



CHALMERS

Motivating users to contribute with original content on social media

Thesis report at bachelor engineering program Design and Product development

SIMON DE CASTRO

ANYA TOFTEFORS

DEPARTMENT OF INDUSTRIAL AND MATERIALS SCIENCE

CHALMERS UNIVERSITY OF TECHNOLOGY

Gothenburg, Sweden 2024

www.chalmers.se

BACHELOR'S THESIS 2024

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SIMON DE CASTRO

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Supervisor: FELIX HENRIKSSON, DEPARTMENT OF INDUSTRIAL AND MATERIALS
SCIENCE

Supervisor: TINA KOOHNAVARD, SENIOR USER RESEARCHER, HUMMY

Examiner: CECILIA BERLIN, DEPARTMENT OF INDUSTRIAL AND MATERIALS SCIENCE

Chalmers University of Technology SE – 412 96 Gothenburg

Phone: +46 (0)31-772 1000

Contact to order the report: *cecilia.Berlin@chalmers.se*

All figures are illustrated by the authors, if nothing else is specified.

Printed by Chalmers Reproservice

Gothenburg, Seden 2024

Abstract

The industry surrounding social media is as ever-changing as the media itself, and the problems facing both users and developers can be difficult to identify. The social media landscape itself is presently focused on influencers and their followers, leading to an unbalanced distribution of attention, speaking power and arguably a need for new perspectives. Thus, the purpose of this project was to investigate and catalogue the systems and mechanics which influence how users interact with existing social media platforms, and how they are encouraged or discouraged to participate themselves. The project is done in collaboration with hummy, which is a tech startup company that has entered the market with many ambitions, among them to introduce a healthier version of social media and to offer a versatile community building hub.

These questions were initially investigated through literature research, which lead to some important insights. Namely, motivating users to seek attention for themselves is complicated. Motivation through rewards is usually only temporarily successful and does not contribute to a satisfactory experience. Other, more subtle methods for steering user behaviour are effective but needs to be carefully utilised as to not veer in a manipulative or otherwise unethical direction.

The literature research was followed up with user research studies, which consisted of interviews. These were conducted with the goal of gaining an understanding of how users think and act when posting or interacting with other peoples' posts. Through analysis, the main issues for users were identified and redefined as a list of requirements for future systems. Following these requirements, several ideas and concepts were developed, refined and evaluated, resulting in a final prototype concept.

The final concept aims to solve several, but not all, of the listed requirements with the ambition to reduce expectations and anxieties, while also facilitating genuine social interactions between users. Solving these requirements is achieved with an interface that replaces likes and a numerical counter with emojis that users may pick to react to existing posts. This solution and the design ques behind it are believed to be compatible with many systems and serves as an alternative to the common "like"-button.

Preface

We wish to thank Felix Henriksson, our supervisor, for his continuous support and feedback throughout the project. Likewise, we wish to thank our examiner Cecilia Berlin for taking on our project and guiding us through it.

Special thanks to Tina Koohnavard for being our primary contact and supervisor from hummy. Thanks to Claes Marten, founder of hummy, for giving us the opportunity to work with them as well as well as showing us his vision. We also wish to thank Magnus Ewerlöf, programmer at hummy, for giving us a sneak-peak at hummy's future ambitions.

Glossary

Camera roll – An application used to store photos and images on a phone or tablet.

Feed – A scrollable page on a social media platform, containing posts.

Influencer – A certain type of user who spends a lot of time creating content on social media, often as their full-time job.

Interface – A place where two systems can communicate with each other or where a person can communicate with a system. In this report interface refers to user interface, which is the way information is presented to a person.

Platform – A website or app hosted by social media

Post – A piece of content on a social media platform, created by a user

Social media – Public or community-centred spaces online with the purpose of hosting social interactions. For the purposes of this project, it includes spaces such as Instagram, Snapchat, Facebook and X but also YouTube, Discord and Reddit.

UI – Is short for User Interface and refers to the visual elements, such as buttons and icons.

UX – Is short for User Experience and refers to the interaction between the user and the product.

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1. Background

Social media are an integral part of everyday modern life. They are used as a news outlet, as communication, entertainment and much more. Information and attention can be viewed as currencies on the same level as material goods, arguably since the turn of the millennium. The online landscape is dominated by quick, snappy content and an influencer culture where contentious topics are encouraged. Dubbed the attention economy, the current climate is based on both platforms and content creators marketing themselves to gain as much attention and engagement as possible. This has led to systems that are often described as addictive, since they utilise as many tools for keeping attention as possible (Kane, 2019).

However, despite the vast number of users who engage in social media in various ways, the percentage of users who actually contribute with their own content is minimal. Participation inequality, as described by Nielsen (2006), means that most of the content online is produced by a small percentage of users while the rest only consume. This leads to an online landscape where it is rare for users to engage with each other socially, and where it is more common to follow the few who post. This phenomenon, in addition to the aforementioned attention economy, means that the most controversial opinions and subjects are more common to come across, since they generate more engagement, leading to a climate that is more often than not negative.

Thusly, there is a need for promoting increased user activity, both from a commercial and sociological standpoint. This thesis aims to explore this need through the following questions. To that end, what methods are available and effective in encouraging certain user behaviour, and are they ethically permissible? Furthermore, who are the primary users of social media and what are their views on it? Finally, how can these aspects be taken into account when designing new functions, interfaces and platforms? The purpose of this thesis is to investigate these questions and specify how they can be addressed when designing functions for an application.

1.1 The collaboration company: hummy

Hummy (officially stylized in lowercase as *hummy*) is a tech startup company, currently developing a platform with the same name. Their ambition as a new app is mainly to set themselves apart from the established options such as Facebook and Instagram, but also to work as the healthier, less toxic version of social media. The app has not been available for long, having been released in 2023, and the company is looking to find a definitive identity for the app (T. Koohnavard, personal communication, December 2024).

Being a relatively new company, hummy has had some trouble finding a suitable identity and their focus has been on growing rather than specifying their niche on the market. For the initial launch of the app, the company relied heavily on influencers to garner attention and engagement but has since shifted focus to make sure the average users feel welcome and comfortable in posting. It is important to hummy that users engage with each other, build communities and create more engagement.

Hummy has ambitions to challenge the media giants such as Facebook, TikTok and Snapchat, all platforms that arguably maintain their large market shares by capitalising on their users growing addicted or trapped by personalised algorithms, likes and attention. Solving this contradictory problem, gaining the attention of users while staying away from predatory practices, will surely be one of hummy's main challenges (T. Koohnavard, personal communication, December 2024).

In the beginning of this thesis work, hummy was mainly a short-video hosting platform. By posting short video clips in different themed albums called hummies, the users could watch and share other users' creations, tips and opinions within different subjects. Users with the same interests could find each other's content easier since the hummies were sorted by theme, resulting in an ease of access to the relevant audience or community. During the mid-point of the project, however, the company made a major pivot, and the old system was no longer in use.

One of hummy's latest ambitions is creating a detailed community-building system. While the specifics are not set, the motivation for this is that hummy wishes to help users customise their communities to only have the functions relevant to them. The idea is that existing platforms have plenty of functions that many users do not need, and to give each user the

ability to build a platform that fits them best. This is recognised as an untapped part of the market, since other platforms are built in the same mould. Hummy's ambition is to offer a unique experience, customised to every community's needs. (T. Koohnavard, personal communication, December 2024).

Lastly, since hummy undergoes frequent changes and might change direction again in the future, the goals and ambitions of this thesis work will be kept independent from hummy's versions. The main benefit to this is that the deliverables from the thesis work can be generally applicable and useful to hummy regardless of the direction they choose to follow in the future.

1.2 Purpose and Problem

The goal of the project is to improve the user experience within the app, implying a function or a part and not the entire app. With this in mind, there is an underlying issue of balancing a need for maximised engagement with a simultaneous need of minimising negative impact upon the user. While these needs run the risk of contradicting each other, they are both required.

The first project output are the results from the user study, which serves to gain a greater understanding of how to boost engagement in hummy's users. The second output is a digital interface prototype and a collection of recommendations relating to development of future interface projects. Thus, a key theme of the project is identifying which predatory practices are common in the social media industry, as well as mapping out which parts of social media are seen as motivating rather than addictive by users. Additionally, the links between these aspects and mechanics related to the user experience/interface specifically need to be identified. As such, the final concept prototype needs to work within these limiting factors.

The project aims to answer the following inquiries:

What factors and mechanisms encourage or discourage social media users to contribute with original content in a digital public environment?

How should a concept be designed with regard to the generated insights?

2. Literature Research

Literature research is done in preparation for and during the user research studies for two major reasons: to understand which known forces influence how users behave when posting or refraining to do so, and to understand the ethical concerns that are relevant to the modern social media landscape. While understanding posting behaviour is mainly what the user research is for, literature research offers a more substantiated way to interpret the findings as the literature is often supported by larger studies and more data than can be gathered during this project alone.

The ethical aspects of social media are taken into account so as to avoid known predatory techniques in the concept development phase. While the project aims to increase the amount of content contributed by users, it should not come at the expense of the user's wellbeing nor the principles of hummy.

2.1 The 90-9-1 effect

The phenomenon where a majority of users assume the role of consumer and a minority acts as content creators has been described as “the 90-9-1 effect” by Nielsen (2006). The effect is thus named since 90% of users do not post at all, 9% post a little and 1% contribute with almost all content. According to Nielsen, this dynamic will be reflected in all social media and is near impossible to eliminate, but the percentages vary and can be influenced. Minimising this effect is crucial to reach hummy's ambition of cultivating an active community, and there are many negative consequences of so-called participation inequality: feedback and reviews from users may not be representative, political content tends to skew towards extremism, and potentially interesting discussions are taken over by a loud minority.

Furthermore, Nielsen (2006) describes a number of strategies that may be utilised to minimise the effect of participation inequality. One of these is to lower the barrier to participate. There is, for example, less effort required to leave a like than to write a comment. Related to this is allowing users to edit existing content as opposed to them needing to create from scratch. Users are less likely to lose motivation if they are presented with something appealing to build upon. Nielsen also recommends making participation a side effect,

meaning that users leave an impact simply by using the platform as they usually do. An example of this might be a recommendation system based on what users that like similar things are currently consuming. The users in such a system do not need to alter their usage or even interact directly, but they indirectly help each other find content and the platform might see an increase in engagement from them.

Supporting contributors indiscriminately is risky, according to Nielsen (2006). For example, direct rewards are recommended only to a certain extent. Allowing contributors to monetise their content is effective, since it incentivises contribution from people who are not regular users, but it also runs the risk that already active users grow even more dominant. Rewards do not necessarily equate to money, of course. Another aspect of this is the importance of promoting quality specifically, to avoid the platform being flooded by only the most active. While the 1% might also have important things to say, promoting them equally to nine- and 90-percenters will make the platform more unbalanced due to the posting habits of the 1%.

The 90-9-1 effect is a helpful tool for understanding the social dynamics online and is employed later in the project, specifically as a way to categorize certain users and as a framework to discuss social sustainability in online spaces. While not all of Nielsen's recommendations can be seen in the final concept presented in this project, the conclusions and underlying philosophy was employed during the concept development phase to strengthen some ideas and critique others.

2.2 Nudging

In a general sense, nudging is about incentivising users to make certain choices that the designer wants them to without directly telling or forcing them. More specifically to this project, nudging is about how choices are framed and presented to the user. However, there are some ethical concerns regarding nudging and the underlying design philosophy that needs to be taken into consideration during this project (Schmidt & Engelen, 2020).

An example of nudging could be letting an option like donating to charity while already shopping be filled in by default, clearly letting users notice and cancel if they wish. People are more likely to let something pass if it is marked as default than to opt into something extra, so this method is effective as long as users do not find it obtrusive or manipulative. It

could also be simpler, like placing certain items closer to the checkout than others. In this case nudging is more about letting people see the preferred option before other options. Crucially, nudging should not change the actual premises of the choice presented. In other words, paying someone to choose the preferred alternative is not nudging. Nudging is about manipulating the part of the user's psyche that is more prone to reflexes and less conscious thought. A rather unique problem with nudging is that it cannot be too effective, since if the design convinces too many people it could be argued they did not have the chance to make a choice at all. This problem further emphasises the fact that nudging can never be about forcing choices or omitting important information (Schmidt & Engelen, 2020).

A common argument against nudging is that it undermines freedom of choice and that the philosophy behind it borders on condescension. In this framework, humans are agents of free will and should be trusted to make the best judgement themselves. Another concern is that if nudging becomes more prevalent, the practice being normalised might put users into a mindset where they feel less responsible for their own choices; the fact that choices are always framed to highlight the "correct" answer might undermine intelligent decision-making. Counter to this, proponents of nudging might argue that nudging leaves the user plenty of space to make their own call, and that in some instances nudging can even the odds in a choice that might otherwise be biased in another direction. In essence, this means that users are given the *opportunity* to act as they please, but they might not be given an unfiltered, free-of-bias choice. Presenting an unfiltered choice without some angle or bias is, according to Schmidt & Engelen, nearly impossible. It is important to consider that every way of presenting a choice is bound to come with some bias in the way the question is framed. Thus, being aware of these biases and accounting for them might actually be more ethical. To quote Schmidt & Engelen (2020):

According to nudge proponents, we should treat people as they are. If people are less rational than they think or wish they were be, then respecting them as agents does not imply treating them as perfectly rational choosers.

While the ethics of nudging can be complicated, there are clear benefits. Users are generally not opposed to it and sometimes even approve of it, at least when they are nudged towards behaviours that they agree with. It is comparatively well regarded since nudging, arguably, respects freedom of choice, and is most often transparent in intention.

With regard to this project, nudging offers both a powerful tool and an important warning, relating to both concept development and evaluation. Influencing users can and should be done with their best interest in mind, and it is important that this is kept in mind at all times. While good intentions are a good starting place, forgetting these initial goals and restrictions can lead to manipulative systems.

2.3 Dark UX/deceptive patterns

Originally described by Dr Harry Brignull (2010), dark UX or deceptive patterns in UX refer to certain recurring techniques or tendencies, where there is a deliberate effort to control the user's actions. A key component to these types of manipulation tactics is the tendency to capitalise on unintended actions by the users. In poorly designed systems, users might make erroneous selections due to the mistakes of the designer. In deceptively designed systems, the users are intentionally guided towards an outcome they did not want due to the manipulations of the designer (Deceptive Patterns, 2024). In regard to the project, these patterns were studied with the purpose of understanding why they are used and how they work, so that they may be avoided in the concept development phase.

Since there are many examples of deceptive patterns, as many companies make use of them, there are multiple categories and descriptions. In this report the more condensed and general categories presented by Gray et al. (2018) are used. These categories build upon the dark patterns described by Brignull (2010) but are less dependent on circumstances and are thus more generally applicable. These categories are named as follows: Nagging, Obstruction, Sneaking, Interface Interference and Forced Action.

The theory behind these categories, much like nudging, was kept in mind throughout the project. In contrast to nudging, however, Dark Patterns was only used as a restriction and a point of perspective on what not to do.

2.3.1 Nagging

Any function or mechanic that repeatedly asks the user to perform a certain action falls within this category. A common example of this are pop-up windows that asks if the user wants to turn on some function, like location sharing, and does not offer the alternative to stop asking (Gray et al, 2018).

2.3.2 Obstruction

Design practices that can be described as obstruction are modelled to make it as difficult as possible for the user to reach their desired outcome. This can be as simple as leaving out functions that would make the process easier, but it can also be more elaborate. Gray et al. gives an example of this in the form of ad tracking settings on the Apple iOS 6 model smartphone, where the relevant settings are hidden behind three menus, none of them having a clear description hinting to the user where the setting might be found. Other examples include services that are easy to start or subscribe to, but are exceedingly difficult to cancel, and sites that prevent copying and pasting of text, ensuring that the user has trouble comparing prices effectively (Gray et al, 2018).

2.3.3 Sneaking

This practice works by hiding or disguising relevant information for the user, leading them to make a different choice than if they had the knowledge. A common example of this is where users need to agree to a set of user terms where they also agree to sharing personal information, which is only stated in the fine print (Gray et al, 2018).

2.3.4 Interface Interference

Whenever one item or selection is prioritised over another by the interface itself, it can be described as interface interference. Put simply, the options are presented in such a way that the user is more inclined to choose or even notice one item over the others. An example of this is preselection, where an option is chosen for the user in advance. How transparently this

is communicated varies, but the intent is making the user trust the website to select the best option and exploit the user's trust (Gray et al, 2018).



Figure 1. An example of aesthetic manipulation: Option A looks more appealing and available than Option B due to colouring. (own image)

Another example is a practice called *Aesthetic Manipulation*, which is purely about presenting information in a way that obfuscates or misdirects the user. This can take the form of different colours, like making one button yellow and another button grey so that the user expects the grey option to be unavailable, see figure 1 above. Aesthetic manipulation also includes things like timers running out but resetting, encouraging users to buy something quickly before the offer runs out as well as using emotionally loaded or judgmental language to describe the options presented (Gray et al, 2018).

2.3.5 Forced Action

The user is refused further access unless they undertake a certain action. A prominent example of this are operating systems on a PC that forces the user to start installing an update if they wish to shut down the PC.

2.4 Extrinsic vs Intrinsic motivation

Since the central purpose of the project is to motivate users, theoretical knowledge on motivation in a general sense was needed. While studies done specifically on user behaviour and psychology online is helpful, inspiration was taken from the theory of Extrinsic and Intrinsic motivation (Ryan and Deci, 2000) to broaden the perspective of the project.

Extrinsic motivation describes rewards and other motivating agents that are not tied to the activity itself. This very much applies to reward mechanics such as likes and upvotes, and primarily makes the user happy that they received the reward, not that they excelled at the activity or task. Intrinsic motivation, on the other hand, are aspects within the task or activity that are themselves a reward. With regard to social media, this could simply be the satisfaction of showing other people a picture you took. Accessing intrinsic motivations is harder than extrinsic but offer better long-term motivation. Furthermore, people that rely on extrinsic motivation are more likely to lose interest or give up when the task becomes challenging (Ryan and Deci, 2000).

2.5 Social media and mental health

In a report by Valkenburg et al (2021), the issue of social media use in relation to mental health in adolescents is discussed using an umbrella study. The report describes what types of consequences social media usage might have, but crucially it does not come down to any solid conclusion. Valkenburg et al argues that whether social media directly contributes to mental health issues is up to interpretation: the data itself can point either way. Regardless, the study is an umbrella review and mentions several studies that link social media usage to primarily depression and anxiety, with a varying degree of confirmation.

In some sense, people exhibiting vulnerability opens up for other people being vulnerable as well. In an article called AnxietyTok by Gallagher (2022), named after the loosely defined community on TikTok, the phenomenon of an online support group of sorts is described. Gallagher describes and categorises four types of videos that are commonly shared in this group, which are: Informational, Anecdotal, Accomplishment Sharing, Humour. Informational videos are typically about some fact that the poster has found and wishes to share. Gallagher mentions the positive effect this might have on mentally ill people that find validation from behaviours or issues they thought they were alone in experiencing, but there is a risk that false information is being spread this way. Anecdotal videos are typically about sharing specific stories related to the poster's experience with mental illness. These videos are often genuine and draw positive attention, but come with the risk that certain users might exaggerate or outright lie in order to generate content. Accomplishment Sharing is a category of posts that celebrate some milestone or similar achievement that the poster has accomplished. Here, Gallagher notes that the vulnerability shown is a good example of the

community being supportive. Users are happy to show their accomplishments and the responses are usually respectful and celebratory. Humour videos are generally simpler and shorter, usually only consisting of a joke. These videos are typically only funny for people who relate to the mental illness-related struggles expressed, and Gallagher compares them to inside jokes.

Regarding comments, Gallagher (2022) describes six categories: Praise, Agreement, Criticism, Experience sharing, Question, Strategy sharing. While the nature of comments containing praise, agreement and criticism are fairly self-explanatory, experience sharing was specifically noted to generate a lot of further interactions and was theorised to be important for community-building. A similar situation seemed to occur surrounding the question-type comments, as users often gained a deeper understanding by talking to each other and replying to each other's questions. One user might ask about a specific diagnosis in relation to a video, but the reply might come from someone else than the one who posted the video in the first place. Lastly, while strategy sharing was not as common as other comment types, Gallagher notes that it, like informative videos, runs the risk of being harmful as the information shared might not be factual.

It seems that personal details and fairly honest thoughts are given more freely when the community is perceived as already being open to sharing personal information, but it could also be the case that newcomers can see themselves fitting in *because* of the detailed sharing. AnxietyTok as described by Gallagher can be seen as a fairly close-knitted community, but it is very much an open communication channel that anyone can view or join. As such, the interactions between users described in the article offer an important insight into what motivates and engages users in such online spaces.

The articles by Valkenburg et al. (2021) and Gallagher (2022) were needed to form a multifaceted view of mental health related social media, since they approach the issue from different perspectives. While increased social media usage has connections to poor mental health, there are also opportunities for healing and acceptance online.

2.6 Overchoice and decision paralysis

When presented with a multitude of options, called overchoice, many consumers are overtaken by decision paralysis and might choose to buy nothing at all (Adriatico, J. M. et al, 2022). This phenomenon likely stems from human brains not being capable of processing too much information at a time, and when an individual's cognitive capabilities are pushed to the limit they simply shut down. Even if a choice is ultimately made, overchoice tends to result in consumers being less satisfied. However, a multitude of options is also something that consumers often wish for, since it represents a higher level of personal choice and a chance to show preference. Thus, there is a fine balance when it comes to consumer satisfaction: too high a number of choices, and the consumer is overwhelmed. Too low, and the consumer feels like something is missing. For the purposes of this project, the concept of overchoice and decision paralysis needs to be taken into account when designing new concepts and functions.

2.7 Kano-model

The Kano model (Österlin, 2016) describes how a product satisfies customer needs and how the value of functions change based on customer expectations, see figure 2. For the purposes of this project, it is used as a means of understanding the user research results and evaluating developed concepts.

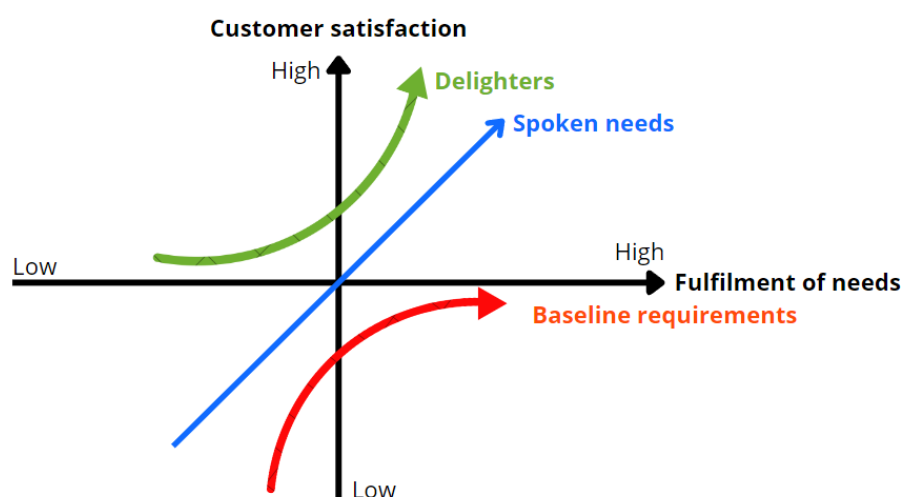


Figure 2. Kano model. (own reproduced image)

The two axes in the graph represent customer satisfaction and fulfilment of needs, respectively. The bottom arrow symbolises baseline requirements, the functions in a product that are necessary for the intended use case. The arrow in the middle symbolises spoken needs, which are mutually understood to be important by both the customer and the company selling the product. Crucially, the uppermost arrow symbolises so-called “delighters”, the products or functions that exceed expectation and lead to high customer value (Österlin, 2016).

3. Method

Since the project is composed of both research and design, this chapter is divided into one part regarding methods for research and another for concept generation.

3.1 User studies & Analysis

The user studies consisted of spontaneous interviews and in-depth interviews, both of which were performed and analysed using the methods as described below. The goal of this phase was to gain a deeper understanding of how users navigate social media, what their habits are and how they feel about it.

3.1.1 Sampling strategies

The theoretical framework regarding sampling was used in the project to examine the findings and to understand what data might be overrepresented or overlooked. The strategies related to this project are convenience and purposive sampling.

Convenience sampling describes when data is gathered at easily accessible places, which might not represent a random selection of the general population (Robinson, 2013).

Therefore, it is important to take into account where, how and from whom the data is collected. This type of sampling is not necessarily a problem, as long as the demographics selected are identified and accounted for. One thing to keep in mind during this approach is that unwarranted connections may occur when the samples are not chosen at random, which aligns with the convenience sampling strategy (Robinson, 2013).

The purposive sampling strategies do not require participants to be sampled at random, instead they are picked out by the researcher (Robinson, 2013). This strategy ensures that the different groups in a sampling universe, meaning the individuals within the decided requirement, are represented in the final sample. Furthermore, the researcher needs theoretical understanding of the topic to accurately pick out different individuals with a unique perspective to ensure a correct representative sampling.

If the researcher includes groups that they consider meaningful the sample is considered to be a stratified sample, a subcategory of purposive sampling (Robinson, 2013). These groups can be based on geography, identity, economics and so on as long as there is theoretical rationale to assume a meaningful difference between the groups.

3.1.2 Interviews

Interviewing, the practice of asking questions and recording the answers, is a common method for qualitative research. In this project, interviews were used to dig deeper into how users behave online as well as what they think about their own social media habits. The ambition was to firstly interview a broad amount of people and then conduct smaller, more personal interviews with fewer people.

Thus, two categories of conducting interviews are relevant to this project: unstructured interviews and semi-structured in-depth interviews. While interviews cannot be entirely unstructured, unstructured interviews are more similar to field notes than in-depth interviews and are generally shorter. Semi-structured interviews follow a set of pre-written questions that are often open-ended as to allow for the interviewee to elaborate freely and the interviewer to ask follow-up questions. Individual in-depth interviews are conducted with a single interviewee and are well suited for more personal, sensitive matters (DiCicco-Bloom & Crabtree, 2006).

3.1.3 KJ analysis

Developed by its namesake, Kawakita Jiro, KJ analysis is performed by segmenting pieces of data into manageable phrases and sorting them thematically. Traditionally this is done by transcribing data from, for example, an interview and cutting the paper into individual statements. The statements are then examined individually and physically placed close to each other on the work area, if they are deemed to be related. There are no strict categories, and the groups of phrases are not named until the analysis is finished, which allows the discussion to be fluid and susceptible to change. The main benefit of this method is that patterns that were not apparent before might be easier to notice, which is perfect for this

study since users do not necessarily have a deep understanding of their own needs. Outliers and singular statements that do not match any others can also easily be identified and taken into account. KJ analysis also serves to make large amounts of data easy to manage in later stages, since many points of interest can be summed up in a single category (Plain, 2007).

3.1.4 List of requirements

A list of requirements is a tool used to limit the range of solutions in a project. A document is formed detailing what needs the product should fulfil with the purpose of guiding the designer and define the ambitions of the project. The requirements relate factors such as user needs and ergonomics as well as distribution and production. The main purpose is to explain what functions are needed for the product to work (Österlin, 2016). As one of the two main deliverables of this project is a list of recommendations, detailing how future functions should be designed, a list of requirements was a fitting way of presenting the conclusions drawn. It also served to give inspiration and limitations during the concept development phase.

3.2 Idea generation and evaluation of concepts

As ideation and evaluation are closely related, the methods regarding these phases are listed together. The methods used for generating ideas were brainstorming, brainwriting, SCAMPER and De Bono's Thinking Hats. These methods are all useful in facilitating creative thinking and were employed in the hope of generating as broad a space of ideas as possible. The methods pertaining to concept evaluation are the PNI (positive, negative, interesting) method and the matrix evaluation. These methods allow for clear distinction between ideas that might otherwise seem similar and eases the process of ranking or picking between them.

3.2.1 Brainstorming

Brainstorming is usually performed in groups of 3-6 and lasts for about an hour. Here, however, there were only two designers performing the project and brainstorming was conducted thusly. The problem is clearly defined in the beginning and the team starts to come up with ideas while one person makes notes. The most important part of the brainstorming is

that everyone follows the rules mentioned underneath and that all ideas get heard. By brainstorming the designers can build on each other's ideas, come up with wild concepts, combine different ideas and discuss different solutions (Österlin, 2016).

These are the rules that should apply on a brainstorming session:

- Do not criticise or judge your own or others' ideas during the brainstorm.
- Aim to get a large number of ideas.
- Try to think outside the box.
- Combine and build on each other's ideas.

By keeping themselves inside this set of rules the designers force themselves to think outside of the box and to communicate their ideas without fear of being judged. Having a climate like this during the generation of ideas generates a greater width of ideas and with that a higher top of good ideas (Österlin, 2016).

3.2.2 Brainwriting

In brainwriting the designers generate their ideas by themselves and document them, the ideas are then shared and discussed at the end of the session. Another way to do this is to pass the ideas between the designers without talking to each other and build further upon each other's ideas (Österlin, 2016).

3.2.3 SCAMPER

This method makes it easier to approach a problem from different angles by relating to a few words or phrases that describe ways to change an already existing idea. The phrases are Substitute, Combine, Adapt, Modify, Put to another use, Eliminate and Reverse. The designers apply one word at a time to an idea and try to figure out new solutions based on that word. The main benefit to SCAMPER is finding unique solutions as well as refreshing the pool of ideas when the design process seems stuck, but the mindset and words associated were kept in mind even when the method was not explicitly applied (Österlin, 2016).

3.2.4 De Bono's hats or the thinking hats:

This method is primarily a way to communicate but it also helps the designer to work with already existing ideas and generate new ideas. By putting on different “hats” the designer enters a new mindset, gains a new perspective of the problem and looks for specific parts within the ideas. The hats are:

- White hat: Objective and neutral facts.
- Yellow hat: Positive thinking, seeing opportunities.
- Green hat: Crazy and creative thoughts and solutions.
- Red hat: Feelings and intuition.
- Black hat: Critical thinking, looking for weaknesses and risks.
- Blue hat: Thoughts about the work process itself.

(Österlin, 2016)

3.2.5 PNI (Positive, Negative, Interesting)

PNI is a method for evaluating concepts by writing a list containing the positive, negative and interesting parts about the concept. This makes the comparison easier and it also highlights different parts that can be further developed. When doing a PNI the most important part is not the resulting list or table, it is the discussions that occur. By discussing the concepts and pointing out the different characteristics, both good and bad, new ideas developed and some ideas may be possible to combine for a better result (Österlin, 2016). Because of this, the method will be used in the beginning of the evaluation phase, specifically for ideas that are similar and need to be differentiated.

3.2.6 Matrix evaluation

In a matrix evaluation the ideas are listed horizontally while the requirements are listed vertically, this creates a grid where every idea is evaluated on how well they fulfil every requirement (Österlin, 2016). A simple scale of one to five is used to grade the different concepts based on the requirements, where three is the points needed for passing. The requirements can also be graded themselves; this is useful when some requirements are more important than others. The requirement-grades are then multiplied with the given grade, the

numbers underneath the idea are later added and the one with the highest sum fulfils the requirements the best. The advantage with this method is that it shows the weakness and the strength of the ideas as well as what the different ideas need to improve in different areas. While many ideas in this project could be implemented independently of each other, the main reason for using matrix evaluation was to see which ideas should be cut as well as to pick one final concept to work further upon.

4. Procedure

This chapter lays out the whole process of this study, including researching, collecting user data, analysing, generating ideas and evaluating them, all leading to a final concept. The focus here will therefore be on what was done and why it was done the way it was.

The procedure mainly went from theory to data collection and then to analysis, however the process is iterative and these phases were often revisited. Figure 3 is a visualisation of the process, showing how the project shifted back and forth between phases. The idea generation and the evaluations worked in the same way, as it is also an iterative process.

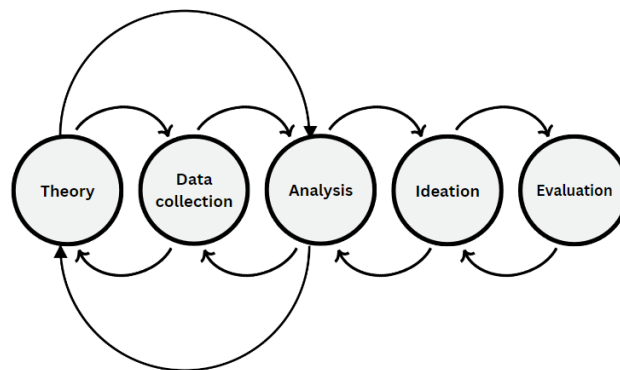


Figure 3. Procedure overview

The phrases are described individually below in the loosely defined sequence as presented in figure 3.

4.1 Literature research

Early meetings with hummy lead to an important insight: the project needs to balance the search for increased user engagement with maintaining hummy's healthy vision of social media. In other words, boosting engagement may not come as a result of predatory or addictive systems. In order to avoid these pitfalls, the project began with literature research in order to understand what damage social media might have on its users. This was coupled with research on how users behave and why, related to how often they post.

4.2 Spontaneous interviews

The purpose for these interviews was to get a more personal and direct view of how users navigate and use social media. Thus, it was both a follow-up to the previous literature research as well as a set-up to determine what types of questions and issues could be addressed in later interviews. The spontaneous interviews, as referred to in this report, loosely belong to the unstructured interview category but have some elements of semi-structured interviews as well.

The method for conducting the first user study was picked through brainstorming (see appendix 1). A variety of questions was generated, evaluated and made into an interview template which was then pilot tested and evaluated further. The pilot test was carried out on two fellow students, who were asked afterwards what they thought of the interview, which led to some small revisions. Using the template (see appendix 2), seven spontaneous interviews were carried out with students approached on Chalmers and Gothenburg University campuses. The interviews took about eight minutes and interviewees were selected primarily by which students who did not look too busy. The interviewees were selected with a preference towards groups of two, in the hope that people would be more comfortable if they were not outnumbered by the interviewers, but also because big groups might result in group think and slightly generic answers.

This spontaneous way of conducting interviews was chosen because of multiple reasons. Firstly, the semistructured nature and casual tone of the interviews meant that the order of the questions could be switched at ease, and that follow-up questions came naturally. While the purpose of the interviews was to root out opinions and anxieties, i.e. qualitative research, some quantitative data was also collected, such as how much time the users spent on social media, what apps they preferred as well as age and gender identity.

Since the interviewees were all students, specifically from universities close to where the project was being worked on, the sampling strategy can mainly be described as convenience sampling (Robinson, 2013). The interviewees were picked as sporadically among strangers within a close area, which means the strategy is geographically convenient. However, finding interviewees at Gothenburg University was done to broaden the types of people interviewed,

as students at Chalmers might be specifically interested in and knowledgeable about technology. There was also a conscious effort to keep a somewhat even ratio between men and women. This ambition was successful as the interviewees included seven men, eight women and one non-binary person. This sampling decision, as well as searching out interviewees from different universities, can be described as purposive. The sampling strategies are described in detail in chapter 3.1.1.

Most interviewees could be categorised as belonging to the 90% of users who post nearly nothing, as described by Nielsen (2006). However, a few individuals described their posting habits in a way that corresponded more to the 9% category, posting little or seldom, while none posted enough to be considered belonging to the 1% category, as expected.

4.3 In-depth interviews

Three in-depth interviews were carried out, with the purpose of gaining a better understanding of the three main take-aways from the previous interviews. This also served to confirm the conclusions drawn so far and ensure there were as few incorrect assumptions as possible. In-depth interviews were used because the questions were more complex and would take more time to answer. Only having one participant per interview also led the answers to be more independent.

The interviews took place at Chalmers campus and the participants were all Chalmers students. These specific individuals were picked because they were known to be at least somewhat active on social media, being part of the 9% category as described by Nielsen (2006). This is because the KJ analysis showed that there was a lack of information about why users posted and what they liked about it, by choosing participants from this specific category the selection became more purposive. The interviews took about 25 minutes and were held in study rooms or empty classrooms since a peaceful and quiet environment is important for these kinds of interviews.

4.4 Analysis and summary conclusion

Two main analyses were done, the first one between the spontaneous interviews (see appendix 3) and the in-depth interviews and the second were done when all of the interviews were finished.

The first analysis had the purpose of finding out what topics were missed during the spontaneous interviews and what questions needed to be asked during the in-depth interviews. The interviews were recorded, transcribed and printed out to be used in a KJ analysis. In this case the analysis was performed using paper and each phrase was cut into an individual piece. Using the conclusions from the KJ analysis, a collection of questions was assembled in preparation for in-depth interviews (see appendix 4). Since the result from the spontaneous interviews also showed that almost all of the participants were part of the 90% category as described by Nielsen (2006) the focus would be put on the other 9% for the in-depth interviews. While interviewing individuals belonging to the 1% category would have been interesting, the project specifically aims to lessen the inequality between influencers and other users and so the perspective of the 9% category was deemed a priority.

After the in-depth interviews were done a new KJ analysis was done where the conclusions from the first KJ analysis were built upon using the new material. This was also done with printed out paper and scissors. The results from this analysis were then translated to requirements that could be used for the idea generating process.

4.5 Ideas and concepts

During the whole phase the “rules of brainstorming” were strictly followed to create an open and welcoming atmosphere where more ideas could flourish.

Brainwriting was used in the beginning of the idea-generating phase because it gives the participants an opportunity to create their own ideas without the influence of each other's ideas. Later it was also used to avoid thinking in the same track. Another advantage with this method is that it works while working from home since direct discussions online can be more challenging than showing the other participant the ideas generated with this method.

Brainstorming was used during the whole process, except for the absolute beginning where the brainwriting was used, to create new ideas or to build on already existing ideas.

SCAMPER was used in a more indirect way; the words were not applied on a concept one by one to gain new ideas. Instead the individual looked at the words when stuck on one idea to see if some of them could be used to further develop it. However the method still provided the user with new angles to explore the problem from.

De Bono's hats was used while speaking about the ideas, when one of the participants was critical, a reminder about not wearing the black hat during a brainstorming, for example, helped with approach and understanding. A combination of a black hat and a yellow hat worked particularly well during the idea development, having one member pointing out potential errors and the other one trying to find potential solutions or changing the idea to avoid the error led to a broad variety of ideas and a lot of different versions of the same idea.

4.6 Evaluation and the final concept

The ideas were evaluated during the idea generating process, as can be seen above in the “ideas and concepts”, but a final evaluation also took place to be able to compare the finished concepts. The methods used were PNI and a matrix evaluation.

The PNI was used to compare two very similar concepts called the Board and the Album, both aiming to solve the problem of users not thinking their content is worthy of a post. This worked well because the PNI highlighted the differences and the possibilities with each concept. This gave some important insights in deciding which version that fulfilled the requirements better.

The matrix evaluation were used as a final evaluation where the two main concepts were evaluated. The requirements were weighted to ensure that the most important ones were visible and that they could affect the outcoming result. The evaluation process was done by going through the requirements one by one and scoring both the concepts and then using google sheets to multiply with the weight and add the scores for each concept. Both of the concepts were very close in the amount of points and therefore the one with the highest points

on the most important requirements was the winner that will go on and become the final concept.

When the final concept was chosen, the specific functions were established and a new version was created to look better and more realistic in Figma, a program used for designing interfaces. This helped with deciding the proportions and also allowed a more specific look on the icons than the ones sketched during the idea-generation phase.

5. Findings

In this chapter, the results from the user studies and the subsequent analyses are described. While analysis was carried out in order to catalogue what the interviewees specifically had said, this chapter aims to interpret further what users' wants and needs are. This is done by putting comments and anecdotes from the interviews into context with the broader social media landscape through the literature research, as well as by comparing and contrasting users that might have differing needs. Summarised here are the main takeaways from the user studies, focusing on the feelings, experiences and opinions of the interviewees.

5.1 The interviewees

The age and gender of the interviewees, as well as where they were found, is presented below in figure 4.

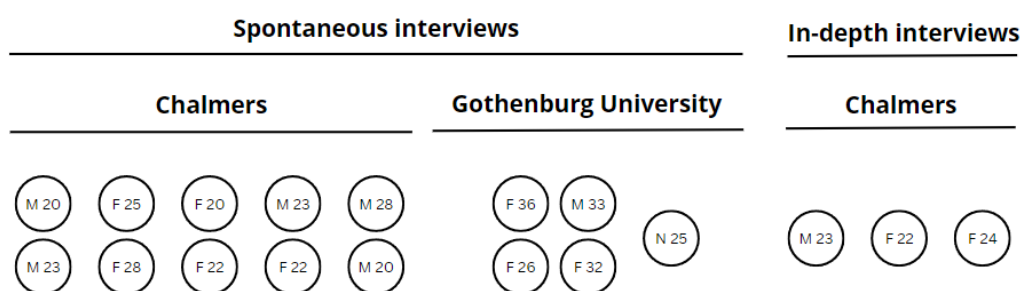


Figure 4. A representation of the interviewees. (own produced image)

During the spontaneous interviews a variety of places were chosen to make sure that the interviewees studied different subjects and enhance the possibility of them having varied interests. The first ten interviewees were interviewed two at a time, then a group of four were interviewed at Gothenburg university followed by an interview of one person.

The in-depth interviews were performed with one interviewee at a time. The interviewees were chosen purposively by picking persons who posted according to the 9% category, as described by Nielsen (2006), since there was an underrepresentation of them in the spontaneous interviews.

5.2 Don't want to bother

A very common answer to why the interviewees did not post was that they felt like they did not have anything to share. A post according to them was supposed to be something worthy of showing others like a trip or a fancy dinner, yet the post's purpose is not to brag about one's life. The interviewees were very particular about how their own pictures were not meant to show off even though they only posted so-called “highlights” of their lives. Before posting, the interviewees often thought about if the content they would share is something that is worth a post. The same thing applies to comments, the train of thought some interviewees mentioned is that someone has already said it, it will not matter if they say it too and that they do not have something to say that is so important that others have to read it. Comments were rarely worth posting according to the interviewees but the pictures that were not worthy of a post could instead be posted as a story, since the standards for that were lower. All of the interviewees used Instagram as one of their main platforms and the stories there are only visible for a specific amount of time and only the one posting the story can see the likes and comments. This is a factor that lowers the anxiety of posting according to some interviewees.

The anxiety about bothering others seemed to be born out of sympathy, as some of them expressed not wanting to bother their friends with content they might not like, but this could also stem from a fear of being judged. Some of the participants that posted more frequently mentioned that they are very careful with how much they post and they have limits on how many posts are acceptable per week. These limits were more like guidelines and they worked both ways since the interviewees wanted to have a consistent online presence. The reason that the limit exists seems to be that they are afraid of posting too much and with that bother or annoy their followers. Another reason is to not seem like they are trying (and failing) to be an influencer which a lot of the interviewees mentioned would be a bad thing. Stories was a place where it was acceptable to post more, one of the participants said that she used her story with friends to spam, meaning posting a lot of pictures and describing what she is doing during the day.

One of the participants mentioned the golden rule, treat others as you want to be treated. Essentially, paraphrasing: “If I do not want to see other peoples pictures then I should not bother them with mine.”

Some interviewees expressed multiple times that they often felt interested in reading or engaging with content purely because of who uploaded it, because they are interested in other people's lives or opinions. One interviewee even expressed that this interest could extend to an online stranger, if their posts and comments had been deemed interesting in the past and their name was remembered because of that. This was only a theoretical scenario, however. Then there were some interviewees that were not interested in others' pictures if they were not on a specific topic, a certain sport for example.

- Users are afraid of bothering others with their own content and have a high standard of what is worthy of a post.
- Posting too often is looked down upon since trying and failing to be an influencer looks bad, and because posting too much becomes annoying in and of itself.

5.3 Fear of judgement

Almost all interviewees from the in-depth interviews expressed a fear that their posts would be embarrassing, and they all mentioned specific cases in which they had received unpleasant responses to their own comments. These interviewees almost exclusively posted on private accounts and only people chosen by them could see the posts. Neither judgement nor mean-spirited engagement existed in their own personal groups according to the participants, however the fear of being judged was still there.

A key aspect of this issue was highlighted by one interviewee, who theorised that her fear of judgement was related to her own judgement of others. Since she knew what she thought of certain posts, she felt she had a good idea of what other people might think as well. While this sentiment was not directly mirrored in any other responses, many interviewees detailed how they pretty often judged themselves before posting, preferring to avoid more sensitive subjects to avoid embarrassment. One interviewee specifically mentioned that she would imagine what some people would think when viewing her post, to paraphrase: "did she think this would be funny?". Most interviewees simply mentioned that they feared being judged and did not mention any specific judgements, but it seems that thoughts such as these often ruin the motivation to post.

Judgement seems to come from both inside and outside, then: users see posts that they find poorly made or they see comments berating others, both of which leads to them internalising an imaginary set of rules to follow. If they avoid doing the awkward thing someone else did, they feel more secure from being attacked. Furthermore, private accounts and groups might offer more clearly defined “rulesets” since the users involved know each other well and interact often adding to the sense of security in such spaces.

- Users do feel anxious of being judged by others and the anxiety does not necessarily come from the responses on their posts.
- Many users prefer to post in a closed group of friends where they feel safer from judgement.

5.4 Influencer culture

While most interviewees estimated that they posted seldom or not at all, a common sentiment mentioned among those that did post was that they felt that they posted too little or too seldom. It might be the case that the individuals from the in-depth interviews, who very much align with the 9% category that post little as described by Nielsen (2006), feel that they do not meet the requirements of a true influencer and are thus not “someone who posts”. This binary way of viewing a person and their posting habits could be seen in many of the interviewees; many of them mentioned feeling shame or like a “fake influencer” when they did not receive a certain number of likes. This mentality among users further exemplifies what Nielsen points out as the main problems of participation inequality. As fewer and fewer people hold more and more of the influence, the majority of users feel that they have less to say and that their input means less.

A common anxiety mentioned by the interviewees was that their posts would be perceived as failed attempts at being an influencer, and that having noticeably few likes would be judged by others. However one interviewee mentioned having fun acting like an influencer as a joke on her Snapchat story, showing others what she did during the day. Having this playful attitude reduced the risk of feeling judged by others, according to her, because she did not try to actually be an influencer and therefore could not be a failed one. Another mitigating factor mentioned by this interviewee was being able to blame something else for uploading, especially if the post did not go well. Notedly, this external factor could vary, since another

interviewee described the same phenomenon when they needed to post relating to their job. These examples point to the user detaching their personal life from the post which reduces the anxiety of a post not doing well.

A common solution to reduce this anxiety among the participants was utilising the “story” format, on Instagram. This seemed to be because the content users share is only viewable for a set amount of time and to a chosen group of people. Many interviewees mentioned that what they posted on their stories were often more casual and less formal in tone. The level of commitment and anxiety associated with these posts appeared to be lower, but the response and positive feedback gained could be equal to that of regular posts.

All of this points to the fact that what is considered worthy of being posted is sometimes slim and specific to the point of crippling users that are otherwise eager. It also shows a need for users to be able to express themselves without being judged on the same merits as professional influencers.

- The view on what content posting is for the average user needs to be detached from the standards of influencers
- Alternative types of posting might open up to more types of content that users are comfortable with posting

5.5 Likes

The number of likes a post got was also a cause of anxiety among the interviewees, by comparing the amount of likes to other posts made by themselves or others. Comparing content output between themselves and others appeared to be an issue, in general. One interviewee even specifically mentioned that “comparison is the thief of joy”. However none of the participants mentioned it being a bad thing if someone else got a small amount of likes on a post. There were mainly two things that the interviewees were anxious about in regards to the like-function. The first being a post getting a small amount of likes and the second being someone else seeing that the user's post has a small amount of likes.

The anxiety of others seeing the amount of likes led some of the participants to use the story function to post pictures or videos because nobody but the creator could see the amount of

likes on a story. The fear of not getting enough likes seems to be less than the fear of others seeing that the like number is low but there were also users who prefer some applications where there is no like or comment function. However none of the interviewees mentioned getting a lot of likes when asked about what made them happy on social media. This could however be a baseline requirement which means that the answer is obvious enough for the interviewee to not mention it. Another possibility is that the likes do not hold as much value as a comment, this meaning that the amount of joy or happiness from a post with lots of likes does not measure to the happiness of genuine comment. It may be possible that the likes are primarily a stress factor that brings anxiety to the user when the number is too low yet does not bring happiness when the number rises.

- Likes might be fun when users receive many of them, but the thought of receiving too few only cause anxiety
- Likes provide a tangible measure of success, and having everyone see a possible “failure” causes some users to refrain from even trying

5.6 Comments

When asked if they commented on others posts the most common answer among the interviewees was “no” however the like-button was frequently used among them. It seems sending likes is easier than writing comments, at least judging by interviewees that post seldom and would rather scroll. It seems obvious, since a like is only a click and a comment requires thought and care in order to write something meaningful.

A couple of interviewees described comments as boiling down to simple phrases such as “how nice” and by that point many interviewees would simply leave a like, since that communicates a similar level of engagement. However, those exact types of comments that are simple in expression but genuine gave nearly as much joy and motivation to other interviewees that posted more often.

Some few moments were described with pure joy, where the interviewees had received a number of positive comments. This included things like general encouragement and appreciation, but also questions due to a genuine interest. One interviewee mentioned that they got more replies to a personal post than they had anticipated, and another had received

congratulations for being accepted to Chalmers. It could be simpler things as well, like one interviewee who posted song recommendations or screencaps from movies and got responses where people either agreed that the song or movie was good or enthusiastically asked what it was. The situations in which this happened had, again, mainly occurred within the user's personal groups with people they already trusted since their accounts were private.

The interviewees who posted regularly thought that others' comments were the best part of posting but they claimed they did not necessarily change their posts to gain more reactions. One of the interviewees described this comment-to-post interaction as a way to maintain a low effort relationship with people they do not see often. They described that by getting glimpses of each other's lives and also the other person's reactions or comments both individuals knew what was going on in the other's life. All interviewees strictly referred to comments when describing a really joyful experience on a platform; the joy came from the message and the person who sent it.

- Comments present a hurdle for some users who would rather send likes, because they require a higher level of input from the user.
- Comments are also a source of genuine interaction and inspiration, to a significantly higher degree than likes.

5.7 Harassment, moderation and freedom

Many interviewees mentioned feeling bad about how discussions can take on a negative tone online. A few participants mentioned getting negative or unconstructive criticism on their posts, while others told of how they had tried to engage in discussions but left feeling worse than before. There was a noticeable pattern where several interviewees had seen other users being false or unfair, had an emotional reaction, sent a response correcting or questioning, received personal attacks as response and ultimately coming away from the exchange feeling angry, sad or hurt. Thus, many interviewees described discussions online as being of little worth and that changing someone else's mind was impossible or pointless. According to them, people who want to be active and comment have already made up their mind and are simply looking for conflict for conflict's sake. This sense of meaninglessness was expressed by more interviewees than those who elaborated on their own experiences, as well. Many

simply did not want to waste their time by sharing thoughts that no one would read or take interest in.

On the other hand, some interviewees expressed a wish to present an alternative viewpoint to the loud minority, especially if there were two sides to a conflict and the side they preferred had few comments defending it.

These concerns beg the question: Is the product itself responsible for making users behave well with each other? Most would say this is obviously the case, since moderation of speech and banning harassers is expected of social media platforms. A platform being full of toxic, rude or dangerous individuals is almost always framed as a failure of the platform. However, the link is not always that strong. A platform with bad UX can have great communities, and what drove that community to find each other and form in the first place is difficult to trace. People need to post something in order to find common interests or beliefs, but they also need the freedom and safety of being allowed to lurk and consume other users' posts. Hounding and nagging users to post will likely not be received well, as can be seen in how reluctant users are to post if they are not completely inspired and willing to do so. Some Interviewees mentioned that they even refrained from posting since they did not want to form the habit and feel obligated to continue. On the flip side, many interviewees brought up being delighted to find engagement on their posts and many more cited a good personalised feed (enabled by a well-functioning algorithm) as a basis for what platforms they preferred. The question, then, is how much freedom users are the most satisfied with.

Of course, it is not as simple as a freedom spectrum. The ways this problem interacts with the notion of freedom is more about the specific use cases where individuals have the opportunity to enact certain behaviours. A user being able to comment something nice is utilising the same function as a user who comments something offensive, after all, which leaves the decision of banning or deleting comments to the users themselves or a moderator of some kind.

The problem with the existing solutions such as banning, blocking and deleting comments is that they are reactive. Many individuals from the interviews mentioned bad experiences from hostile strangers online, and there were clear signs that these interactions had caused some interviewees to post less or not at all. Reactive solutions do not prevent everyone from having to see an aggressive comment, but it does spare future users that visit the same post.

In the end, reactive functions such as banning certain people and removal of comments on a user's own posts, while not perfect, should be as easy and intuitive as every other function. While it is a shame that users will have to experience hateful comments, even if they are able to delete them, this study has not focused on reducing harassment. Judging from the responses given in many interviews, the problem is that even the threat of bad reactions causes some users to hesitate and others to avoid contributing at all. As such, it is important that the availability of these options are clear and understandable to all users as soon as they start posting.

- Users need the freedom to be creative and express themselves, but they also need to feel safe, or as safe as possible, from harassment.
- Existing solutions such as user bans and keyword filters work, but they are reactive.

5.8 What platforms were used

Instagram was commonly mentioned among the interviewees when asked what platform they used, others were Snapchat and YouTube. TikTok, X and Facebook were rarely used among them and when asked if they avoided some platforms the most frequent answer was TikTok. When asked why, they brought up the applications algorithm that keeps the user on the platform, scrolling for content.

Scrolling idly as a form of entertainment was not viewed favourably by most interviewees. Phrases such as “waste of time” and “meaningless” were common, and they were frustrated with spending so much time on something that was meant as entertainment but not as enjoyable as other pastime activities. There seemed to be a certain amount of shame involved in disclosing how much time they spent on social media. Some interviewees even mentioned that they avoid or limit their social media usage to preserve their mental health. This all points to an anxiety among users, a fear of wasting their free time on activities they do not actually care about. It also points to a willingness to find meaning, and to meaningfully interact with others.

When asked why they used Instagram, interviewees often claimed it was the first platform that they started using, that the algorithm works well and that they had their friends there.

They mentioned that since it is the first platform they used, the barrier of switching to a new one is higher. It seems to be easier to stay where the climate and functions are known. The difficulty of switching platforms was mentioned by several interviewees; most were content with the platform they were used to and felt that they did not have time nor the interest to get to know an additional platform. Regarding Instagrams algorithms, a commonly held opinion among the interviewees was that it is easy to change the personalised feed by liking and watching different videos, influencing what the algorithm would show them. The third aspect brought up by the participants regarding what they liked about the app was that their friends and family used it. They also mentioned that adding a new acquaintance as a friend is easy because most people have Instagram.

However, not everyone agrees. Some interviewees brought up the algorithm not working as well as others presented it. Other participants stated that they preferred TikTok over Instagram since Instagram regulates their comments more. They further explained that TikTok has a lower censorship which makes more room for more comments. This opinion came from interviewees who were more active and liked to post and discuss different topics, politics was commonly named as such.

- Users have a tendency avoid using a new platform if it seems difficult to understand.
- While scrolling through an algorithm might be an effective and necessary tool to make users find the content that interests and engages them, it should be carefully designed so as not to prey upon the user.

5.9 Nudging contra dark UX

The difference between nudging and dark UX are not always easy to define. Both work by utilising interactive design to guide the user's choices, and both assume a certain naivete from the user. However, there are clear differing characteristics and certain patterns can be spotted that will be useful in constructing an ethical interface design approach.

While the intent of the designer is important, the main issue for users is that they feel manipulated. Schmidt and Engelen (2020) mentions that users in certain scenarios are in favour of nudging, at least when the option they are nudged towards results in an end goal they find appropriate. This might indicate that the end justifies the means, according to some

users, but that is likely not the case for most people. The article by Schmidt and Engelen (2000) and the article by Gray et al. (2018) both mention the issue of free will and obstruction. The main issue between both articles is that users feel misled, used or actively lied to.

While both approaches can be classified as manipulative, a designer utilising nudging is generally honest in their intent. The nudge approach works mainly by making the user aware of what the designer wants them to notice. In contrast, a running theme amongst the many techniques described as “dark” or deceptive is that they intentionally mislead the user to make a decision they would rather not. In this regard, the main difference between the two approaches is that nudging presumes that the user knows what subtle manipulation they are being subjected to, and that they can see what outcome the designer is hoping for. There is usually some form of communication between designer and user in the nature of a suggestion and the possibility of rejection. This communication is rarely present in deceptive patterns, and if it exists it is used as another form of misdirection. Thus, a key differentiating point might be that a nudged user understands why a certain option is preferred and has the chance to agree.

With these concerns in mind, how can the pitfalls of deceptive patterns be avoided when designing an app to increase posting habits?

- Keep the intent openly visible. The app wants you to post, and the tools for it will always be available.
- Encourage the users that want to post, while bothering the users that are reluctant as little as possible.

5.10 Keeping the fun

Since platforms built on counting likes cause users to prioritise numbers going up rather than the social interaction, these platforms effectively prioritise extrinsic motivation over intrinsic. As described by Ryan and Deci (2000), activities that follow this prioritisation rarely keep up engagement unless the participants find other, intrinsic motivations along the way. In effect, a user might rely on likes and the associated dopamine kick to keep posting, but needs other types of positive reinforcements as well.

As expected, many interviewees felt that their fear of few likes or the stress of keeping attention upon themselves overshadowed the joy that drew them to social media in the first place. If the only motivating force is separate from the activity itself and that motivating force disappears, there will be no reason left to keep doing that activity. Users have a tendency to follow the path of least resistance, even if another path will be more enjoyable to them. Thus, a good reward system should aim to guide the user into activities on the platform that are supposed to spark motivation, such as posting, commenting or engaging in discussions.

- Rewarding users is clearly effective, but the rewards need to be closely tied to activities that the user is already supposed to find joy in.

5.11 Personas

Two personas were constructed in order to map out what types of users are common and what their needs are. They each belong to the 90% and 9% categories as described by Nielsen, J (2006), meaning one of them posts nearly nothing and the other posts rarely. The 1% category is not represented as a persona since influencers are not represented in the user studies. Their posting habits and social media presence is primarily described by answering the following questions:

What do they use social media for? What is the appeal for them?

What do they upload, if ever?

How do they respond to others' posts?

5.11.1 Persona 1 - Alexander - 90% category

Alexander primarily uses social media to stay in touch with friends, however he also uses it to avoid boredom. His most commonly used apps are Snapchat and Instagram, where Snapchat is the platform used to send messages to his friends and Instagram is used as a distraction when time needs to pass. The types of posts that interest him are usually tied to his interests, like skiing and basketball, but he also has his friends and relatives on Instagram and

likes seeing what they are doing through their posts as well. He also likes sharing funny or interesting posts he finds with his friends.

While Alexander does spend several hours a day scrolling, he views it as a bad habit and feels like it does not actually add anything to his day. He is anxious about wasting his time on meaningless buzz. Sometimes he gets stuck in the loop of scrolling through the reels and realises first after a while how much time has passed, which makes him feel guilty for not doing something more productive with his time. As a student, he feels that there are always assignments to work on or math problems to solve, which leaves no room for mindless scrolling. This is the main reason for him to avoid TikTok, where he feels like one can scroll through the feed forever.

Alexander is not particularly interested in posting himself, he posts on some occasions, less than once a year but when he does it is usually a picture of a trip, food or his friends. He does, however, want to interact with posts from his friends and relatives to show that he has seen them. Most often, though, Alexander feels that the comment he would leave is on the same level of engagement as a like, so he tends to press the like button and move on.

While Alexander is interested in certain subjects that are often brought up in online discourse, he has experienced a lot of negativity when trying to engage with strangers online previously and has concluded that no one online is worth talking to. The discussions almost exclusively left him feeling angry or upset over things that he felt did not affect him directly, because it does not really matter to him what strangers online are thinking. However, the negative tone in the comment sections does affect his mood by making him angry or sad. As an alternative Alexander prefers regularly discussing his interests with his friends where he knows that the climate will be more open and where there are no personal attacks.

5.11.2 Persona 2 - Petra - 9% category

Petra uses social media mainly as a way to stay in touch with her friends. By posting stories and seeing others' comments or watching and commenting on her friends' stories she feels connected to them. Petra likes posting about food she enjoys and events she attends as well as regular daily activities, which is also the type of content she enjoys seeing from her friends.

She has a habit of commenting on her closest friends posts but she will leave a like on almost all posts.

Her main platforms are Instagram, TikTok and Snapchat and she uses them with different purposes. Instagram and TikTok is where she posts good looking pictures, videos and events in her life. When using Instagram Petra prefers to post in the form of stories since they feel less serious than the normal posts. Snapchat is the least demanding of the platforms according to Petra. She uses the application to message her friends and she also uses the story function within the platform frequently, posting about events during her day but also milestones in her life such as getting a job or her first apartment. Her friends post this kind of stories as well and Petra enjoys watching them as it makes her feel more connected to her friends.

Petra's story on Snapchat as well as her Instagram is private and only people she knows have access to see the posts. The best part of posting according to Petra is the reactions she gets from her friends. Seeing her close friends congratulating her on getting a specific job or getting a happy birthday from someone she met once makes her happy.

However, posting is not always easy for Petra sometimes she is afraid that others will not like her posts, especially if she tries to be funny or look pretty on an account that is not private. She thinks that it would be embarrassing to try being funny and fail to do so and that others will judge her for it. Petra usually posts on her story because nobody can see how many likes she gets. The amount of likes she gets affects how she feels about a post and so does the thought of what others may think when they see that she got fewer likes. Petra does not want to care about likes but she cannot help feeling a little ashamed if the number is low.

The anxiety of being judged is not based on experiences from a previous event, Petra has never received bad or mean comments on her post as long as she can recall. The risk of getting negative feedback is enough for her to get anxious before posting. However, she can find herself thinking about someone else's post not doing too well and therefore she assumes that others may think the same about her. Even though neither she nor her friends would write a bad comment the thought of others judging her is bothersome.

6. Requirements

The insights gained from the Findings chapter resulted in a list of users requirements. These were used to generate and build upon concepts during concept development, as described in chapter 7, but also to evaluate and pick concepts in chapter 8. Note that some of these requirements contradict each other and that a direct solution to one of them could yield a worse result regarding another. See table 1.

Table 1. List of requirements

Requirements.	Conclusions from Result and analysis.
Minimise/eliminate stress and anxiety caused by likes.	Likes might be fun when users receive many of them, but the thought of receiving too few only cause anxiety. Likes provide a tangible measure of success, and having everyone see a possible “failure” causes some users to refrain from even trying.
Instil safety from negative responses.	Many users prefer to post in a closed group of friends where they feel safer from judgement. Existing solutions such as user bans and keyword filters work, but they are reactive.
Minimise manipulative or addictive cycles.	Catching user attention with addictive scrolling and similar mechanisms might be an effective and necessary tool to make users find the content that interests and engages them, but it should be carefully designed so as not to prey upon the user.
Encourage users that want to post but might find it difficult or anxiety-inducing.	Posting too often is looked down upon since posting too much becomes annoying in and of itself.

	<p>Users do feel anxious of being judged by others and the anxiety does not necessarily come from the responses on their posts.</p> <p>Keep the intent of the app openly visible. The app wants you to post, and the tools for it will always be available.</p> <p>Encourage the users that want to post, while bothering the reluctant users as little as possible.</p>
Avoid hindering casual usage of the app by users who never want to upload.	<p>Users have a tendency avoid using a new platform if it seems difficult or demanding to understand.</p> <p>Keep the intent openly visible. The app wants you to post, and the tools for it will always be available.</p>
Detach posting from associations with influencer-culture.	<p>Posting too often is looked down upon since trying and failing to be an influencer looks bad.</p> <p>The view on what “content posting” is for the average user needs to be detached from the standards of influencers.</p>
Broaden the scope of what is worthy of sharing.	<p>Users are afraid of bothering others with their own content.</p> <p>Users have a high threshold for what is considered worthy of a post.</p>
Allow separation of low- and high-effort posting.	<p>Many users prefer to post in a closed group of friends where they feel safer from judgement.</p> <p>Alternative types of posting might open up to more types of content that users are comfortable with posting.</p>
Tie meaning to the interaction itself, not rewards.	<p>Comments are also a source of genuine interaction and inspiration, to a significantly higher degree than likes.</p>

	Rewarding users is clearly effective, but the rewards need to be closely tied to activities that the user is already supposed to find joy in.
Lower the barrier to respond.	<p>Comments present a hurdle for some users who would rather send likes, because they demand a higher level of input from the user.</p> <p>Comments are also a source of genuine interaction and inspiration, to a significantly higher degree than likes.</p>
Promote and allow for creative expression.	Users need the freedom to be creative and express themselves, but they also need to feel safe, or as safe as possible, from harassment.
User-friendly interface is a baseline requirement for users to participate.	Users have a tendency to avoid using a new platform if it seems difficult to understand.

7. Ideas and concepts

These are the “first draft” concepts created regarding the different requirements as problems to solve. The concepts had their main focus in one of two different areas, how to interact with already existing posts and how the posts can be assigned different values depending on the way they are posted.

7.1 Interact with already existing posts

A topic used during the idea generation was enabling users to react to already existing posts. The concepts should solve the requirement of “minimise/eliminate stress and anxiety caused by likes” from the Requirements list. The first batch of ideas focused on not having a like, and finding something that can replace the function and give more value to the one posting.

7.1.1 The sticker page

The first idea is called the sticker page because it works like a sheet that the user may stick icons on. The visitors, seeing someone else's post can put an emoji sticker that represents their reaction on the sticker page. The idea also fulfilled the “Promote and allow for creative expression” requirement since the users reacting can pick and place their emoji how they want to.

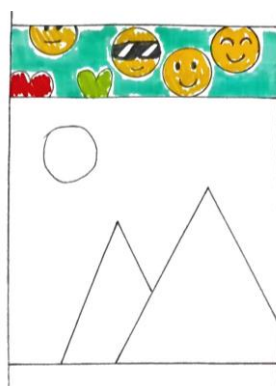


Figure 5. The sticker page.

The sticker board is directly connected to the post by sharing an edge with it, see figure 5. At first the idea was to have the sticker page to the left of the post, but the shape of the phone

made the top or bottom of the post more suitable since the picture or video usually takes up the whole width of the screen. Another idea within this is that the emojis should be able to be as big or small as the user wishes.

Some problems with the idea is the lack of safety from negative responses, others can use mean or inappropriate emojis for example. This may however be stopped by a limited range of emojis. Another problem can be found in the possibility to decide the size of the emojis, this may lead some of them to block the already existing emojis, especially if someone puts a very large emoji on top of the sticker page. The sizing option may therefore not work as well as intended, however blocking others' emojis when the board gets filled with time will remain a problem.

7.1.2 The marbles

This idea is created to have a fun, game-like way of reacting and collecting the reactions to a post. Visually this would mean having the emojis drop down in a container like marbles when reacting. The main point within this idea is to make it easier for the users to respond to a post than with the sticker page. Not having to select a size and place for every emoji while reacting to others post may not be as mentally taxing and therefore be lowering the barrier to respond.



Figure 6. The marbles.

However, this idea was scrapped pretty early since the animation may be a bit too playful and it was difficult to find room for it in the layout as can be seen in figure 6. Another reason was that an animation may take up too much time, being counterproductive to the requirement of “Avoid hindering casual usage of the app by users who never want to upload”.

7.1.3 Hummy heat

Hummy heat is the one idea closest in function to likes, by measuring the number of reactions such as likes, comments and shares the colour on the sides of the post change. This would probably lower the stress and anxiety surrounding likes since there is no clear number involved.

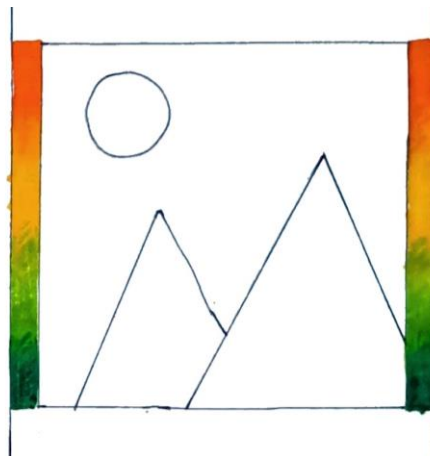


Figure 7. hummy heat.

An important aspect of this concept is having randomised colours for different milestones which would make it difficult for the user who posted and the ones seeing the post to know exactly how many reactions the post has while still seeing a change and getting a response, see figure 7. This would also hide the number of reactions other posts get, easing the anxiety surrounding others, judgement of someone having few likes. Having a standardised colour for a known level of interaction would probably not lower the anxiety related to likes, since users could easily calculate or speculate on how much attention a post gets.

All ideas up to this point had some good and creative aspects but mostly fulfilled one or two requirements while sometimes worsening other requirements. To further develop the main thought of not having a like and fulfilling more requirements, the ideas were built upon with new ideas which resulted in a pairing of a reaction and a comment. The reaction was decided to be an emoji since that worked well within the first ideas.

7.2 Interact with comments

Many users from the spontaneous interviews rarely commented and preferred to use the like button as a reaction. However, the users from the deep interviews all thought that the reactions, in the form of comments, was the best part about posting while likes only caused anxiety since they worried about how many they would get. In conclusion, the one who posts enjoys receiving comments and reactions while the ones seeing the post does not feel a need to react and give comments. By facilitating the process of reacting, more users may feel comfortable reacting to a post.

Most of these ideas use emojis instead of a like, making the user choose from a small menu with a few options which makes it less cognitively taxing for the one reacting. This focus on few options is to prevent overchoice and subsequent decision paralysis (Adriatico et al, 2022), detailed in chapter 2.6 of this report. The user will still have access to all emojis by a “see more” kind of button and they may also be able to customise the commonly used emojis. However, being able to block some of the emojis in a specific hummy or maybe for one person's specific posts is a possibility within these ideas.

The second batch of ideas revolves around pairing comments with reactions to make it easier for the users to comment on other users' posts. The goal of these ideas is to nudge the user to react more than just pressing a like button, by choosing an emoji or writing a comment but still have the user in charge by letting them choose how elaborately they want to react.

7.2.1 Emojis and comments version 1

This was the first idea where the one reacting had to pick an emoji and write a comment instead of just liking or commenting. This idea would fulfil the requirement of “Minimise/eliminate stress and anxiety caused by likes” as well as “Lower the barrier to respond” and “Promote and allow for creative expression”.

However, picking an emoji instead of tapping a heart may be more mentally taxing and it may fail to fulfil the “Avoid hindering casual usage of the app by users who never want to upload” requirement. This may therefore lead to fewer responses on a post, but the reaction will probably be more meaningful than a like, fulfilling the “Tie meaning to the interaction itself, not rewards” requirement.

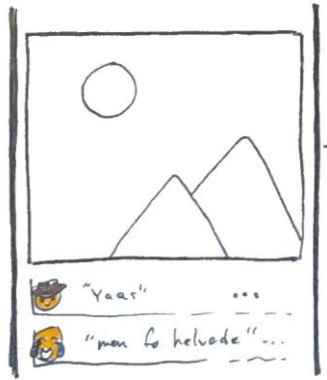


Figure 8. *Emojis and Comments, version 1.*

In practice the user picks an emoji and then writes a comment and since the comment already had to match the emoji, it may help the writer with what message they want to send. It can also help others to understand the tone of the comment section and the general perception of the post, see figure 8.

7.2.2 Emojis and comments version 2

The first idea was further developed and built upon, by making it possible for the user to react with only the emoji. This may help engagement since not everyone has something specific to say to every post and an emoji may be enough for some people in some cases.

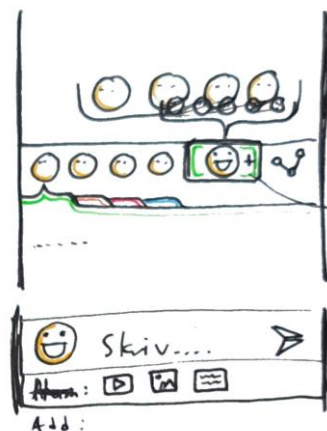


Figure 9. *Emojis and Comments, version 2.*

Figure 9 shows how someone clicks on the emoji and finds the menu of “common emojis”. After picking an emoji the user also sees the “write a comment” box and if they do not feel like writing they can post an empty comment which leads to only the emoji being posted. By having the text grey before writing something and the send symbol in colour the user gets the message that they do not have to write something. Additionally, a row of emojis is shown with their corresponding comments left by other users. In Figure 9 only four emojis with comments are shown and they would likely be a randomised sample from all comments shown to save space.

Another idea within this concept is to let the user press and hold the “add an emoji button” and the menu of “common emojis” shows, the user swipes to the emoji they want to use and releases their finger from the screen to send the emoji. This would be a very quick and easy way to react to others' posts, making sure not to hindering casual usage of the app.

7.2.3 Add-buttons

To further develop this idea the place and symbol of the “add an emoji and a comment” were adjusted, see figure 10. One idea was having a hummy-heart that when pressed could change to an emoji. One of the standard emojis can be the heart, which may help users who do not know which emoji they want to react with by being a standard reaction.

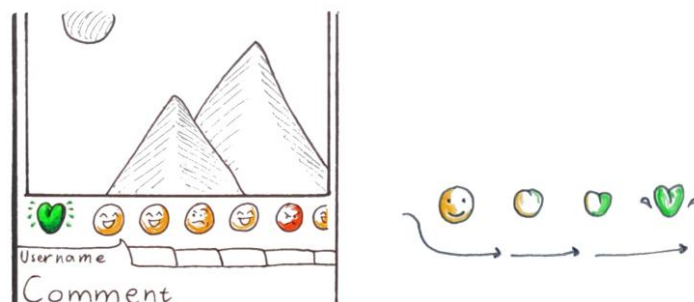


Figure 10. hummy heart.

The heart is similar to a like shape-wise but the function is different, instead of only giving the user a number that “rates” the post which leads to anxiety, it gives the user some potential reactions and kind comments. Some negative aspects of this shape may be that users are used to just pressing a like button and then scrolling away, the shape does not communicate to the user that a menu will pop up where they have to make decisions. One way of solving this is

having the hummy-heart morphing into one emoji and then get back to the heart to later morph into another emoji, see figure 10. This will communicate that the heart is not just a like-button, and the user can prepare to make a decision when pressing the button.



Figure 11. "add" buttons.

Another version of the button's shape was the "add" button seen furthest to the left in figure 11, this is very clearly a button where the user can add something. By having the frame and a plus sign it communicates being a clickable button that will lead to an action. One idea was to have the emoji on the button being happy as a nudge to the users about writing positive comments, fulfilling the "Instil safety from negative responses" requirement. Being a button with a thick frame, it was deemed not modern in its shape language and a more icon-based approach was preferred.

Another solution that communicated clickability to the users was having a dashed circle with a plus sign in the middle, also seen in figure 11. This looks more like an icon and may therefore fit in better in a social media app. This also lets the users know that they will have to make a decision since the space is empty until the user decides which emoji they want to react with.

Some of the other options were a simple plus-sign, either as a button or as a symbol. However the plus sign may look like a save function and could therefore mislead the users which the final design aims to avoid. Another version of this was to have an exclamation mark instead of the plus sign, as a button version or a symbol version. This showcases a strong reaction which may not be as inviting for someone who originally wants to give the post a simple like.

7.2.4 Placement

The two main ways that the “add a reaction”-button could be placed were to the furthestmost left or the furthestmost right of the “emoji-row”. Putting the button on the furthestmost left may help the user understand that it is a clickable button since the like-button is usually found there. Another advantage of putting the button there is the possibility of letting the users scroll among the emojis in the row, this can be communicated to them by having half an emoji furthestmost to the right (as can be seen in figure 10).

However, the position of the furthestmost left button is strongly associated with the like-function, therefore it might be beneficial to have the button in another place, avoiding misleading the users to think the button would work as a like.

7.2.5 No speech bubble

Another development to the “Emojis and Comments”-concept was to change the shape of the speech bubble to fit in with contemporary designs. Apps such as Instagram, Facebook, Snapchat and TikTok do not use the speech bubble in their comments nor in their messages. Instead, they use a rectangle with rounded edges, slim lines or spacing to differentiate the comments or messages. These changes will however not affect which requirements the concept fulfils since the main functions are the same as in the “emojis and comments”.



Figure 12. No speech bubble

The result of trying to avoid a speech bubble can be seen in figure 12, in this sketch the share- and save-buttons are added as well and instead of the half emoji is a double arrow button that lets the user see all emojis. Another added function was the possibility to write a caption that is visible underneath the picture which is commonly used in other social media. The concept does not show comments underneath the picture, which may help users who do not feel as comfortable with writing comments since the comment will not be “out for everyone else to see” in the same way as if it was put on display underneath the post. However, this may encourage the one posting a little less since they will not see the comments as quickly and easily.

7.2.6 Vertical emojis

Another version of the “no speech bubble” idea was having the Emojis and Comments lined up vertically underneath. The main difference between the concepts is the connection between the emoji and the comment.

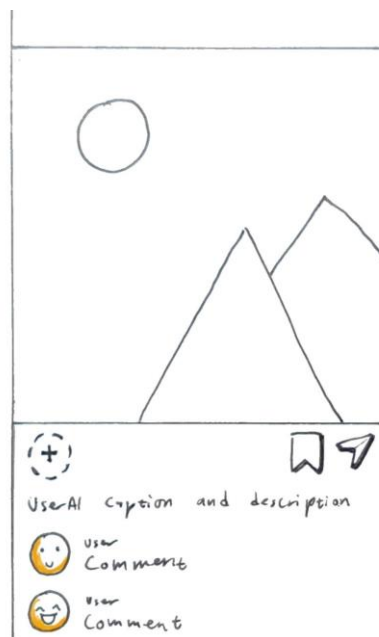


Figure 13. Vertical emojis

The placing of the save- and share-buttons is closer to the placing in other social medias and may therefore be easier to find for the users, see figure 13. However this version does not have the emoji row underneath the picture but the general reactions may be represented with the two emojis underneath.

7.2.7 Comments

Lastly there was one idea about the comments where users can decide to block certain words from their comment section or some words being blocked in different hummies. This is very similar to a previous idea, under the “Interact with comments” section, about deciding which emojis others are able to use on certain posts and hummies and would fulfil the “Instil safety from negative responses “. A further development of this resulted in a possible “kids” preset where certain words and emojis are banned from being used at hummies made for a younger audience or accounts of younger users.

7.2.8 Example of function

Below is a series of images describing how a user would interact with the add a reaction function, and how they are guided through it by the interface. In this case, the hummy heart icon is used as the add-button.

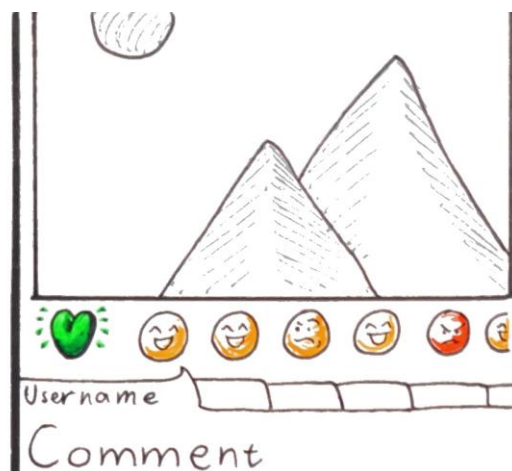


Figure 14. Comments left by other users and a reaction button.

See figure 14. Below the post content, a series of reactions placed by other users can be seen in the form of different emojis and a written comment. A green heart is placed where the like button is usually found, looking distinct from a regular like or upvote but clearly evoking the same type of shape and placement. If the user taps the green heart, the screen changes into the next image.

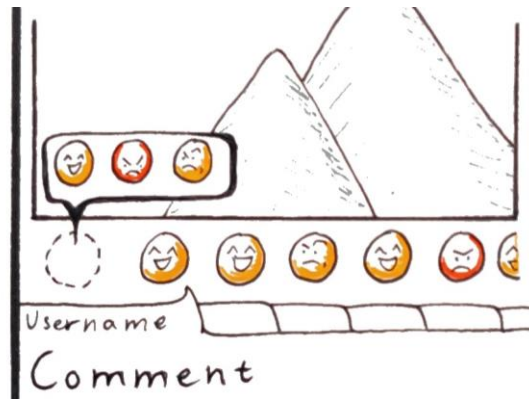


Figure 15. Selection of reaction emojis

See figure 15. The green heart disappears and a menu appears, showing a selection of emojis for the user to choose between. The user may tap an emoji to proceed to the following screen, or tap anywhere else to cancel.

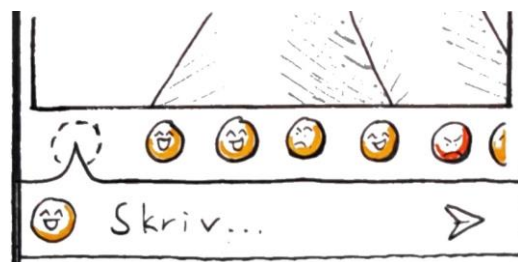


Figure 16. Text input box.

See figure 16. The chosen emoji descends and is joined by a text input box. The user may simply press the “send” arrow to the right and thus react only with an emoji, but has the opportunity to write in the text box. Once the reaction has been sent, the screen reverts back to figure 14 and the sent emoji is placed where the green heart used to be.

7.3 Assigning posts different values

A noticeable pattern from both sets of interviews is that a post has more perceived worth among users than a story, at least on Instagram. Only the best pictures get a post while the good pictures have to be a story or not get posted at all. This information was used during an idea generation process with the goal to solve “broaden the scope of what is worthy of sharing”, “encourage users that want to post but might find it difficult or anxiety-inducing” and “allow separation of low- and high-effort posting”.

The main goal while creating this idea was to have a specific place to post the extra good pictures or videos, like a Hall of Fame bound to one's profile. By giving the user a place to put the really good photos, the Hall of Fame may take the place of the high-effort posts while the actual posts take the place of the more low-effort stories. This lowers the standards for a normal post and may therefore lead to users posting more frequently. There are two main design options that are explored for the Hall of Fame: the board and the album.

7.3.1 The board

The Board is supposed to work as a bulletin board where the users can place content freely and put it exactly how they want it. This option is supposed to be very customizable, letting the users choose placement, fonts, sizes and colours by themselves. The board concept, see figure 17, puts an extra highlight on the “promote and allow for creative expression” requirement.

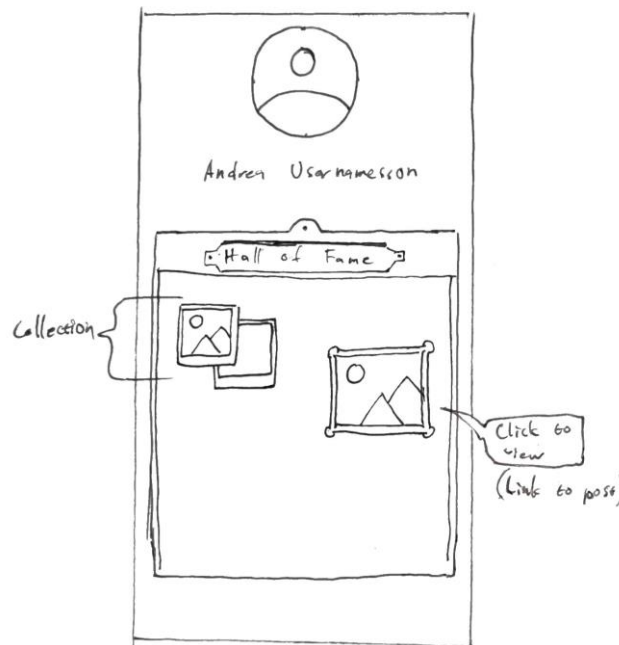


Figure 17. The board

One of the problems within this idea is that it demands more from the user, having them create something for everyone else to look at. Doing this completely from scratch may take a lot of time and effort from the users. A solution to this may be having some presets to choose from and later edit if there is a need to. To further develop the board an idea of a feature is

that a post containing more than one image can be put up as a collection, this helps with showing which posts belong together.

Giving the users a possibility to customise their Hall of Fames creates a way of expressing themselves on their profile page and it may facilitate finding new friends on the internet. The content that the user posts on their Hall of Fame should preferably be one of their own previous posts that they particularly liked but does not necessarily have to be a post since that would create a higher standard for the posts. Instead it could be a picture from the camera roll for example. If the content originally comes from a post other users may click on it to get to the actual post where they are able to see others' reactions or comments.

7.3.2 The album

The Album, see figure 18, is not as customizable as the Board, instead it is a line of posts that the visitor can scroll between. This does not let the user pick placement or size freely, but the sequencing can be changed by the user.

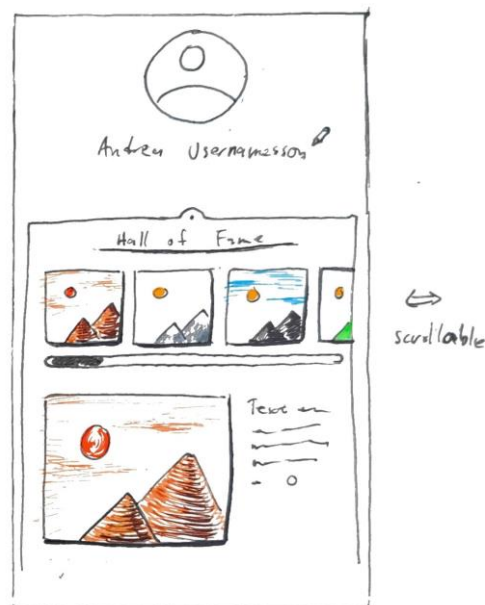


Figure 18. The album

If the one looking wants to see more about a post they can click on it to see the actual post. If the picture is not connected to a post it might just show a larger version of the picture and if

the creator wants to, they can write their own text that will appear next to it. The Album does not demand a lot of the user while still giving the option to customise their profile page. However it is not as customizable as the board.

7.3.3 Link to posts

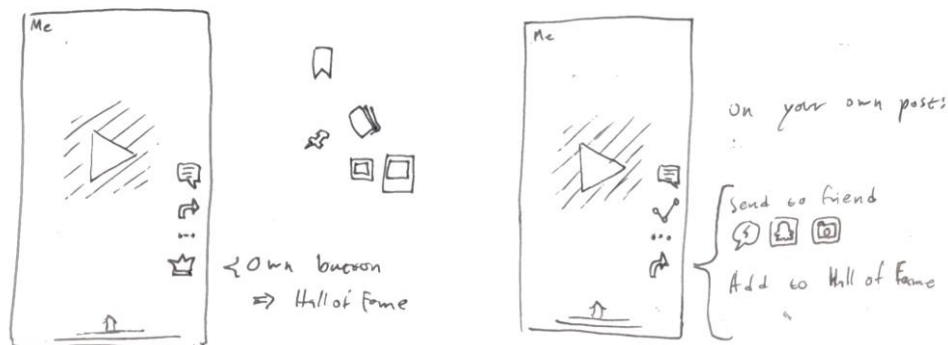


Figure 19. Adding posts to the Hall of Fame

If a user wants to add a picture in the Hall of Fame they can either go to the “Hall of Fame”-page and press an add- or an edit-button, if it is a post the user can add it from the post by clicking on an icon, see the crown in left picture in figure 19. There are some ideas about the shape of this button. It could be in the shape of a pin for example, this would fit very well with the Board concept since a pin is used to put something on a bulletin board. It could also appear in a bookmark-shape or perhaps as some polaroid pictures. This may fit the Album idea better. Another idea is to have the “add to Hall of Fame” within a share function, see the right picture in figure 19. This way makes sure that the user understands what will happen when pressing the button but it may be difficult to find, being a part of another function.

8. Evaluation of concepts

The following are the evaluations of the ideas within the Emojis and Comments concept and the Hall of Fame. The ideas of different details are evaluated and combined into one final concept; the two main concepts are then evaluated with a Matrix evaluation to see if one fulfils the requirements better than the other. Both of the two concepts could be implemented separately on a platform without clashing. However, comparing the two will show where the concepts need improvement and if they are equal in creating an atmosphere that encourages the users to post content of their own or if one is better than the other.

8.1 Emojis and Comments

The final version of the Emojis and Comments concept aims to eliminate the anxiety related to likes, as well as to facilitate user-to-user interaction. During discussions utilising De Bono's thinking hats, some details were stripped away and others were given more focus. Details such as the visual pairing of Emojis and Comments or the possibility for users to write a caption to their post were deemed especially helpful. However, the main challenge was to combine this into an interface. The final concept of Emojis and Comments can be seen below in figure 20.



Figure 20. The final Emojis and Comments concept

The winning icon of the add an emoji function was the dashed circle with a plus sign inside placed furthest to the left. Since an important requirement to meet was to reduce the anxiety related to likes, this button is placed where likes are usually found but it does not invoke the visual language of a like itself.

The comments are placed below the emojis to help the connection between them, meeting the requirement of facilitating meaningful interactions between users by visually connecting the emoting faces and the text written. This also serves to shift the focus away from the reward of likes and towards the interaction itself.

8.2 Hall of Fame - PNI

To decide which of the two versions of the “Hall of Fame” to use in a final concept a PNI was performed, finding the Positive, the Negative and the Interesting aspects of the concepts, see table 2.

Table 2 - PNI of the Hall of Fame concepts

Concept	PNI	Comment
The Board	P	Customizable.
	N	Can be overwhelming.
	I	Templates could help new users. Could effectively mimic the Album. Room for development such as new functions.
The Album	P	Easy to use. Uncomplicated.
	N	Rigid, no room for personalization.
	I	Increasing the size of images could be more inclusive.

The main conclusion after the PNI is that the board can be made to replicate the Album almost exactly. The only difference is the function of seeing a larger version of a picture when clicking on it, however the board could still achieve the inclusivity by letting others zoom in on a photo on the board. And the templates within the board concept can compensate for the potential mental load of creating the board from scratch. The resulting Hall of Fame can be seen in figure 21.

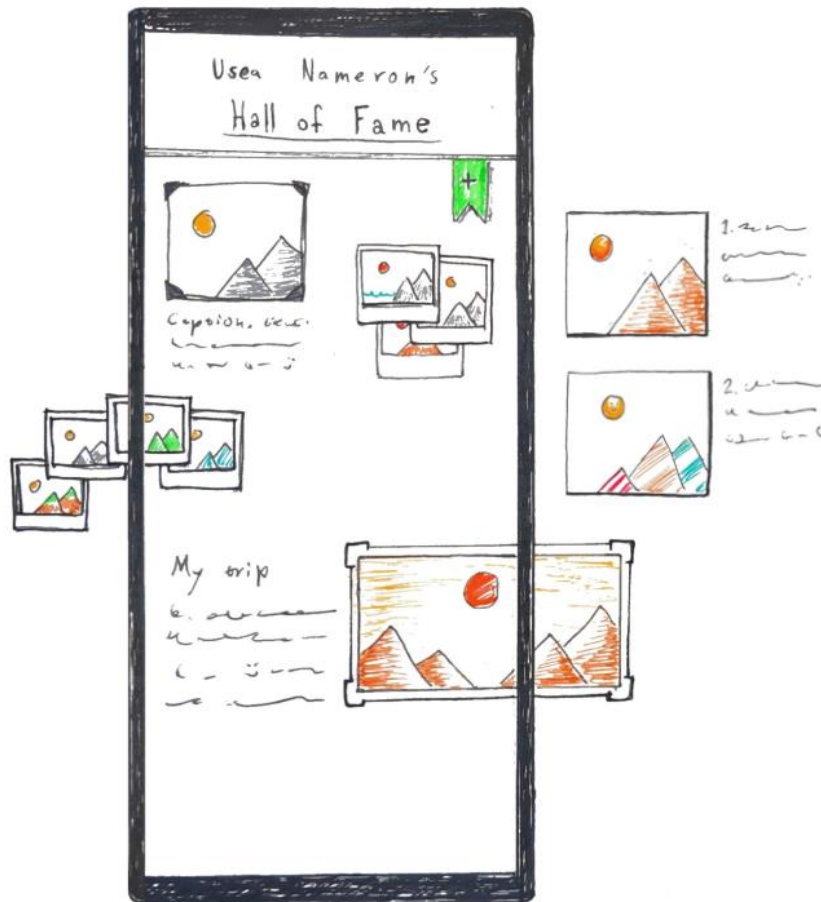


Figure 21. The Hall of Fame concept, utilising the board idea

This rendition shows a black frame, representing the mobile phone frame and what can be viewed inside it at a time. Swiping across the screen in any direction will move the frame, like panning a physical board, enabling the user to view the other images. The banner on top will move along as the user swipes, always showcasing whose Hall of Fame is presented as well as the green button that allows the user to add new posts, if they are the owner of the page.

8.3 Final evaluation

Both concepts above can be implemented independently of each other, however a matrix evaluation shows the strengths and the weaknesses within the different concepts. The stated goal of the project is to develop a single concept, and so one concept needs to be chosen. The requirements are listed below, as can be seen in table 3, and each of them has been assigned a

weight. The weight is a number between one and three where three is the heaviest weight, which means that the requirement was deemed extra important.

The concepts were rated with points between one and five. A one on this scale would mean that the concept did the opposite of the requirement, while a five means that the concept fulfils the requirement completely. A rating of three meant that the concept neither fulfilled the requirement nor compounded the issues. For example, the Hall of fame concept did not affect the stress and anxiety caused by likes and was therefore given a rating of three on the “Minimise/eliminate stress and anxiety caused by likes” requirement.

Table 3. Matrix evaluation

Requirements:	Weight	Emojis and Comments		Hall of Fame	
		Rating	Rating * Weight	Rating	Rating * Weight
Minimise/eliminate stress and anxiety caused by likes.	3	5	15	3	9
Instill safety from negative responses.	2	3	6	3	6
Minimise manipulative or addictive cycles.	1	3	3	3	3
Encourage users that want to post but might find it difficult or anxiety-inducing.	3	3	9	4	12
Avoid hindering casual usage of the app by users who never want to upload.	1	2	2	3	3
Detach posting from associations with influencer-culture.	2	3	6	3	6
Broaden the scope of what is worthy of sharing.	2	3	6	4	8
Allow separation of low- and high-effort posting.	1	3	3	5	5
Tie meaning to the interaction itself, not rewards.	3	5	15	3	9
Lower the barrier to respond.	1	4	4	3	3
Promote and allow for creative expression.	2	4	8	5	10
Sum:	19	34	69	34	64

Both the Emojis and Comments and the Hall of Fame concept got the same total points underneath the “rating” column, however a small difference is appearing when the ratings are multiplied with the weight of the requirements. Since the difference is small, a comparison of individual ratings was done to further evaluate the concepts.

The Hall of fame got the lowest rating of three, meaning that it does not worsen any aspect of the requirements, this may therefore be a safer option to choose. However, two of the requirements with the rating of three are weighted with a three, meaning the concept does not fulfil two of the most important requirements. The Emojis and comments concept, in contrast, got a lowest rating of two on the “Avoid hindering casual usage of the app by users who never want to upload” requirement. This means that the concept actually might hinder casual usage of the app. Worth to note however is that this requirement has a weight of one.

A final comparison was done looking only at the concepts score on the requirements with the highest weight, here the Emojis and comments concept scored a total rating of 13 while the Hall of fame got a rating of 10. Since this are the most important requirements the decision was to further develop the Emojis and comments concept.

9. Final concept

The final concept is relatively conservative in its design and will likely be familiar to users who frequently uses Instagram. The reason for this is mainly to highlight the central function: the reaction system replacing likes. This function is designed to be generally applicable and can be integrated into an interface supporting media of other types than pictures, such as video or text. Another reason is that the system should be easily recognised and approachable to users who are familiar with other platforms but might be overwhelmed by the new function.



Figure 22. Final concept.

Figure 22 shows a rendition of the final concept Emojis and Comments, as decided in the final evaluation. The picture of mountains represents the content shared by the posting user, here exemplified as User Name above and below the picture, along with their caption. To the right of the caption is an icon which allows users to share the post with other users, or copy it

as a link. Below are the emojis as added by previous users, all of which are able to be tapped which highlights them. The currently highlighted emoji is slightly larger and displays its corresponding comment below. To the furthestmost left, a translucent button with a plus sign can be tapped to add a new emoji and/or comment. To the furthestmost right, a tappable icon showing twin arrows allow the user to view more emojis, if there are any. Underneath is the upper half of another post, uploaded by the user named User Nameson2, showing that the posts can be scrolled through to reveal more posts.

10. Discussion

In this chapter, issues related to sustainability and ethics are discussed as well as how well the user studies was conducted, how the requirements were fulfilled and how the main problem was resolved.

10.1 Sustainability

An important factor to consider in any project relating to design is the subject of sustainability. The efforts to reduce climate change need to be accounted for in all industries. This project in particular does not involve any physical product, and so any concerns regarding production and life cycle are irrelevant. Of course, when discussing apps as a product in need of physical server hosts, data centres, the issue of energy usage needs to be mentioned. Data centre power consumption is estimated to account for roughly 1% of global power consumption, according to Masanet et al. (2020), which makes such usage sensitive. However, the most pertinent sustainability issue regarding this project is that of social sustainability.

A core theme throughout this project has been the issue of participation inequality as described by Nielsen (2006), and it has been an important framework for understanding the practical issues regarding social media throughout the project. However, since participation inequality results in a small set of individuals being the primary voices and opinion setters, it also becomes a democratic issue of speech. Of course, freedom of speech is still technically accessible to the average user, but if they belong to the majority who posts nearly nothing they might have trouble having their voices heard. In contrast, the influencers who dominate social media receive attention even when they express opinions on relatively unimportant matters. Simply put, when one opinion gains tens of thousands of likes and an opposing opinion gains three or less, freedom of speech loses a lot of its fairness.

10.2 Ethical concerns

To what extent is it ethical to encourage users to participate more? While communities and platforms at large benefit from as many voices as possible being heard, that might not personally benefit every individual user. The purpose of this project is to encourage a higher level of participation, but that results in strategies to subtly change user behaviour to something they are explicitly hesitant to do. In practice this could be seen as guiding the users behaviour in order to extract content from them, for the entertainment of other users, which could in turn be seen as exploitative.

Many individuals from the interviews even explicitly stated that they avoid social media for personal mental health reasons, so the hesitant but ultimately willing participant is not the only user to consider. Of course, offering a more pleasant and easy way to take part in a social environment can be a very positive thing, especially for individuals who benefit from new friends or interests. This highlights the importance of letting the user find meaning in the interactions themselves, and not to rely too heavily on rewards of likes and similar functions. Encouraging users to post more is directly tied both to their own enjoyment and the benefit of the company producing an entertaining and popular app, and it is paramount to an ethically conscious platform not to forget the former.

These ethical concerns further highlight the importance of “encouraging while not bothering”, as described in the list of requirements. While it is not one of the most inspiring requirements, and not one that specifically led to some grand concept, it is arguably one of the more important points of this work. In the end, a successful social media platform will likely need to utilise some form of addictive interaction in order to drive engagement, as these are the terms of the attention economy. This discussion needs to be continuous, as the terms and culture surrounding social media use are ever-changing. Therefore, conclusions such as those presented by Valkenburg et al (2021), Gallagher (detailed in chapter 2 of this report) and this report itself are all important factors to consider when designing, or just interacting with social media.

10.3 User study samplings

All of the interviewees were students at Chalmers or Gothenburg University, mainly for convenience, to minimise travel time and to have easy conversation starters. During consultation with the primary contact at hummy, she warned that students might not spend as much time on social media as younger or older people, since university studies are time-consuming (T. Kooonavard, personal communication, 15 february 2024). This might indeed be the case, since many interviewees expressed dissatisfaction with how much time they spent on social media. Nevertheless, all of them used some form of social media and many spent time they did not intend to. This may have affected the view on the different social media, however, as a common sentiment was that TikTok was a waste of time with no redeeming qualities. Answers from the interviews that express not having the time to learn a new platform may also be a symptom of the interviewees being older students. It is likely that a similar user study conducted on younger people, for example, in high school, would have had more positive mentions of TikTok. In a general sense, university students might be especially negative towards social media and that certainly coloured the findings.

A positive aspect to the interviews was a relatively large diversity among users, relating primarily to platforms used, frequency of use, and gender. Most interviewees mentioned Instagram and Snapchat as their most preferred apps, but some preferred YouTube and others TikTok or X. Even though most interviewees actively avoided TikTok, others preferred it and still others used YouTube shorts or Instagram reels as a substitute. This does show a generalised pattern where short-form video content is prevalent, but the interviewees showing differing opinions on what platforms are healthy or not is a sign of a diverse sampling group. Differences in frequency of use was also interesting since people who scrolled a lot and very seldom both wished that they scrolled less. Furthermore, by interviewing seven men, eight women and one non-binary person, the interviewees were intentionally diverse in gender in an effort to be as representative as possible.

10.4 Revisiting the requirements

Some essential requirements were not fulfilled by the final concept. This compromise stems from the fact that the requirements themselves were diverse and multifaceted, some directly contradicting each other. This was by choice, since the needs of the consumers as observed in the user research were contradictory themselves.

The final concept effectively solves the requirement of eliminating the stress and anxiety caused by likes, being the main goal of that concept during development. Furthermore, the system is also meant to propagate meaningful interactions, nudging users into writing a comment they might not have otherwise bothered to. At the very least, the user will have left a visual token of their emotions when seeing a post, which could help give a sense of meaning to the one who receives them. Conversely, this system does not account for manipulative or addictive cycles at all since it is not tied to scrolling specifically. Reaction and interaction is simply the direction the concept specialised in, a prioritisation that needed to be done.

Furthermore, Emojis and Comments tie the reward system to the interactions themselves, being similar to likes but not keeping count. In theory, the user should feel the same amount of satisfaction from seeing an emoji being added to their post as an incrementing number, and the user adding the emoji should feel a sense of participation with the post. In a similar vein, the visual feedback a user might get from seeing other people receive emojis might inspire them to post themselves. This effectively fulfils the requirement to encourage users that want to post but might find it difficult or anxiety-inducing. Not specifically having a counter of “likes” also minimises the risk of users feeling the need to compare their posts’ success and failure with that of others.

Nudging users into commenting does increase the amount of input a user needs in order to simply leave a like. However, this slightly hindered casual usage which the project aimed to avoid. In this regard, it could be argued that the system both lowers the barrier to respond and heightens it. Users that have a comment in the back of their minds might click an emoji, see the prompt to write something and proceed to comment something they would otherwise not have. On the other hand, some users might grow annoyed at getting the prompt and as a result they might not use the react button at all.

It could be argued that the Emoji and Comment system can instill some safety from negative responses, since the user may disallow the selection of certain emojis, specifically those that have negative connotations. This does not, however, eliminate negative responses in the form of text.

Regarding associations with influencer-culture, the final concepts of Emojis and Comments does little to broaden the scope of what is worthy of sharing. In this regard, the concept of the Hall of Fame could be further examined as it was developed specifically to allow separation of low- and high-effort posting.

10.5 Methods discussion

An important factor that complicates the research is that the interviews were carried out in public and in groups, with the exception of the three deep interviews. Interviewing in public likely meant that interviewees felt more self-conscious, since they might fear being overheard and judged. They might have kept some personal details that would have been shared if they were alone with the interviewer or they might skew their answers to make themselves look better. An example of this is the question of social media usage; interviewees might say the time spent per week is less than what they actually spend. Some might hesitate or wait until their friends reply in order to make their own answer fit better with their friend group. This does not apply to all interviewees, however, and the information should still be representative of how they perceive themselves.

Another difficulty within interviews was to interpret what the interviewees meant and felt about certain topics. An example of this is the subject of being an aspiring or part-time influencer. During the interviews no one mentioned it being bad when others tried and failed to be an influencer, yet they were very particular about not being interpreted as a “wannabe” influencer themselves. There is a possibility that the interviewees did not like to watch aspiring influencers on social media and therefore were scared to be perceived as one. Since this pattern was observed in several interviews the interpretation is heavily implied and likely to be representative of user opinions, but it could be coloured by the interviewers' personal views.

On the other hand, emotions communicated by the interviewees in other ways than words may be very helpful for the conclusions. During the deep interviews when asked if someone had sent them a mean comment on their post, all of the interviewees had some examples they brought up. While the interviewees said that the comments were not really mean and that it was jokes, they looked and sounded upset. While drawing the conclusion that these comments did in fact bother them is a matter of interpretation, their mood while answering these questions is notable and the possibility that the interviewees had received comments that hurt them should not be dismissed.

Another thing to keep in mind is that occasionally interviewees express one thing during an interview and then proceed to actually do another. This is not necessarily because the interviewee is dishonest or actively lying but rather that they are not aware of their own actions. Because of this, observations are usually involved in user studies, the tricky part about this is that the user may feel observed and therefore change their actions. There were ambitions to include observations in the user research phase, but observing genuine interactions was deemed less lucrative than interviews. Viewing a person trying to upload photos or comments and getting frustrated or anxious would have been very interesting, but it would have presented some issues. Firstly, behaviours such as hateful comments or harassment is universally regarded as unethical, so it is highly unlikely that a participant would exhibit such behaviour in front of observing researchers. Secondly, if the user were to be observed trying to post or engage with some discussion, they would most likely not choose something sensitive that might actually cause them to feel anxious. Furthermore, if a sensitive topic or photo was chosen for the observed participant to interact with they might feel disrespected or uncomfortable, leading to them not showing much at all. Thus, asking during an interview if the user has regretted any post they had seemed more respectful, and showed to still give some insightful answers. It allowed the interviewees to keep their privacy as well as elaborating with details if they wished.

During the spontaneous interviews, it was difficult to keep track of what questions had been answered and not. People often answered questions ahead of time as parts of another answer, simply because they went for an elaborate explanation. For example, asking what platforms people frequented often led to them describing what they do on those platforms. Following up by asking what they use the platforms for could yield further information, but it could also cause some irritation if they felt that they had already answered and that the person interviewing them was not listening. Getting elaborate answers is of course a good thing,

since it means that the questions leave a lot of room for people to elaborate further. The question “What do you think about social media?” was interesting because it clearly confused people but also gave a lot of good answers. When interviewing, it is important not to be scared of confused looks or thoughtful silences; that means people are actually having to reflect and that often leads to more insightful data.

10.6 Fulfilment of purpose and goals

Practically, the main purpose of the project was finding ways to encourage users to contribute to social media with their own content. This has largely been fulfilled, as the user research studies resulted in a list of requirements which elaborate what motivates and discourages posting, respectively.

Another ambition set in the beginning of the project was to develop a prototype as a proof of concept, which has also been met. Some requirements were easier than others to solve, or have existing solutions. The problem regarding likes was mechanically easy, since the development process could largely be reduced to eliminating likes as a mechanism and build new ideas in its absence that fulfil the same needs. Furthermore, the issue regarding hateful comments and other negative responses is even simpler; there already exist adequate solutions (banning offending users, filtering out certain keywords, etc.) and there is no need to reinvent the wheel, as opposed to the problematic nature of likes.

The final concept, Emojis and Comments, effectively provides an alternative to likes that is hopefully as rewarding while avoiding the issues of comparisons between users. The secondary concept which was not developed fully, Hall of Fame, can also be further explored as it solves different requirements than the final concept. Lastly, the list of requirements contain a few warnings not to bother or overly manipulate users, as too heavy-handed approaches run the risk of annoying the users or crossing certain ethical lines.

Continuations to this project could involve looking further into similar, existing functions such as Facebook’s reaction feature. This feature lets the user replace their likes with emojis as well, but it still counts them as likes and displays them numerically. This means that users do get a more emotionally focused measurement of how their post is received, but it does not

remove the problematic nature of numerically measuring attention, leaving the door open for users to compare themselves to others.

An important aspect to note is that the people interviewed heavily favoured Instagram over almost all other social media platforms. As such, the findings also skew toward how users behave on Instagram and the image-based content on there, which in turn influenced the concept development. While the concepts developed in this project are presented with images as their primary content, the key functions are compatible with other content as well.

11. Conclusion

The purpose of this project was to investigate and catalogue the factors and mechanisms that influence how users behave around social media, specifically how users are encouraged or discouraged from contributing with their own content. For this to be accurately understood, the user themselves needed to be examined as well as put into context within the broader social media landscape, which was gained through both interviews and literature research. Thus, the needs of users both as part of the community and as individuals was taken into account throughout the project.

Firstly, as posed at the start of the project: What factors and mechanisms encourage or discourage social media users to contribute with original content in a digital public environment? The social media landscape is a complicated environment, and it can certainly be daunting to its inhabitants. Discourse is often controlled by a vocal minority and there are many incentives for the average user to stay silent. The threat of hateful comments or the fear of being looked down upon contributes to this, and the culture surrounding influencers lead to a general view of contribution as something not meant for everyone. Still, there are opportunities for both exciting and uplifting experiences online. Social media offers the chance for people who rarely meet to keep in touch, and positive interactions, even between strangers, are often appreciated. These interactions require engagement from both parties before they can occur, however, and not everyone is eager to spend the time and effort. The average user is often content with engaging minimally with others because they fear getting a reaction they did not wish for, be it hate or apathy.

Secondly: How should a concept be designed in regard to the generated insights? The final concept was designed to both replace likes as a mechanism and to facilitate more meaningful interactions between users. Replacing the numerical value of a like counter with emoting faces puts the social aspect into focus; the emojis themselves are meant to be a gauge of feelings or mood, not limited to approval. Furthermore, the user is encouraged to write a comment to go along with the emoji through nudging which also serves to promote meaningful interactions.

The focus on removing likes as a mechanic served multiple purposes. Likes, according to the user research, is a consistent cause of hesitation or nervousness among users and is one of the main issues identified. Likes provide a numerical value to attention, a concrete point of measurement which encourages users to compare themselves to others. That function also acts as an extrinsic reward, placing focus on a number increasing and taking focus away from the joy intrinsic to the activity itself.

In the end, the project has been successful in identifying factors that influence how users behave on social media as well as gain an understanding of how some users navigate existing platforms. It also succeeded in providing a set of guidelines for how future platforms should be regarded in their functions, through the list of requirements. The resulting suggestion of a function, the final concept, will hopefully be successful and applicable as well with further evaluation and development.

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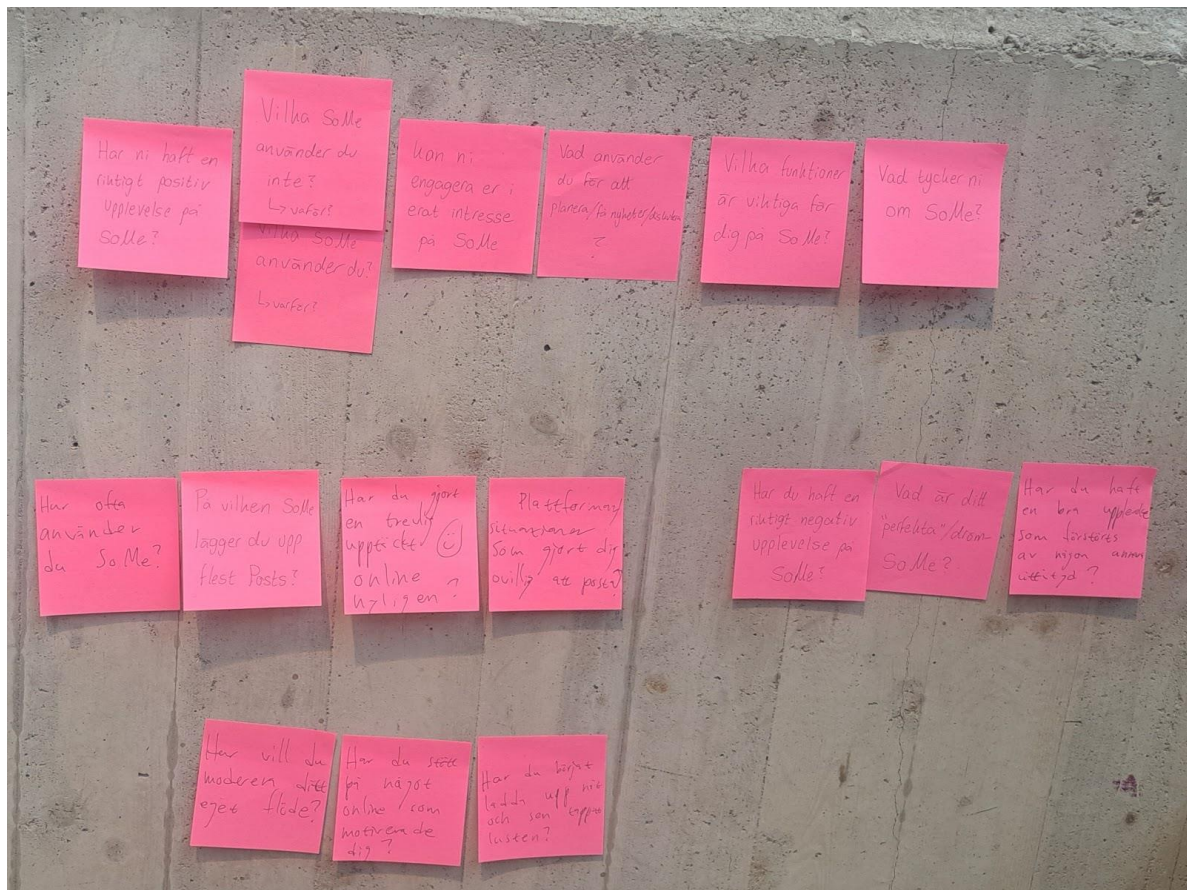
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Appendices

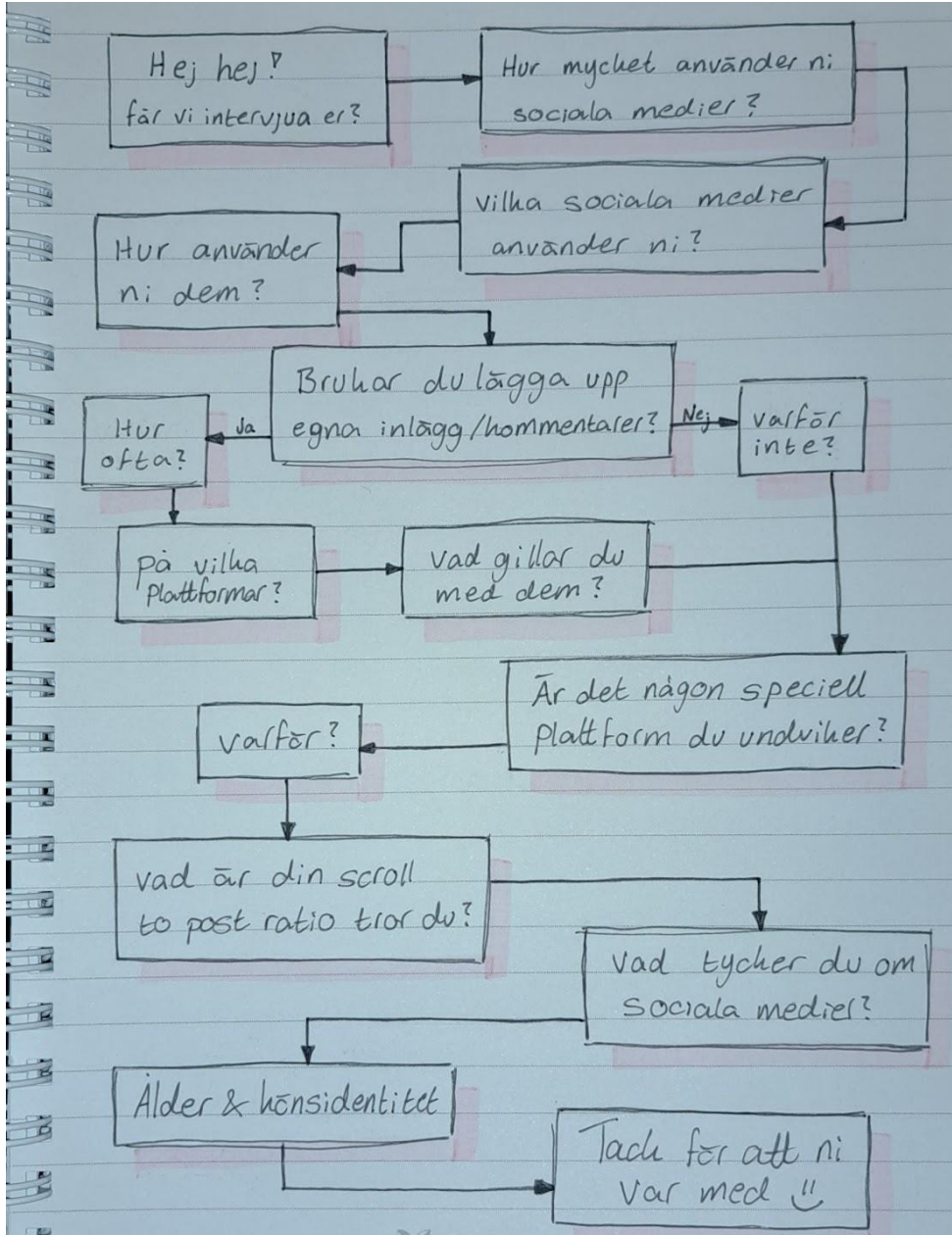
1. Evaluation of quick interview questions:

A potential question that can be used during the spontaneous interviews is written down on each post-it and then sorted into categories deciding which are going to be used in the interview guide.



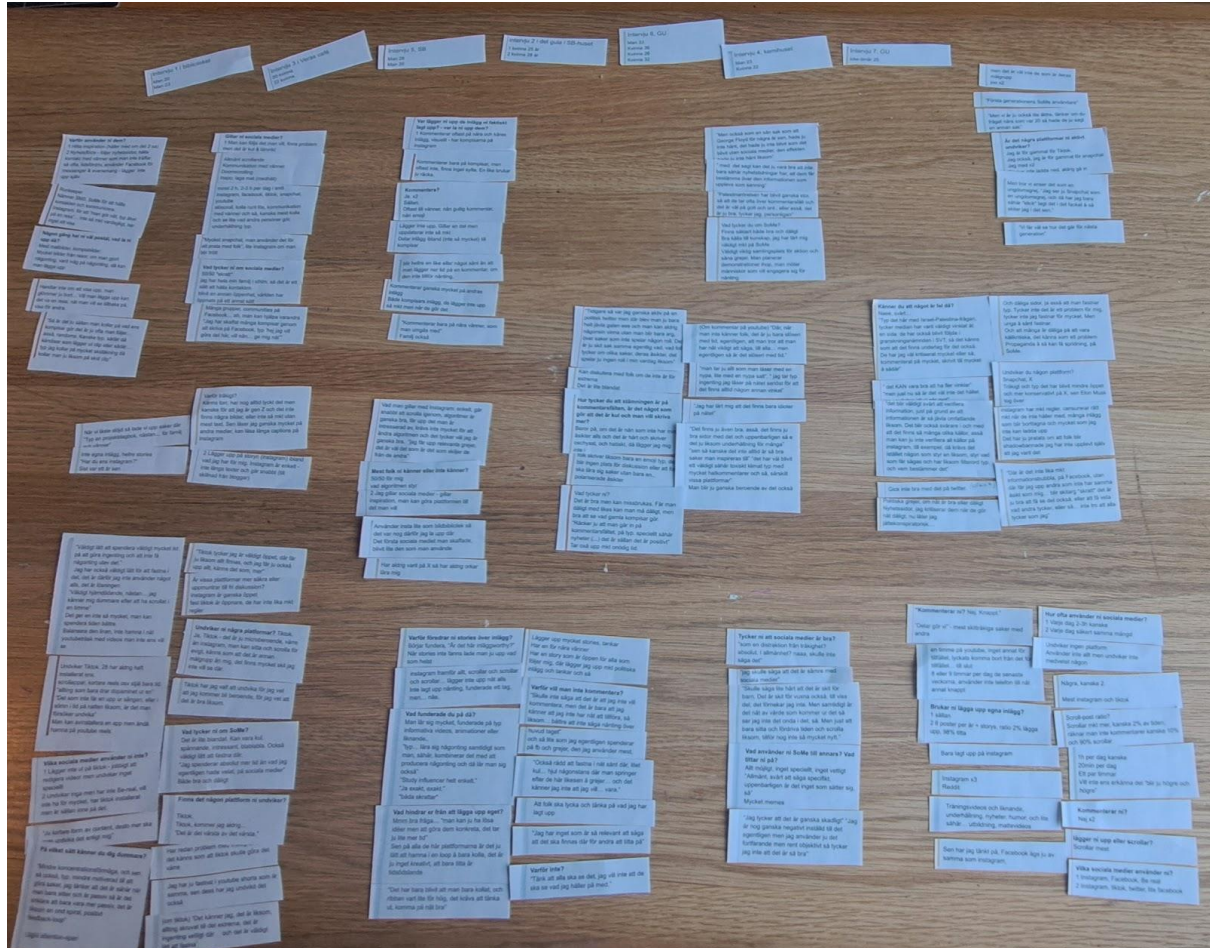
2. Quick Interview Questionnaire:

This is the resulting quick interview questionnaire; this model was sketched up after the evaluation and used during the spontaneous interviews.



3. KJ-analysis:

This is a picture of the KJ analysis, showing how the different answers forms groups based on their theme.



4. Interview guide for the deep interviews:

Following is a translation of the interview guide for the deep interviews:

How often do you upload your own content on social media?

Why do you rarely/never post?

What have you posted?

Why did you post that?

Who is your post for?

Do you have several accounts with different purposes? What is different about the content?

Who can follow you on the different accounts?

What platform do you use/how do you upload the images? (ex: Instagram, posts or stories)

Why do you use that platform/method?

What is the most fun thing to post?

What kind of response have you gotten to that?

Have you ever wanted to post something but regretted it?

Why?

Do you easily pick up on trends?

Have you seen posts that inspired you?

Which types of posts do you usually look at?

Which posts make you the happiest?

Do you often send pictures/posts in chats?

Do you feel a sense of community with people who post similar things as you?

Have you been involved in a very interesting discussion on social media?

How was it? / Why not?

Have you seen content generated by a community?

Have you taken part in it?

What topics/interests would you like to discuss with like-minded people?

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Göteborg, Sverige 2024
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