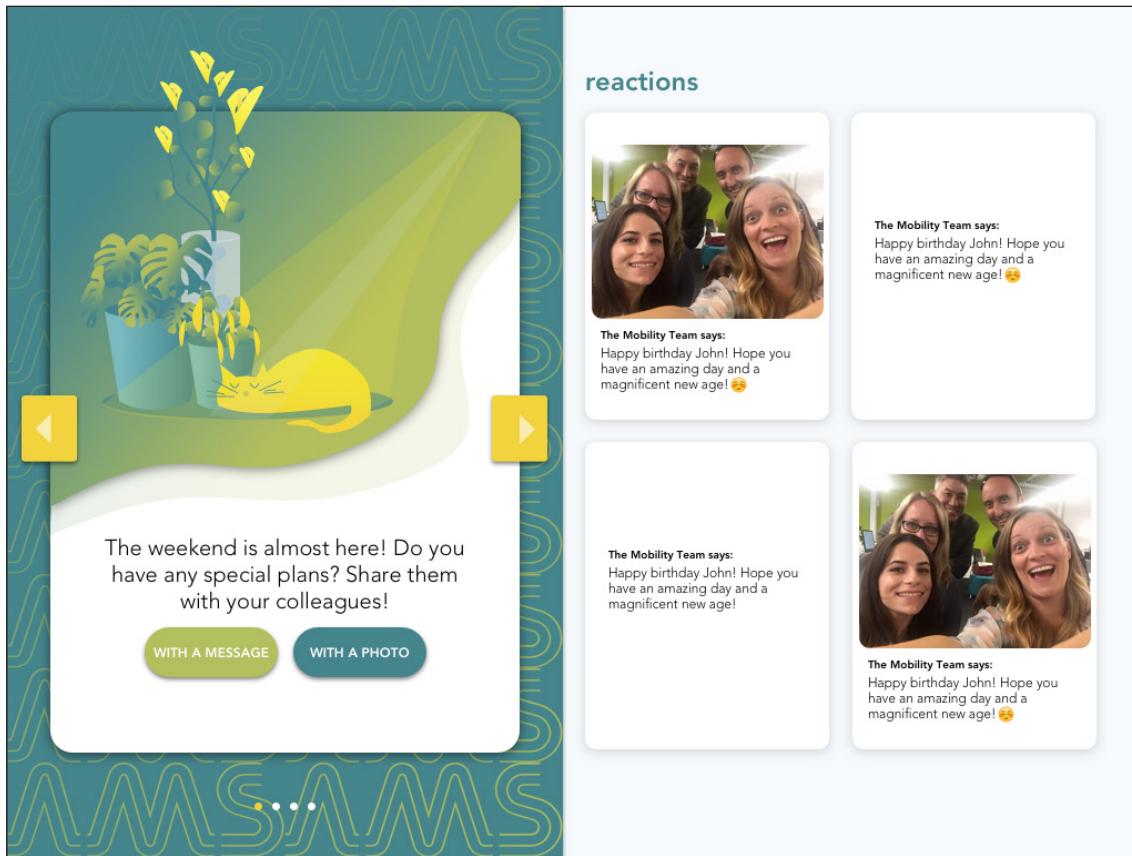


Figure 35: Weekend trigger interface

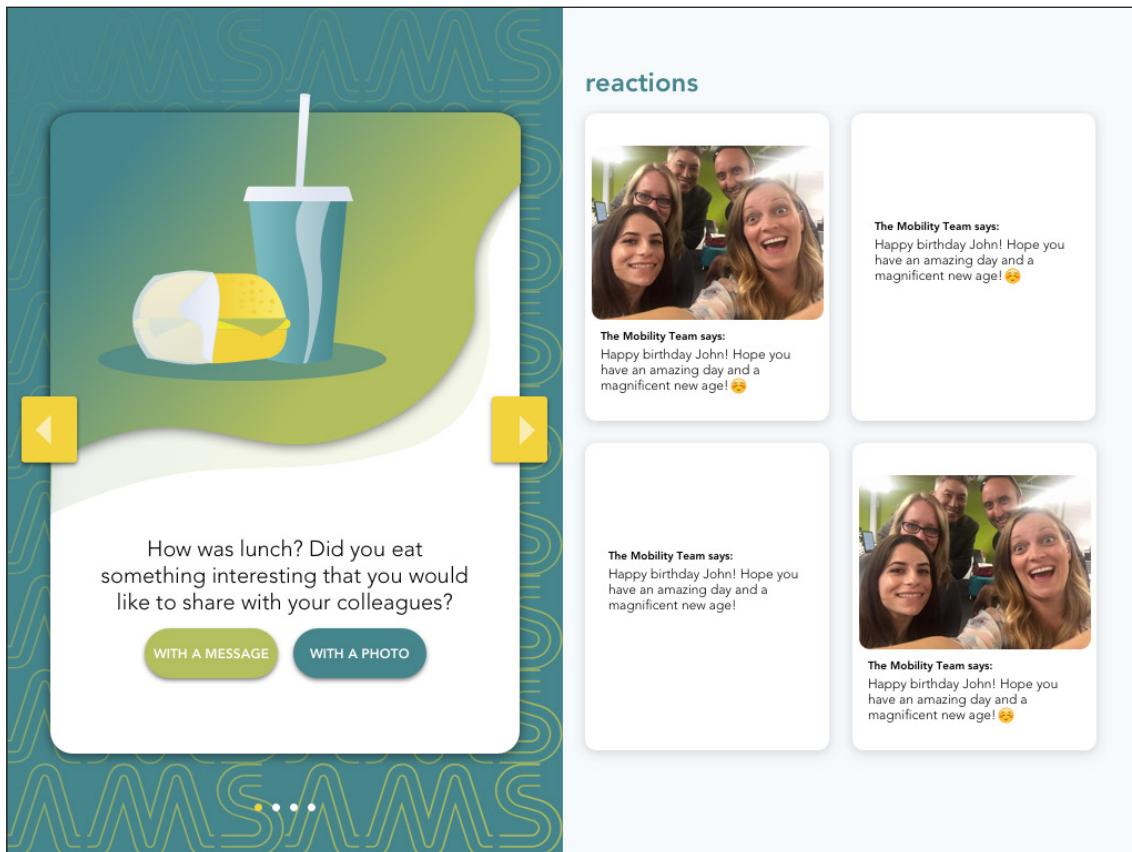


Figure 36: Lunch trigger interface.

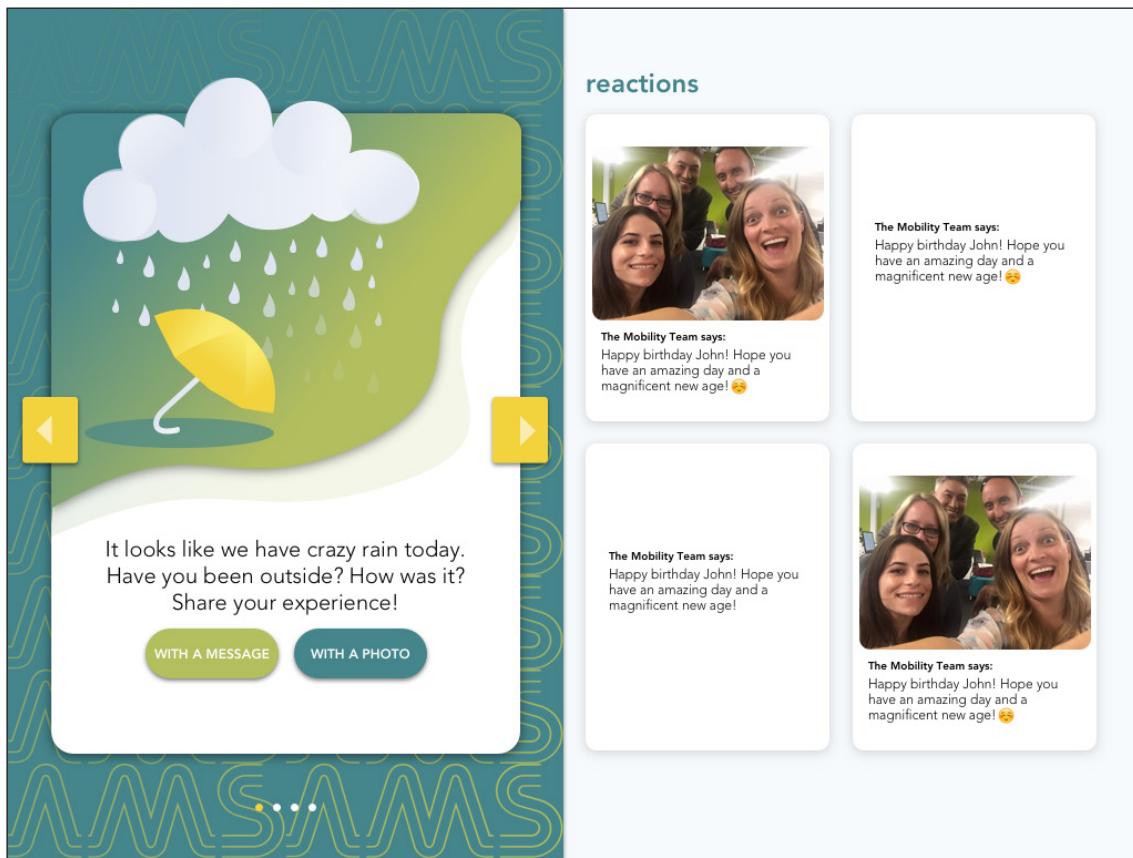


Figure 37: Heavy rain trigger interface.

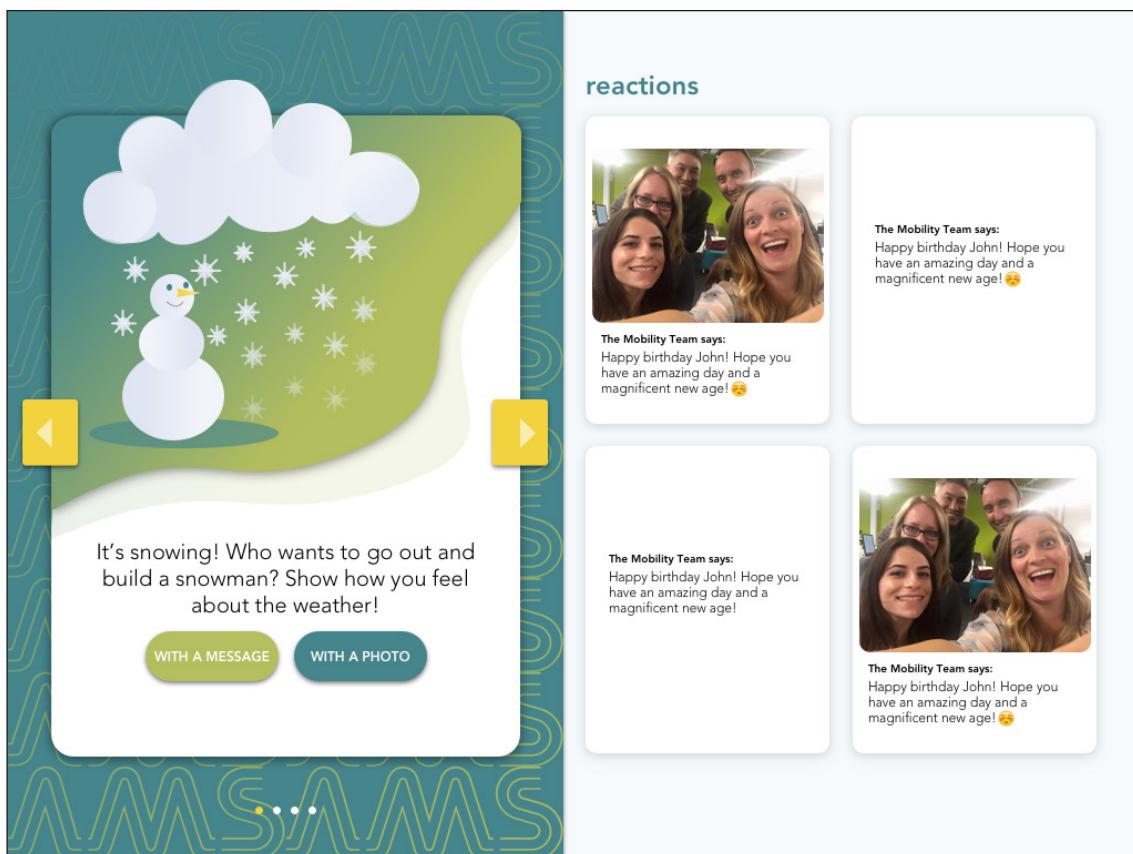


Figure 38: Snow trigger interface.

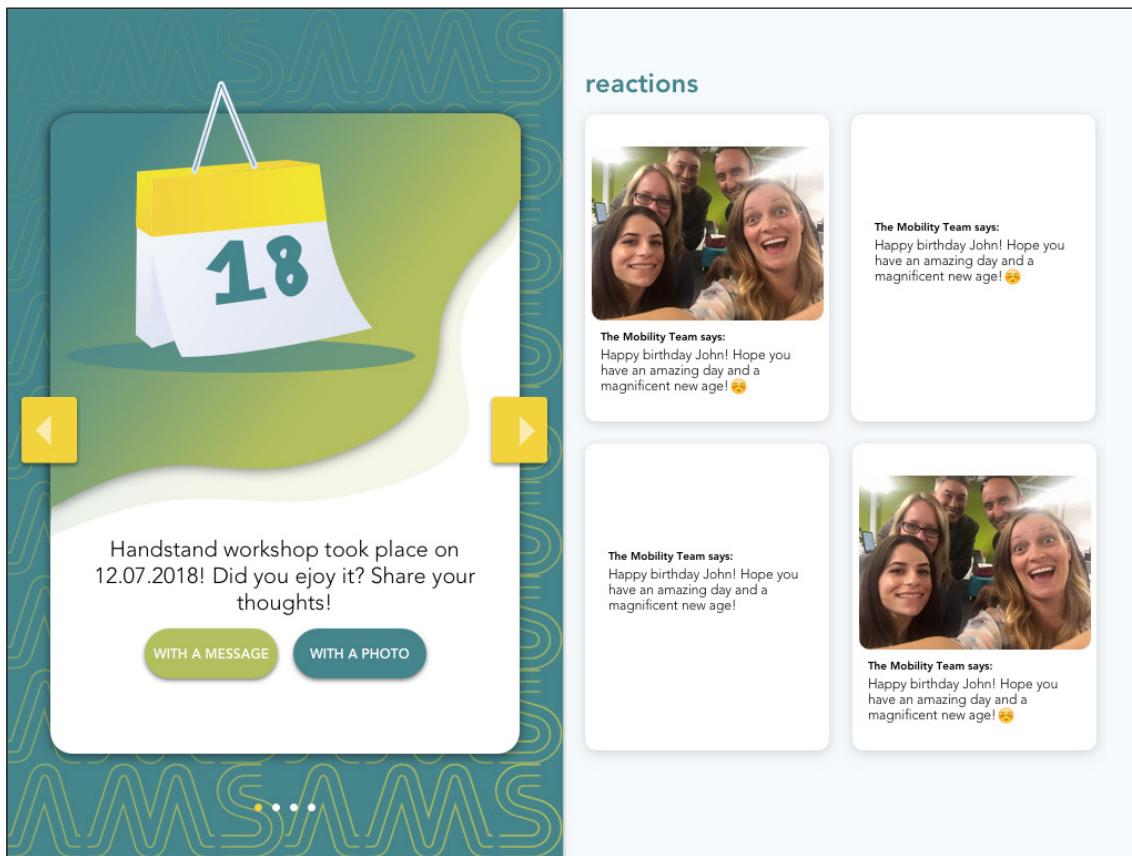


Figure 39: Internal and external events trigger interface.

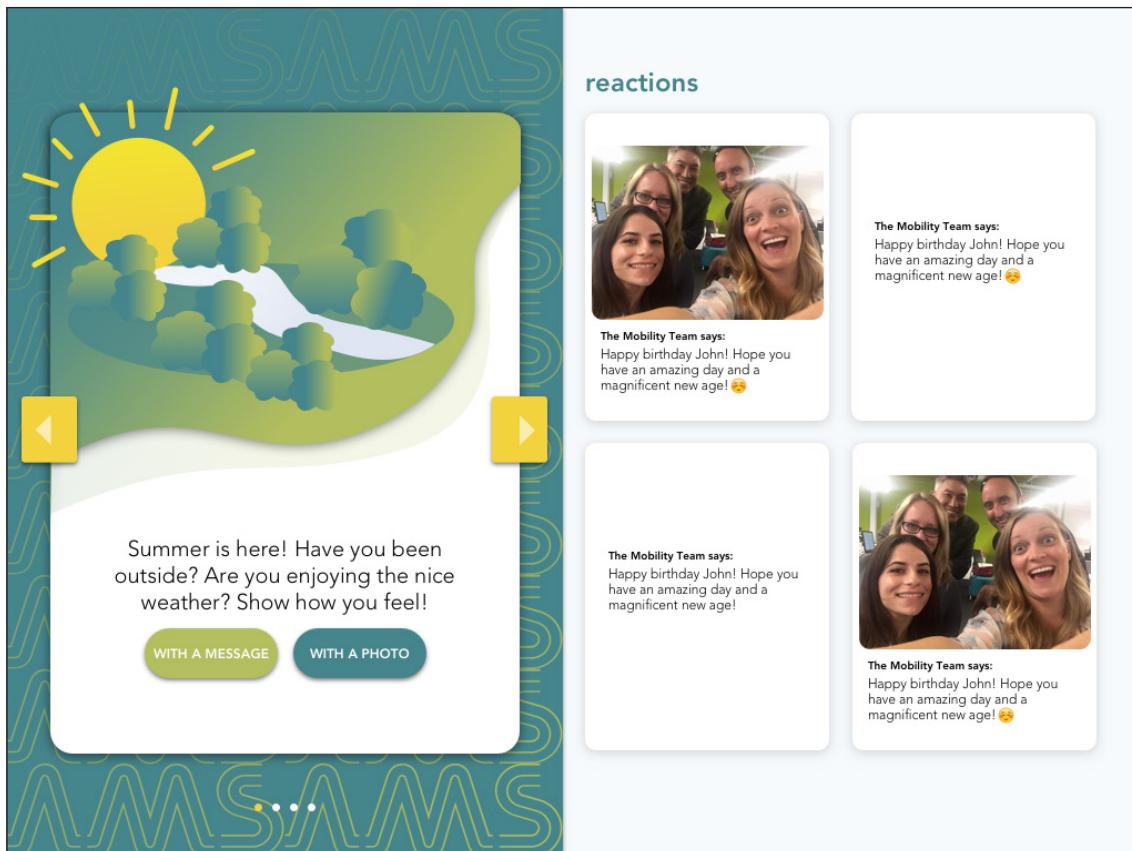


Figure 40: Warm weather trigger interface.

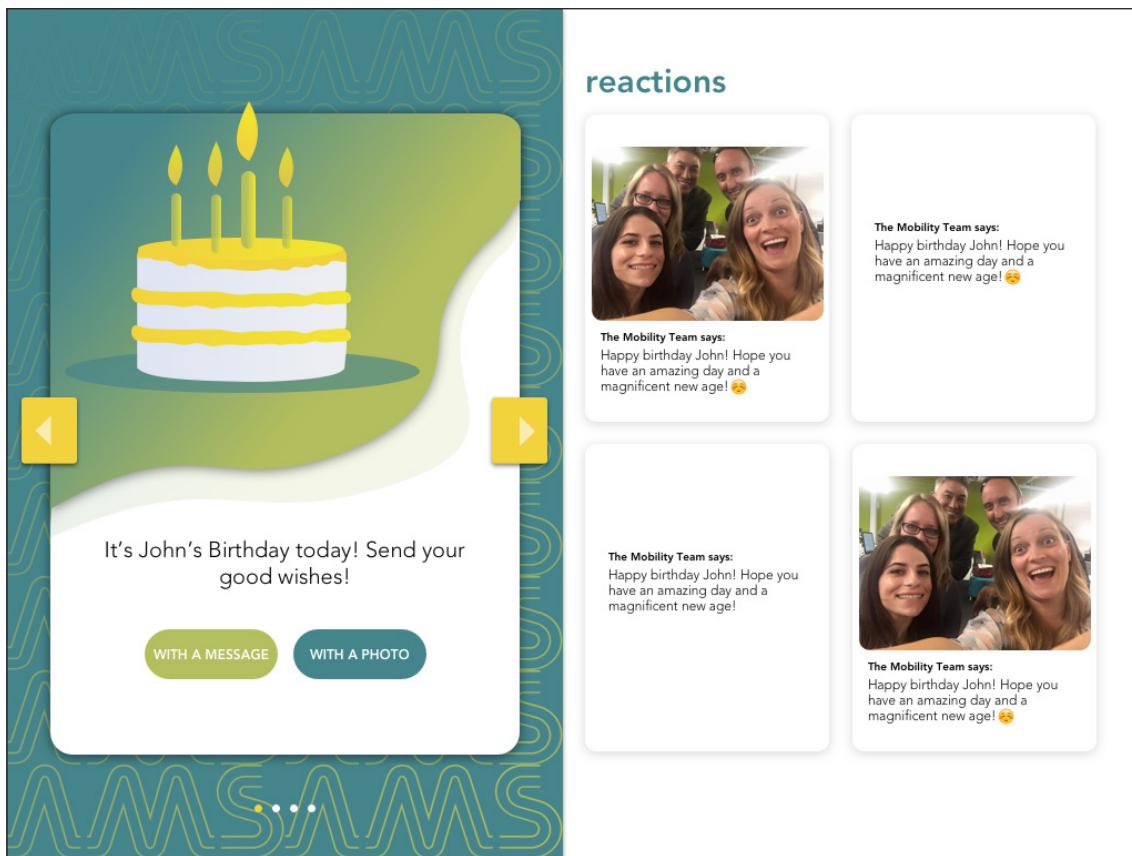


Figure 41: Birthday trigger interface.

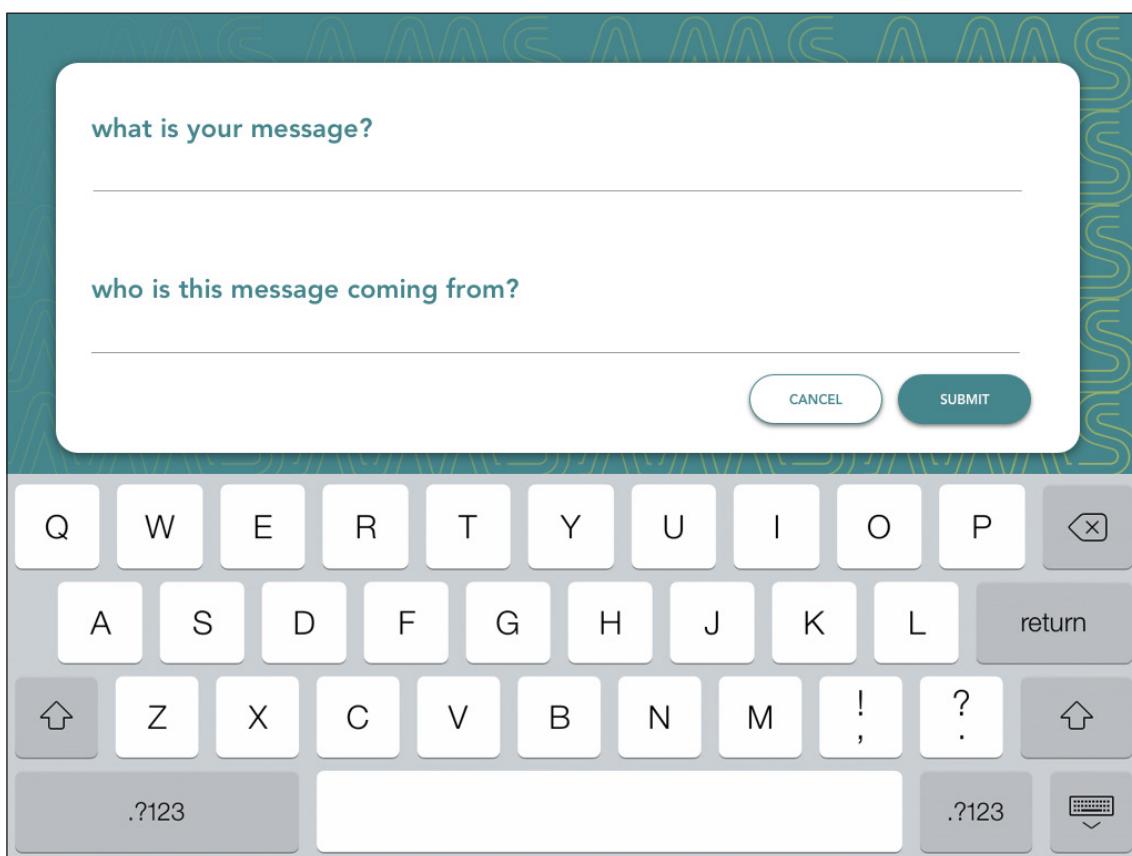


Figure 42: Caption and signing screen for the text only reactions.

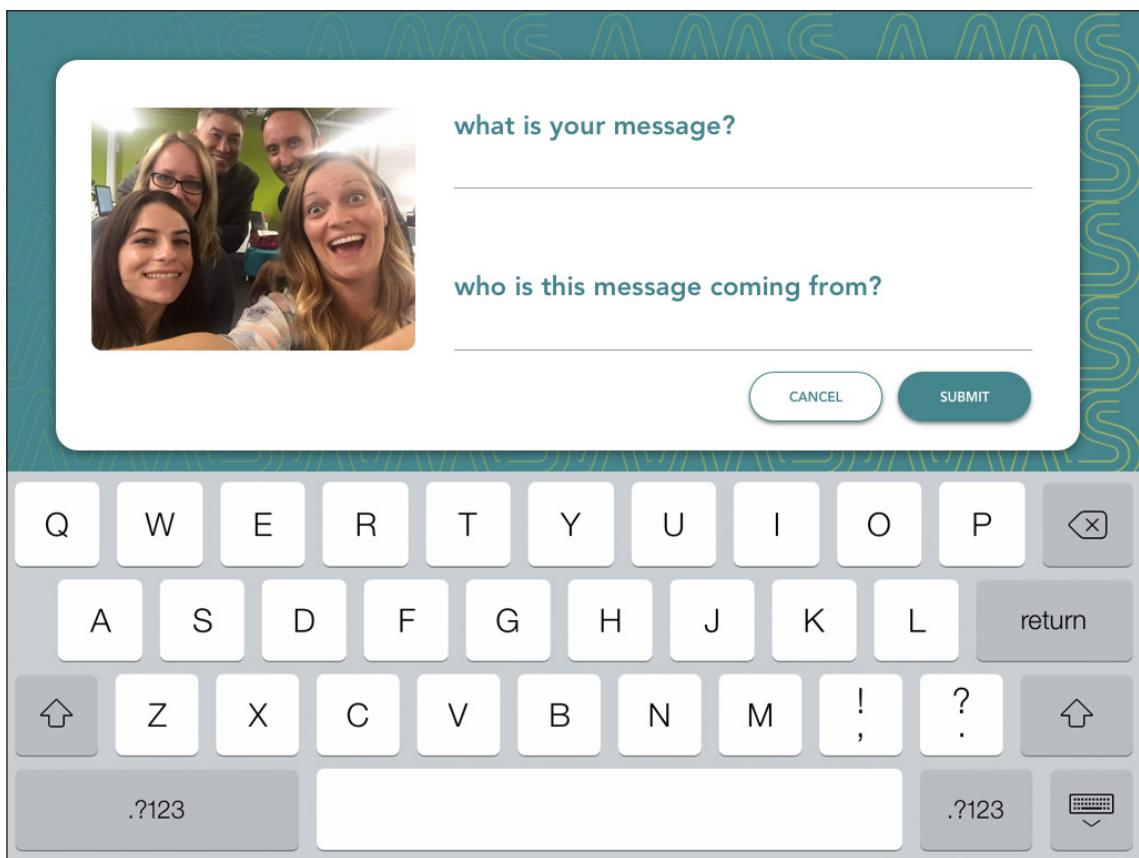


Figure 43: Caption and signing screen for the reactions that include a selfie.

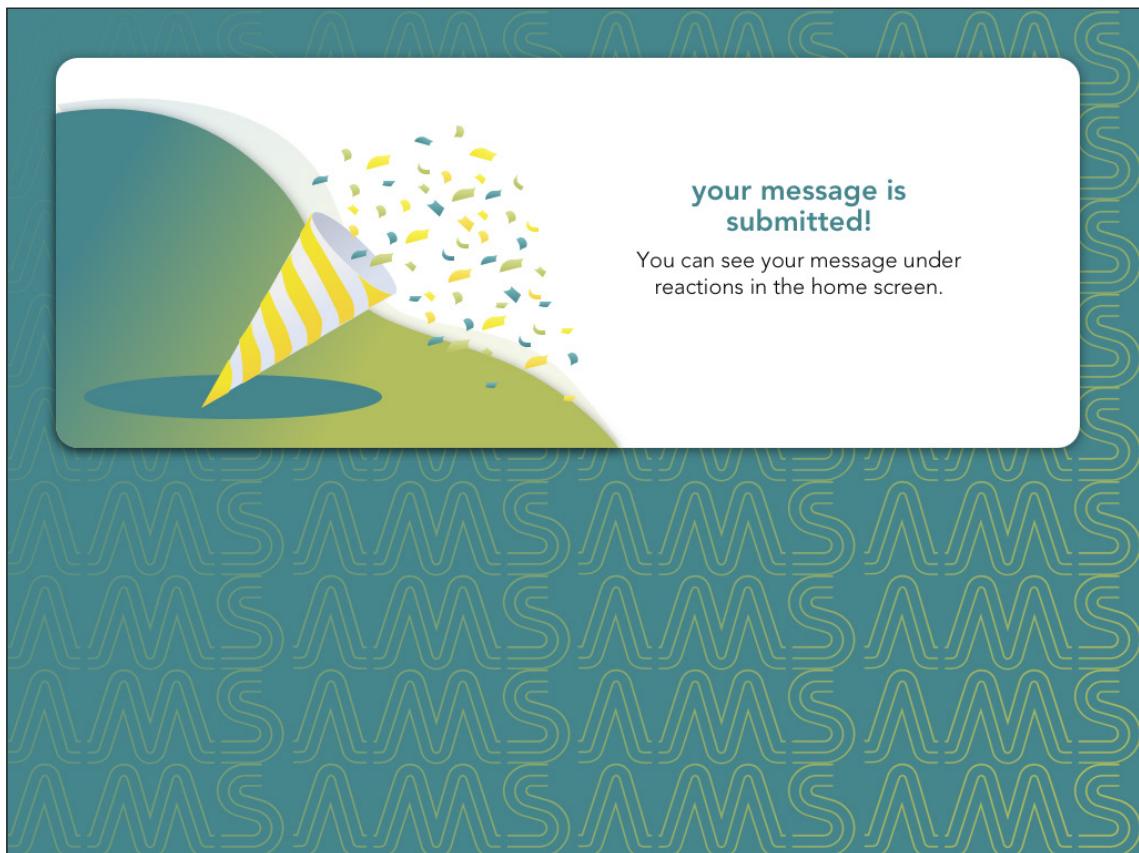


Figure 44: Submission screen.

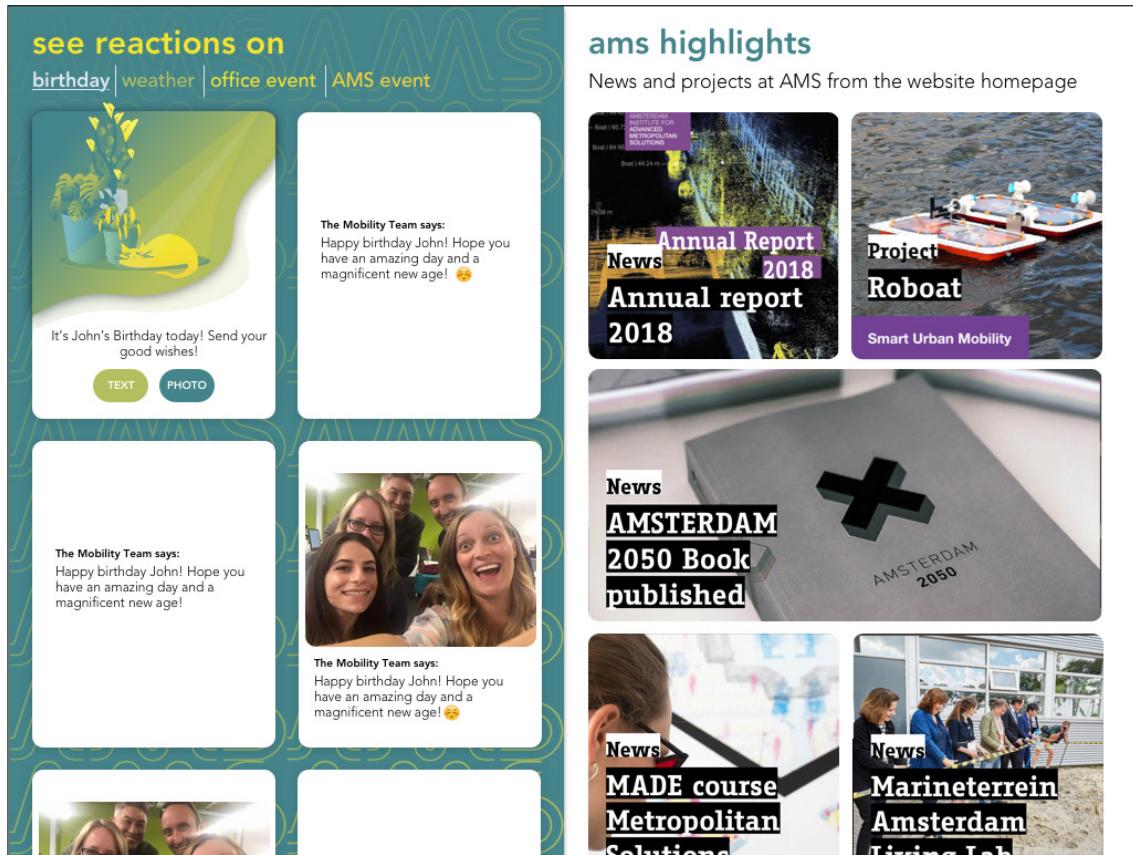


Figure 45: Display mode with weekend trigger.

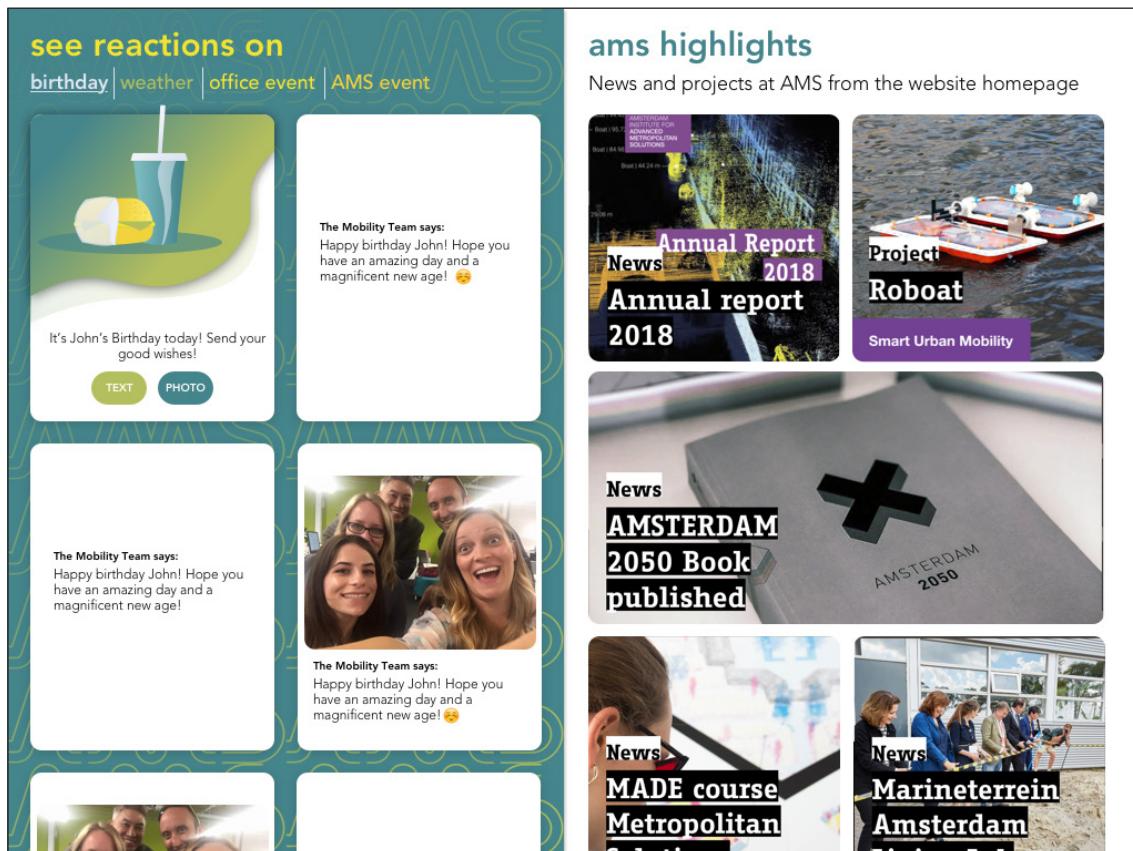


Figure 46: Display mode with lunch trigger.

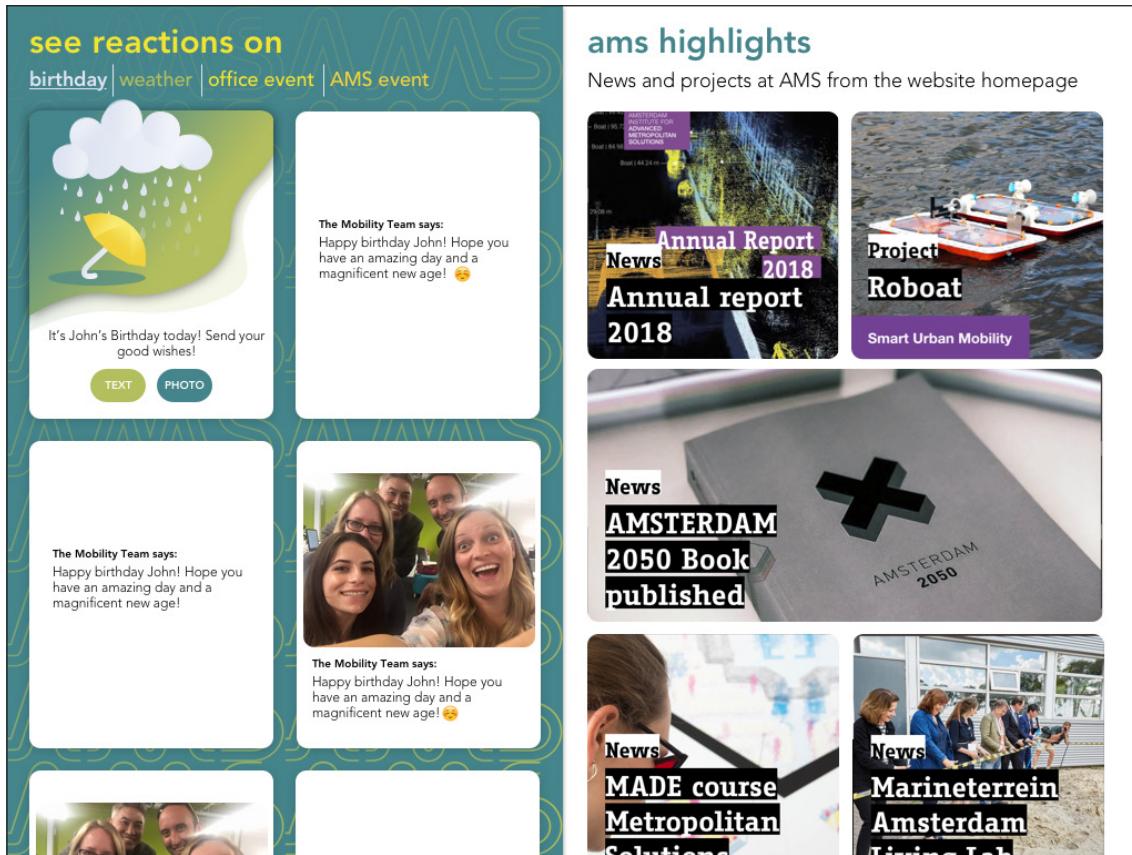


Figure 47: Display mode with heavy rain trigger.

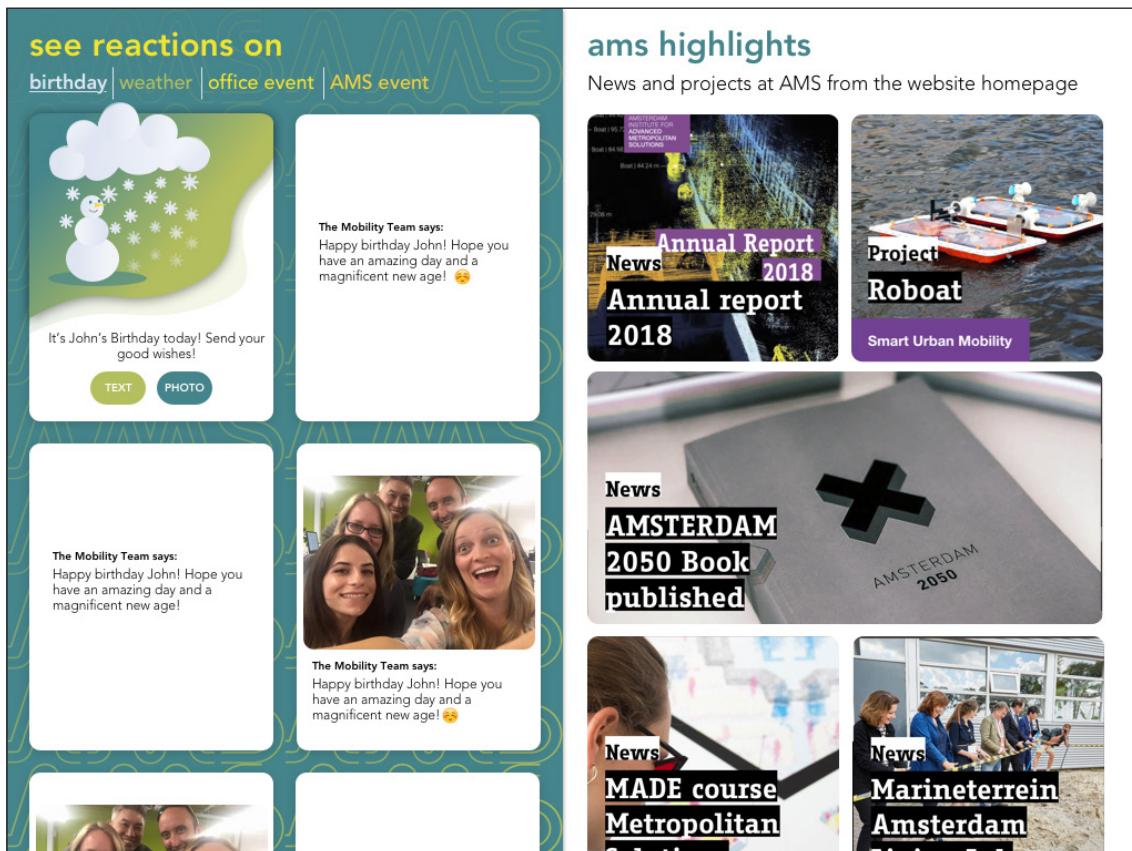


Figure 48: Display mode with snow trigger.

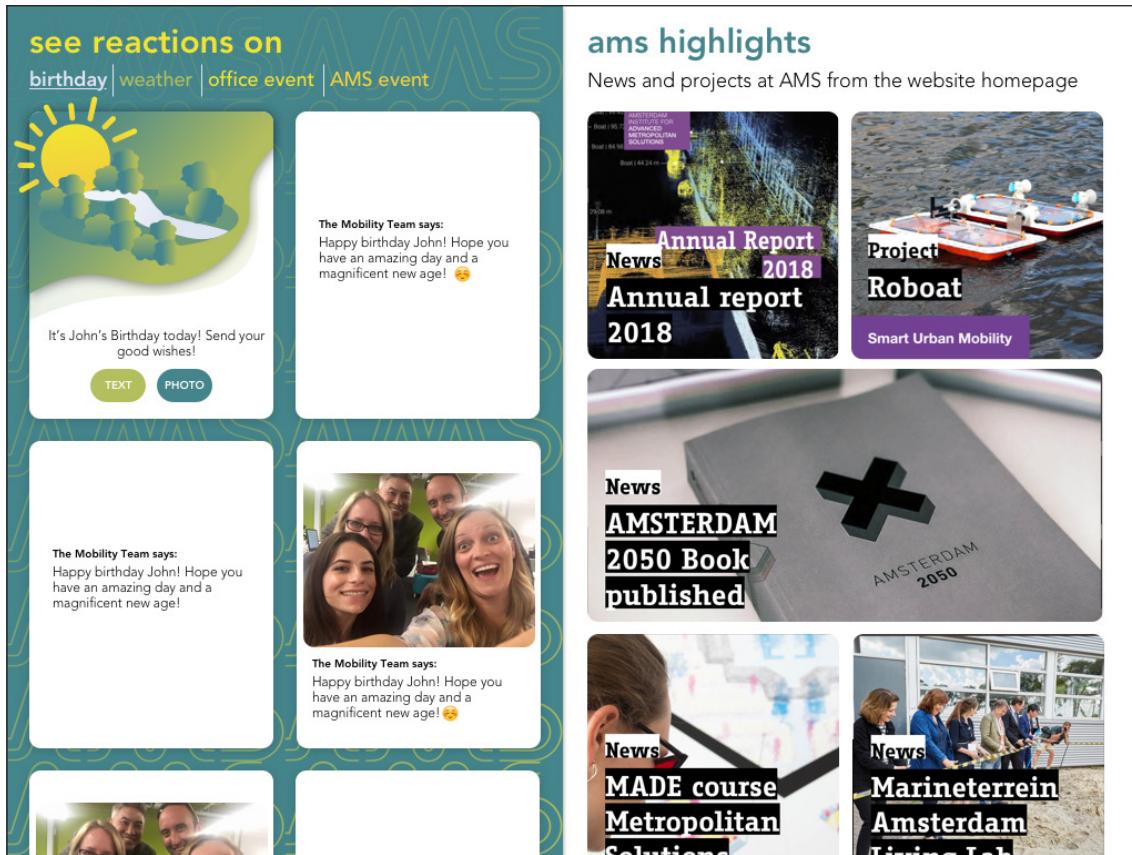


Figure 49: Display mode with warm weather trigger.

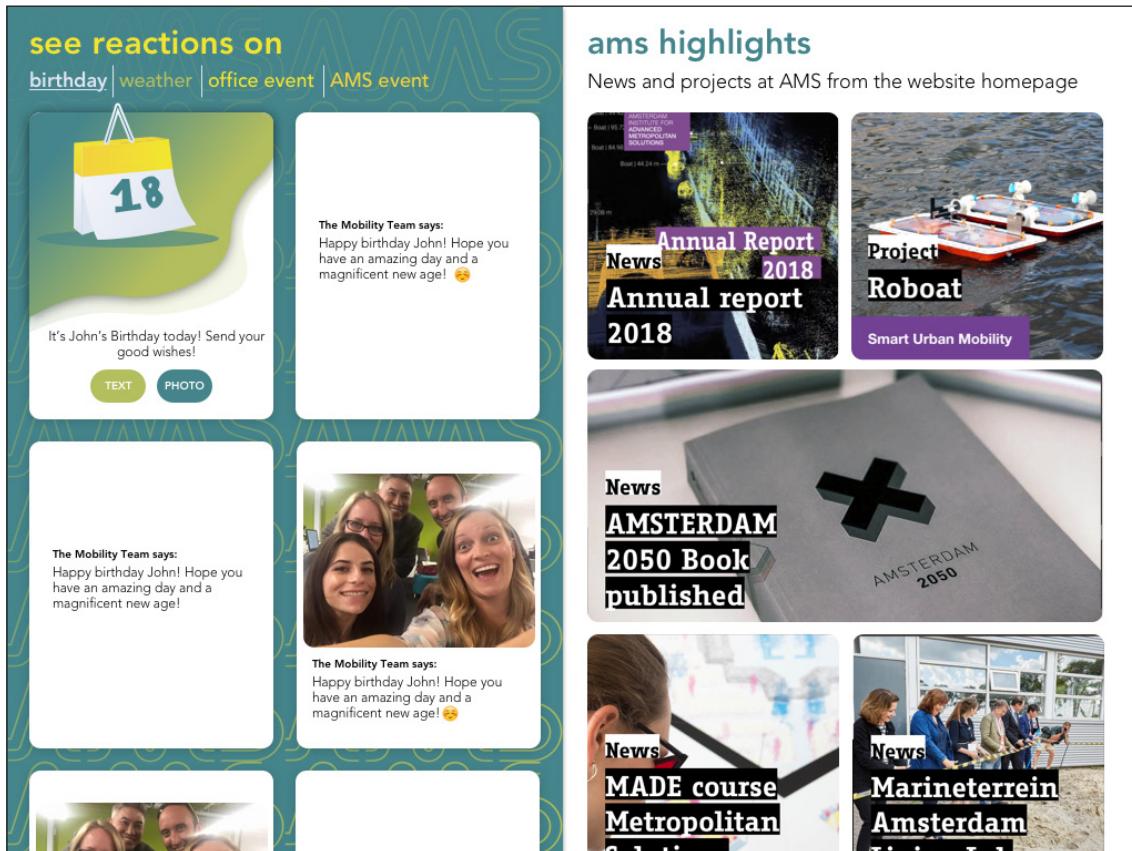


Figure 50: Display mode with internal and external events trigger.

see reactions on

[birthday](#) | [weather](#) | [office event](#) | [AMS event](#)



It's John's Birthday today! Send your good wishes!

[TEXT](#) [PHOTO](#)

The Mobility Team says:

Happy birthday John! Hope you have an amazing day and a magnificent new age! 😊

The Mobility Team says:

Happy birthday John! Hope you have an amazing day and a magnificent new age!



The Mobility Team says:

Happy birthday John! Hope you have an amazing day and a magnificent new age! 😊



ams highlights

News and projects at AMS from the website homepage



Annual Report
2018



Project
Roboat



News
**AMSTERDAM
2050 Book
published**



News
**MADE course
Metropolitan**



News
**Marineterrein
Amsterdam**

Figure 51: Display mode with birthday trigger.



6.0 Conclusion

The chapter summarizes the findings, reflects on the process and gives opinions on how this research can be continued further.

6.1 Main Findings

6.1.1 Problem and Design Goal

The project explored the effects of the flexible office setting on the communication between colleagues. These effects were mainly due to the dynamic nature of the flexible office which requires the employees to be constantly on the go. As a consequence, **colleagues end up spending less time being physically together** and it becomes harder for them to form deeper relationships with each other. The result of this situation is a high number of shallow relationships within the office context, causing the majority of colleagues to **communicate with each other less**. Although there are tools to provide communication alternatives for this on-the-go situation they fail to encourage people to engage in inclusion and pleasure motives of communication for various reasons.. Therefore, this project aimed to autonomously motivate people to engage in pleasure and inclusion motives of communication in order to strengthen the feeling of community.

6.1.2 Good Triggers

To achieve this goal, the project made use of conversation triggers that would invite people to have fun conversations about stuff that are not necessarily work related. With the outcomes of the research, I was able to group the triggers in three main categories: people related with the highest level of stimulation, situation related with medium level of stimulation and content related with lowest or almost no level of stimulation. The project makes use of people related triggers. These are in this context birthdays and situation related triggers (events, weather situations or activities) depending on the date and time. These triggers are presented to users as questions through a platform that is placed on top of the coffee machine (Photo 14). These questions invite colleagues to react on them by taking photos or writing messages that express their feelings. By posting this content to the platform, people share their opinions and these posts form the initiation of a communication among colleagues.

There are four characteristics for the triggers to successfully motivate people to

react on them. These are; the relatability of a trigger with the user group that it is presented, the fit between the trigger and the context that it is placed, the ability to connect people and finally the element of novelty. The trigger has a higher chance of succeeding when these characteristics are kept in mind while designing.

6.1.3 Trigger Guidelines

To help other designers increase the number of triggers or to be able to design new triggers that can be used in other contexts, the project sets trigger guidelines by analyzing the outcomes. These guidelines aim to serve as a blueprint for designing new triggers.

The guidelines for designing a trigger are:

Using relatable questions about people or situations that users can encounter or already have encountered.

Using targeted phrasing, just like questions asked in a conversation. Instead of saying "what do you think..." saying "did you enjoy..." or "are you excited..." works better because it takes away the feeling of a template question and makes it feel more like a conversation.

It needs to have a connecting characteristic, such as sending messages to a person or sharing opinions in order to see the like-minded individuals.

It needs to be generated with the right type of data that comes from the same context as the users so that they can identify with it.

6.1.4 End Result and Room for Improvement

The result of all this research and guidelines is a digital platform that is displayed on a screen which is placed at the common facilities in an office. In this context, the chosen common facility is the coffee machine. The final product aims to amplify the effect of current communication triggers, by broadcasting them on this platform. This way the triggers are no longer time and space related and can reach to more colleagues and connect the ones that are not at the same place at the same time.

Remember the researcher called Sally in the beginning? She did not know anyone from the office that is outside her immediate

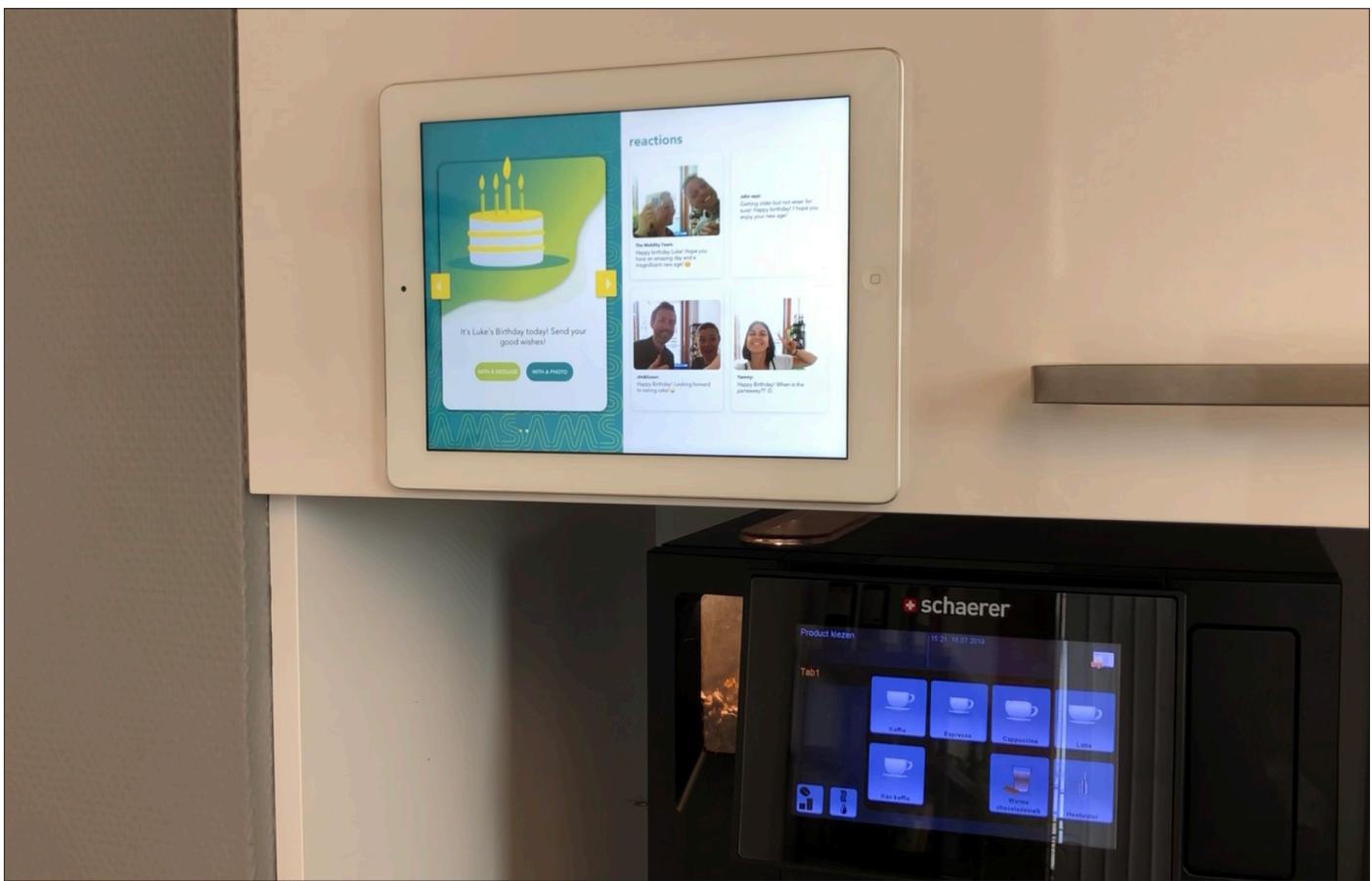


Photo 14: Task flow legend

working circle so her conversations were limited to the people with whom she already worked with. This made her miss some of the collaboration opportunities she may have with the people working at AMS since most of them share common interests on urban issues. With this platform, Sally can share her opinions and read about other's while she is getting coffee. Next time she's in the office and sees someone who has already shared a reaction on the platform, she can just say "Hey! I saw that it was your birthday last week! How was it?" or have someone else give a comment in real life about a reaction she has shared earlier. This way her conversations at work can extend from her immediate working circle, forming a connection with the colleagues that she does not actively work with.

The above scenario still requires some social skills and courage to be outgoing with people and these might be two things some people may struggle with. So the platform still has a lot of points that can be improved to smoothen the transition between the platform communication and the face to face

communication. Deeper user flows involving user interaction with each other within the platform, user generated content or error scenarios are still to be worked on. With that said, the platform as it is can also serve as a communication trigger and an initiation point for face to face interpersonal communication. This can be a valuable start to conduct further research that might open doors to deeper interactions.

6.2 Reflection on the Process

6.2.1 Reflection on the Approach

The project used an iterative design approach by analyzing the needs in the context and addressing it with interventions. In the end one of the interventions evolved into the final concept which is the communication platform that is placed on top of the coffee machine.

Overall, the process included three iterations on the concept that evolved to the final product and one iteration that was discontinued. During this period, some of the iteration ideas were not implemented due to

shortage of my prototyping skills. Due to these skill and time limitations I could not test the exact interventions that I wanted but still I found ways of testing that would answer my research questions.

In general, I can say that the project successfully applied the iterative design process. Throughout the project I placed interventions in the context and assessed their effects by asking questions to the participants about their experience and feedbacks. This helped me to develop the product further and further each time according to the users' needs.

6.2.2 Reflection on the Research Context

The research took place in the AMS Institute office with the help of the employees working there. They contributed to user interviews and the co-design workshop. Since the final design is developed and tested in the same context, participants may be more eager to adopt the product due to their contributions to the design process. This biased approach by the participants may misrepresent the actual adoption rates of the product. The product till needs to be tested in another context in order to have a non-biased assessment of the adoption rate.

Similar to the previous point, as the research and testing is done in one context only, the triggers and the data that feeds these triggers are retrieved from AMS Institute office only. Each flexible office has their own characteristics, some of them have internal dashboards, accounts on different services, offices in different locations or bigger offices with several floors. All these different characteristics can add to the type of the triggers or change the data that is being used to generate triggers. Also, the context allowed the product to be placed on top of the coffee machine. With a different type of coffee serving unit, this may have not been the case so different common facilities can accommodate different interactions.

The context overall provided rich insights that allowed the project to evolve into a product. It was always available for research and testing, contributing to the iterative design process of the project. This provided a solid ground for me to find answers for the research

questions I had throughout the project.

6.3 Further Research

6.3.1. Use of Other Types of Data

The research revealed many aspects about designing communication triggers and their core characteristic to achieve successful results. However, the answers received from the research opened new doors with more questions behind it. The outcomes show that person related triggers are the best at motivating people to start a conversation. For now, the research only uses birthdays of the colleagues as person related triggers. Increasing the number of person related triggers can serve beneficial for the depth of the interpersonal relationships in the AMS context. Therefore, it is valuable to investigate what sort of other personal data can be used. Making use of the data that people generate via their personal accounts can be a good way but making people feel comfortable about sharing this type of data and the extent of the use still rests as a design challenge to be addressed.

6.3.2 Implementation to other Contexts

The use of the platform in different contexts is also another aspect that is yet to be investigated. New types of triggers can be generated for the flexible offices with different characteristics and some of the triggers that are mentioned in this project may become irrelevant. This is also something to research further in order to come up with globally applicable trigger guidelines.

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